RICE

DEPARTMENT OF EARTH SCIENCE
WEISS SCHOOL OF NATURAL SCIENCES

March 24, 2015

Jolie Harrison, Supervisor
Incidental Take Program
Permits and Conservation Division,
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
ITP.Cody@noaa.gov

Subject: 0648-XD773- *Comment on "Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August 2015"*

Dear Ms. Harrison:

I am pleased to submit the following comments to the National Marine Fisheries Service about the application for an Incidental Harassment Authorization for the proposed 3D seismic program on the New Jersey Shelf to study sea-level rise. This 3D program uses the *R/V Marcus G Langseth*, a unique asset of the National Academic Fleet with its specially designed capabilities to conduct the proposed seismic program. I support the NMFS commitment to science-based decisions in its regulatory process.

I am a member of the MLSOC, a committee within the University National Oceanographic Laboratories System (UNOLS) and consists of a diverse group of professionals, including geophysicists, geologists, oceanographers, and marine engineers, who provide advice on the scientific operations of *R/V Langseth.* The committee's members have extensive experience in seismic operations around the world aboard *R/V Langseth*, and other seismic vessels, as well as knowledge and experience in mitigation and monitoring identified and/or required under the National Environmental Policy Act (NEPA), the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). One role of the Committee is to advise both the National Science Foundation (NSF) and the ship operator Lamont Doherty Earth Observatory (LDEO) on safe, efficient, cost-effective, and scientifically compelling operations of *R/V Langseth*.

As a U.S. research vessel, *R/V Langseth* operates entirely within the U.S. regulatory process, and, when appropriate, international laws, required for understanding and mitigating the potential impacts of sound in the environment. NEPA requires proposed agency actions (in this case, NSF, which is proposing a seismic survey) to make the best effort to avoid adverse effects, minimize

RICE UNIVERSITY DEPARTMENT OF EARTH SCIENCE-MS 126 P.O. BOX 1892 HOUSTON, TEXAS 77251-1892
6100 MAIN STREET HOUSTON, TEXAS 77005-1892 PHONE: 713-348-4880 FAX: 713-348-5214 E-MAIL: GEOL@RICE.EDU

them, and mitigate them as part of assessing the environmental consequences of the project. The Environmental Assessment (EA), and the associated application for an Incidental Harassment Authorization (IHA) for this 3D seismic experiment on the NJ shelf lay out the program, its potential consequences, possible alternatives, rationale for why the proposed action is the most efficient and safe program, and mitigation measures that would minimize any potential adverse impacts. Among the factors considered in developing the research plan are:

a. Minimum energy source size to accomplish scientific objectives
b. Mitigation and shut down procedures specific to species
c. Protected Species Visual Observers (PSVO) observations for a standard amount of time, generally 30 minutes prior to the start of the survey to clear a specified area around the vessel, and to monitor marine animal occurrence during seismic operations.
d. Startup of the energy source includes ramp-up procedures over a standard amount of time (generally 30 mins) that serves to alert animals of the activities and allows them to vacate the area if disturbed.
e. No start-up of the seismic source during poor visibility or at night unless at least one airgun has been operating.
f. PSVOs, independent biologists, have authority to shut down the seismic source when marine mammals or sea turtles are detected in or about to enter designated exclusion zones.
g. Passive Acoustic Monitoring (PAM) and infrared sensors during day and night to complement visual monitoring.
h. Additionally, the airguns would be shut down if a North Atlantic right whale were seen at no matter distance from the vessel.

Seismic data are an essential and irreplaceable tool for scientific research in the oceans. Seismic methods are the only tool available for peering directly into the seafloor and acquiring the data necessary to advance understanding of the impact of climate change on the ocean's margins, plate tectonics, submarine landslides, and offshore faulting. Seismic data are also used to map nearshore and coastal changes from storms such as superstorm Sandy so that managers can identify areas of greatest risk to future erosion and coastal modification from these extreme events.

The NJ shelf program fits wholly within this framework and will provide invaluable data on sea level history by imaging former coastlines, rivers, and estuaries now buried beneath the sediments of the shelf. The proposed NJ shelf program uses an airgun array that is only about 10% of the size of the array typically used by industry for oil and gas exploration. Whereas oil and gas exploration requires larger seismic sources to image deep targets, the NJ shelf program is focused on shallow sediments where no oil or gas deposits occur. The NJ cruise is part of the solution to innovative cruise planning for acquiring the necessary data for the scientific program with the minimum adverse impacts.

If modest seismic programs such as those proposed for the NJ shelf using *R/V Langseth* are not permitted, the future of this unique national asset and the innovative research that it enables will be lost. The U.S. will have no way to investigate and study marine geologic features of critical interest to or potential geohazards along our coastlines, such as earthquakes, tsunamis, and landslides. Further, this means government officials will not be able to make informed polices to

better protect its citizen, for example from earthquake or tsunami hazards, especially along populated coastline areas. If the *R/V Langseth* cannot operate in its own national waters to complete programs relevant to U.S. national interests, what role will science play in policies that safeguard public safety, resilience, and stability?

NSF and LDEO have followed the appropriate IHA process and have conformed with the associated requirements. Therefore, I urge NMFS to approve this application for an IHA.

R/V Langseth, and its predecessor, *R/V Ewing*, completed more than a decade's worth of academic/government seismic programs with the highest standards of mitigation and monitoring and without the dire, unfounded results purported by opponents of the activities (e.g., no marine mammal mass strandings). As a consequence of past activities, academic scientists have provided significant contributions to society through results which have enhanced our understanding of the Earth, Earth processes, and geohazards. Additionally, observations made by the PSVOs aboard seismic expeditions are contributing to better understanding of the distribution and behavior of marine mammals and sea turtles. I encourage NMFS – as a science based agency – to use science to make informed decisions, perform its regulatory duties, and issue IHAs in an appropriate and timely manner.

Respectfully submitted,

Dr. Dale Sawyer,
Member of MLSOC
Professor of Earth Science
Rice University
Houston, TX 77001
dale@rice.edu

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773: NOAA, INCIDENTAL TAKE PROGRAM, NEW JERSEY SEISMIC SURVEY, JUNE TO AUGUST, 2015

1 message

David W Scholl <dscholl@usgs.gov> Wed, Mar 25, 2015 at 12:10 PM
To: ITP.Cody@noaa.gov

NOAA, Incidental Take Program

I wish to comment on the application by Lamont-Doherty Earth Observatory (LDEO) for an incidental harassment authorization linked to a planned scientific "Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730). Authorization to conduct this offshore research program had previously been granted for the summer months of 2014. But equipment failure on the seismic research vessel Marcus G. Langseth caused the postponement of this collaborative National Science Foundation (NSF) program until the summer of 2015.

The original authorization was granted after the environmental compliance process of the National Environmental Policy (NEPA) had been successfully completed. The scientific merit of the science program itself, which addresses offshore sediment depositional processes linked to sea level changes, was vetted and authorized by NSF's competitive program reviewing process. As demonstrated by hurricane Sandy, this subject matter is of societal relevance to New Jerseyans as well as to all the states and coastal communities of the eastern seaboard.

I am aware that many statements have been made and printed that marine seismic studies bring harm to marine mammals, sea turtles, and the fisheries more generally. These statements are characteristically unaccompanied by verifiable documentation. It is helpful in addressing these concerns that in the past two years the Bureau of Ocean Energy Management(BOEM), who is charged with a legal responsibility to protect marine species and ecosystems from harm by seismic systems, has stated in their published Science Notes that:

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- "To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting marine animal populations or coastal commmunities".

This statement squares with my own observations at sea conducting thousands of hours of marine seismic research using high-energy airgun systems and with trained observers on board authorized to halt seismic operations if even a chance of inadventent harm is perceived.

It is my belief that the permitting process prescribed by regulation and law should, again, enable NOAA to authorize LDEO to conduct NSF's program of Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730).

Respectfully,

David W. Scholl

David W Scholl
United States Geologcial Survey, Emeritus
MS 999, 345 Middlefield Rd, Menlo Park, CA 94025
650-329-4762
dscholl@usgs.gov

Chapman Chair, Emeritus
University of Alaska Fairbanks
408-605-5486
dscholl@usgs.gov

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773: NOAA, Incidental take program, New Jersey seismic survey, June to Aug., 2015

1 message

Gulick, Sean S <sean@ig.utexas.edu> Wed, Mar 25, 2015 at 12:32 PM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>

Dear NOAA Officials, Colleagues, and interested observers,

I am writing to support the permitting and operation of the scientific research program using seismic methods on the New Jersey margin this summer. Specifically Lamont-Doherty Earth Observatory (LDEO) applied for an incidental harassment authorization linked to a planned scientific "Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730). Authorization to conduct this offshore research program was granted for the summer months of 2014, however equipment failure on the seismic research vessel *Marcus G. Langseth* caused the postponement of this collaborative National Science Foundation (NSF) program until the summer of 2015. All paperwork is in order for this scientific research program to move forward summer of 2015 and there is incredible merit in it doing so. In particular, this study will examine the continental margin record to unravel the history of sea level changes that are relevant over long time scales, such as the building of our continental shelves, but also on short timescales such as modern sea level rise. Only through imaging the subsurface can we assess what critical processes are interacting to results in local sea level rise. As Hurricane Sandy has shown the residents of New Jersey, these scientific questions are also very much of “real world” interest. Criticism exists over the use of sound in the ocean for scientific research due to concerns over wildlife. Having spent well over a year a sea personally conducting operations using a variety of levels of sound, I an personally attest that National Science Foundation funded programs are the gold standard for doing absolutely everything to avoid even a potential for issues with marine life. Despite the fact there is no documented scientific evidence that air guns have adversely affected marine animal populations, NSF marine seismic cruises still sail a host of marine mammal observers and take very stringent standards on soft starts, power downs and shutdowns based on radii from operations that are extremely conservative. The incidental harassment authorization is also only for a permit allowing the potential to affect behavior and is not in any way an authorization to harm - the use of the word “take” often raises confusion. Therefore with the safety measures in place, with the extreme scientific importance, and with the track record of NSF funded seismic operations, there should be no further concern over the proposed activities. Therefore I urge NOAA to again permit the New Jersey seismic operation (0648-XD7730) for this basic research project.

Sincerely,

Sean Gulick

_____

Dr. Sean P. S. Gulick
Research Associate Professor
Institute for Geophysics
Jackson School of Geosciences, University of Texas at Austin
J.J. Pickle Research Campus (ROC)
10100 Burnet Rd. (R2200)
Austin, Texas 78758-4445

Phone: 512-471-0483, Fax: 512-471-0999
Email: sean@ig.utexas.edu
http://www.ig.utexas.edu/people/staff/sean/

"Honor the past, live the present, create the future"

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773- Comment on "Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August 2015"

1 message

Nathan Bangs <nathan@utig.ig.utexas.edu> Fri, Mar 27, 2015 at 10:49 AM
To: ITP.Cody@noaa.gov

March 27, 2015

Jolie Harrison, Supervisor

Incidental Take Program

Permits and Conservation Division,

Office of Protected Resources

National Marine Fisheries Service

1315 East-West Highway

Silver Spring, MD 20910

ITP.Cody@noaa.gov

Subject: 0648-XD773- *Comment on "Takes of Marine Mammals Incidental to Specified*

Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August 2015"

Dear Ms. Harrison,

I am writing to express my support for permitting to allow a planned seismic survey offshore New Jersey for this coming summer. This is a project that is planned for the *R/V Langseth* operated by Columbia University and conducted by scientists from Rutgers University, Columbia University, and the University of Texas at Austin. Lamont-Doherty Earth Observatory (LDEO) has applied for incidental harassment authorization linked to a planned scientific survey "Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730). Authorization to conduct this offshore research program had previously been granted for the summer months of 2014. But equipment failure on the seismic research vessel *Marcus G.*

Langseth caused the postponement of this collaborative National Science Foundation (NSF) program until the summer of 2015.

The planned study will examine the continental margin record to unravel the history of sea level changes that occur over both the time scales that have constructed continental shelves, and on the much shorter timescale of modern sea level rise. Through imaging the subsurface offshore New Jersey we can understand the effects of past sea level fluctuations on the New Jersey coast to assess the effects of the current sea level rise. As is apparent from Hurricane Sandy, sea level rise will only intensify the issues of coastal evolution. Consequently, the results of this study will be of direct benefit to the residence of New Jersey. Having discussed this project with the Principal Investigators directly, I know that the acquisition plans have been designed to minimize the impact on marine life, and still be able to adequately address the scientific questions.

As a U.S. research vessel, *R/V Langseth* operates entirely within the U.S. regulatory process, and, when appropriate, international laws, required for understanding and mitigating the potential impacts of sound in the environment. NEPA requires proposed agency actions (in this case, NSF, which is proposing a seismic survey) to make the best effort to avoid adverse effects, minimize them, and mitigate them as part of assessing the environmental consequences of the project. The Environmental Assessment (EA), and the associated application for an Incidental Harassment Authorization (IHA) for this 3D seismic experiment on the NJ shelf lay out the program, its potential consequences, possible alternatives, rationale for why the proposed action is the most efficient and safe program, and mitigation measures that would minimize any potential adverse impacts. Through my experience as a Principal Investigator on the Langseth I have seen that operations are conducted strict compliance with high standards for protection of marine life.

R/V Langseth, and its predecessor, *R/V Ewing*, completed more than a decade's worth of academic/government seismic programs with the highest standards of mitigation and monitoring and without the dire, unfounded results purported by opponents of the activities (e.g., no marine mammal mass strandings or detectable impacts to fishing). As a consequence of past activities, academic scientists have provided significant contributions to society through results which have enhanced our understanding of the Earth, Earth processes, and geohazards. Additionally, observations made by the PSVOs aboard seismic expeditions are contributing to better understanding of the distribution and behavior of marine mammals and sea turtles. I encourage NMFS – as a science based agency – to use science to make informed decisions, perform its regulatory duties, and issue IHAs in an appropriate and timely manner.

I urge you to once again enable NOAA to authorize LDEO to conduct NSF's program of Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730).

Respectfully submitted,

Nathan Bangs

Senior Research Scientist

Institute for Geophysics

University of Texas at Austin

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773: NOAA, INCIDENTAL TAKE PROGRAM, NEW JERSEY SEISMIC SURVEY, JUNE TO AUGUST, 2015

1 message

Mitch Lyle CEOAS <mlyle@coas.oregonstate.edu> Fri, Mar 27, 2015 at 2:04 PM
To: ITP.Cody@noaa.gov
Cc: Mitch Lyle CEOAS <mlyle@coas.oregonstate.edu>

To the NOAA Incidental Take Program

Here are my comments, as a member of the academic marine geology community, on the application by Lamont-Doherty Earth Observatory (LDEO) for an incidental harassment authorization linked to a planned scientific program: *"Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730).* I understand that this is a re-authorization for a seismic reflection survey that was to be done in the summer of 2014, but was postponed because of equipment failures.

I recommend that the program be permitted because (1) the seismic survey has important scientific and societal goals, (2) the scientific party will be taking reasonable and adequate precautions to prevent injury to marine mammals as required by the NOAA permit, and (3) the level of acoustic energy from the seismic reflection survey is relatively small when compared to acoustic energy from typical ship traffic.

The survey was funded by the National Science Foundation to study the rates of sea level rise and its impacts on the eastern US coast. It is an integral part of a program that has been collecting data for more than 25 years on the New Jersey margin, through scientific drilling and regional seismic reflection surveys. The particular survey now planned on the *Marcus G Langseth* for summer 2015 was permitted by NOAA for 2014, but equipment failures prevented the survey from taking place.

The science is both important to understand how passive continental margins are formed and respond to sea level changes, and also to understand the magnitude of sea level change that results from melting large continental ice sheets, a problem the world faces for the next few centuries. The science is pertinent to better constrain environmental impacts of sea level change all along the US Atlantic seaboard.

Seismic reflection has been used academic marine geologists for more than 50 years with little or no impact on the environment. Typical sources used by the academic community are small, and negative impacts scale strongly with the size of the air gun. The source for the 2015 survey on the *Langseth* is roughly 10% of the size of typical oil industry seismic sources. Because the source is small, the relative acoustic energy released into the environment is small compared to other sources of acoustic noise. For example, a typical container ship releases 3 times the acoustic energy per hour as that proposed for the seismic survey, in a similar acoustic frequency range (see McKenna et al., 2012; Bassett et al, 2012).

Lamont Doherty Earth Observatory has also been proactive to develop protocols to minimize impacts to wildlife from seismic reflection surveys, and these protocols will be used in the proposed survey. For example, the seismic sources are typically turned off when whales or sea turtles are nearby, and constant observation is required during the seismic reflection survey.

I believe that the program falls well within allowable environmental impacts and should be allowed to go forward. Permitting *"Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015" (0648-XD7730*) will allow a scientific and societally relevant research project to take place with minimal environmental risk.

Sincerely yours,

Dr. Mitchell Lyle

References:

McKenna, M.F., Ross, D., Wiggins, S.M., Hildebrand, J.A., 2012. Underwater radiated noise from modern commercial ships. Journal of the Acoustic Society of America 131 (1), 92-103.

Bassett, C., Polagye, B., Holt, M., Thomson, J., 2012. A vessel noise budget for Admiralty Inlet, Puget Sound, Washington (USA). Journal of the Acoustic Society of America 132 (6), 3706–3719.

Mitch Lyle
Professor (Sr. Research)
CEOAS, Oregon State University
Burt 112
541-737-3427
mlyle@coas.oregonstate.edu

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773 acoustic blast testing in the ocean

1 message

Chuck Hansen <charles.hansen3@verizon.net> Tue, Mar 31, 2015 at 10:25 AM
To: ITP.Cody@noaa.gov

We are asking you to withdraw your proposed Incidental Harassment Authorization, ref 0648-XD773. This allows over 32 marine mammal species (six endangered) to be needlessly exposed to high levels of acoustic blasting. We feel this is dangerous to marine life and serves no useful purpose since NJ is opposed to offshore oil exploration.

Best Regards,

Charles and Kathleen Hansen
29 Mahoras Dr
Ocean, NJ 07712-3346

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773 NJ Seismic Study

1 message

John <jdbellnj@comcast.net> Wed, Apr 1, 2015 at 2:59 PM
To: ITP.Cody@noaa.gov
Cc: John <jdbellnj@comcast.net>

Jolie Harrison:

As someone who is extremely alarmed at the global assault on Wildlife and our Environment I feel very strongly that

The NJ Seismic study should be stopped in its tracks before it is begun.

With every attack on animals, drinking water, oceans and our atmosphere how could anyone consider doing more harm to our sea creatures.

I find it perplexing that people are open to doing anything that would harm our creatures of the sea.

Please concentrate on things that help our earth and its inhabitants instead of harming them.

John Bell
Toms River, NJ

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773 Incidental Harassment Authorization

1 message

Amy Harlib <aharlib@earthlink.net> Wed, Apr 1, 2015 at 10:49 PM
To: ITP.Cody@noaa.gov

aharlib@earthlink.net
Dear Jolie Harrison,

NO TO THIS ECOSYSTEM DESTROYING INSANITY!

I totally agree with marine scientists united in their concern over the introduction of seismic oil and gas exploration along the U.S. mid-Atlantic and south Atlantic coasts. This activity represents a significant threat to marine life throughout the region.

To identify subsea deposits, operators use arrays of high-volume airguns, which fire approximately every 10-12 seconds, often for weeks or months at a time, with sound almost as powerful as that produced by underwater chemical explosives. Already nine survey applications covering the entirety of the region several times over have been submitted within the past six months, including multiple duplicative efforts in the same areas. In all, the activities contemplated by the Interior Department would result in more than 20 million seismic shots.

Airgun surveys have an enormous environmental footprint. For blue and other endangered great whales, for example, such surveys have been shown to disrupt activities essential to foraging and reproduction over vast ocean areas. Additionally, surveys could increase the risk of calves being separated from their mothers, the effects of which can be lethal, and, over time, cause chronic behavioral and physiological stress, suppressing reproduction and increasing mortality and morbidity. The Interior Department itself has estimated that seismic exploration would disrupt vital marine mammal behavior more than 13 million times over the initial six-to-seven years, and there are good reasons to consider this number a significant underestimate.

The impacts of airguns extend beyond marine mammals to all marine life. Many other marine animals respond to sound, and their ability to hear other animals and acoustic cues in their environment are critical to survival. Seismic

surveys have been shown to displace commercial species of fish, with the effect in some fisheries of dramatically depressing catch rates. Airguns can also cause mortality in fish eggs and larvae, induce hearing loss and physiological stress, interfere with adult breeding calls, and degrade anti-predator response: raising concerns about potentially massive impacts on fish populations. In some species of invertebrates, such as scallops, airgun shots and other low-frequency noises have been shown to interfere with larval or embryonic development. And threatened and endangered sea turtles, although almost completely unstudied for their vulnerability to noise impacts, have their most sensitive hearing in the same low frequencies in which most airgun energy is concentrated.

The Interior Department's decision to authorize seismic surveys along the Atlantic coast is based on the premise that these activities would have only a negligible impact on marine species and populations. Our expert assessment is that the Department's premise is not supported by the best available science. On the contrary, the magnitude of the proposed seismic activity is likely to have significant, long-lasting, and widespread impacts on the reproduction and survival of fish and marine mammal populations in the region, including the critically endangered North Atlantic right whale, of which only 500 remain.

Sincerely,
Amy Harlib
212 West 22nd St. #2N
N.Y., NY 10011-2707

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

Pavlis, Terry L <tlpavlis@utep.edu> Fri, Apr 3, 2015 at 10:59 AM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>

I am writing this note as a concerned scientist. Although I am not a controlled source seismologist, I work with these data and have worked extensively with many other scientists acquiring and using these kind of data. I have been involved in permitting processes like this myself in a seismic acquisition experiment a few years ago. Thus, I speak here with a significant knowledge on the subject. Lamont Doherty and Rutgers University have an important science project whose results depend on the acquisition of a 3D seismic data volume. Lamont is very experienced in these kinds of studies and the article posted for the planned project (https://www.federalregister.gov/articles/2015/03/17/2015-05913/takes-of-marine-mammals-incidental-to-specified-activities-marine-geophysical-survey-in-the#h-21) lays out all of the details known about marine mammal issues and this report clearly outlines the plan for avoidance of marine mammal issues. This plan is above and beyond the call of duty and reflects a well thought out plan to avoid any potential problems. I see absolutely no reason that this project should be denied on any grounds outlined in the report. The science is sound, the plan to avoid any problems is well laid out, and it seems absolutely safe by any measure of modern standards. Certainly by comparison to anything done by the DOD in the same region the impact is trivial.

It is my understanding that there has been much public outcry against this plan. Please be advised that this is a classic example of an emotional response by a public that is generally ignorant about these issues but is vocal because they see it as a broader environmental issue—it is essentially aimed at the petroleum industry industry via an easier target, academic science, which lacks an army of lawyers to fight it. My guess is a tiny percentage of the people who have written in opposition to this plan have read the document on the impact. I confess that I am personally left-leaning politically, but radical left groups who react to these kinds of things emotionally with no real knowledge of the subject are an embarrassment. I suggest you ignore the emotional responses to this plan, look only at the facts, and make a decision on issuing this permit without paying attention to politics. If you do that I am sure you will issue this permit because it is the right thing to do.

Respectfully submitted,

Dr. Terry L. Pavlis

Professor, Geological Sciences

University of Texas at El Paso

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

catmmaher@yahoo.com <catmmaher@yahoo.com> Fri, Apr 3, 2015 at 2:17 PM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>

I am opposed to the plan for seismic testing off the Need Jersey shore. These tests can hurt or kill aquatic life and are of no benefit to our residents. We need a healthy ocean, we don't need studies that could lead to oil or gas drilling. The only study we need is one to determine how to safely use this area for clean, renewable energy to insure a healthy, prosperous future.

Thank you,

Kathleen Maher
1201 Evergreen Ave
Ocean, NJ 07712

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

Lincoln Hollister <linc@princeton.edu> Mon, Apr 6, 2015 at 11:21 AM
To: ITP.Cody@noaa.gov
Cc: Sean Higgins <sean@ldeo.columbia.edu>, Gregory Mountain <gmtn@rci.rutgers.edu>

To: Jolie Harrison, National Marine Fisheries Service

From: Lincoln S. Hollister, Professor of Geosciences, Emeritus, and Senior Geologist, Princeton University

Subject: 0648-XD773

April 6, 2015

This is a comment on the " Marine Geophysical Survey by the R/V Marcus G.Langseth in the Atlantic Ocean off New Jersey, June-August, 2015."

Environmental groups' opposition to science-focused marine seismic surveys erodes the ability of academics to do research. If the Rutgers project were stopped it would be particularly damaging because of the loss of data and of the loss of understanding of geologic processes such as sea level rise. Basic research needs to move forward without further hassle to academic scientists.

Local environmental groups and NJ politicians, coordinated by Clean Ocean Action (COA), have, for about a year, relentlessly attacked the proposed Rutgers-led marine seismic study. For decades, Rutgers scientists have been studying the effects of sea level rise on the NJ Shore. The intent of COA is to stop the Rutgers project, no matter the environmental costs from the research not being done.

At issue is the standard tool for studying earth below the seabed, airguns. The environmental groups claim the use of airguns will bring death and destruction to marine life. In making this claim, the environmental groups ignore the fact that for some 40 years of using airguns no lasting damage to marine life has been demonstrated. To achieve their goal of stopping the Rutgers project, the environmental groups prey on the fears of NJ Shore residents by greatly exaggerating the sound made by airguns, and by cherry-picking controlled studies that test the effects of airguns on several forms of marine life. For seismic surveys, the conditions of the controlled studies that show harm are scrupulously avoided. The claim that the airguns cause "death and destruction" of marine life has no basis in fact and is scientifically without merit.

If there is an impact on marine life by airguns - for example, if fish swim away from the approaching airguns - the environmental groups would lead us to think the fish will never return, but it has been shown that the fish return within days following a seismic study.

The benefits to New Jersey and humanity from the results of the Rutgers project far exceed what little disturbance, if any, might be done to marine life by the seismic survey. Our knowledge of how Earth works, including the effects of sea level rise on the NJ Shore, will be much increased, and the basic research at Rutgers University on sea level rise can move forward.

The relentless misinformed attacks on the use of airguns to explore the 70% of Earth covered by water negatively affect University-based science. Research programs are dismantled, and the education of the next generation of scientists is impaired. Students' and young scientists' careers are interrupted and future students are deterred from entering marine seismic science.

The size of Rutger's proposed airgun array is about one tenth the size of a typical oil and gas industry array. It is half the size of the array used last year, which did no harm. The NJ cruise represents innovative planning for acquiring the necessary data for the scientific program with the minimum adverse impacts.

The IHA should be granted for 2015.

Sincerely,

Lincoln S. Hollister

Professor of Geosciences, Emeritus and Senior Geologist

Princeton University

Princeton, NJ 08544

609-2584106

Participating Organizations
Alliance for a Living Ocean
American Littoral Society
Arthur Kill Coalition
Asbury Park Fishing Club
Bayshore Regional Watershed Council
Bayshore Saltwater Flyrodders
Belford Seafood Co-op
Belmar Fishing Club
Beneath The Sea
Bergen Save the Watershed Action Network
Berkeley Shores Homeowners Civic Association
Cape May Environmental Commission
Central Jersey Anglers
Citizens Conservation Council of Ocean County
Clean Air Campaign, NY
Clearwater of New Jersey
Coalition Against Toxics
Coalition for Peace & Justice/Unplug Salem
Coastal Jersey Parrot Head Club
Communication Workers of America, Local 1036 & 1038
Concerned Businesses of COA
Concerned Citizens of Bensonhurst
Concerned Citizens of COA
Concerned Citizens of Montauk
Concerned Students and Educators of COA
Eastern Monmouth Chamber of Commerce
Fisher's Island Conservancy
Fishermen's Conservation Association, NJ Chapter
Fishermen's Conservation Association, NY Chapter
Fishermen's Dock Cooperative, Pt. Pleasant
Friends of Island Beach State Park
Friends of Liberty State Park, NJ
Friends of the Boardwalk, NY
Garden Club of Bay Head and Mantoloking
Garden Club of Brielle/Bayberry
Garden Club of Englewood
Garden Club of Fair Haven
Garden Club of Long Beach Island
Garden Club of RFD Middletown
Garden Club of Morristown
Garden Club of Navesink
Garden Club of New Jersey
Garden Club of New Vernon
Garden Club of Oceanport
Garden Club of Princeton
Garden Club of Rumson
Garden Club of Sea Girt/Holly
Garden Club of Short Hills
Garden Club of Shrewsbury
Garden Club of Spring Lake
Garden Club of Terra Nova
Garden Club of Three Harbors
Garden Club of Washington Valley
Great Egg Harbor Watershed Association
Green Party of Monmouth County
Green Party of New Jersey
Highlands Business Partnership
Hudson River Fishermen's Association
Jersey Shore Captains Association
Jersey Shore Parrot Head Club
Jersey Shore Partnership
Jersey Shore Running Club
Junior League of Monmouth County
Keyport Environmental Commission
Kiwanis Club of Manasquan
Kiwanis Club of Shadow Lake Village
Leonardo Party & Pleasure Boat Association
Leonardo Tax Payers Association
Main Street Wildwood
Mantoloking Environmental Commission
Marine Trades Association of NJ
Monmouth Conservation Foundation
Monmouth County Association of Realtors
Monmouth County Audubon Society
National Coalition for Marine Conservation
Natural Resources Protective Association, NY
NJ Beach Buggy Association
NJ Commercial Fishermen's Association
NJ Environmental Federation
NJ Environmental Lobby
NJ Main Ship Owners Group
NJ Marine Education Association
NJ PIRG Citizen Lobby
Nottingham Hunting & Fishing Club, NJ
NYC Sea Gypsies
NY State Marine Education Association
NY/NJ Baykeeper
Ocean Wreck Divers, NJ
PaddleOut.org
Picatinny Saltwater Sportsmen Club
Raritan Riverkeeper
Religious on Water
Rotary Club of Long Branch
Rotary District #7540—Interact
Saltwater Anglers of Bergen County
Sandy Hook Bay Anglers
Save Barnegat Bay
Save the Bay, NJ
SEAS Monmouth
Shark Research Institute
Shark River Cleanup Coalition
Shark River Surf Anglers
Shore Adventure Club
Sierra Club, NJ Shore Chapter
Sisters of Charity, Maris Stella
Sons of Ireland of Monmouth County
Soroptimist Club of Cape May County
South Jersey Dive Club
South Monmouth Board of Realtors
Staten Island Tuna Club
Strathmere Fishing & Environmental Club
Surfers' Environmental Alliance
Surfrider Foundation, Jersey Shore Chapter
TACK I, MA
Unitarian Universalist Congregation/Monm. Cnty.
United Boatmen of NY/NJ
Village Garden Club
Volunteer Friends of Boaters, NJ
WATERSPIRIT
Women's Club of Brick Township
Women's Club of Keyport
Women's Club of Long Branch
Women's Club of Merchantville
Women's Club of Spring Lake
Zen Society

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Clean Ocean Action

www.CleanOceanAction.org

18 Hartshorne Drive, Suite 2
Highlands, NJ 07732-0505
T (732) 872-0111
F (732) 872-8041
Info@CleanOceanAction.org

April 6, 2015

Via electronic mail sent to ITP.Cody@noaa.gov
Ms. Jolie Harrison
Supervisor, Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, Maryland 20910

RE: Comment Period for IHA Application of Lamont-Doherty Earth Observatory and National Science Foundation; Seismic Survey in the Northwest Atlantic Ocean Offshore New Jersey, June through August 2015 (RIN 0648-XD773)

Dear Ms. Harrison:

We write to request to the comment period concerning the above application for Incidental Harassment Authorization (IHA) for takes of marine mammals incidental to conducting a marine seismic survey in the northwest Atlantic Ocean off the New Jersey coast.

First, we urge NMFS to rescind and reissue its notice of the proposal authorization. The notice is materially defective because it make no reference to the fact that the State of New Jersey has determined the subject activity—the non-stop seismic blasting of our ocean for a 30-day period this Summer—to be inconsistent with its coastal zone management policies. This is an essential fact to communicate if members of the public are to have a fair opportunity to evaluate the proposed activity. To that end, the current IHA is incomplete; it should be rescinded and then re-issued with such pertinent information.

Should NMFS refuse to rescind the subject notice, we would alternatively request a 60-day extension to the public comment period. As you are aware, any proposal to perform seismic surveys off the coasts of New Jersey is a matter of significant public input. We believe that the communities potentially affected by this activity, have not been properly alerted or informed about this IHA. The shore communities most affected are seasonal, and many business owners and residents have not yet returned to the shore. The proposal poses significant threats to marine resources upon which these businesses and residents depend. Their interest was evident last

year when over 300 citizens gathered to learn about the issue in August. Most were outraged that they had not heard about the proposal and did not have an opportunity to comment.

Moreover, some members of the public we have interacted with are reasonably confused by the different seismic studies being proposed for the Atlantic Ocean. Additional time is necessary to clarify to the public how this proposal off the Jersey shore is different in scope and stated purpose than that proposed by BOEM for oil and gas exploration.

Accordingly, the public should be afforded a 60-day extension of the comment period in order to have more time and a reasonable opportunity to be informed about the proposal and to prepare thoughtful comments.

I would welcome an opportunity to discuss this matter with you or your staff at your convenience. For further discussion, please contact me at 732.872.0111 or zipf@cleanoceanaction.org.

Thank you for your consideration of our request and I look forward to hearing from you.

Sincerely,

Cindy Zipf
Executive Director
Clean Ocean Action

cc: The NJ Coastal Congressional Delegation
NJ Legislature, coastal and environment committees
NJ Department of Environmental Protection
Open letter

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

Seismic Study 0648-XD773

1 message

Don Widmyer <squwidley@gmail.com> Tue, Apr 7, 2015 at 11:36 AM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>

Jolie Harrison,
I would like to express my opposition to the use of acoustic blasting off the NJ shore or anywhere else. The risk to marine mammals and the fisheries far out way any possible benefit of the mapping of the ocean floor.
Donald Widmyer
Ship Bottom, NJ

Sent from my iPad

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773 – Support for Marine Seismic Survey off the New Jersey Coast for Scientific Studies

1 message

Clowes, Ronald <rclowes@mail.ubc.ca> Tue, Apr 7, 2015 at 7:01 PM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>
Cc: "gmtn@rci.rutgers.edu" <gmtn@rci.rutgers.edu>, "Mladen Nedimovic (mladen@ldeo.columbia.edu)" <mladen@ldeo.columbia.edu>

Jolie Harrison, Supervisor

Incidental Take Program, Permits and Conservation Division

Office of Protected Resources, National Marine Fisheries Service

Silver Spring, MD 20910

Email: *ITP.Cody@noaa.gov*

Dear Jolie Harrison:

RE: Subject 0648-XD773 – Marine Seismic Survey off the New Jersey Coast for Scientific Studies

I am an academic seismologist (now Professor Emeritus) who has worked in seismic reflection studies on land and at sea for more than 50 years. From about 1970 to 1990, I ran a marine seismic program off the west coast of Canada, initially using explosives as a source, then switching to air gun sources because they are not damaging to the marine environment and its inhabitants. No study of which I am aware that has used seismic air guns as its source has ever caused harm to whales, other mammals or the fishery. In a much later study (mid 2000s) off Canada's west coast, in which I was involved with U.S. colleagues, an independent environmental consulting company contracted by Lamont-Doherty concluded that no environmental harm would occur if the standard requirements for air gun operation as regulated in Canada were followed, and of course such regulations must be followed.

I also participated in on-land recording of the 1994 ACCRETE marine seismic project along Portland Canal, the narrow waterway between SE Alaska and NW British Columbia, using the Lamont-Doherty seismic research vessel, the R/V EWING, the predecessor to the R/V LANGSETH. During that survey, using 20 airguns with a total volume of about 8000 cu in (compare to the 4 air guns with a 700 cu in volume for the New Jersey survey), environmental observers were on board and no deleterious effects were noted. Indeed, one observer, a First Nations Chief, noted in a recorded video that he saw no problems with the survey.

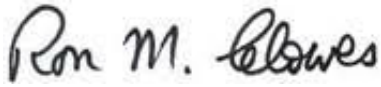
I quote these examples because, as a citizen, I have no inclination to harm the environment, just as protestors of the New Jersey study do not want the environment harmed. As a scientist, I know from past experience and from past environmental studies in which I have been involved that an air gun seismic survey, carried out under normal federal regulations, will not cause harm to mammals, the fishery or other sea life.

During the past 15 years or so, more rigorous requirements for the conduct of seismic surveys have been implemented by both U.S. and Canadian regulatory bodies, and rightfully so. Now all such surveys must, and do, comply with all of these regulations to ensure safety and environmental integrity. Experience by many scientists and many studies has exemplified this point: monitoring and mitigation requirements issued by the responsible federal authorities have been, and are, completely effective. Moreover, marine seismic reflection studies are the only methods by which the third dimension, depth beneath the sea floor, can be imaged at appropriate resolutions to address both fundamental and applied scientific questions.

The planned study off the New Jersey coast is one of these studies. It should proceed as planned because the scientific objectives are important and the seismic acquisition will not harm marine life, nor does it have anything to do with oil and gas exploration. Also, the planned air gun array (4 sources with a total volume of 700 cu in) is moderate compared to many seismic surveys and thus has even less (i.e., no) chance of causing damage to any aspect of the marine environment when it is deployed and used following the standard NOAA requirements.

Thank you for allowing me the opportunity to support my colleagues in carrying out their planned survey off the New Jersey coast.

Respectfully submitted,



Ronald M Clowes, CM[1], FRSC[2]

Emeritus Professor

Earth, Ocean & Atmospheric Sciences

2020 – 2207 Main Mall

University of British Columbia

Vancouver, Canada V6T 1Z4

Tel: 604.822.4138

Email: rclowes@eos.ubc.ca

[1] Member, Order of Canada; [2] Fellow of the Royal Society of Canada

MARINE MAMMAL COMMISSION

8 April 2015

Ms. Jolie Harrison, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by Lamont-Doherty Earth Observatory (LDEO), in collaboration with the National Science Foundation (NSF), seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA) to take small numbers of marine mammals by harassment. The taking would be incidental to a marine geophysical survey to be conducted off New Jersey from June–August 2015. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 17 March 2015 notice announcing receipt of the application and proposing to issue the authorization, subject to certain conditions (80 Fed. Reg. 13962) and commented on the same activity in a 31 March 2014 letter.

In several previous Commission letters, including most recently the letter of 1 April 2015 concerning a marine geophysical survey to be conducted off New Zealand, the Commission has raised issues that reflect ongoing concerns that apply more broadly to certain incidental take authorization applications, not just those from LDEO. The enclosed 1 April 2015 letter should be read in conjunction with this letter, as it provides additional background and rationale regarding the Commission's general concerns and some of the recommendations contained herein.

Background

LDEO proposes to conduct a high-energy, 3D geophysical survey 25 to 85 km offshore of New Jersey. The purpose of the proposed survey is to collect and analyze data on the arrangement of sediments deposited during times of changing global sea level from roughly 60 million years ago to the present. The survey would be conducted in waters estimated to be 20[1] to 75 m in depth with approximately 4,906 km of tracklines. LDEO would use the R/V *Marcus G. Langseth* to operate a four-airgun array (nominal source level of up to 240.4 dB re 1μPa at 1 m (peak) with a maximum discharge volume of 700 in^3) at a tow depth of either 4.5 or 6 m. The arrays would be used in an

[1] Although NMFS indicated the minimum water depth would be approximately 30 m, LDEO indicated that the minimum water depth would be approximately 20 m in its application.

alternating (flip-flopping) firing sequence. The *Langseth* also would tow either (1) four hydrophone streamers (3,000 m in length) or (2) two hydrophone streamers (also 3,000 m in length) and a P-Cable hydrophone streamer system during the survey. In addition, LDEO would operate a 10.5- to 13-kHz multibeam echosounder and a 3.5-kHz sub-bottom profiler continuously during the survey. The survey is expected to last for 30 days.

NMFS preliminarily has determined that, at most, the proposed activities would result in a temporary modification in the behavior of small numbers of up to 32 species of marine mammals and that any impact on the affected species would be negligible. NMFS does not anticipate any take of marine mammals by death or serious injury. It also believes that the potential for temporary or permanent hearing impairment will be at the least practicable level because of the proposed mitigation and monitoring measures. Those measures include (1) refraining from operating the multibeam echosounder and sub-bottom profiler in transit to and from the project area, (2) monitoring the exclusion and buffer zones (based on Level A and B harassment, respectively), and (3) using power-down, shut-down, and ramp-up procedures. LDEO also would shut down the airguns immediately if and when a North Atlantic right whale is sighted, regardless of the distance from the *Langseth*. Ramp-up procedures would not be initiated until the right whale has not been seen at any distance for 30 minutes. In addition, LDEO would power down the array, if possible, when concentrations of humpback, sei, fin, blue, and/or sperm whales (six or more individuals that do not appear to be traveling and are feeding, socializing, etc.) are observed within the buffer zone.

Inconsistencies and inaccurate information

The marine mammal species that could be affected, marine mammal densities, take estimation method, and numbers of takes estimated in the *Federal Register* notice differ from those used in LDEO's application. NMFS is proposing to authorize takes for some species that were not included in LDEO's application. The Commission is unsure why those species and associated takes were not included in LDEO's 2015 application given their potential occurrence in the project area and the fact that they were included in the authorization issued by NMFS in 2014. NMFS also determined that the density estimates obtained from the Strategic Environmental Research and Development Program spatial decision support system (SERDP SDSS) Marine Animal Model Mapper[2] were different than those provided in LDEO's application based on a recent upgrade to the Mapper's model algorithms and amended the densities accordingly. In addition, NMFS used a take estimation method in the *Federal Register* notice that incorporated a time element rather than LDEO's standard area x density method. The Commission now understands, through consultation with NMFS staff, that NMFS intends to use yet another method to estimate the numbers of takes that will likely yield greater take estimates than those proposed to be authorized, which is discussed in detail herein. The Commission is concerned that, by changing its methodology and publishing underestimates of the potential impacts in the proposed authorization, NMFS is undermining the public review process. Lastly, also as discussed herein, the distances to relevant sound thresholds based on in-situ and extrapolated measurements are not accurately presented in NMFS's notice.

Because of the inconsistencies between the application and the *Federal Register* notice and, as detailed herein, the fact that large portions of the notice are either incorrect or not reflective of how

[2] Based on the Department of the Navy's OPAREA Density Estimates (NODE) for the Northeast Operating Areas in summer.

NMFS apparently plans to assess the proposed activity, neither the Commission nor the public are able to provide informed comments on the proposed authorization or to be confident that only a small number of animals from each species or stock would be taken. For these reasons, the Commission recommends that NMFS (1) amend its proposed authorization to include correct radii for the exclusion and buffer zones based on in-situ and extrapolated measurements, a detailed description of its revised take estimation method, and the numbers of takes it proposes to authorize and (2) allow for additional public comment after publishing a revised proposed authorization in the *Federal Register*. In addition, the Commission recommends that, in the future, NMFS require LDEO and NSF to provide revised applications that reflect the best available scientific information concerning the species affected, marine mammal densities, take estimation method, and estimated numbers of takes, before it deems the application complete and publishes a proposed authorization.

Uncertainty in modeling exclusion and buffer zones

Since 2010, the Commission has raised concerns about the method used to estimate exclusion and buffer zones (based on Level A and B harassment, respectively) and the numbers of takes incidental to NSF-funded geophysical research. Briefly, LDEO performs acoustic modeling for geophysical research funded by NSF. For at least 6 years, LDEO has estimated exclusion and buffer zones using a simple ray trace–based modeling approach that assumes spherical spreading, a constant sound speed, and no bottom interactions (Diebold et al. 2010). As noted in several Commission letters, numerous studies[3] have underscored the importance of incorporating site-specific environmental and operational parameters into estimating exclusion and buffer zones. The recent Crone et al. (2014)[4] study indicated that, in shallow and sloped environments, the complexity of local geology and bathymetry and the typical lack of sufficient information regarding this complexity can make it difficult to predict accurately sound levels as a function of distance from the source array. In contrast to the most widely accepted current approaches in the scientific literature, LDEO's model does not incorporate environmental characteristics of the specific study area, including sound speed profiles and refraction within the water column, bathymetry/water depth, sediment properties/bottom loss, or absorption coefficients.

To estimate the proposed exclusion and buffer zones for the survey off New Jersey, LDEO used various extrapolations and scaling factors. Specifically, propagation measurements were obtained in shallow water of the Gulf of Mexico for the *Langseth*'s 3,300-in^3 array towed at 6 m depth, in both cross-line (athwartship) and in-line (foreward and aft) directions. A 95th percentile fit to the cross-line measurements (which were obtained at ranges approximately 2–14.5 km from the source) was used to extrapolate the near-field measurements at less than 2 km and far-field measurements at more than 14.5 km. The cross-line measurements and extrapolations were more conservative than the in-line measurements and extrapolations and thus were used to derive the mitigation radii for the proposed survey off New Jersey. The differences in array volumes, airgun configurations, and tow depths between the Gulf of Mexico and New Jersey surveys were accounted for by various scaling factors calculated based on the radii obtained from the LDEO model for deep water. However, the use of those scaling factors for shallow-water surveys has not been substantiated. Tolstoy et al. (2009) verified that, in shallow water, sound is expected to reverberate in

[3] Tolstoy et al. (2004), Tolstoy et al. (2009), Diebold et al. (2010), and most recently, Crone et al. (2014).
[4] Crone et al. (2014) used hydrophone data from waters off Washington State to compare empirically derived estimates to model-estimated exclusion and buffer zones for LDEO's 36-airgun array.

the water column and upper seafloor and, therefore, sound propagation in shallow water would be highly dependent on local seafloor geology[5]—not scaling factors based on modeled results in deep water. Further, although calibration experiments for both the *Ewing* and *Langseth* occurred in the Gulf of Mexico, Tolstoy et al. (2009) indicated that data differences between the two studies at shallow-water depths may have been due to site-specific differences.

Because LDEO has failed to verify the applicability of its model to conditions outside the Gulf of Mexico, the Commission has recommended in many of its letters that NMFS and/or the respective applicants estimate exclusion and buffer zones using either empirical measurements from the particular survey site <u>or</u> a model that accounts for the conditions in the proposed survey area. The model should incorporate site-specific environmental[6] and operational[7] parameters. The Commission understands that LDEO has been analyzing hydrophone data from waters off Washington and New Jersey to allow comparisons of empirically derived estimates to model-estimated exclusion and buffer zones. For the survey off Washington, Crone et al. (2014) indicated that the zones can be reliably established with the hydrophone streamer only in shallow water, perhaps in depths no greater than about 200 m. They also stated that additional investigations into the use of hydrophone data for the determination of sound power levels from previous surveys, and perhaps new targeted calibration experiments, could help refine the effects of water depth and seafloor slope on power levels measured with the streamer in intermediate-depth waters and provide more concrete guidelines on the depth ranges for which the streamer can be reliably used for sound power level estimates[8]. Further, Crone et al. (2014) indicated that the modeled zones were greater than the measured zones in waters 200 m or less, which could be due to differences in bottom and sub-bottom properties between the Washington and the Gulf of Mexico sites—some of the very factors that the Commission believes should be included in the model.

For New Jersey, LDEO analyzed one of the lines (a 700-in^3 source towed at 4.5 m depth and shot upslope in water depths ranging from approximately 50 to 20 m) using hydrophone data from its truncated survey in 2014[9] to verify the accuracy of its acoustic modeling approach for estimating exclusion and buffer zones (Crone 2015). The Commission understands that Crone (2015) used a simple logarithmic regression model[10] to fit the data that were collected 500 m to 3.5 km in line from the source. He then estimated the cross-line mean based on a 1.63 correction factor (Carton pers. comm.) and used a 95th percentile fit to the regression model for all shots along the line. Since the closest hydrophone was 500 m from the source, the distances to the 180-dB re 1 μPa threshold were extrapolated based on the model—in some instances, the extrapolation was more than 400 m. Crone (2015) provided neither the slope nor the y-intercept for the logarithmic regression model. Specifics on the model are essential, as is basic information for comparing modeled to measured radii, similar to the information included in Tolstoy et al. (2009) and Crone et al. (2014). It is noteworthy that

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[5] Tolstoy et al. (2009) further indicated that empirical data confirm significantly different propagation loss rates in shallow and deep water as previously observed for the R/V *Ewing* (Tolstoy et al., 2004), with lower propagation loss rates in shallow water.
[6] Such as sound speed profiles, refraction in the water column, bathymetry/water depth, sediment properties/bottom loss, and wind speed.
[7] Such as tow depth, source level, number/spacing of active airguns.
[8] Moreover, hydrophone streamers measure power levels in only one direction (behind the vessel). Previous studies have indicated that power levels vary as a function of azimuth.
[9] Due to mechanical issues and inclement weather.
[10] Although the document itself indicated a logarithmic spreading model.

polynomial and non-parametric cubic spline models best represented the data off Washington (Crone et al. 2014), neither of which are logarithmic in nature and a linear least squares method was fit to the typical spherical spreading model to extrapolate the 160-dB re 1 μPa radii to account for radii that fall beyond the length of the hydrophone streamer. In addition to issues surrounding the model specifics, Crone (2015) did not specify the basis for the cross-line correction factor, the sound speed profile when the measurements were collected, or whether the near-field extrapolated data would have been better fitted with another model, since propagation loss in the near- and far-field may not necessarily be the same.

In addition, NMFS misrepresented the data from Crone (2015) in Table 4 of the *Federal Register* notice. NMFS included the in-line measured and extrapolated means (78 and 1,521 m for the 180- and 160-dB re 1 μPa thresholds, respectively) rather than the 95th percentile cross-line predicted means (273 and 3,505 for the 180- and 160-dB re 1 μPa thresholds, respectively), which LDEO generally uses for its best-fit model. Thus, the percent differences in the model predicted radii and the 95th percentile cross-line predicted radii based on in-situ measurements were approximately 28 and 33 percent for the 180- and 160-dB re 1 μPa thresholds rather than 79.3 and 70.9 percent as specified in Table 4. Further, Crone (2015) indicated that the contour of the seafloor along the line was quite flat and varied by only a few meters along most of its 50-km length, which limited the shadowing and focusing that have been seen in other datasets (Crone et al. 2014). He then noted that the variability observed in Figures 3 and 4 for the 180- and 160-dB re 1 μPa thresholds, respectively, likely was caused by the shadowing and focusing of seismic energy from bathymetric features. Those two statements do not comport.

Although the far-field values appear to support the use of LDEO's model for the 160-dB re 1 μPa threshold, measurements for the cross-line direction, other tow depths, and the near-field that informs the radii for mitigation are still lacking. Until those data are available, the Commission continues to believe the use of a simplistic model and various extrapolations and scaling factors does not represent the best available science, especially since Crone et al. (2014) indicated polynomial and non-parametric cubic spline models best fit the data off Washington. The environmental conditions in the New Jersey survey area[11], which should include sound speed profiles that represent cold-water conditions (increased sound speeds), surface ducts, and in-water refraction, as well as bathymetry and sediment characteristics that reflect sound should be incorporated into such a model. Therefore, <u>the Commission recommends</u> that NMFS (1) require LDEO to re-estimate the proposed exclusion and buffer zones and associated takes of marine mammals using site-specific environmental (including sound speed profiles, bathymetry, and sediment characteristics at a minimum) and operational (including number/type of airguns, tow depth) parameters for the proposed incidental harassment authorization and (2) impose the same requirements for all future incidental harassment authorizations submitted by LDEO, NSF, U.S. Geological Survey (USGS), Scripps Institute of Oceanography (Scripps), Antarctic Contract Support (ASC), or any other relevant entity. In addition, the Commission continues to believe that LDEO, NSF, and related entities (USGS, Scripps, ASC) should be held to the same standard as other action proponents (i.e., U.S. Navy, Air Force, Bureau of Ocean Energy Management, and the oil and gas industry).

[11] Which differ substantially from warm- or temperate-water regions where LDEO normally operates.

Take estimation methods and overall numbers of takes

LDEO used its standard area[12] x density method to estimate the numbers of takes, which likely underestimated both the numbers of individuals exposed and the total number of takes because the survey would occur in a small area (12 x 50 km) 24 hours per day for approximately 30 days. To help address the shortcomings of LDEO's method, NMFS used its own take estimation method, an approach that it believed followed a recommendation the Commission included in its 2014 letter on the proposed survey. NMFS's method used the total ensonified area (including overlap and the 25 percent contingency) for the 30 days multiplied by (1) the revised density estimates from SERDP SDSS summer NODE data, (2) an adjustment factor of 25 percent based on Wood et al. (2012), and (3) an estimate of re-exposure, which was essentially the percent overlap of the survey. Unfortunately, the specific method adopted contains various deficiencies. It is unclear why overlap in the estimation was included, not only because it is removed at the end of the calculation but, more importantly, because NMFS normally indicates that an animal can be taken only once per day. Furthermore, an area x density method, which still serves as the basis for NMFS's method, assumes uniform distribution. At no time does NMFS actually account for the survey occurring for 30 days, thus a time element was not actually incorporated.

In addition, the Wood et al. (2012) correction factor of 1.25 was inaccurately described and incorrectly applied, which the Commission has observed for multiple recent proposed authorizations by NMFS. Briefly, Wood et al. (2012) determined a turnover rate of 2.5 for mysticetes based on tagged blue whales foraging for a mean of 21 days off the west coast of the United States (Bailey et al. 2009) and the proposed 53 days for the Pacific Gas and Electric (PG&E) survey off Diablo Canyon. It is important to note that the 21-day mean also included a standard deviation of 27 days due to blue whales spending from 3 to 115 days foraging within an area-restricted search patch. Wood et al. (2012) also included a turnover rate of 1 for resident species and 1.25 for other odontocetes and pinnipeds. Although justification for the 1.25 turnover rate was not provided by Wood et al. (2012), that rate would imply that individuals of those species would remain in the area for 24 days in the context of the 30 days of the NJ survey, which is highly unlikely since the area off New Jersey is more of a migratory corridor than a prime foraging area for at least some of those species. In addition, the Commission is concerned that NMFS misinterpreted what the turnover rates in Wood et al. (2012) actually mean. A correction factor of 1.25 does not imply that 25 percent of the animals would move away from the area and not be re-exposed. If that were the case, the 1.25 turnover rate would imply four individuals were exposed on a given day and on the following day, and during the remaining 28 days, three of those individuals would be exposed continually and only one would move beyond the range of the source. That would assume emigration rather than immigration, which was the intent of Wood et al. (2012). Furthermore, the assumption of a 25 percent emigration rate reduces the overall number of takes rather than increase the number of animals that could be affected. By using this approach, NMFS apparently would assume that 30 days of potential exposures would equate to only one take for the majority of the animals, whereas the smaller percentage of the animals leaving the zone would be taken during a very short timeframe (e.g., the time it would take to leave the zone before being re-exposed).

[12] Based on the estimated ensonified area calculated from the overall survey area, the estimated buffer zone, and a 25 percent contingency to account for repeating tracklines.

NMFS's approach is neither consistent with the intent of Wood et al. (2012) nor consistent with NMFS's assumptions regarding a 24-hour reset. More importantly, it does not represent a science-based method to determine the total number of individuals taken on a given day and the total number of exposures for a survey, for which at least two other methods could have been used. First, the total area (including the 25 percent contingency) without overlap that would be ensonified on a given day could have been multiplied by each species-specific density to yield the number of individuals taken on a given day. To determine the total number of exposures or takes, the number of individuals taken on a given day should have been multiplied by 30 days. The second method would use the total ensonified area for the entire survey (including the 25 percent contingency) without overlap multiplied by the density to yield the total number of exposures. The total number of exposures then should have been divided by 30 to yield the number of individuals taken on a given day. If NMFS plans to determine the number of individuals taken during the proposed survey following an approach similar to what was intended by Wood et al. (2012), NMFS will have to review the scientific literature for applicable information regarding migratory, residence, and foraging patterns for the various species off the East Coast and relate those data to the 30-day survey period for the proposed survey off New Jersey to derive applicable turnover rates.

In line with these comments, the Commission understands that since publication of the *Federal Register* notice, NMFS is in the process of revising its take estimation methodology for the proposed survey. The Commission understands that the total numbers of exposures likely will decrease but the estimated numbers of individuals that could be taken likely will increase—the numbers of individuals currently serves as the authorized numbers of takes should the authorization be issued. Because the details of NMFS's revised take estimation method and the degree to which the numbers of takes to be authorized have increased are unknown, it is unclear if the number of takes for each species or stock would still be considered small numbers. Since neither the Commission nor the public can comment effectively on the revised take estimation method or the proposed numbers of takes to be authorized, NMFS should, as recommended herein, republish the *Federal Register* notice with updated information and allow for an additional comment period on the proposed authorization. This is especially important for an activity such as the New Jersey survey, which has garnered much attention and scrutiny. However, if NMFS chooses not to amend and republish its notice, the Commission recommends that NMFS (1) use one of the two methods described herein to estimate the total number of takes for each species/stock for the survey and (2) if NMFS intends to estimate the total number of individuals for each species/stock taken during the survey[13], include a review of the applicable scientific literature regarding migratory, residence, and foraging patterns for the various species off the East Coast and relate those data to the 30-day survey period for the proposed survey off New Jersey.

Monitoring measures

In several previous letters, the Commission has indicated that the monitoring and reporting requirements adopted under section 101(a)(5) of the MMPA need to be sufficient to provide a reasonably accurate assessment of the manner of taking and the numbers of animals taken incidental to the specified activity. The discussion of monitoring measures in the Commission's 1 April 2015 letter details these general concerns and provides the background and rationale for the following recommendation. Consistent with that discussion, the Commission again recommends that NMFS

[13] Which likely will be based on the numbers of animals taken during a given day.

consult with LDEO and other relevant entities (e.g., NSF, USGS, Scripps, ASC) to develop, validate, and implement a monitoring program that provides a scientifically sound, reasonably accurate assessment of the types of marine mammal takes and reliable estimates of the numbers of marine mammals taken by incorporating appropriate estimates of g(0) and f(0) values derived from protected species observer data collected during geophysical surveys. The Commission believes those values are essential for assessing more accurately the numbers of marine mammals taken during geophysical surveys based on the extent of the Level B harassment zones extending from more than 10 km in some instances and to more than 26 km in other instances (79 Fed. Reg. 52125). And, although the Commission has made this recommendation in numerous previous letters, the Commission believes that NMFS may have misinterpreted it. NMFS recently stated that it does not believe it is appropriate to require NSF to collect information in the field to support the development of survey-specific correction factors (80 Fed. Reg. 4862). The Commission never suggested that correction factors be developed for every survey. Rather, it is important for LDEO, NSF, and other relevant entities to continue to collect appropriate sightings data in the field to be pooled to determine g(0) and f(0) values relevant to the various geophysical survey types. The Commission would welcome another meeting to help further this goal.

The Commission looks forward to collaborating with NMFS on the various guidance documents and issues raised in this letter. Please contact me if you have questions concerning the Commission's recommendations.

Sincerely,

Rebecca J. Lent

Rebecca J. Lent, Ph.D.
Executive Director

Enclosure

References

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IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

Sprague, Denise <denise.sprague@united.com> Thu, Apr 9, 2015 at 7:52 AM
To: "ITP.cody@noaa.gov" <ITP.cody@noaa.gov>

To Whom it May Concern:

It is my understanding that the NOAA Fisheries has proposed Incidental Harassment Authorization for a seismic study off the coast of NJ. I, along with many other NJ citizens, rigorously oppose this action and the seismic testing. It is known that acoustical blasts are harmful to marine life. It is wrong to inflict harm on these animals and disrupt our eco-system.

I strenuously urge you to stop this study and table all further proposals on this and any related matters.

Sincerely,

Denise Sprague

Marcus Langseth Science Oversight Committee (MLSOC)
Dr. Nathan Bangs, Interim Chair
University of Texas at Austin, Institute for Geophysics
mlsoc@mail.unols.org

Jolie Harrison, Supervisor
Incidental Take Program
Permits and Conservation Division,
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910
ITP.Cody@noaa.gov

April 9, 2015

Subject: *0648-XD773- Comment on "Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015"*

Dear Ms. Harrison:

The Marcus Langseth Science Oversight Committee (MLSOC) welcomes the opportunity to comment on the application for an Incidental Harassment Authorization (IHA) for the proposed 3D seismic program on the New Jersey (NJ) Shelf to study sea-level rise. This program utilizes *R/V Marcus G Langseth (R/V Langseth)*, a unique asset of the Federal Academic Fleet with its specially designed capabilities to conduct the proposed 3D seismic program. MLSOC supports the application for an IHA and endorses NMFS commitment to science-based decisions in its regulatory process.

The MLSOC is a committee within the University National Oceanographic Laboratories System (UNOLS) and consists of a diverse group of professionals, including geophysicists, geologists, oceanographers, and marine engineers, who provide advice on the scientific operations of *R/V Langseth.* The committee's members have extensive experience conducting seismic operations around the world aboard *R/V Langseth* and other seismic vessels, as well as knowledge and experience in mitigation and monitoring identified and/or required under the National Environmental Policy Act (NEPA), the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). One role of the Committee is to advise both the National Science Foundation (NSF) and the ship operator Lamont-Doherty Earth Observatory (L-DEO) on safe, efficient, cost-effective, and scientifically compelling operations of *R/V Langseth*.

As a U.S. research vessel, *R/V Langseth* operates entirely within the U.S. regulatory process, and, when appropriate, international laws, including for mitigating any potential impacts of sound on the environment. NEPA requires agencies, in this case NSF, to consider the potential environmental impacts of their proposed actions. The Draft Amended Environmental Assessment (EA), the associated application for an IHA, and NMFS's Notice of Intent to issue an IHA for this 3D seismic experiment on the NJ shelf describe the proposed research program, its potential consequences, possible alternatives, the rationale for why the proposed action is the most efficient and safe program, monitoring plan, and mitigation measures that would minimize any potential adverse impacts. Among the factors considered in developing the research plan were:

a. Minimum energy source size to accomplish scientific objectives;
b. Mitigation and shut down procedures for marine species;

c. Protected Species Visual Observers (PSVO) observations for a standard amount of time, generally 30 minutes prior to the start of the survey to clear a specified area around the vessel, and to monitor marine species occurrence, abundance, and behavior during seismic operations;
d. Startup of the energy source includes ramp-up procedures over a standard amount of time (generally 30 mins) that serves to alert animals of the activity and allows them to vacate the area if disturbed;
e. No start-up of the seismic source during poor visibility or at night unless at least one airgun has been operating;
f. PSVOs, independently contracted biologists, have authority to shut down the seismic source when marine mammals, sea turtles, and diving and foraging endangered/threatened seabirds are detected in or about to enter designated exclusion zones;
g. Passive Acoustic Monitoring (PAM) and infrared sensors during day and night to complement visual monitoring; and
h. Additionally, the airguns would be shut down if a North Atlantic right whale were seen at any distance from the vessel.

These factors are similar to and sometimes more stringent than guidelines that are implemented by countries such as:

U.K. (*http://jncc.defra.gov.uk/pdf/JNCC_Guidelines_Seismic%20Guidelines_Aug%202010.pdf*),
Canada (*http://www.dfo-mpo.gc.ca/oceans/management-gestion/integratedmanagement-gestionintegree/seismic-sismique/index-eng.asp*),
Brazil(*http://www.oceanwatchmmos.com/resources/IBAMA_document_Guide%20for%20monitoring%20marine%20biota%20translated_2005_04.pdf*),
Australia (*http://www.environment.gov.au/resource/epbc-act-policy-statement-21-interaction-between-offshore-seismic-exploration-and-whales*),
New Zealand (*http://www.doc.govt.nz/our-work/seismic-surveys-code-of-conduct/*),
Denmark(*http://www.govmin.gl/images/stories/petroleum/environmental_reports/EIA_Guidelines_to_environmental_impact_assessment_of_seismic_activities_in_Greenland_waters.pdf*),
Norway (*http://www.npd.no/global/engelsk/5-rules-and-regulations/guidelines/guidelines-seismic-surveys.pdf*),

The monitoring and mitigation strategies proposed for the NJ survey are reasonable, and are consistent with these internationally accepted standards. The proposed monitoring and mitigation measures are based on standards set in the *Programmatic Environmental Impact Statement/Overseas Environmental Impact Statement for Marine Seismic Research Funded by the National Science Foundation or Conducted by the U.S. Geological Survey* (NSF/USGS PEIS – link provided below), which included public input, expert review, and are precautionary because of the uncertainties associated with impacts of man-made sound on animals and unknowns about the behavior, abundances, and distributions of marine animals.

There is often public confusion regarding the potential impacts to marine mammals from seismic surveys, in particular, the distinction between injury and disturbance because the U.S MMPA uses the term "take" to describe both situations. The IHA application for the NJ research program is an application only to "incidentally" disturb animals, not to injure animals. The proposed monitoring and mitigation described in a – h above is designed to minimize potential disturbance to marine mammals, as well as to avoid the possibility of injury.

The size of the proposed airgun array is modest, but has been determined to be sufficient to meet the research goals. The proposed 2015 NJ research program was proposed *and approved* originally in 2014

to use either 700 in^3 or 1400 in^3 airgun arrays, but the survey was terminated prematurely because of mechanical failures aboard the vessel. Hence the current IHA application is to conduct work that *was already approved* through the regulatory processes (i.e., all necessary federal regulatory authorizations were issued for the survey in 2014). The data collected in 2014 demonstrated that the smaller of the two airgun arrays was adequate to meet the scientific research goals. Therefore, the 2015 IHA application was changed to only use the smaller 700 in^3 airgun array, following the standard set forth in the NSF/USGS PEIS for pre-survey planning to identify and propose the lowest practicable source level to achieve science goals. For comparison, industry airgun arrays can be a factor of 10 larger in volume. The NJ survey represents innovative cruise planning to minimize any potential impacts while acquiring the necessary data for the scientific program.

The 2015 IHA application contained new information with regard to the proposed exclusion and mitigation zones that was not available for the 2014 application. Specifically, scientists at Lamont-Doherty Earth Observatory (L-DEO) have analyzed actual received sound levels from the *R/V Langseth* acoustic source collected via hydrophone streamers in shallow water depths, similar to water depths that occur on the New Jersey shelf. Their results showed that the mitigation radii based on models (i.e., the radii generally used in establishing exclusion and mitigation zones in the IHA permit) were 2-3 times larger than the radii measured in situ (Crone et al., 2014). The authors noted "Conservative mitigation radii are preferred to those that are underestimated; however, excessively conservative radii can result [*in*] the over-counting of takes, and may cause unnecessary power-downs and shutdowns like those that plagued the 2012 COAST project on the *R/V Langseth*, and lead to large unnecessary losses of survey data" (Crone et al., 2014, p. 3805). These new results do not undermine model results, but rather are consistent with, and confirm the assessment in the IHA application that the radii are in fact very conservative.

For the permit issued for this survey in 2014, NMFS enlarged the exclusion and mitigation zones by requiring an additional 3 dB buffer, shifting the >190 dB exclusion zone to >187 dB, the >180 db exclusion zone to > 177 dB, etc. Because the dB scale is logarithmic, the 3 dB increase was equivalent to a 50 % increase to the operational mitigation zone. Additional analysis by L-DEO on data collected during 2014 activities of *R/V Langseth*, and provided to NMFS, again clearly demonstrates that the proposed mitigation radii are substantially more conservative than actual received in situ sound levels. We encourage NMFS to accept the site-specific modeling analysis conducted by L-DEO and not require a scientifically unwarranted 3 dB buffer beyond the already conservative modeled exclusion zone radii.

Part of the rationale for mitigation and monitoring, including ramp-ups, is that animals are given the opportunity and will move away from a sound that might disturb them. During the 2014 *R/V Langseth* program conducted by the U.S. Geological Survey along the U.S. Atlantic margin to survey natural hazards and the extended continental shelf, the IHA permit authorized 11,367 takes to "incidentally" disturb individual animals protected under the Marine Mammals Protection Act and the Endangered Species Act. Only three unidentified dolphins were observed as potentially exposed to airgun sounds within the mitigation zone (> 160 dB) during the survey, resulting in a power down for 12 minutes out of 357.2 hours that the source was active. This very small number is evidence that mitigation and monitoring do work to minimize exposure and potential harm. Additionally, it demonstrates conservative, precautionary approaches to estimating take calculations can result in significantly overestimating potential impacts to marine species and can instead mislead the public as to the level of impacts that may result from acoustic sources.

Acoustic sources are essential and irreplaceable tools for the collection of data for scientific research in the oceans. Seismic methods are the only tool available for peering directly into the seafloor and acquiring the data necessary to advance understanding of the impact of climate change on the ocean's margins, plate tectonics, submarine landslides, and offshore faulting. Seismic data are also used to map

nearshore and coastal changes from storms such as superstorm Sandy so that resource managers can identify areas of greatest risk to future erosion and coastal modification from these extreme events.

The proposed NJ shelf program fits wholly within this framework and will provide invaluable data on sea level history by imaging former coastlines, rivers, and estuaries now buried beneath the sediments of the shelf. Whereas oil and gas exploration requires larger seismic sources to image deep targets, the NJ shelf program is focused on shallow sediments where no oil or gas deposits occur.

If modest seismic research programs such as that proposed for the NJ shelf using *R/V Langseth* are not permitted, the future of this unique national asset and the innovative research that it enables will be lost. The U.S. will have no way to investigate and study marine geologic features of critical interest to or potential geohazards along our coastlines, such as earthquakes, tsunamis, and landslides. Further, this means government officials will not be able to make informed polices to better protect its citizens, for example from earthquake or tsunami hazards, especially along populated coastline areas. If the *R/V Langseth* cannot operate in its own national waters to complete programs relevant to U.S. national interests, what role will science play in policies that safeguard public safety, resilience, and stability?

NSF and L-DEO have followed the appropriate IHA process and have conformed to the associated requirements. Based on the information and analysis provided by NSF and L-DEO, the proposed activities meet the criteria established for issuance of an IHA. Therefore, the MLSOC urges NMFS to approve this application for an IHA.

R/V Langseth, and its predecessor, *R/V Ewing*, completed more than a decade's worth of academic/government seismic programs with the highest standards of mitigation and monitoring and without the dire, unfounded results purported by opponents of the activities (e.g., no marine mammal mass strandings or disruption to fishing). Contrary to public statements made that there is "near-unaminous" opposition to the proposed NJ survey (http://www.capemaycountyherald.com/article/government/washington+dc/106173-lobiondo+reaffirms+opposition+allow+drilling+new+jersey), there is in fact significant support from the scientific community, such as the members of MLSOC and other members of the public, for the IHA to be issued for the proposed activity and for the survey to be conducted. As a consequence of past seismic research activities, academic scientists have provided significant contributions to society through results which have enhanced our understanding of the Earth, Earth processes, and geohazards. Additionally, observations made by the PSVOs aboard seismic expeditions are contributing to better understanding of the distribution and behavior of marine mammals and sea turtles. We encourage NMFS – as a science based agency – to use science to make informed decisions, perform its regulatory duties, and issue IHAs in an appropriate and timely manner.

Respectfully submitted,

Dr. Nathan Bangs, Interim Chair MLSOC
University of Texas at Austin, Institute for Geophysics

Members:
Deborah Hutchinson, U.S. Geological Survey
William Lang, National Science Foundation (ret.)
Beatrice Magnani, Southern Methodist University
Greg Mountain, Rutgers University

Dale Sawyer, Rice University
David Scholl, University of Alaska
Alexander Shor, University of Hawaii
Maurice Tivey, Woods Hole Oceanographic Institution

Ex-officio:
Maya Tolstoy, Lamont-Doherty Earth Observatory
Suzanne Carbotte, Lamont-Doherty Earth Observatory

Crone, T.J., Tolstoy, M., and Carton, H., 2014, Estimating shallow water sound power levels and mitigation radii for the R/V Marcus G. Langseth using an 8 km long MCS streamer: Geochemistry, Geophysics, Geosystems, 15, 3793-3807, 10.1002/2014GC005420, (http://onlinelibrary.wiley.com/doi/10.1002/2014GC005420/epdf).

NSF/USGS PEIS can be found at https://www.nsf.gov/geo/oce/envcomp/usgs-nsf-marine-seismic-research/nsf-usgs-final-eis-oeis_3june2011.pdf

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773 - Seismic Blasting

1 message

Mary Wilding <mcwilding@gmail.com> Sat, Apr 11, 2015 at 1:08 PM
To: ITP.Cody@noaa.gov

Ms. Jolie Harrison

Supervisor, Incidental Take Program

Permits and Conservation Division

Office of Protected Resources

National Marine Fisheries Service

1315 East-West Highway

Silver Spring, Maryland 20910

RE: Comment Period for IHA Application of Lamont-Doherty Earth Observatory and National Science Foundation; Seismic Survey in the Northwest Atlantic Ocean Offshore New Jersey, June through August 2015 (RIN 0648-XD773)

Dear Ms. Harrison:

I am writing as a concerned citizen regarding the above application for Incidental Harassment Authorization (IHA) for takes of marine mammals incidental to conducting a marine seismic survey in the northwest Atlantic Ocean off the New Jersey coast.

I would appreciate your consideration in having NMFS rescind and reissue its notice of the proposal authorization. It is my understanding the notice is materially defective because it makes no reference to the fact that the State of New Jersey has determined the subject activity—the non-stop seismic blasting of our ocean for a 30-day period this summer—to be inconsistent with its coastal zone management policies. This is an essential fact to communicate if we in the public are to have a fair opportunity to evaluate the proposed activity. Because the current IHA is incomplete, it should be rescinded and then re-issued with such pertinent information.

Should NMFS refuse to rescind the subject notice, I would alternatively request a 60-day extension to the public comment period. As you are aware, any proposal to perform seismic surveys off the coasts of New Jersey is a matter of significant public input. I believe that the communities potentially affected by this activity, have not been properly alerted or informed about this IHA. The shore communities most affected, like mine, are seasonal, and many business owners and the majority of residents have not yet returned to the shore. The proposal poses significant threats to marine resources upon which these businesses and residents depend and value. Last August over 300 citizens gathered on Long Beach Island

to learn more about the issue. Most were incredulous that they had not heard about the proposal and angry they did not have an opportunity to comment.

Because of the different seismic studies being proposed for the Atlantic Ocean, there is some confusion and additional time is needed to clarify how this proposal is different in scope and stated purpose than the one proposed by BOEM for oil and gas exploration. Accordingly, there should be a 60-day extension of the comment period in order to have more time and a reasonable opportunity to help the people be informed about the proposal and to prepare their comments.

Thank you for your consideration of my request.

Sincerely,

Mary C. Wilding

7 E, Gloucester Avenue

Harvey Cedars, N.J. 08008

James H. Knapp, Ph.D.
Professor
Department of Earth and Ocean Sciences
University of South Carolina
Columbia, SC 29208

11 April 2015

Via electronic mail sent to ITP.Cody@noaa.gov
Ms. Jolie Harrison
Supervisor, Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Re: Comments on NMFS Incidental Harassment Authorization for Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August 2015 (RIN 0648-XD773)

Dear Ms. Harrison:

Please accept the following comments submitted in response to the National Marine Fisheries (NMFS) request for comments on the proposed incidental harassment authorization (IHA) for the take of marine mammals incidental to a marine geophysical survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August 2015 (RIN 0648-XD773.) I submit for your consideration reference to statements I have previously made in the public domain bearing on the issue of marine seismic acquisition generally, including testimony before the U.S. Congress. I urge you to approve without delay this IHA request.

For the record, I am a Professor in the Department of Earth and Ocean Sciences in the School of the Earth, Ocean, and Environment at the University of South Carolina, and I currently serve as Chair of the Faculty Senate at the University of South Carolina Columbia campus. By way of background, I hold a Bachelor of Science degree with distinction in geological sciences from Stanford University, and a Ph.D. in geology from the Massachusetts Institute of Technology. I have lived in six and traveled to 49 states, and through my profession as an Earth scientist, have worked in or visited more than 40 countries. From 1988 to 1991 I worked with Shell Oil, where I participated directly in oil and gas exploration activities in the Gulf of Mexico. For the better part of twenty-five years since then, my research team and I have carried out both fundamental and applied research in the design, acquisition, processing, and interpretation of seismic surveys, both onshore and offshore.

In January of 2014 I had the honor to appear as a witness before the House Subcommittee on Energy and Mineral Resources for an oversight hearing entitled "The Science behind Discovery: Seismic Exploration and the Future of the Atlantic OCS." Links related to that hearing can be found as follows:

Archived video of Congressional testimony (~2 hrs.):
http://naturalresources.house.gov/calendar/eventsingle.aspx?EventID=363692

Written testimony submitted for the Congressional Record:
http://naturalresources.house.gov/UploadedFiles/KnappTestimony1-10-14.pdf

Press release from Subcommittee on Energy and Mineral Resources:
http://naturalresources.house.gov/news/documentsingle.aspx?DocumentID=366439

Following is the text of an op-ed I recently authored, published in the Myrtle Beach (SC) Sun News on Thursday, 09 April 2015 (http://www.myrtlebeachonline.com/opinion/letters-to-the-editor/article17982428.html):

"Much has been written in recent years about the prospect of conducting marine seismic surveys in the waters off the Atlantic Coast. Unfortunately, some of that information is either at odds with published scientific data on marine mammals or neglects the experience from decades of marine seismic operations both here in the U.S. and worldwide. The information provided by the opponents of marine seismic surveys regretfully is misleading to the public and requires analysis based on scientific studies.

Seismic surveying is not new to the Atlantic offshore. From the late 1960's through the mid-1980's, more than 240,000 line miles of 2D seismic reflection profiles were acquired from New England to the Florida Keys. A small 3D survey was also acquired in 1982; however, this technology was in the very earliest stages of this now-standard technique. While much of these data were collected in support of a previous stage of oil and gas exploration on the Atlantic Outer Continental Shelf (OCS) from 1978-1984, numerous surveys were conducted for research purposes by the U.S. Geological Survey or through projects funded by our National Science Foundation in the public interest.

Only six months ago, 3,000 line miles of new seismic reflection profiles were acquired for scientific purposes off the coast of North Carolina. Using an airgun source (the more appropriate term for "sonic cannons") larger than that for the proposed new commercial surveys, these data are now being evaluated to provide fundamental new insights on geologic evolution of the Atlantic basin and development of the North American continent.

One of the most commonly cited criticisms of marine seismic operations is the alleged "devastating effects" on marine life, in particular on marine mammals. Established in 1991, The Working Group on Marine Mammal Unusual Mortality Events (UME) within

the National Oceanic and Atmospheric Administration (NOAA) has formally identified a total of 60 marine mammal UMEs in U.S. waters over the last 24 years. In most cases (29) where a cause has been determined, infections and/or biotoxins were indicated. Of the 60 documented UMEs, not a single one has been attributed to marine seismic operations.

The incidence of UMEs is statistically the same between the Atlantic, Pacific, and Gulf of Mexico (GOM) regions, during a period when extensive commercial marine seismic surveys have been conducted in the GOM, but not in the Atlantic and Pacific regions. The two states with the most declared UMEs are California and Florida, neither of which has been the site of commercial marine seismic operations during the period in which the records have been compiled. Based on these existing data, it appears that mass mortality events of marine mammals show little if any correlation with marine seismic surveys.

The current process for considering new geological and geophysical surveys on the Atlantic OCS began in early 2009 with a request for public input. Five years of extensive review, public comment, and compilation of scientific data by the Bureau of Ocean Energy Management led to the 2100-page, three-volume Programmatic Environmental Impact Study (PEIS) mandated by the National Environmental Protection Act before any new survey permits might be considered. Included in this process was a 370 page opinion by the National Marine Fisheries Service under NOAA evaluating the potential risks to marine populations, and particularly risks posed to marine mammals.

One of the most authoritative studies extensively quoted in the BOEM PEIS is provided by Southall and co-authors. The study, "Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations" appeared in the journal of Aquatic Mammals in 2007. The BOEM estimates for impacts on marine mammals use thresholds much more stringent than those recommended by Southall and colleagues.

The beauty of science is that through regular observation and experiment we can greatly increase our ability to determine the behavior of the world around us. One generation may discover new facts countering a previously held status quo. In public policy, it is essential to use science in a way that constantly refines conventional wisdom and dismisses the misinformation campaigns that so often clog political discourse. When used properly, science is an exceptional tool to fine tune public policy and make society a better place for everyone. As we consider the use of seismic surveying off our coasts, we must look to the evidence, not politics, for answers."

Respectfully submitted,

James H. Knapp, Ph.D.

SIERRA CLUB
FOUNDED 1892

Ocean County Group
PO BOX 4520, BRICK, NJ 08723
TEL: [732] 451-9220 FAX: [732] 451-9227
EM: SIERRACLUBOC@AOL.COM
WWW.NEWJERSEY.SIERRACLUB.ORG/OCEAN/

Ms. Jolie Harrison, Chief
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Springs, MD 20910

12 April 2015

RE: ***Seismic Blasting Project in Atlantic Ocean---0648-XD773***
(Proposed Geological & Geophysical Activities in the Mid- and South Atlantic OCS Planning Areas)

Dear Chief Harrison,

The Sierra Club, the oldest environmental organization in the United States, opposes any and all plans to undertake seismic testing along the Atlantic coastline, which in the final analyses would lead to future oil and gas exploration and extraction. In my capacity as the Conservation Chair of the Sierra Club, Ocean County Group, New Jersey, I submit the following comments on the subject referenced above.

It must be noted that just last year—in 2014—Secretary of the Interior Department, Sally Jewell, openly admitted that 138,000 marine mammals will be harmed by seismic testing for oil in the Atlantic!

The following marine mammals will be impacted with disastrous results and this after the World Wildlife Fund (WWF)reported that the "Earth has lost ½ its Animals (52 percent)" since1970:

I – Endangered and Threatened Marine Species

Seismic testing would have a detrimental impact on a number of endangered and threatened species as well as any living marine creature, plants and animals. The pressure disturbance of *sound waves* which travels through a medium by means of particle-to-particle interaction, will distorts sonar communications between whale species as well as dolphins. **Sound in *saltwater* travels at about 1500m/s, and it had been stated that the Atlantic Coast OCS would require nearly *43 million blasts.***

A – North Atlantic Right Whale – Endangered 1970

The North Atlantic Right Whale ***is the most endangered whale on the planet with less than 350 extant.*** These marine mammals can reach a length of 13.7-16.7m (45-55 feet), weigh up to 70 tons (63,500kg) and it is estimated that they can reach 50 years or more. Their diet exists of zooplankton including copepods, euphausiids and cyprids. Therefore, Right Whales are considered surface feeders. The physical waves of seismic testing would destroy the whales' food source as well as their communication. The Right Whale migrates from Florida all the way north to Nova Scotia, Canada each year. Since scientists who have dedicated most of their professional careers to studying these mammals do not know their location at any given point and time, how could those individuals involved in "seismic testing" know---hardly!

B – Northeast Atlantic Ocean Loggerhead Turtles – Endangered 2011

The weight of the adult turtles can reach 113 kg (250lbs), hatchlings on average 20g. The average length is ca. 1 m (3 feet). How long they live is not known, but they can reach sexual maturity at approx. 35 years of age. Their diet consists of whelks and conch, and the female nests from April-September and generally lays 3-5 eggs per season.

C - Atlantic Sturgeon – Endangered 2012

The adults of the species reach a weight up to 361 kg (800 lbs) and a length up to 12 feet. Their life expectancy is between 50 to 75 years. Their diet consists of mollusks, worms, snails, invertebrates, shrimps, small bottom-dwelling fish and insect larvae. The Sturgeon is more or less a bottom feeder.

These are just the three species that are on the Marine ESA list. But seismic testing and possibly later drilling and installing platforms for oil and gas extraction will impact the entire sea life along the path of the Gulf Stream. One has to understand the movement of the water current along the eastern coastline; such as the *Coriolis force,* the surface water, which moves at faster pace than the *Thermohaline circulation,* the "Global Conveyor Belt," which comprises nearly 90 per cent of ocean waters and constitutes the deep water currents (at a depth of 400 m). Not only does any seismic testing interrupt the feeding sources for marine life, it would certainly also destroy **Critical Habitat** they need to survive. Seismic induced waves inflict heavy damage on the marine environment. It would bring loss of spawning areas and water pollution. One has to remember that the fishing industry makes their living on the seas and brings valuable foods to the nation's tables.

II – Weapons of Mass Destruction (WMDs)

Only in the late 1960s was the dumping by the US military of thousands of canisters of chemical weapons into the waters of the East Coast halted. Records show that the military disposed of WMDs for decades, from 1944 to 1970. Off the coast of New Jersey the military dumped containers of mustard gas and nerve gas, off Virginia and South Carolina canisters of arsenic trichloride, white phosphorus, mustard gas and lewisite. When in 1987 hundred of dolphins washed ashore in Virginia and New Jersey beaches with burns similar to mustard gas exposure, a marine mammal specialist believed chemical weapons dumped in the ocean by the US Army killed these animals. It is a real possibility that any seismic activity will speed up the

breakdown of those aged containers and cause leakage. Not only will any dispersal of such toxic chemical cause great harm to marine life, it may also cause major injury, such as severe spastic paralysis and even death if the respiratory muscles become paralyzed in those human workers. To take it one step further: will the American consumer put seafood on their table contaminated with arsenic and other toxic substances?

III – Tourist Trade

Here along the New Jersey shoreline many people earn their livelihood from the tourist trade. It is estimated that tourism in New Jersey brings in ***$40 BILLION*** a year. That is income for the hospitality trade as well as the fishing, boating, swimming, sailing industry and wildlife-related recreation. Families come here to enjoy the clean air and the clean water of the shores and beaches. Businesses can ill afford any interruption of their seasonal income. The beaches of New Jersey are their treasure and need to be protected. In addition to loss of tourism in case of a disastrous accident, property values along the eastern seaboard, and particularly to New Jersey, would be astronomical.

IV – The Gulf Stream

Even if there were to be no seismic testing at the New Jersey coast at the present time, this state and its tourism trade and fishing industry would be impacted by any unforeseen future oil spill, if later drilling was approved along the coastline of Virginia and the Carolinas. The Gulf Stream runs along the entire eastern seaboard and the damage to the environment and estuaries would be unbelievable. Based upon traditional currents, a spill off Virginia would reach New Jersey's southern beaches in about forty-eight (48) hours. As of this day and judging by reports, the area of the horrendous Deepwater Horizon disaster in the Gulf of Mexico is still inundated by suffering and dying sea life, and will be for many years to come.

V- Fossil Fuels

With the ever-increasing evidence of sea level rise along the nation's shorelines one wonders why there is still the push for more oil and gas exploration. There needs to be exploration of alternative energy sources. For your office to claim that you are involved in developing "***Renewable Energy Programs***" sounds irresponsible. Are you aware that a possible renewable power source is available without damage to marine life and industry? The Gulf Stream transports ca. 1.4 petawatts of heat which is the equivalent of 100 times the world energy demand.

The Sierra Club Ocean County opposes any seismic testing and future oil and gas exploration in the Atlantic Ocean for the reasons mentioned above. I thank you for giving us the opportunity to express our deep concerns.

We are enclosing to this letter signed petitions of individuals who deeply love our shoreline and oppose any destruction of marine wildlife, fishing industry jobs and our tourist trade.

Sincerely,

Margit Meissner-Jackson
Sierra Club, Ocean County Group

Encl.
Petitions in Opposition with 126 signatures

12 April 2015

A note from
Margit Meissner Jackson

These petitions were submitted
by SIERRA CLUB,
OCEAN COUNTY GROUP
PO BOX 4520
BRICK, NJ 08723

WE, THE UNDERSIGNED, JOIN OUR SENATORS AND CONGRESS REPRESENTATIVES IN OPPOSING ALL SEISMIC TESTING/BLASTING IN OUR ATLANTIC OCEAN AND ALONG OUR NEW JERSEY SEASHORE

Name:	Address:
Laura Bozek	P.O. Box 1464, Island Heights, NJ 08732
Joe Gmitter	PO Box 1464, Island Heights NJ 08732
Marsha Caffee	104 Blossom Hill Ln, Chalfont PA 18914
Jessica Montgomery	437 Chekwan Fairless Hills, Pa. 19030
Douglas Miller	1517 Windsor Ave Toms River
Art Gruber	131 MARSHALL AVE. TUCKERTON NJ
Elaine Gruber	131 Marshall Ave, Tuckerton, NJ
Heidi Camerengo	301 Spring Garden Rd. Hammonton NJ
Jennifer Martin	270 Tip Seaman Dr. Tuckerton, NJ
Barbara Kelly	104 Stage Rd, Little Egg Harbor, NJ
NANCY LYNCH	102 COMMODORE LEH NJ
D. J. Sena	347 Rt. 9 MANAHAWKIN NJ
Sean Oler	220 5th. St Beach haven NJ
Francine Passantino	1516 Ridge Ave. Jackson, NJ
[illegible]	PO Box 8 Rosellen Park
Catherine Erdos	20 Lincoln place No. Plfd., NJ 07060
PAUL ERDOS	20 Lincoln Place North Plainfield N.J. 07060-4712
B. Ciambrone	23A Rosalie Av. Runson

We, the undersigned, join our SENATORS and CONGRESS REPRESENTATIVES in opposing ALL SEISMIC/BLASTING in our ATLANTIC OCEAN and along the NEW JERSEY seashore

Name:	Address:
Joe PAGANO	25 A Monticello Dr Whiting NJ
Howard Schwartz	803 Bowline Drive Forked River, NJ 08731
Julie VanSciver	11 East Wilson Ave Moorestown NJ 08057
Nancy Dale	40 W Navesink Drive 08087
[illegible]	Warren Grove NJ 08005
Lynda Pack	Indpls., In 46217
Madeline Lyon	41 Barnegat Beach Dr. Waretown NJ 08758
Susanne Ricciardi	532 Roses Swamp Rd West Creek, NJ 08092
Diane Hagaman	62 Turtle Creek Rd Egg Harbor City, NJ 08215
John C. VanSciver	11 East Wilson Ave Moorestown NJ 08057
Harry Van Sciver	8 Pine Oak Dr Tuckerton, N.J. 08087
[illegible]	227 Pox West Creek NJ
Clayton Whitcraft	1074 Vessel Cr. Manahawkin, NJ
ROB WARNER	345 E STAFFORD AVE LAUREL SPRING NJ 08021
CONNIE DALE	— " —
Richard Kalwasinski	429 Ewan Rd Mullica Hill, N.J. 08062
Marie Schwartz	107 Oneida Lk. Dr. Ltl Egg Harb NJ 08087
Steve Jost	107 Oneida Lake Dr. Ltl Egg Harbor, NJ 08087

Name:	Address:
B Overton	232 N. Green St, Tuckerton.
Kasim Harris	28 Eagle Drive Egg Harbor Twp
R Overton	232 N Green St Tuckerton
Matthew Bates	118 E Holly Lane
Lindsay Parker	118 East Holly Lane, Little Egg Harbor.
Nancy Gallagher	15 Benjamin Ct, Barnegat, NJ
Herb Muth	14 Lillie Rd TRNJ 08753
Sue Hennelly	153 Halls Corners Rd Dover Plains NY 12522
Marie Darby	28 N. Captains Dr LEH NJ 08087
Becky Hedden	7 Country Ct. Manahawkin NJ 08050
Stanley Vodopivik	1129 S Green St Tuckerton NJ 08087
Amanda Silvino	1129 S Green St Tuckerton NJ 08087
Jane Moeller	270 Great Bay Tuckerton 08087
Kim Brown	24 Harvest Way LEH NJ 08087
Michael Spiecker	14th Cedar Bonnet Is. NJ 08050
Linda Haugh	44 Waters edge Dr LEH 08087
Ashlye Devlin	637 Wayside Rd. Neptune NJ 07753
Jayne Kinsell	508 Tappan St. Forked River, NJ 08731
Tammy Swoyer	598 E Bay Ave Barnegat NJ 08005
Rita Feder	113A Edinburgh Ln. Caldwell NJ 07701

Name:	Address:
Lynn Lippincott	36 Pennsylvania Ave Barnegat 08758
Jason Klett	132 Amwell Road Millstone, NJ 08844
Robert A. Green	45 Pine Grove Ave. Manahawkin, N.J. 08050
Virginia L. Price	1314 Doughty Rd E.H.T. NJ 08234
Virginia L. Price	1314 Doughty Rd. E.H.T., N.J. 08234
Denise Sorensen	103 W. Holly Ln. LEH NJ 08087.
Jean St. Germain	1141 Laurel Blvd, Lanoka Harbor, NJ 08734
Steve Lredhader	643 Rt 72 Barnegat NJ
Gary L. Cook	643 Rt. 72, Barnegat, NJ
James Adams	12 Maplewood Dr. Tuckerton NJ 08087
Ron McConnell	POB 92 Tuckerton NJ 08087
Sharon McConnell	PO Box 92 Tuckerton NJ 08087
Thomas Conklin	899 Center Street Little Egg Harbor 08087
Barb Morell	10 Falkinburg Drive LEH, NJ 08087
Wayne D. Dell	214 Van Sant Ave Linwood NJ 08221
Joan Dell	214 Van Sant Ave Linwood NJ 08221
Guy A. Cardillo	89 Railroad Ave Waretown, NJ 08758
[illegible]	50 Old Forge Rd Laurel Springs NJ 08021
Frank A. Gorgia	101 20th Ave. S. Seaside Pk NJ 08752

WE, THE UNDERSIGNED, JOIN OUR SENATORES AND CONGRESS REPRESENTATIVES IN OPPOSING ALL SEISMIC TESTING/BLASTING IN OUR ATLANTIC OCEAN AND ALONG OUR NEW JERSEY SEASHORE

Name:	Address:
Bette Chosak	644 Petunia Lane South, Whiting 08759
GREG LINNOTT	PO BOX 263 - ADDIPIDIA NJ 07710-0263
WILL ROGERS	PO BOX 884 FORKED RIVER, NJ 08731-0884
KATHLEEN COMER	97-C Hope Rd., WHITING 08759 NJ
ROGER KIRINEY	927 TUNESBROOK DV. TOMS RIVER, NJ
Donnarie Myles	254 Frankapple gate Rd Jackson
WALT Goldenbaum	89B FAIRWAY LN WHITING NJ 08759
Allison Donahue	48 Seville Dr. Brick 08723 NJ.
Laura Stone	130 Douglas Dr, Jackson, NJ 08527
Pat + Bob Brune	P.O. Box 625 Chadwick Beh 08739
Erik Arnold	771 Community Dr Brick, NJ 08723
Diane Marie Lent-Simon	1 a Iowa Dr. Whiting, NJ 08759
MARILYN MILLER	38 ST. CROIX ST. TOMS RIVER, N.J. 08757
Margaret Mary Piccolo	235 Magnolia Ave. Apt 27 South Toms River, NJ 08757
Margit Meissner-Jackson	114 Division Street WEST CREEK, NJ 08092
JOSEPH H JACKSON	118 DIVISION ST. WESTCREEK, N.J. 08092

Name:	Address:
N. Driscoll	272 North St, West Creek
Greg Tamasi	29 Elker Rd. Cranbury
DENNIS WOJUK	77 N MAIN ALLENTOWN NJ.
David B. Unley	245 Country Club Blvd, Little Egg Har
Nan Unley	933 S. Green ST Tuckerton.
Mariah Maloney	5420 Strms Follow S.J.C. 33956
Ronald Hollings	154 OTIS AVE TUCKERTON, N.J 08087
John Vincent	539 Dean St Bklyn NY
William J Brown Jr.	418 7th WARRETON NJ. 08758
Ken Haggerman	1/10 B LONG BEACH BLVD LB TOWNSHIP 08018
Jean Ann Clasky	193 Energreen Ave Franklinville 08322
Mike Pitch	6 Atrium CT. LEWES NJ 08082
Pat Brittin	108 Folsom Ave, Cape May 08204
Richard Rowen	58 Water St Bgt NJ.
Kenneth Kaylor	301 Heron Rd Tuckerton
SUSAN Pudec	2 Deport St, Barnegat.
Gregory L Helt	321 Ash Rd Tuckerton NJ
Patrick DUNN	150 Allen St. Tuckerton, NJ
Tom Sotns	195 SEKANNO DR & BCVD Tans River NJ 08753

WE, THE UNDERSIGNED, JOIN OUR SENATORS AND CONGRESS REPRESNTATIVES IN OPPOSING ALL SEISMIC TESTING/BLASTING IN OUR ATLANTIC OCEAN AND ALONG THE NEW JERSEY SEASHORE

Name:	Address:
John C. Beck	42 Flipper Ave Manahawkin, NJ. 08050
Lara Beck	42 Flipper Ave Manahawkin, NJ. 08050
Peggy Beck	42 Flipper Ave Manahawkin NJ 08050
Lauren MacInnis	1179 Treasure Ave Manahawkin, NJ
[illegible]	21 Second St Bgt NJ.
Madeleine Ritter	21 Second St Bgt. NJ
IRENE IRWIN	PO BOX 448 WARETOWN. NJ.
BOB DOMBLOWSKI SR	22 W. Bay MYSTIC ISLAND NJ
DOJ BLACKWELL	27 CEDAR DR. LAUREL HARBOR NJ 08734
Margaret Mary Piccolo	235 Magnolia Av Apt. 27 So Toms River, NJ. 08757
Steve Flynn	1282 Rt 539 Warren Grove N.J. 08005
Barbara Youmans	290 Rt 37 Toms River, NJ
Mike Goldspring	
Jeranne Youmans	
Susan Kalarone	1301 Morgan Ave Cinnaminson NJ
Julie Schumacher	67 Tall Timber Rd. Middletown NJ 07748

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

stop seismic mapping

1 message

Basile, Prof. Tracy <tbasile@pace.edu> Mon, Apr 13, 2015 at 1:29 PM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>

Please stop the SEISMIC PROJECT to map Barnegat Bay by NSF, Rutgers U, Columbia U and U of Texas. There is too much risk to marine wildlife. The project was dismissed last year. What is different this year? Also, the project has been performed 4 times previously. Why is a 5th time necessary at all? How is this information used? Who benefits? I urge you to do whatever is in your power to stop the seismic mapping of the NJ coast for the sake of the marine mammals.

Sincerely,

Professor Tracy Basile
Environmental Studies
Pace University
Pleasantville, NY

OCEAN MAMMAL INSTITUTE

www.oceanmammalinst.org

Science Protecting Nature
Education Embracing the Earth

14 April 2015

To: ITP.Cody@noaa.gov

Subject: 0648-XD773 Seismic mapping of Barnegat Bay New Jersey

The seismic mapping of Barnegat Bay by NSF, Rutgers U., Columbia U., and U. Texas should not be approved for the following reasons:

- Seismic mapping has been related to marine mammal stranding at times.
- The Marine Mammal Commission objected to data provided in the EIS, stating impacts to marine mammals were underestimated by 30 times.
- The mitigation measures are not adequate: visual cues for shutdown are invalid at night, during poor weather conditions, and when cetaceans are underwater.
- The project has already been done 4 times previously.
- The area has been seismically mapped and drilled an excessive number of times (313 times). There is nothing to be gained by doing this again except the harassment of marine mammals.

My belief that the planned seismic mapping will create high risks to marine life is shared by the NJ EPA and public officials who sued to stop the project.

Sincerely,

Marsha L. Green

Marsha L. Green, Ph.D.,
President, Ocean Mammal Institute

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

NSF/Rutgers University seismic mapping project

1 message

Imogen Taylor <imogen.taylor@gmail.com> Wed, Apr 15, 2015 at 12:58 PM
To: ITP.Cody@noaa.gov

Jolie Harrison, Supervisor,
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service

Dear Supervisor Harrison:

I write to express my opposition to the application by Rutgers University to conduct seismic mapping of the ocean floor off southern New Jersey.

Proponents of this proposal have grossly underestimated the impacts to marine life. According to the US Marine Mammal Commission, the impacts just to whales alone were underestimated by 30 times. The area to be mapped is rich in marine life, including 33 species of whales and dolphins.

Seismic airgun array projects have been condemned by 75 scientists who wrote the following in a letter to President Obama:

> "Airgun surveys have an enormous environmental footprint. For blue and other endangered great whales, for example, such surveys have been shown to disrupt activities essential to foraging and reproduction over vast ocean areas. Additionally, surveys could increase the risk of calves being separated from their mothers, the effects of which can be lethal, and, over time, cause chronic behavioral and physiological stress, suppressing reproduction and increasing mortality and morbidity....
>
> The impacts of airguns extend beyond marine mammals to all marine life. Many other marine animals respond to sound, and their ability to hear other animals and acoustic cues in their environment are critical to survival. Seismic surveys have been shown to displace commercial species of fish, with the effect in some fisheries of dramatically depressing catch rates. Airguns can also cause mortality in fish eggs and larvae, induce hearing loss and physiological stress, interfere with adult breeding calls, and degrade anti-predator response: raising concerns about potentially massive impacts on fish populations. In some species of invertebrates, such as scallops, airgun shots and other low-frequency noises have been shown to interfere with larval or embryonic development. And threatened and endangered sea turtles, although almost completely unstudied for their vulnerability to noise impacts, have their most sensitive hearing in the same low frequencies in which most airgun energy is concentrated."
>
> Letter to President Obama. http://docs.nrdc.org/wildlife/files/wil_15030401a.pdf

The proposed mitigations to these effects are unscientific, ineffective and thus meaningless:

1. Visual monitoring ignores simple facts about whale behavior and ocean conditions. Whales are underwater for the vast majority of their time. They simply can not be seen! In the darkness of night there is zero to 1 meter visibility on the ocean. During fog, rain or stormy conditions visibility may likewise drop to 0-1 meter, if that. Protected Species Observers are no different from anyone looking out into the darkness, fog and stormy weather; all are unable to see much of any distance from the vessel. Daylight and clear skies are not 24/7 on the open ocean; invisible whales will be present during ongoing 24/7 destructive acoustic airgun arrays operations.

2. Passive monitoring involves “listening” devices, that detect the sounds of whales underwater. However, whale are very often silent underwater, especially under stress, this was proven in recent marine mammal science studies. Not only this, the noise from the airgun arrays - reaching a brain and lung-shattering 240+ dB is comparable to the noise from the explosion of one kiloton of TNT, effectively masking any vocalizations or cries of whales in the area. Without vocalizations on passive acoustic monitoring equipment, researchers can claim there are/were “no whales in the area,” a statement that can never be accurately verified.

3. Vessel speed reduction and minor course alteration are both meaningless mitigations; cetaceans do not follow a predictable route that can be avoided with any accuracy. Cetaceans are 95%+ underwater, they and their vertical or horizontal “course” are both invisible to those on board. Directing a moving vessel to avoid cetaceans, or even slow down, is for the most part impossible.

Despite this inability to detect marine mammals and these unscientific and ineffective mitigation measures, Rutgers University’s airguns will continue to operate, jeopardizing everything over a 230 sq. mile project zone and far beyond.

I urge you not to approve this project.

Thank you,

Imogen Taylor

NEW JERSEY MARINE FISHERIES COUNCIL
501 EAST STATE STREET, 3RD FLOOR
P.O. BOX 420 Mail Code 501-03
TRENTON, NJ 08625-0420
609-292-7794
609-984-1408 FAX

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RICHARD HERB, ACTING CHAIRMAN
JIM ALEXIS
SCOTT BAILEY
ERLING BERG
ELEANOR A. BOCHENEK
WALTER L. JOHNSON III
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SERGIO RADOSSI
JOE RIZZO
ROBERT R. RUSH, JR
JOSEPH A ZABOROWSKI

April 15, 2015

Ms. Jolie Harrison
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Dear Ms. Jolie Harrison:

At the April 9, 2015 meeting of the New Jersey Marine Fisheries Council, the Council unanimously agreed to formally voice its opposition to the proposed seismic testing off of Barnegat Inlet, New Jersey in 2015. The Marine Fisheries Council (Council) advises the Commissioner of the Department of Environmental Protection (DEP) on various issues and management programs related to marine fishery resources. The Council has 11 members representing recreational and commercial fishermen, fish processors, the general public and the Atlantic Coast and Delaware Bay sections of the Shellfisheries Council.

The proposed seismic testing will cover approximately a 230 square mile area, 15 to 60 miles offshore of Barnegat Inlet. Arrays of air guns used for the testing towed behind the vessel will send blasts louder than 200 decibels every 5 seconds towards the sea floor. Try to imagine a pile driver running continuously (24-hours a day) for the entire month of June, on the lot next door to you. Pus, the planned timing of this testing (June – August) could not have been worse; striped bass that have spawned in the Delaware River and the Chesapeake Bay and their tributaries will be migrating north along the New jersey coast, bluefish will be migrating north

and spawning offshore, black sea bass will be migrating inshore from their offshore grounds; and it will be the start of the summer tourist season. The testing will affect fish behavior and distribution (avoidance of areas), schooling behavior and their ability to locate food, and resulting in poor fish health. These impacts will have a significant economic impact to New Jersey's vital commercial and recreational fishing industries. The proposed timeframe for this activity will take place during the peak abundance and fishing activity for many of New Jersey's important fisheries.

The researchers from the National Science Foundation, Rutgers University (who should be looking out for New Jersey's best interest) and the Universities of Texas and Columbia need to do a better job of planning their surveys. It has been shown that seismic air guns used in this type of testing have damaged the auditory organs of fish, and even resulted in mortality. Echo-location and sound are vital to marine mammals. The detrimental effects this testing will have on these protected species should be enough for the Secretaries of Commerce and Interior to stop this testing immediately.

New Jersey's fishing industries are still recovering from the impacts from Hurricane Sandy and need all the help they can get. Unnecessary and avoidable activities such as this will create additional losses and negative economic impacts on these important industries. We request that you put a stop to this detrimental study and not issue an Incidental Harassment Authorization permit for the take of marine mammals.

We appreciate the opportunity to provide comment on this very important issue for New Jersey's commercial and recreational fishing industries.

Sincerely

Richard Herb, Acting Chair
NJ Marine Fisheries Council

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

(no subject)

1 message

Edward Mitchell <bronxriverbicycleworks@msn.com> Wed, Apr 15, 2015 at 11:20 PM
To: "ITP.Cody@noaa.gov" <ITP.Cody@noaa.gov>

Sent from Windows Mail

Jolie Harrison, Supervisor,
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service

Dear Supervisor Harrison:

I (WE/OUR ORGNAZATION) STAND OPPOSED TO THIS PROJECT.

Please reject the application by NSF/Rutgers U, etal to seismically map the ocean floor off southern New Jersey.

The project to seismically map an area the size of Barnegat Bay off the NJ coast (purportedly for historical climate change data) has been called bogus and unnecessary at best;
This work has been repeated 4 times.
No new mapping technology is being used thus yielding no new information.
The team grossly underestimated impacts to marine life, lucrative fisheries and whales. Impacts to whales were underestimated by 30 times, according to the US Marine Mammal Commission.
Project is being done in an area teaming with marine life, with up to 33 species of whales and dolphins, in a location that has already been drilled 313 times!
The project would ruin vital local fishing economies.
Findings would yield data that would ultimately and promptly benefit the oil and gas industries.

75 scientists have condemned seismic airgun array projects, calling them highly destructive to marine life:

> "Airgun surveys have an enormous environmental footprint. For blue and other endangered great whales, for example, such surveys have been shown to disrupt activities essential to foraging and reproduction over vast ocean areas. Additionally, surveys could increase the risk of calves being separated from their mothers, the effects of which can be lethal, and, over time, cause chronic behavioral and physiological stress, suppressing reproduction and increasing mortality and morbidity....

> The impacts of airguns extend beyond marine mammals to all marine life. Many other marine animals respond to sound, and their ability to hear other animals and acoustic cues in their environment are critical to survival. Seismic surveys have been shown to displace commercial species of fish, with the effect in some fisheries of dramatically depressing catch rates. Airguns can also cause mortality in fish eggs and larvae, induce hearing loss and physiological stress, interfere with adult breeding calls, and degrade anti-predator response: raising concerns about potentially massive impacts on fish populations. In some species of invertebrates, such as scallops, airgun shots and other low-frequency noises have been shown to interfere with larval or embryonic development. And threatened and endangered sea turtles, although almost completely unstudied for their vulnerability to noise impacts, have their most sensitive hearing in the same low frequencies in which most airgun energy is concentrated." Letter to President Obama. http://docs.nrdc.org/wildlife/files/wil_15030401a.pdf

Mitigations proposed by the team are unscientific, ineffective and thus meaningless.

1. Visual monitoring ignores simple facts about whale behavior and ocean conditions. Whales are underwater for the vast majority of their time. They simply can not be seen! In the darkness of night there is zero to 1 meter visibility on the ocean. During fog, rain or stormy conditions visibility may likewise drop to 0-1 meter, if that. Protected Species Observers are no different from anyone looking out into the darkness, fog and stormy weather; all are unable to see much of any distance from the vessel. Daylight and clear skies are not 24/7 on the open ocean; invisible whales will be present during ongoing 24/7 destructive acoustic airgun arrays operations.

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3. Vessel speed reduction and minor course alteration are both meaningless mitigations; cetaceans do not follow a predictable route that can be avoided with any accuracy. Cetaceans are 95%+ underwater, they and their vertical or horizontal "course" are both invisible to those on board. Directing a moving vessel to avoid cetaceans, or even slow down, is for the most part impossible.

Despite this inability to detect marine mammals and these ridiculously unscientific and ineffective mitigation measures, Rutgers U's airguns will continue to operate, jeopardizing everything over a 230 sq. mile project zone and far beyond.

240 dB sound from airgun arrays will be projected over the project area (230 sq. miles) every 5-6 seconds, 24 hours a day. The acoustic energy from seismic airgun arrays has reached 249 dB, comparable to the acoustic energy from the Hiroshima bomb!(http://www.makeitlouder.com/Decibel%20Level%20Chart.txt) Even with debated conversion calculations this is more than enough to injure or even kill whales, or drive them, many endangered, out of the water to strand; certainly this is enough acoustic energy to harm and even destroy fisheries that are so critical to human survival on the east coast.

Opposition to this project has been fierce. A Press Release from the Jersey Coast Angler's Association is aptly revealing::

> What about the fisheries in the NY Bight that Rutgers has cooperatively worked with industry to our common benefit? This seismic testing starts at the Barnegat Ridge area in waters about 60 feet deep, a historically important fishing ground for centuries, from there it runs southeast in a 20 mile wide strip out off the continental shelf over a 1,000 feet deep. The fisheries that will be impacted by this study include Loligo Squid, inshore, and Illex squid on the offshore end, excellent Scallop grounds occur through 120 to 240 feet depths, along with Quahog clams. Tilefish live in adobe type burrows in the 350 to 700 feet depths, while Lobsters and red crabs are important fisheries on the deep edge of the continental shelf. Summer and Winter Flounder are present on the inshore ends of the study, and many other commercially and recreationally important demersal fish are present in the summer, including Bluefish, Weakfish, Bonito, Spanish Mackerel, A few different species of Tuna, and many different types of sharks. Many of these fish will swim away as fast as they can from the testing area, they are not stupid, when a bomb goes off everybody runs, fish do the same. When the bombs continue for a period of weeks the fish will totally leave or be killed. Either way, the fishing industry will suffer from no fish to catch, and the scientists will say it wasn't them, prove it. If Rutgers wants to be involved in seismic testing then they should grow a pair [of fins] and do research that will document what really happens to marine life when seismic testing takes place. Good luck finding funding for that….
> A recent study in Spain regarding seismic testing found that it had serious to lethal effects on squid, New Jersey's squid industry is always among the largest on the East Coast. June and July are some of the best months for the offshore Illex fishery, while the loligo fishery is at full speed inshore throughout the summer. Seismic testing off Australia a few years ago was blamed for totally destroying a rich scallop bed, and clams have suffered documented negative effects from seismic testing. Tilefish will not swim away from this testing they will seek sanctuary in their burrows and probably die. The coast off of Jersey will be barren for the summer season and Rutgers will pocket a few hundred thousand in blood money. Is it worth the risk? Will they reimburse the fishing industry for the damage they cause?. Do they think that our industry will ever cooperate in any more joint projects with them again? Rutgers can stop this sham, the only reason they are needed is because the oil industry needs them involved so they can check our offshore area for reserves. No Rutgers, No study.
> (http://jcaa.org/JCNL1406/1406SeismicTesting.htm

Opposition has been unrelenting; public and elected officials are condemning this project, and the NJ EPA even sued to stop it! Please do not approve this poorly conceived and irresponsible project by NSF and Rutgers.

Thank you,

YOUR NAME

Edward G. Mitchell

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

Wilford Gardner <wgardner@ocean.tamu.edu> Wed, Apr 15, 2015 at 11:32 PM
To: ITP.Cody@noaa.gov

Dear NOAA officials,

I am truly surprised that some of the politicians and people of New Jersey are attempting to obstruct the work of Rutgers University scientists to understand the frequency and impact of past hurricanes and sea level changes along the New Jersey coast after such devastating damage was incurred so recently during Hurricane Sandy. Surely the people of that state deserve to obtain the best possible information about potential damage in the future. I am a former resident (and property owner) of New Jersey and assure you that I would want to have all the scientific data possible available to policy makers to reach rational decisions about mitigating damage during future hurricanes and sea level changes. I understand the concerns raised about unintentional harm to marine mammals and other species. After reading Rutgers' answers to questions posed about potential impacts, I am convinced that they have shown they have taken, and will take, extreme caution to avoid impacts. They will have 5 independent, trained observers on the ship who have authority to shut down operations at the least sign of animals that might be harmed. I urge NOAA to approve the research cruise as they did in 2014. Please don't extend the comment period as requested by politicians. That will only cause further delays in performing the work during the period when there is the least likelihood of encountering marine animals. This was well explained on the Rutgers web site. Please make the right decision and help ensure the safety and well being of future generations of New Jersey citizens by approving the project.

Dr. Wilford D. Gardner
Earl F. Cook Professor of Geosciences and
Professor of Oceanography
Department of Oceanography
Texas A&M University
College Station, TX 77843-3146

THOMAS MACARTHUR
3RD DISTRICT, NEW JERSEY

506 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4765

Congress of the United States
House of Representatives
Washington, DC 20515–3003

April 15, 2015

Ms. Jolie Harrison, Supervisor, Incidental Take Program
Permits and Conservation Division, Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Dear Ms. Harrison,

As representative of New Jersey's Third Congressional District, including forty miles of the Jersey Shore, I am writing to express my support of the recent requests of Clean Ocean Action Executive Director Cindy Zipf in regard to the comment period for the IHA Application of Lamont-Doherty Earth Observatory and National Science Foundation (RIN 0648-XD773).

In particular, I am requesting a 60-day extension for the public comment period. I believe many of the shore communities that could be affected by the proposed activity have not been properly informed about this IHA application and its possible consequences. The public has a right to a full understanding of any potential repercussions of this proposed seismic survey that could detrimentally affect businesses and the quality of life at the shore.

There exists understandable public confusion as more than one seismic study has been proposed for the Atlantic Ocean. The citizens who would be affected by the studies should be afforded the opportunity to become knowledgeable about this IHA application. I implore you to extend the comment period an additional sixty days to provide a more reasonable opportunity for a thorough review of this important issue.

Thank you for your attention to this matter.

Sincerely,

Tom MacArthur
Member of Congress

TM/jp

PRINTED ON RECYCLED PAPER

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773 Comment on “Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015”

1 message

Sally Shore <redbirdreef@gmail.com> Thu, Apr 16, 2015 at 3:43 AM
To: ITP.Cody@noaa.gov

Jolie Harrison
Supervisor, Incidental Take Program
Permits and Conservation Division,
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway, Silver Spring, MD 20910.

Subject: 0648-XD773- Comment on “Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August, 2015”

Dear Ms Harrison:

I oppose the Rutgers project to blast the Jersey shore. Having read the scholarly analysis of individuals, below, and am motivated to write you. These people understand the science, and I am persuaded Rutgers research is covert oil & gas hunting.

Tom Fagan, President of Clean Ocean Action Board of Trustees and Treasurer of CWA Local 1075 stated this clearly: "If you think our country is 'investing in science' to better understand climate change, you are being naive. Funders of this "study" include US Bureau of Ocean Energy Management, The Gas Technology Institute and the American Chemical Society Petroleum Research Fund and includes researchers from the University of Texas, which lists 'energy geosciences" as a primary research field.'"

Cindy Zipf, Executive Director of Clean Ocean Action said on this day one year ago, "The purpose is to go down and evaluate sediment between 30 and 60 million years ago, to look for climate change affects. That depth also includes the depth where there is methane hydrates. Methane hydrates are frozen natural gas, so they will be assessing, whether they know it or not, the energy potential in that area.”

Jim Lovgren, fisherman and Clean Ocean Action Trustee says, "So why shame on Rutgers University? Because they are allowing themselves to be used by big oil for the sake of a few dollars in grant money. An unfortunate reality of being a university professor is that if you do not bring into the university Grant money from outside sources then you will find yourself looking for another job. It is not how good a teacher you are, it is how much money can you raise, and that in itself is a shame."

Tom Fote of Jersey Coast Anglers Association said, "Under the guise of researching climate change 60 million years ago, Rutgers and Texas A & M are proposing seismic testing 15 miles east of Barnegat Inlet. They must think anglers and our Legislature are
stupid. We all know if you are doing work to study rock formations you are actually looking for oil and gas. Every legislator I talked to recognizes this ruse. "

The informed message is clear. Would these educated people speak so clearly against Rutgers if they didn't fully grasp what they were talking about? There are issues of fish in the sea but let's stop kidding around: this study, primarily funded through "interests" in the Texas Oil community, is not to look for evidence of "climate change". It is to look for oil and gas (primarily gas). It is a search for fossil fuels, couched and concealed in an "environmentally friendly" study name.

Get ocean science off our shores!

Sincerely yours,

Sally Shore
Anchorage Apartments,
960 Ocean Ave
Sea Bright, NJ
07760

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

SHSLFoundation@aol.com <SHSLFoundation@aol.com> Thu, Apr 16, 2015 at 7:41 AM
To: ITP.Cody@noaa.gov
Cc: SHSLFoundation@aol.com

Jolie Harrison
Supervisor, Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway, Silver Spring, MD 20910

Dear Ms. Harrison,
SandyHook SeaLife Foundation strongly opposes the proposed seismic study, to be conducted by Columbia University's Lamont-Doherty Earth Observatory and National Science Foundation along with University of Texas and Rutgers University lead researchers, that will allow over 32 marine mammal species, six of which are endangered, to be exposed to seismic air guns and three other acoustic blast technologies, all known to be harmful to marine life, from June to August 2015 off the New Jersey coastline.

Not only will this study affect mammals but seismic blasting has been shown to disperse fish, the result of which will negatively affect New Jersey's recreational and commercial fishing industry during the tourist season.

For the Office of Protected Resources to allow a destructive practice is wrong. Please reconsider going forward with this proposed seismic study. Thank you.

For the Ocean,
Mary M. Hamilton, Executive Director
SandyHook SeaLife Foundation™ (SSF)
Marine Conservation through Education, Volunteerism & Political Action
Supporting Wild Oceans (formerly NCMC), Blue Frontier Campaign, Healthy Oceans Coalition, Shark Alliance International, NJ Environmental Lobby

Outreach campaign: https://vimeo.com/105902335

Website: http://www.sandyhooksealife.org

Facebook: https://www.facebook.com/pages/SandyHook-SeaLife-Foundation/216276201738905

Contact: 609.953.2677 or SHSLFoundation@aol.com 326 Stokes Rd. #372 Medford, NJ 08055

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

Mary Jo Richardson <mrichardson@ocean.tamu.edu> Thu, Apr 16, 2015 at 11:27 AM
To: ITP.Cody@noaa.gov
Cc: Mary Jo Richardson <mrichardson@ocean.tamu.edu>

As part of the public comment opportunity I want to emphasize some important points associated with the proposed work.

1) The “permit” for the proposed work was issued for summer 2014. The science mission begun in 2014 needed to be suspended due to equipment failure. This request is an extension of the already approved request from 2014. I am not aware of any new scientific data that would alter the decision made last year.

2) In addition to the seismic survey data acquired during this study, visual observation, passive acoustic monitoring, and infrared sensors will add valuable data for scientists studying marine mammals and other marine organisms.

3) The wording in the regulatory guidelines can cause significant confusion and lead to misinterpretation. For example, the word “take” can be confused with capture or injury. It this study “take” is more equivalent to “disturbance”. The potential “disturbance” is mitigated by the procedures followed in the study including the slow “ramp up” of the seismic study so that animals disturbed by the sound will move away from it.

4) Understanding the past is critical to planning for the future. The seismic study will provide data to map nearshore and coastal changes that have occurred due to changing sea level and severe storms (e.g. superstorm Sandy).

I encourage the National Marine Fisheries Service to move expeditiously in granting the permit for this seismic study.

Dr. Mary Jo Richardson
Regents' Professor
Department of Oceanography
979-845-7966

mrichardson@ocean.tamu.edu

Congress of the United States

Washington, DC 20510

April 16, 2015

Dr. Kathryn D. Sullivan
Administrator
National Oceanic and Atmospheric Administration
1401 Constitution Avenue, NW, Room 5128
Washington, DC 20230

Dear Administrator Sullivan:

We write today in regards to the Lamont Doherty Earth Observatory and National Science Foundation's application for an Incidental Harassment Authorization (IHA) which would allow the take of marine mammals by harassment during a marine geophysical survey conducted by Rutgers University less than 16 miles off the coast of Long Beach Island, New Jersey.

Scientific studies are essential to better understanding climate change and its impacts. However we are concerned that seismic activity during the peak summer season just miles off of New Jersey's coast have the potential to not only cause significant harm to marine life and habitat, but will threaten our coastal economy as well. In fact, during a similar cruise last summer, the Research Vessel *Marcus G. Langseth* encountered at least 108 animals over the course of just 15 days of observation. According to the project's Protected Species Mitigation and Monitoring Report, observers recorded visual detections of protected species 41 times, including detections of multiple types of sea turtles, three types of dolphins, and a Humpback whale.

Allowing for seismic surveys off the coast of New Jersey sets a dangerous precedent for future efforts to explore offshore for oil and gas, something we have strongly opposed in the Mid-Atlantic region and will continue to strongly oppose off of New Jersey. In March, the New Jersey Department of Environmental Protection (DEP) determined that the project is inconsistent with the state's rules on Coastal Zone Management. In the determination, DEP cited foreseeable adverse impacts to fisheries, endangered or threatened wildlife, and to New Jersey's coastal resources.

We respectfully request a 60-day extension to the public comment period so that members of the public have sufficient time to thoroughly review the proposed study and environmental assessment and provide meaningful input. We appreciate your time and attention to this matter and look forward to your response. If you have any additional questions, please do not hesitate to contact our offices.

Sincerely,

Cory A. Booker
United States Senator

Robert Menendez
United States Senator

Frank Pallone
Member of Congress

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF THE DEPUTY COMMISSIONER
Mail Code 401-07
P.O. BOX 402
Trenton, NJ 08625-0402
TEL (609) 292-2908
FAX (609) 292-7695

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

April 16, 2015

Jolie Harrison, Supervisor
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources, National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

RE: Comments for Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, June to August 2015
RIN 0648-XD773

Dear Ms. Harrison:

The New Jersey Department of Environmental Protection (Department) respectfully submits the following comments for the above captioned notice, located at Federal Register, Volume 80, No. 51, March 17, 2015, which expires April 16, 2015. The Federal Notice is for an Incidental Harassment Authorization (IHA) to be issued by the National Marine Fisheries Service (NMFS).

Project Description

The National Science Foundation (NSF) is funding a research project proposed by lead Principle Investigator Dr. Gregory Mountain of Rutgers University and collaborators Drs. J. Austin, C. Fulthorpe, and M. Nedimovic of University of Texas Austin to study sea level rise in the Atlantic Ocean off of the coast of New Jersey, which includes a marine geophysical survey. The project includes the use of a 3-D seismic reflection survey to map sequences around existing drill sites and analyze their spatial/temporal evolution. Objectives include establishing the impact of known Ice House base-level changes on the stratigraphic record; providing greater understanding of the response of nearshore environments to changes in elevation of global sea-level; and determining amplitudes and timing of global sea-level changes during the mid-Cenozoic era.

The Department contends that there is insufficient information to conclude that the impacts to the 32 species of marine mammals listed in Table 1 of the above captioned Federal Notice, "General

Information on Marine Mammals That Could Potentially Occur in the Proposed Activity Area During the Summer (June Through August 2015)" will be negligible.

Impacts to Marine Mammals

New Jersey's Atlantic Ocean waters act as a migration corridor for several endangered marine mammals which transit between habitats farther north and south. Listed marine mammals found year round off of New Jersey include humpback and fin whales (GMI, Inc. 2010). Acoustic detections of whale calls by Geo-Marine, Inc. confirmed the presence of North Atlantic right whales within 37 km of the shoreline, approximately between Seaside Park and Stone Harbor, during all seasons, concluding that some individual North Atlantic right whales occur in the nearshore waters off New Jersey either transiently or regularly. Similarly, the Department's Endangered and Nongame Species Program has records of harbor porpoise occurring in the project vicinity and during the project period. Despite the time of year and 30 day duration, the project would still impact individual whales and other marine mammals remaining in the area.

Marine mammals, especially cetaceans, would be adversely affected by noise created during seismic testing activities. Cetaceans' primary means of communication, navigation, locating food and mates, and avoiding predators and other threats is through their sense of hearing. Cetaceans' sense of hearing is much more highly developed than that of humans and can detect sounds within a much wider range of frequency. Noise pollution, in the form of repeated or prolonged sounds would adversely impact marine mammals by disrupting otherwise normal behaviors associated with migration, feeding, alluding predators, resting, and breeding, etc. Any alterations to these behaviors would jeopardize the survival of an individual simply by increasing efforts directed at avoidance of the noise and the perceived threat. In addition, animals distressed by noise generated from survey activities may become more susceptible to disease or predation by species which are not directly affected themselves. Furthermore, the project will add to an existing and increasing cacophony of anthropogenic noise pollution which may already be negatively impacting species.

New Jersey's Atlantic Ocean waters act as a migration corridor for several endangered sea turtle species which transit between habitats farther north and south. More specifically, the marine waters off New Jersey shore provide critical migration and feeding areas for sea turtle species such as Kemp's Ridley, Green, Atlantic Loggerhead and Leatherback turtles. Sea turtles likely use sound for navigation, predator avoiding, locating prey, and other activities (Piniak et al. 2012). The sea turtle species noted above are not listed on the Table 1 of the above captioned Notice, "General Information on Marine Mammals That Could Potentially Occur in the Proposed Activity Area During the Summer (June Through August 2015)". Although information regarding the impacts of anthropogenic noise on sea turtles is conclusively lacking, there is evidence to suggest that observed effects due to airguns may include behavioral changes, as well as temporary or even permanent hearing loss (Moein et al. 1995).

Numerous sea turtle sightings have been reported from June through September in and around Barnegat Bay. It is believed that the sea turtles are utilizing the area as feeding grounds. Therefore, sea turtles may be migrating through the project area during the critical June to July

period, making them susceptible not only to impacts (e.g. behavior changes, hearing loss) from seismic activity, but to entanglement in the seismic array gear, and injury or mortality due to ship strikes. Although the Amended EA states that "recent monitoring studies show that some sea turtles do show localized movement away from approaching airguns," the extent to which sea turtles will exhibit avoidance behavior, along with the impacts to airgun exposure, remains unclear. Many of the sea turtles migrating near New Jersey during the project period are juveniles. Effects from air gun noise to smaller turtles will undoubtedly be greater than those observed in monitoring studies, while their ability to swim away or avoid the array due to their size will be reduced.

The Endangered or threatened wildlife or vegetation species habitats rule, N.J.A.C. 7:7E-3.38, seeks to protect endangered and threatened species which are facing possible extinction in the State in the immediate future due to loss of suitable habitat, and past overexploitation through human activities or natural causes. Extinction represents a loss of biodiversity, which would adversely affect education, research and the interrelationship of all living creatures within the coastal ecosystem. Despite the consideration of impacts to sea turtles and marine mammals and the proposed monitoring and mitigation measures noted in the *Draft Amended Environmental Assessment of a Marine Geophysical Survey by the R/V Marcus G. Langseth in the Atlantic Ocean off new Jersey, Summer 2015* (Amended EA), the Department contends that there is insufficient information to conclude that the impacts to the habitat of New Jersey's endangered and threatened wildlife species will be negligible.

Impacts to Marine Mammal Habitat

The IHA notice also focuses on the study's impacts to marine mammals' habitat. The Department is mindful of potential effects to marine mammal habitat not only because of the study's impact to marine mammals' food source, but also for the potential impacts to an important resource to New Jersey's recreational and commercial fishing industry. Both the project location and the timeframe will foreseeably adversely affect New Jersey's prime fishing areas. The project area will see high commercial and recreational activity off the coast of New Jersey during the study period.. The project's timeframe coincides with a period of high to peak population abundance of several commercially and recreationally important fish species at identified prime fishing areas.

Prime fishing areas include tidal water areas and water's edge areas, which have a demonstrable history of supporting a significant local intensity of recreational or commercial fishing activity. These areas include all coastal jetties, groins, public fishing piers or docks, and artificial reefs. Prime fishing areas also include features such as rock outcroppings, sand ridges or lumps, rough bottoms, aggregates such as cobblestones, coral, shell and tubeworms, slough areas and offshore canyons. Prime fishing areas also include areas identified in "New Jersey's Recreational and Commercial Fishing Grounds of Raritan Bay, Sandy Hook Bay and Delaware Bay and The Shellfish Resources of Raritan Bay and Sandy Hook Bay," Figley and McCloy (1988), and those areas identified on the map titled, "New Jersey's Specific Sport Ocean Fishing Grounds."

The project is located off the coast of New Jersey, extending from Barnegat Ridge to the 35 fathom line, and runs in a northwest to southeast direction intersecting fathom curves at a general perpendicular nature along its extent. This location is offshore from some of New Jersey's most important fishing ports, including: Barnegat Light, Atlantic City, and Point Pleasant. Pursuant to the aforementioned "New Jersey's Specific Sport Ocean Fishing Grounds" map, a portion of the proposed survey area is a State-recognized productive and historical fishing area known as "The Fingers." Contrary to the portrayal in the Amended EA, areas beyond State waters are heavily utilized by New Jersey's commercial and recreational fishing industry. It should also be noted that according to National Marine Fisheries Service data, New Jersey's commercial and recreation fisheries are some of the most productive, highest grossing and employ more people than other states in the Mid-Atlantic and along the Atlantic Coast. Lastly, there is at least one known shipwreck, *Lillian,* within the project area that is popular with scuba diving and spearfishing enthusiasts.

Data analysis of commercial and recreational landings from 1996 to 2013 indicate that this entire area is not only used by multiple commercial fisheries including gillnetters, otter trawl vessels, scallop boats, and long liners, but is also heavily utilized by recreational fishermen. In combination, both commercial and recreational sectors pursue over 35 species of fish in this area including but not limited to: albacore, bluefish, big eye tuna, Bluefin tuna, bonita, black sea bass, butter fish, cobia, cod, smooth dogfish, spiny dogfish, summer flounder, Atlantic menhaden, monkfish, red hake, skate, tilefish, swordfish, yellow fin tuna, and skipjack tuna.

Offshore waters also serve as essential habitat for invertebrate species during various stages of their lifecycles. Studies have provided "evidence that noise exposure during larval development produces body malformations in marine invertebrates. Scallop larvae exposed to playbacks of seismic pulses showed significant developmental delays and 46% developed body abnormalities. Similar effects were observed in all independent samples exposed to noise while no malformations were found in the control groups."[1] A reduction in harvestable stock would result in further impacts to New Jersey's commercial fisheries.

While seismic surveys are not expressly prohibited pursuant to the N.J.A.C. 7:7E-3.4(b)2, based on studies examining seismic survey impacts, it is reasonably foreseeable that the project would affect fishery distribution, movement, migration and spawning at identified prime fishing areas. This also foreseeably results in adverse impacts to the high productivity of New Jersey's commercial and recreational fishing industry.

Numerous studies identify responses of fish to high energy sound. Studies have shown that noise produced from this activity can cause physical impacts such as short and long term damage to the ears of fish and in some cases, mortality. Research has also documented behavioral impacts that show a clear change in "normal" activity and an increase in "alarm" response behavior that results in changes to schooling behavior, swimming speeds, water column location and sound avoidance. Studies have also demonstrated declining catch rates for a number of commercial

[1] de Soto, N.; Delorme, N.; Atkins, J.; Howard, S.; Williams, J. & Johnson, M. 2013. Anthropogenic noise causes body malformations and delays development in marine larvae. Scientific Reports. 3. Article No. 2831.

fisheries during seismic testing activities. For example, Arill Engas, et al., found that catch rates fell within the seismic shooting region and surrounding areas immediately after shooting started and continued after shooting ended.[2] More recently, Svein Løkkeborg, et al., highlighted that "reduced catches on fishing grounds exposed to seismic survey activities have been demonstrated."[3] The conclusions reached by the Løkkeborg study are further supported by other recent studies concluding that catch rates reduced in the presence of seismic studies.[4] Based on this information, it is reasonably foreseeable that the project will adversely impact New Jersey's marine fish and fisheries resources.

Department rules define marine fisheries as one or more stocks of marine fish that can be treated as a unit for the purposes of conservation and management, and which are identified on the basis of geographical, scientific, technical, recreational and economic characteristics. Any activity that would adversely impact the natural functioning of marine fish, including the reproductive, spawning and migratory patterns or species abundance or diversity of marine fish, is discouraged.[5] In addition, any activity that would adversely impact any New Jersey based marine fisheries or access thereto is discouraged. Based on the above cited research and lack of appropriate mitigation and threat reduction strategies, the Department concludes that any benefits for the study's research are outweighed by the risk posed to New Jersey's coastal resources.

The time of year and project duration (30 consecutive days) are considered significant negative factors that may adversely affect normal fisheries movement, migration and availability. The project's timeframe is a period of high to peak population abundance of several commercially and recreationally important fish species and commercial and recreational activity off the coast of New Jersey. These impacts could lead to direct and indirect consequences to New Jersey's important commercial and recreational fishing industries. The results of a harvest analysis from May through August 2013 showed that 20% of the commercial black sea bass harvest and 22% of the commercial summer flounder harvest occurred within an area that includes the study area. This represents $250,000 worth of black sea bass and $1,360,000 of potential loss of summer flounder. This period generates 21% of commercial harvest revenue for New Jersey fishermen and represents 60% to 100% of the entire recreational season for the species listed above. Generally during any given year from May through August, 67% of the annual black sea bass and 89% of summer flounder are recreationally harvested. Local businesses including restaurants, hotels, bait and tackle shops, and other coastal related trades are dependent on this time period for generating income.

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[2] A. Engas, S. Lokkeborg, E. Ona and A.V. Soldad, 1996. Effects of Seismic Shooting on Local Abundance and Catch Rates of Cod (Gadus morhua) and Haddock (Melanogrammus aeglefinus). Can. J. Aquat. Sci. 53: 2238-2249.
[3] Løkkeborg, S.; Ona, E.; Vold, A.; & Salthaug, A., 2012. Effects of Sounds from Seismic Air Guns on Fish Behavior and Catch Rates. Advances in Experimental Medicine and Biology, 730, 415-419.
[4] Fewtrell, J.L. & McCauley R.D., 2012, Impact of Air Gun Noise on Behavior of Marine Fish and Squid. Marine Pollution Bulletin, 64, 984-993.
[5] N.J.A.C. 7:7E-8.2(b)

For the reasons stated above, the Department respectfully requests NMFS not issue an IHA for the proposed study because of the likely impact to New Jersey's resources, including marine mammals and marine mammal habitat.

Sincerely,

John Gray, Deputy Chief of Staff
Department of Environmental Protection

Cc: Virginia Kopkash, Assistant Commissioner, Land Use Management
Brandon Muffley, Manager, Bureau of Marine Fisheries
Megan Brunatti, PCER

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

0648-XD773

1 message

Jon R Childs <jonrchilds@gmail.com> Thu, Apr 16, 2015 at 6:01 PM
To: ITP.Cody@noaa.gov

I am writing to strongly encourage NMFS to issue the requested IHA for the upcoming geophysical research survey proposed by Rutgers University and Lamont-Doherty Earth Observatory off the New Jersey coast in the summer upcoming with the *R/V Langseth*.

As a marine geophysicist with extensive experience in environmental assessment of the effects of seismic surveys on the marine environment, I can say categorically that the effects of this survey on the environment will be minimal, particularly given the relatively small size of the source and the limited geographical extent. As numerous studies and literature reviews by the Bureau of Ocean Management and others have demonstrated, there is no credible evidence that seismic surveys harm fish or fishing interests in any way. The mitigation measures that will be observed on the vessel during seismic operations ensure that environmental impacts to marine mammals and other protected species will also be minimal and negligible.

Imaging the sub-seafloor with seismic reflection technology is absolutely critical to our understanding of important and societally-relevant earth processes such as marine hazards (e.g. tsunamigenic landslides) and climate (sea-level) history. No other technology can provide equivalent resolution. The proposed research has been thoroughly peer-reviewed, and complies with all relevant NEPA requirements.

I urge NMFS to approve the subject application. Thank you for your consideration.

Sincerely yours

Jonathan R. Childs
geophysicist
Menlo Park, Ca
jonrchilds@gmail.com

Participating Organizations
Alliance for a Living Ocean
American Littoral Society
Arthur Kill Coalition
Asbury Park Fishing Club
Atlantic Highlands Arts Council
Bayshore Regional Watershed Council
Bayshore Saltwater Flyrodders
Belford Seafood Co-op
Belmar Fishing Club
Beneath The Sea
Bergen Save the Watershed Action Network
Berkeley Shores Homeowners Civic Association
Cape May Environmental Commission
Central Jersey Anglers
Citizens Conservation Council of Ocean County
Clean Air Campaign, NY
Clean Water Action
Coalition Against Toxics
Coalition for Peace & Justice/Unplug Salem
Coastal Jersey Parrot Head Club
Communication Workers of America, Local 1075
Concerned Businesses of COA
Concerned Citizens of Bensonhurst
Concerned Citizens of COA
Concerned Citizens of Montauk
Eastern Monmouth Chamber of Commerce
Environment NJ
Fishermen's Conservation Association, NJ Chapter
Fishermen's Conservation Association, NY Chapter
Fishermen's Dock Cooperative, Pt. Pleasant
Food and Water Watch, NJ
Friends of Island Beach State Park
Friends of Liberty State Park, NJ
Friends of the Boardwalk, NY
Garden Club of Allenhurst
Garden Club of Bay Head and Mantoloking/Seaweeders
Garden Club of Brielle/Bayberry
Garden Club of Englewood
Garden Club of Fair Haven
Garden Club of Long Beach Island
Garden Club of RFD Middletown
Garden Club of Morristown
Garden Club of Navesink
Garden Club of New Jersey
Garden Club of New Vernon
Garden Club of Oceanport
Garden Club of Princeton
Garden Club of Ridgewood
Garden Club of Rumson
Garden Club of Sea Girt/Holly
Garden Club of Short Hills
Garden Club of Shrewsbury
Garden Club of Spring Lake
Garden Club of Terra Nova
Garden Club of Washington Valley
Great Egg Harbor Watershed Association
Green Party of Monmouth County
Green Party of New Jersey
Highlands Business Partnership
Hudson River Fishermen's Association
Jersey Shore Captains Association
Jersey Shore Parrot Head Club
Jersey Shore Partnership
Junior League of Monmouth County
Keyport Environmental Commission
Kiwanis Club of Shadow Lake Village
Leonardo Party & Pleasure Boat Association
Mantoloking Environmental Commission
Marine Trades Association of NJ
Monmouth Conservation Foundation
Monmouth County Association of Realtors
Monmouth County Audubon Society
National Coalition for Marine Conservation
Natural Resources Protective Association, NY
NJ Beach Buggy Association
NJ Environmental Lobby
NJ Friends of Clearwater
NJ Marine Education Association
Nottingham Hunting & Fishing Club, NJ
NYC Sea Gypsies
NY Marine Education Association
NY/NJ Baykeeper
Ocean Wreck Divers, NJ
PaddleOut.org
Picatinny Saltwater Sportsmen Club
Raritan Riverkeeper
Religious on Water
Rotary Club of Point Pleasant
Rotary District #7540—Interact
Saltwater Anglers of Bergen County
Sandy Hook Bay Anglers
Save Barnegat Bay
Save the Bay, NJ
SEAS Monmouth
Shark Research Institute
Shark River Cleanup Coalition
Shark River Surf Anglers
Sierra Club, NJ Shore Chapter
Sisters of Charity, Maris Stella
South Monmouth Board of Realtors
Staten Island Tuna Club
Strathmere Fishing & Environmental Club
Sunrise Rod & Gun Club
Surfers' Environmental Alliance
Surfrider Foundation, Jersey Shore Chapter
Surfrider Foundation, South Jersey Chapter
TACK I, MA
Unitarian Universalist Congregation/Monm. Cnty.
United Boatmen of NY/NJ
Viking Village
WATERSPIRIT
Women's Club of Brick Township
Women's Club of Keyport
Women's Club of Long Branch
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Ocean Advocacy Since 1984

18 Hartshorne Drive, Suite 2
Highlands, NJ 07732-0505
T (732) 872 - 0111
F (732) 872 - 8041
Info@CleanOceanAction.org

April 16, 2015

Via electronic mail sent to ITP.Cody@noaa.gov
Ms. Jolie Harrison
Supervisor, Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

RE: Comments on the National Marine Fisheries Service Incidental Harassment Authorization for the Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Northwest Atlantic Ocean Offshore New Jersey, Summer 2015 (RIN 0648-XD77)

Dear Ms. Harrison:

On behalf of the coalition, Clean Ocean Action (COA) submits the following comments in response to the National Marine Fisheries Service (NMFS) request for comments for the proposed incidental harassment authorization (IHA) for the takes of marine mammals incidental to a marine geophysical survey in the Northwest Atlantic Ocean Offshore New Jersey, Summer 2015 (RIN 0648-XD77).[1] We file these comments without having received the courtesy of your reply to our request of April 6, 2015 for an extension based upon information your Notice failed to include, namely, the State of New Jersey has found the subject project to be inconsistent with its coastal policies. Moreover, we made it clear that many of the citizens and businesses most affected by the proposed activity are only beginning to return to this seasonal community. They are unaware of the opportunity to comment on the IHA.

According to the application,[2] the State University of New Jersey at Rutgers ("Rutgers"), with funding from the US National Science Foundation ("NSF"), proposes to conduct a high-energy, 3-D seismic survey on the *R/V Marcus G. Langseth* off the coast of New Jersey between June and August 2015 to study changes in sea level from 60 million years ago to present ("Proposed Project"). The Proposed Project includes the use of two four-airgun subarrays operating alternately, in conjunction with a multibeam echosounder, sub-bottom profiler, and

[1] 80 Fed. Reg. at 13993 (Tuesday, March 17, 2015) (hereafter "NMFS IHA").
[2] Request by Lamont-Doherty Earth Observatory for an Incidental Harassment Authorization to Allow the Incidental Take of Marine Mammals during a Marne Geophysical Survey by the R/V Marcus G. Langseth in the Atlantic Ocean off New Jersey, Summer 2015, at 1.

acoustic Doppler current profiler. The nominal source levels of the airgun subarrays range from 246 decibels (dB) re: 1 µPa (peak-to-peak), and airguns would fire every 5-6 seconds, 24 hours a day, for approximately 30 consecutive days this summer. The area to be surveyed is a roughly rectangular region that encompasses approximately 230 square miles and is positioned between 15.5 and 52.8 miles off the coast of New Jersey.

NMFS issued its proposed IHA for takes of 1323 marine mammals by harassment under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA). The Proposed Project is subject to regulations under the National Environmental Policy Act (NEPA) and must also request a Section 7 Consultation under the Endangered Species Act (ESA)[3] and an Essential Fish Habitat assessment under the Magnuson-Stevens Fishery Conservation and Management Act.[4]

For the reasons detailed herein, the undersigned organizations request denial of the NMFS IHA on the grounds that the potential impacts to marine mammals are incompatible with the goals, mandates, and prohibitions of the MMPA. Additionally, the State of New Jersey has found the Proposed Project to be inconsistent with the State's Coastal Zone Management Rules. However, should NMFS determine that it will proceed with issuance of a final IHA, significant revision of the authorization and the completion of a full Environmental Impact Statement (EIS) would be necessary to remedy issues of incomplete information, inadequate assessment of impacts, and insufficient evaluation of alternatives and mitigation measures. Importantly, the Proposed Project should not be conducted during summer, which is the peak of marine mammal (and other marine species) activity off the New Jersey coast, as well as the height of tourism and fishing seasons. Moreover, NMFS would have to ensure that best available science and regulatory review are incorporated into the document, and require stronger mitigation measures and consider different times of year for the Proposed Project.

I. NMFS must ensure that its IHA complies with the MMPA.

The MMPA places a "moratorium on the taking" of marine mammals.[5] Any authorization to take marine mammals must result in the incidental take of only "small numbers of marine mammals of a species or population stock," and can have no more than a "negligible impact" on species and stocks. Furthermore, NMFS must provide for the monitoring and reporting of such takings and must prescribe methods and means of affecting the "least practicable adverse impact" on the species or stock and their habitat.[6]

A. Scientific evidence supports marine mammal harassment below the 160-dB Level B threshold

The proposed IHA uses the single sound pressure level of 160 dB re 1 µPa (RMS) as a threshold

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[3] Section 7 of the ESA (16 U.S.C. 1531 et seq.) outlines the procedures for Federal interagency cooperation to conserve federally-listed species and designated critical habitats.

[4] Public Law (P.L.) 94-265, as amended by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (P.L. 109-479). EFH Guidelines at 50 CFR 600.05-600.930 outline the process to satisfy EFH consultation under Section 305(b)(2)-(4)) of the MSA.

[5] 16 U.S.C. § 1371(a).

[6] 16 U.S.C. § 1371(a)(5)(A) & (D).

for behavioral, sub-lethal take in all marine mammal species affected by the proposed survey.[7] This approach does not reflect the best available science, and the choice of threshold is not sufficiently conservative in several important respects. In fact, five of the world's leading biologists and bioacousticians working in this field recently characterized the 160-dB threshold as "overly simplified, scientifically outdated, and artificially rigid."[8] Therefore, the best available science indicates that NMFS must use a more conservative threshold.

Using a single sound pressure level of 160-dB for harassment represents a major step backward from recent programmatic authorizations. For Navy sonar activity, for example, NMFS has incorporated linear risk functions into its analysis, which endeavor to account for risk and individual variability and to reflect the potential for take at relatively low source levels.[9]

Furthermore, current scientific literature establishes that behavioral disruption can occur at substantially lower received levels for some marine mammal species, including these that will be impacted by the Proposed Project. For example, the startup of a seismic survey has been shown to cause endangered fin and humpback whales to stop vocalizing – a behavior essential to breeding and foraging.[10] Similarly, a low-frequency, high-amplitude fish shoal imaging device was recently found to silence humpback whales at a distance of up to 200 kilometers, where received levels ranged from 5 to 22 dB above ambient noise levels.[11] Groups of humpback whales in the wild have been observed to exhibit avoidance behaviors at a distance of two kilometers from a small airgun array; the received levels in these trials were 159 dB re: 1 μPa^2 peak-to-peak.[12] Blue whale behavioral changes in response to a small airgun array have also been monitored. Researchers tracked a blue whale traveling and vocalizing in the vicinity of a vessel firing a four-gun array with a source level of 215 dB re: 1 μPa^2 peak-to-peak and noted that at a distance of 10 kilometers from the vessel (where the received level was estimated to be 143 dB re: 1 μPa^2 peak-to-peak), the whale ceased vocalizations for an hour and changed course significantly.[13] The literature also shows that harbor porpoises are acutely sensitive to a range of anthropogenic sounds, including airguns. They have been observed to engage in avoidance responses 50 miles from a seismic airgun array, a result that is consistent with both captive and wild animal studies showing them abandoning habitat in response to pulsed sounds at very low received levels, well below 120 dB.[14] Cuvier's beaked whales exhibited alarming behavioral impacts when exposed to

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[7] 80 Fed. Reg. at 13980.

[8] Clark, C., Mann, D., Miller, P., Nowacek, D., and Southall, B., Comments on Arctic Ocean Draft Environmental Impact Statement at 2 (Feb. 28, 2012); *see* 40 C.F.R. § 1502.22.

[9] *See, e.g.*, 74 Fed. Reg. 4844, 4844-4885 (Jan. 27, 2009).

[10] Clark, C.W., and Gagnon, G.C. 2006. Considering the temporal and spatial scales of noise exposures from seismic surveys on baleen whales. (IWC Sci. Comm. Doc. IWC/SC/58/E9); *see also* MacLeod, K., Simmonds, M.P., and Murray, E., Abundance of fin (*Balaenoptera physalus*) and sei whales (*B. Borealis*) amid oil exploration and development off northwest Scotland, *Journal of Cetacean Research and Management* 8: 247-254 (2006).

[11] Risch, D., Corkeron, P.J., Ellison, W.T., and van Parijs, S.M., Changes in humpback whale song occurrence in response to an acoustic source 200 km away, PLoS ONE 7(1): e29741. doi:10.1371/journal.pone.0029741 (2012).

[12] McCauley, R.D., Jenner, M.N., Jenner, C., McCabe, K.A., and Murdoch, J. 1998. The response of humpback whales (*Megaptera novaeangliae*) to offshore seismic survey: Preliminary results of observations above a working seismic vessel and experimental exposures. *Appea Journal*: 692-706.

[13] McDonald, M.A., Hildebrand, J.A., and Webb, S.C. 1995. Blue and fin whale observed on a seafloor array in the Northeast Pacific. *Journal of the Acoustical Society of America* **98**: 712-721.

[14] *See, e.g.*, Bain, D.E., and Williams, R., Long-range effects of airgun noise on marine mammals: responses as a function of received sound level and distance (2006) (IWC Sci. Comm. Doc. IWC/SC/58/E35).

sonar at low received levels of 89-127dB re: 1 µPa.[15]

Although the proposed IHA NMFS cites many studies that show low-frequency sounds in general and seismic surveys in particular can have significant behavioral impacts to marine mammals well below 160 dB, NMFS nonetheless irrationally continues to rely upon a Level B harassment threshold of 160 dB. [16] NMFS should modify its threshold estimates, as they must be based on the best available science; this would in turn likely significantly increase the estimated number of marine mammal takes incidental to the Proposed Project.

B. NMFS's assertion of no Level A takes is not based on best available science

Although the NMFS IHA states that marine mammal harassment will be limited to Level B takes, evidence in the scientific literature has indicated that temporary threshold shifts (TTS) can occur in cetaceans at source levels lower than proposed for this survey. As NMFS itself cites, a recent study involved the exposure of a captive harbour porpoise to one airgun firing on three occasions at an average source level of 200.2 dB re: 1 μPa^2 peak-to-peak.[17] In addition to avoidance behavior exhibited by the animal during the trials, the researchers estimated through modeling that the onset of TTS that did not fully subside until *55 hours after exposure*.[18] Moreover, NMFS cannot rationally assume that other marine mammals will not incur injury at noise levels below those in the Proposed Project. The Lucke *et al.* study demonstrates that TTS can occur at different levels for different species of cetaceans.

Moreover, controlled exposure trials in which harbor seals were exposed to small airguns firing for one hour at source levels ranging from 215 to 224 dB re: 1 μPa^2 peak-to-peak revealed dramatic physiological and behavioral responses, including a fright response evidenced by significant drops in heart rate; decreased stomach temperatures indicating a cessation of feeding; and rapid swimming away from the noise source.[19] Thus, NMFS cannot assume that TTS and even permanent threshold shifts (PTS) would be unlikely for marine mammals in the area of this Proposed Project.

A number of other recent studies indicate that anthropogenic sound can induce PTS at lower levels than anticipated.[20] New data indicate that mid-frequency cetaceans have greater sensitivity to

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[15] DeRuiter, S.L., Southall, B.L., Calambokidis, J., Zimmer, W.M.X., Sadykova, D., Falcone, E.A., Friedlaender, A.S., Joseph, J.E., Moretti, D., Schoor, G.S., Thomas, L., and Tyack, P.L. 2013. First Direct Measurements of behavioural responses by Cuvier's beaked whales to mid-frequency active sonar. *Biology Letters* **9**: 20130223 1 (2013).

[16] 80 Fed. Reg. at 13973.

[17] Lucke, Klaus, Siebert, U., Lepper, P. a, & Blanchet, M.-A. (2009). Temporary shift in masked hearing thresholds in a harbor porpoise (Phocoena phocoena) after exposure to seismic airgun stimuli. *The Journal of the Acoustical Society of America*, 125(6): 4060-70.

[18] Lucke, K., Siebert, U., Lepper, P.A., and Blanchet, M.-A. 2009. Temporary shift in masked hearing thresholds in a harbor porpoise (*Phocoena phocoena*) after exposure to seismic airgun stimuli. *Journal of the Acoustical Society of America* 125: 4060-4070. Emphasis added.

[19] Thompson, D., Sjoberg, M., Bryant, M.E., Lovell, P., and Bjorge, A. 1998. Behavioral and physiological responses of harbour (*Phoca vitulina*) and grey (*Halichoerus grypus*) seals to seismic surveys. Report to European Commission of BROMMAD Project. MAS2 C7940098.

[20] Kastak, D., Mulsow, J., Ghoul, A., and Reichmuth, C. 2008. Noise-induced permanent threshold shift in a harbor seal [abstract], *Journal of the Acoustical Society of America* **123**: 2986; Kujawa, S.G., and Liberman, M.C. 2009. Adding insult to injury: cochlear nerve degeneration after "temporary" noise-induced hearing loss, *Journal of Neuroscience* **29**: 14077-14085.

sounds within their best hearing range than was previously thought.[21] NMFS must also consider that even behavioral disturbance can amount to a Level A take if it interferes with essential life functions. For example, TTS can impair reproductive success and fitness that would constitute harm or Level A harassment. Beaked whales are sensitive to noise, and it is not necessarily the auditory damage that causes the injury. Sounds cause beaked whales to change their behavior, including panic response and rapid surfacing, which results in an injury similar to decompression sickness ("the bends").[22]

Given NMFS's decidedly non-conservative approach to estimating impacts thresholds for injury to marine mammals from the proposed survey, it is likely that many more marine mammals will be harmed than NMFS estimates. In light of the best available science, NMFS cannot rationally defend its conclusion that the proposed survey will not lead to any Level A impacts and will have no more than negligible impacts on these species or stocks. NMFS must take into account the best available science and set lower thresholds for level A take, which would lead to larger exclusion zones around the survey.

II. NOAA must prepare an EIS because there are significant environmental impacts from the Proposed Project

For the reasons discussed below, we strongly urge NMFS to prepare an EIS for this project, which would include complete scientific substantiation for the project, a thorough analysis of all direct, indirect, and cumulative environmental impacts, and consideration of a full range of alternatives to the project. Moreover, to meet its NEPA obligations, the NEPA document must be made available for public review and comment.[23]

A. Purpose of NEPA and EA and trigger for an EIS

NEPA's fundamental purposes are to guarantee that: (1) agencies take a hard look at the environmental consequences of their actions before these actions occur; and (2) agencies make the relevant information available to the public so that it may also play a role in both the decision-making process and the implementation of that decision.[24] To assure transparency and thoroughness, agencies also must "to the fullest extent possible...[e]ncourage and facilitate public involvement" in decision-making.[25]

The purpose of an EA is to assist the agency in determining whether the project may significantly

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[21] See discussion in Wood, J., Southall, B.L. and Tollit, D.J. 2012. PG&E offshore 3-D Seismic Survey Project EIR – Marine Mammal Technical Draft Report. SMRU Ltd.; Marine Mammal Commission, Marine Mammals and Noise: A Sound Approach to Research Management, Report to Congress, at 46 (March 2007).

[22] Cox, T.M., Ragen, T.J., Read, A.J., Vos, E., Baird, R.W., Balcomb, K., Barlow, J., Caldwell, J., Cranford, T., Crum, L., D'Amico, A., D'Spain, G., Fernandez, A., Finneran, J., Gentry, R., Gerth, W., Gulland, F., Hildebrand, J., Houser, D., Hullar, T., Jepson, P.D., Ketten, D., MacLeod, C.D., Miller, P., Moore, S., Mountain, D.C., Palka, D., Ponganis, P., Rommel, S., Rowles, T., Taylor, B., Tyack, P., Wartzok, D., Gisiner, R., Mead, J., and Benner, L. 2006. Understanding the impacts of anthropogenic sound on beaked whales. *Journal of Cetacean Resource Management* **7**: 177-187.

[23] *See, e.g. Anderson v. Evans*, 314 F.3d 1006, 1016 (9th Cir. 2002) ("the public must be given an opportunity to comment on draft EAs and EISs").

[24] See, e.g. 40 C.F.R. § 1500.1.

[25] 40 C.F.R. §1500.2(d

affect the environment and therefore require a full EIS.[26] An agency may avoid preparing a full EIS if the agency: (1) prepares an environmental assessment identifying and analyzing the action's environmental effects; and (2) makes a finding of no significant impact, which presents the agency's reasons for concluding that the action's environmental effects are not significant.[27] NEPA requires federal agencies to prepare an EIS for all "major federal actions significantly affecting the quality of the human environment."[28] A full EIS is required if "substantial questions are raised as to whether a project...may cause significant degradation of some human environmental factor."[29] To trigger this requirement, the plaintiff "need *not show* that significant effects will *in fact* occur;" but rather, "raising substantial questions whether a project may have a significant environmental effect is sufficient."[30]

Whether an action may have "significant" impacts on the environment is determined by considering the "context" and "intensity" of the action.[31] "Context" means the significance of the project "must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality."[32] Intensity of the action is determined by considering the following ten factors: (1) impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial; (2) the degree to which the proposed action affects public health or safety; (3) unique characteristics of the geographic area such as proximity to ecologically critical areas; (4) the degree to which the effects on the quality of the human environment are likely to be highly controversial; (5) the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks; (6) the degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration; (7) whether the action is related to other actions with individually insignificant but cumulatively significant impacts; (8) the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources; (9) the degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the federal Endangered Species Act; (10) whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.[33] The presence of one or more significant effects can trigger the need for a full EIS.[34] Based on the nature of potential

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[26] 42 U.S.C. §4332(2)(C); 40C.F.R. §1508.9.

[27] 40 C.F.R. §§ 150l.4(b), (e); 1508.9; 1508.1.3.

[28] 42 U.S.C. § 4332(2)(C); see also 40 C.F.R. § 1501.4. The Act defines the "human environment" as including "the natural and physical environment and the relationship of people with that environment…This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment." 40 C.F.R. § 1508.14.

[29] *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149-50 (9th Cir. 1998).

[30] *Id*. (emphases in original).

[31] 40 C.F.R. § 1508.27.

[32] Id. § 1508.27(a).

[33] 40 C.F.R. § 1508.27(b)(1)-(10).

[34] S*ee, e.g. Nat'l Parks & Conserv. Ass'n. v. Babbitt*, 241 F.3d 722, 731 (9th Cir. 2001) (either of two significance factors considered by the court "may be sufficient to require preparation of an EIS in appropriate circumstances");

impacts to marine life from the Proposed Project and the incomplete analysis of such impacts in the EA (discussed further below), a full EIS must be prepared for this study.

B. Availability of new information subsequent to the finalization of the PEIS in 2011 precludes NMFS's reliance on this prior NEPA analysis.

It is inadequate for NMFS to rely on any prior NEPA analysis because there is significant new information about the impacts of seismic surveys on marine mammals and fish. New, relevant information on marine mammals, specifically North Atlantic right whales and bottlenose dolphins, is discussed herein in Section IV. Additionally, while tiering to a broader EIS may be useful in complying with NEPA, it does not eliminate the need to conduct a thorough analysis of the impacts of the site-specific actions.[35]

C. Cumulative actions and effects have not been adequately evaluated.

In conducting a NEPA review, federal agencies must look at cumulative actions and effects. Cumulative actions are those that "have cumulatively significant impacts and should therefore be discussed in the same impact statement."[36] Similar actions include those that have "common timing or geography."[37] Cumulative impacts are those that result when combined with past, present, and reasonably foreseeable future actions on the resources of the area.[38]

Here, there are numerous activities in the region that will harm the same marine mammals and environment that must be analyzed in a cumulative impacts analysis. The Proposed Project has made only limited consideration of the cumulative impacts of this project in conjunction with other current and/or proposed anthropogenic noise-producing activities in the region. The Draft EA used by NMFS in drafting its IHA contains only a cursory statement as to the potential for any cumulative impacts upon marine mammals from the Proposed Project and the proposed Geologic and Geophysical (G&G) seismic airgun and other related seabed test drilling activities being considered by the Bureau of Ocean Energy Management (BOEM) for the mid- and south-Atlantic OCS Planning areas.[39] Cumulative impacts from shipping activities are only addressed in terms of increased vessel traffic, and the additive effects of more noise in the area and a greater potential for ship strikes are not considered.[40] Marine mammal disease is also a concern, particularly for bottlenose dolphins affected in 2013 by *morbillivirus*. The Draft EA only assesses the potential for the Proposed Project to "contribute to the development or continuation of a morbillivirus outbreak"[41] in bottlenose dolphins, but fails to consider the cumulative harmful effects of the Proposed Project on the population in light of the recent morbillivirus outbreak.

Anderson v. Evans, 350 F.3d 815, 835 (9th Cir. 2003) (presence of one or more factors can necessitate preparation of a full EIS).

[35] 40 C.F.R. § 1502.20.

[36] 40 CFR § 1508.25(a)(2).

[37] Id. at § 1508.25(a)(3).

[38] 40 C.F.R. §§ 1502.16, 1508.7, 1508.8, 1508.25(a)(2).

[39] Draft Amended Environmental Assessment (Dec. 2014) at 56-57.

[40] Draft Amended Environmental Assessment (Dec. 2014) at 55.

[41] Draft Amended Environmental Assessment (Dec. 2014) at 55.

Such assessments are significant components of an analysis of potential impacts to marine life from the additional set of noise sources considered in the Proposed Project, and must be assessed in the NMFS IHA.

D. Potential impacts from sound-producing sources other than seismic airguns were not evaluated.

Neither the NMFS IHA nor the EA upon which it relies have offered any meaningful evaluation of the potential impacts that other sound-producing sources used in the Proposed Project may have on marine species. Of particular concern, the NMFS IHA indicates that a high-frequency Kongsberg EM 122 multibeam echosounder will operate concurrently with airgun operations. produces sound in the 10.5 to 13.0 kHz frequency range, which is within the optimal hearing spectrum for many odontocete and pinniped species that may occur in the study area. A 12-kHz multibeam echosounder system operated by an Exxon survey vessel off the coast of Madagascar was implicated by an independent scientific review panel (ISRP) in the mass-stranding of approximately 100 melon-headed whales (*Peponocephala electra*) in 2008.[42] The report of the ISRP stated, "all other possible factors considered were determined by the ISRP to be unlikely causes for the initial behavioral response."[43]

Furthermore, a 2002 seismic expedition in the Gulf of California, also lead by L-DEO, employed a similar multibeam sonar system with a center frequency of 15.5 kHz and source levels of 237 dB. Beaked whale strandings observed in the area of the survey in September 2002 may have been linked to the use of this technology – a federal judge responded by ordering the ship to cease operations.[44]

Based on the correlation between these previous stranding events and the use of multibeam sonar technology, it is imperative that NMFS fully assess the potential for this source to impact marine mammals both on its own and in concert with seismic airgun blasts.

E. The analysis of alternatives in the EA was incomplete.

The "heart" of the NEPA process is an agency's duty to consider "alternatives to the proposed action" and to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[45] The CEQ regulations require NMFS to "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from

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[42] Southall, B.L., Rowles, T., Gulland, F., Baird, R. W., and Jepson, P.D. 2013. Final report of the Independent Scientific Review Panel investigating potential contributing factors to a 2008 mass stranding of melon-headed whales (*Peponocephala electra*) in Antsohihy, Madagascar.

[43] Id.

[44] Cox, T.M., Ragen, T.J., Read, A.J., Vos, E., Baird, R.W., Balcomb, K., Barlow, J., Caldwell, J., Cranford, T., Crum, L., D'Amico, A., D'Spain, G., Fernandez, A., Finneran, J., Gentry, R., Gerth, W., Gulland, F., Hildebrand, J., Houser, D., Hullar, T., Jepson, P.D., Ketten, D., MacLeod, C.D., Miller, P., Moore, S., Mountain, D.C., Palka, D., Ponganis, P., Rommel, S., Rowles, T., Taylor, B., Tyack, P., Wartzok, D., Gisiner, R., Mead, J., and Benner, L. 2006. Understanding the impacts of anthropogenic sound on beaked whales. *Journal of Cetacean Resource Management* **7**: 177-187.

[45] 42 U.S.C. §§ 4332(2)(C)(iii), 4332(2)(E).

detailed study, briefly discuss the reasons for their having been eliminated."[46] "A 'viable but unexamined alternative renders [the] environmental impact statement inadequate.'"[47]

The EA does not devote sufficient evaluation of the No Action alternative, in which researchers conducting the study would not proceed with the Proposed Project but would instead rely on core samples previously conducted in the same area to evaluate historical changes in sea level rise. We also urge NMFS to consider the recommendation of NJDEP that the Proposed Project be conducted at an alternative time of year[48] and to evaluate when the potential for impact to marine life would be at its lowest. Should it be determined that the Proposed Project must continue as planned for the summer of 2015, we urge NMFS to consider alternatives with stronger mitigation measures, including larger exclusion zones and lower sound thresholds, avoidance of areas that are high value habitat to marine mammals, suspension of activities in low light and night conditions, use of the fewest surveys and duplicate surveys as possible, and other methods to detect marine mammals beyond visual observation and acoustic monitoring, in addition to those measures recommended by NJDEP.[49]

III. NMFS must take best available science and the precautionary principle into account.

Several experts in marine mammal bioacoustics have underscored our extremely limited understanding of the potential auditory and behavioral impacts to marine mammals from the use of seismic airguns and other sound-producing technologies. Darlene R. Ketten, a marine biologist and neuro-anatomist at the Woods Hole Oceanographic Institution, has written, "[a]t this time we have insufficient data to accurately predetermine the underwater acoustic impact for anthropogenic sources."[50] Other published scientists have noted, "[g]iven the current state of knowledge…the risk of seismic sources causing hearing damage to marine mammals cannot be dismissed as negligible."[51] Scientists have also commented on the variability in how a seismic source could affect a marine mammal based on the orientation of the source relative to the animal, which is not considered in the Proposed Project. A 2004 review paper on the effects of seismic surveys on marine mammals stated, "[m]arine mammals will be distributed in a variety of positions relative to a seismic array and the signal they receive may have a complicated and variable nature."[52] A study of the environmental implications of marine seismic surveys conducted in Australia published in 2000 concluded, "[i]t was believed slight differences in the orientations of receivers to each array, alignments and depths of array components and of functioning air guns within each array contributed to the measured differences. Again this

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[46] 40 C.F.R. § 1502.14(a).

[47] *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999) (quoting *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985)).

[48] Federal Consistency Determination Letter of NJDEP Letter to National Science Foundation (Mar. 6, 2015), at 9.

[49] Id. at 10.

[50] Ketten, D.R. Marine Mammal Auditory Systems: A Summary of Audiometric and Anatomical Data and Implications for Underwater Acoustic Impacts. Polarforschung, 72. Jahrgung, Nr. 2/3, pp. 79-92.

[51] Gordon, J.C.D., Gillespie, D., Potter, J., Frantzis, A., Simmonds, M.P., Swift, R., and Thompson, D. 2004. A Review of the Effects of Seismic Survey on Marine Mammals. *Marine Technology Society Journal* **37**: 14-32.

[52] Id.

exemplified the difficulty of predicting the received air gun level for a specific air gun array."[53]

Because of this high degree of uncertainty in our understanding of impacts to marine mammals from airgun sources, compounded by the variability in the level of impact based on the position of the source relative to a marine mammal, NMFS should be precautionary in its assessment of incidental takes. One of the Principles in the 2010 Final Recommendations of the Interagency Ocean Policy Task Force report urges the use of best available science and the precautionary approach: "Decisions affecting the ocean…should be informed by and consistent with the best available science. Decision-making will also be guided by a precautionary approach as reflected in the Rio Declaration of 1992."[54] Responsible application of the precautionary principle to the NMFS IHA would reasonably have led to the denial of marine mammal takes incidental to the Proposed Project.

IV. Important species information was not incorporated into NMFS's analysis.

Of particular concern is that a 2013 peer-reviewed study demonstrating North Atlantic right whale presence off the New Jersey coast year-round, particularly in the spring and summer months, does not appear to have been incorporated into the NMFS IHA. Furthermore, factors that may compound the number of bottlenose dolphin takes, including the recent population debilitation by *morbillivirus* and the time and area overlaps between the Proposed Project and calving, have minimally been taken into account. Inclusion of this information is critical to ensuring that the NMFS IHA is based on the best available science and considers external factors in its take estimates.

A. The presence, abundance, and potential impacts to North Atlantic right whales in the survey area were not adequately evaluated.

With respect to the critically endangered North Atlantic right whale (*Eubalaena glacialis*), NMFS fails to take into account the best available science on population size, cumulative effects, or species presence in the survey area. NOAA estimates that the western population of the North Atlantic right whale contains only about 400 individuals.[55] Because of this critically low population level, NMFS has stated that "no mortality or serious injury for this stock can be considered insignificant."[56] The NMFS IHA authorizes the Level B take of three (3)[57] individual right whales; however, given the low population level and NMFS's own prior statements, take of even one individual would constitute more than a negligible impact and would therefore violate the MMPA.

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[53] McCauley, R.D., Fewtrell, J., Duncan, A.J., Jenner, C., Jenner, M-N., Penrose, J.P., Prince, R.I.T., Adhitya, A., Murdoch, J., and McCabe, K. 2000. Marine seismic surveys – A study of environmental implications. *Appea Journal* 692-708.

[54] The White House Council on Environmental Quality. Final Recommendations Of The Interagency Ocean Policy Principle 15 of the Rio Declaration 1992 reads, "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall be not used as a reason for postponing cost-effective measures to prevent environmental degradation."

[55] http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/rightwhale_northatlantic.htm.

[56] NMFS. 2012. Marine Mammal Stock Assessment Reports (SARs) by Species/Stock; North Atlantic Right Whale (*Eubalaena glacialis*): Western Atlantic Stock. http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2012whnr-w.pdf.

[57] 80 Fed. Reg. 13988.

The NMFS IHA minimally cites research papers or information on right whales that may give the reader an indication of how NMFS reached its decision on the number of authorized takes. The North Atlantic right whale was added to the Behavioral Disturbance section, subsection Baleen Whales, in the 2015 IHA.[58] However, the added paragraph further illustrates the lack of data on reactions or right whales to seismic surveys.[59] The data that is available, which is specifically cited in the IHA, states that "ship noise causes increased stress in right whales."[60] If NOAA were to authorize the Proposed Project, that data would simply be overlooked.

The peer-reviewed, Whitt *et al.* 2013 paper, "North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implications for management," should have been fully analyzed by NMFS in its evaluation of potential right whale impacts. This study involved the use of passive acoustic monitoring at several locations off the New Jersey coast over the course of two years and found that "North Atlantic right whales are present off New Jersey throughout the year and not only during 'typical' migratory periods."[61] The numbers of up-call detections per day were highest from March through June, which indicates that right whales communicate extensively during this time of year off the New Jersey coast.[62] Furthermore, skim-feeding behavior observed off Barnegat Bay indicated that right whale feeding grounds may extend beyond the generally understood primary feeding areas further north, leading the authors to conclude that the "sightings and acoustic data from the present study also suggest that the nearshore waters of New Jersey may serve habitat functions other than migration for this species."[63] If NMFS has not fully analyzed this study in its assessment of right whale takes, then the three takes authorized may be a significant underestimation.

B. The NMFS IHA does not appear to account for external factors potentially affecting the area bottlenose dolphin population.

Common bottlenose dolphins (*Tursiops truncatus*) are commonly observed in New Jersey coastal waters during the summer months, and have been sighted as far north as Barnegat Light.[64] The Proposed Project authorizes takes of 411 pelagic bottlenose dolphins.[65] This high number of takes is troublesome for two reasons. Firstly, according to Robert Schoelkopf, founding director of the Marine Mammal Stranding Center in Brigantine, NJ, the calving season for bottlenose dolphins in the New Jersey coastal region typically runs from May through June.[66] The Proposed Project would subject newborn calves to intense levels of noise; these individuals are limited in their ability to flee the ensonified area due to their dependence on their mothers and small size, and are possibly also more susceptible to hearing damage than adult dolphins. The Proposed Project does not account for the overlap of the survey period with the bottlenose dolphin calving period,

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[58] 80 Fed. Reg. 13969.
[59] Id.
[60] Id.
[61] Whitt, A.D., Dudzinski, K., and Laliberte, J.R. 2013. North Atlantic right whale distribution and seasonal occurrence in nearshore waters off New Jersey, USA, and implications for management. *Endangered Species* Research 20: 59-69.
[62] Id.
[63] Id.
[64] Robert Schoelkopf, pers. comm.
[65] 80 Fed. Reg. at 13988 (Table 6).
[66] Robert Schoelkopf, pers. comm.

nor does it evaluate the potential heightened sensitivity of bottlenose dolphin calves to anthropogenic noise.

Furthermore, the number of bottlenose dolphin standings along the U.S. Eastern seaboard has dramatically increased since 2012. From July 2013 through mid-October 2014, more than 1500 dead or dying bottlenose dolphins were stranded. This prompted NOAA to declare an Unusual Mortality Eventand NOAA has since found that 266 of the 280 stranded dolphins it tested were positive for *morbillivirus.*[67] In 2014, Mr. Schoelkopf has expressed concern about the impact that the Proposed Project could have on the local bottlenose dolphin population: "They've already taken a pretty good beating, death-rate wise. To have the testing conducted during the birthing period could be even more traumatizing to the entire population. If we're looking at a normal death rate on animals because of entanglement and fishing gear, shark bites, [and] pneumonia, then the sonic explosions could be totally devastating to anything that swims underwater."[68] The stranding data indicate that the local bottlenose dolphin population has been compromised by the *morbillivirus* outbreak of 2013, and the Proposed Project puts this population and its numbers under further, unnecessary stress, even two years later.

V. NMFS's determination that only "negligible" impacts to marine mammals will occur is reckless and not scientifically defensible.

The Proposed Project acknowledges the scarcity of data throughout the discussion of potential impacts to marine life, and yet irrationally characterizes impacts to marine life as "negligible." Examples from the text of the Proposed Project that are particularly noteworthy include:

- "There are almost no specific data on the behavioral reactions of beaked whales to seismic surveys."[69]
- "For the type of airgun array planned for the proposed program, the pathological (mortality) zone for crustaceans and cephalopods is expected to be within a few meters of the seismic source, at most; however, very few specific data are available on levels of seismic signals that might damage these animals."[70]
- "Few systematic data are available describing reactions of toothed whales to noise pulses."[71]
- "The available data do not allow identification of a specific exposure level above which non-auditory effects can be expected…or any meaningful quantitative predictions of the numbers (if any) of marine mammals that might be affected in those ways."[72]

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[67] Draft Amended EA, at 21.

[68] http://thesandpaper.villagesoup.com/p/environmental-organizations-against-proposed-seismic-testing-off-barnegat-bay/1158487.

[69] 80 Fed. Reg. at 13971.

[70] 80 Fed, Reg. at 13978.

[71] 80 Fed. Reg. at 13971.

- "NMFS, however, acknowledges the complexity of noise exposure on the nervous system, and will re-examine this issue as more data become available."[73]

- There is "no data" on the population trend of nearly every marine mammal species to be taken under the IHA.[74]

Based on the extremely limited amount of real-world data upon which to base its conclusions regarding potential impacts to marine life, how can NMFS comfortably state that the impacts to marine mammals are all expected to be "negligible" and fall within the Level B Harassment classification? As stated previously, in the absence of robust data that points to a low likelihood of impacts, the NMFS IHA should rely on a more conservative, precautionary approach.

VI. The State of New Jersey Finds the Proposed Project to be Inconsistent with State Coastal Zone Management Policies

The New Jersey Department of Environmental Protection (NJDEP) sent a letter, in March 6, 2015, to the National Science Foundation (NSF) affirming that the Proposed Project is inconsistent with New Jersey's Coastal Zone Management rules, and therefore it should not move forward.[75] The release of this letter preceded the release of the IHA and yet was not referenced in the IHA. The NJDEP referenced both environmental and coastal uses effects that would incur as a result of this study. Specifically, the NJDEP found the study inconsistent with the NJCMP for the following reasons:

1. research indicates adverse impacts to fisheries are likely and New Jersey's rules discourage activities that adversely impact the natural functioning of marine fish;
2. NSF's failure to minimize or mitigate for adverse impacts to a commercially important fishery, which is inconsistent with NSF's own guidance;
3. NMFS findings and guidance; and
4. significant concerns raised by the Department's stakeholders, including members of New Jersey's commercial and recreational fishing industry.[76]

Most importantly, the NJDEP states that "it is reasonably foreseeable that the project will adversely impact New Jersey's marine fisheries resources."[77]
NOAA should respect the sovereignty of the State of New Jersey and its administration of its coastal zone management plan. The proposed IHA is an endorsement of an activity that would be in direct violation of its coastal zone management policies. We implore NOAA to deny the IHA accordingly.

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[72] 80 Fed. Reg. at 13974.
[73] 80 Fed. Reg. 13972.
[74] 80 Fed. Reg. at 13988 (Table 6).
[75] State of New Jersey, Department of Environmental Protection (2015). RE: Federal consistency determination for marine geophysical survey by the R?V *Marcus G. Langseth* in the Atlantic Ocean off New Jersey, Summer 2015 – Inconsisent. DLUR File No. 0000-14-0030.1 CDT 150001.
[76] Id.
[77] Id.

VII. 75 World Leading Ocean Scientists Urge President Obama to Halt Seismic Studies

On March 5, 2015, 75 leading world scientists urged President Obama to stop seismic testing plans for oil and gas exploration. While this study is of a different scope, the technology is the same as are the impacts to marine life and highlights the need for further assessments for any study using high-energy sound.

The IHA does not reference the above study in its evaluation of the Proposed Project. More importantly, the IHA would be in direct contravention of this admonishment from this collection of leading scientists.

VIII. Conclusion

For the reasons detailed above, the undersigned organizations request denial of the NMFS IHA. The Proposed Project threatens serious harm to numerous species of marine mammals and is therefore contrary to the goals, mandates, and prohibitions of the MMPA.

However, should NMFS determine that it will proceed with issuance of a final IHA, significant revision of the authorization and the completion of a full EIS are necessary to remedy issues of incomplete information, inadequate assessment of impacts, and insufficient evaluation of alternatives and mitigation measures. Importantly, the Proposed Project must not be allowed to be conducted during summer, which is the peak of marine mammal (and other marine species) activity off the New Jersey coast, as well as the height of tourism and fishing seasons. NMFS would also have to ensure that best available science and regulatory review are incorporated into the document, and require stronger mitigation measures for the Proposed Project and permit the subject activity to be conducted at a different time of year.

Sincerely,

Cindy Zipf
Executive Director

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

Re: 0648-XD773

Taffy Williams <tlwilliams@optonline.net> Wed, Apr 15, 2015 at 11:10 AM
To: ITP.Cody@noaa.gov

April 15, 2015

Jolie Harrison, Supervisor,
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service

Dear Supervisor Harrison:

I AND MY FAMILY AND COLLEAGUES STAND OPPOSED TO THIS PROJECT.

Please reject the application by NSF/Rutgers U, etal to seismically map the ocean floor off southern New Jersey.

The project to seismically map an area the size of Barnegat Bay off the NJ coast (purportedly for historical climate change data) has been called bogus and unnecessary at best.
This work has been repeated 4 times.
No new mapping technology is being used thus yielding no new information.
The team grossly underestimated impacts to marine life, lucrative fisheries and whales. Impacts to whales were underestimated by 30 times, according to the US Marine Mammal Commission.
The project is being done in an area teaming with marine life, with up to 33 species of whales and dolphins, in a location that has already been drilled 313 times!
The project would ruin vital local fishing economies.
Findings would yield data that would ultimately and promptly benefit the oil and gas industries.

75 scientists have condemned seismic airgun array projects, calling them highly destructive to marine life:

"Airgun surveys have an enormous environmental footprint. For blue and other endangered great whales, for example, such surveys have been shown to disrupt activities essential to foraging and reproduction over vast ocean areas. Additionally, surveys could increase the risk of calves being separated from their mothers, the effects of which can be lethal, and, over time, cause chronic behavioral and physiological stress, suppressing reproduction and increasing mortality and morbidity...."

"The impacts of airguns extend beyond marine mammals to all marine life. Many other marine animals respond to sound, and their ability to hear other animals and acoustic cues in their environment are critical to survival. Seismic surveys have been shown to displace commercial species of fish, with the effect in some fisheries of dramatically depressing catch rates. Airguns can also cause mortality in fish eggs and larvae, induce hearing loss and physiological stress, interfere with adult breeding calls, and degrade anti-predator response: raising concerns about potentially

massive impacts on fish populations. In some species of invertebrates, such as scallops, airgun shots and other low-frequency noises have been shown to interfere with larval or embryonic development. And threatened and endangered sea turtles, although almost completely unstudied for their vulnerability to noise impacts, have their most sensitive hearing in the same low frequencies in which most airgun energy is concentrated." Letter to President Obama. http://docs.nrdc.org/wildlife/files/wil_15030401a.pdf

Mitigations proposed by the team are unscientific, ineffective and thus meaningless.

1. Visual monitoring ignores simple facts about whale behavior and ocean conditions. Whales are underwater for the vast majority of their time. They simply can not be seen! In the darkness of night there is zero to 1 meter visibility on the ocean. During fog, rain or stormy conditions visibility may likewise drop to zero to 1 meter, if that. Protected Species Observers are no different from anyone looking out into the darkness, fog and stormy weather; all are unable to see much of any distance from the vessel. Daylight and clear skies are not 24/7 on the open ocean; invisible whales will be present during ongoing 24/7 destructive acoustic airgun arrays operations.

2. Passive monitoring involves "listening" devices, that detect the sounds of whales underwater. However, whale are very often silent underwater, especially under stress, this was proven in recent marine mammal science studies. Not only this, the noise from the airgun arrays - reaching a brain and lung-shattering 240+ dB is comparable to the noise from the explosion of one kiloton of TNT, effectively masking any vocalizations or cries of whales in the area. Without vocalizations on passive acoustic monitoring equipment, researchers can claim there are/were "no whales in the area," a statement that can never be accurately verified. This absurd mitigation measure is beyond ridiculous.

3. Vessel speed reduction and minor course alteration are more meaningless mitigations; cetaceans do not follow a predictable route that can be avoided with any accuracy. Cetaceans are 95%+ underwater, they and their vertical or horizontal "course" are both invisible to those on board. Directing a moving vessel to avoid cetaceans, or even slow down, is for the most part impossible.

Despite this inability to detect marine mammals and these unscientific and ineffective mitigation measures, Rutgers U's airguns will continue to operate, jeopardizing everything over a 230 sq. mile project zone and far beyond.

240 dB sound from airgun arrays will be projected over the project area (230 sq. miles) every 5-6 seconds, 24 hours a day. The acoustic energy from seismic airgun arrays has reached 249 dB, comparable to the acoustic energy from the Hiroshima bomb!(http://www.makeitlouder.com/Decibel%20Level%20Chart.txt) Even with debated conversion calculations this is more than enough to injure or even kill whales, or drive them, many endangered, out of the water to strand; certainly this is enough acoustic energy to harm and even destroy fisheries that are so critical to human survival on the east coast.

Opposition to this project has been fierce. A Press Release from the Jersey Coast Angler's Association is aptly revealing:

What about the fisheries in the NY Bight that Rutgers has cooperatively worked with industry to our common benefit? This seismic testing starts at the Barnegat Ridge area in waters about 60 feet deep, a historically important fishing ground for centuries, from there it runs southeast in a 20 mile wide strip out off the continental shelf over a 1,000 feet deep. The fisheries that will be impacted by this study include Loligo Squid, inshore, and Illex squid on the offshore end, excellent Scallop grounds occur through 120 to 240 feet depths, along with Quahog clams. Tilefish live in adobe type burrows in the 350 to 700 feet depths, while Lobsters and red crabs are important fisheries on the

deep edge of the continental shelf. Summer and Winter Flounder are present on the inshore ends of the study, and many other commercially and recreationally important demersal fish are present in the summer, including Bluefish, Weakfish, Bonito, Spanish Mackerel, A few different species of Tuna, and many different types of sharks. Many of these fish will swim away as fast as they can from the testing area, they are not stupid, when a bomb goes off everybody runs, fish do the same. When the bombs continue for a period of weeks the fish will totally leave or be killed. Either way, the fishing industry will suffer from no fish to catch, and the scientists will say it wasn't them, prove it. If Rutgers wants to be involved in seismic testing then they should grow a pair [of fins] and do research that will document what really happens to marine life when seismic testing takes place. Good luck finding funding for that….
A recent study in Spain regarding seismic testing found that it had serious to lethal effects on squid, New Jersey's squid industry is always among the largest on the East Coast. June and July are some of the best months for the offshore Illex fishery, while the loligo fishery is at full speed inshore throughout the summer. Seismic testing off Australia a few years ago was blamed for totally destroying a rich scallop bed, and clams have suffered documented negative effects from seismic testing. Tilefish will not swim away from this testing they will seek sanctuary in their burrows and probably die. The coast off of Jersey will be barren for the summer season and Rutgers will pocket a few hundred thousand in blood money. Is it worth the risk? Will they reimburse the fishing industry for the damage they cause?. Do they think that our industry will ever cooperate in any more joint projects with them again? Rutgers can stop this sham, the only reason they are needed is because the oil industry needs them involved so they can check our offshore area for reserves. No Rutgers, No study. (http://jcaa.org/JCNL1406/1406SeismicTesting.htm

Opposition has been unrelenting; public and elected officials are condemning this project, and the NJ EPA even sued to stop it! Please do not approve this poorly conceived and irresponsible project by NSF and Rutgers.

Thank you,
Taffy Williams, BM, MM (Rutgers, 1985), AS
Director of Music, Archdiocese of New York
Founder, NY4Whales
Member, Board of Directors, Cetacean Society International
Beacon Scholar
NYS DEC Special Licenses Division Class One Wildlife Rehabilitator

cc Rutgers President Barchi
cc UTexas/Austin Presidents Powers and Fenves

Taffy Williams
New York Whale and Dolphin Action League
PO Box 273
Yonkers, NY 10707 USA
914-793-9186
www.ny4whales.org
A 501(c)(3) non-profit for whales
Follow/Tweet @ny4whales

Member, Board of Directors
Cetacean Society International

New York State Department of Environmental Conservation
Special Licenses Unit
Class One Wildlife Rehabilitator

tlwilliams@optonline.net
914-793-9186
407-404-2046 cell

IPT Cody - NOAA Service Account <itp.cody@noaa.gov>

Re: 0648-XD773

Taffy Williams <tlwilliams@optonline.net> Thu, Apr 16, 2015 at 10:22 PM
To: ITP.Cody@noaa.gov
Cc: Taffy Williams <ny4whales@optonline.net>

191 Westchester Ave. / Tuckahoe, NY 10707 / 914-793-9186 / 407-404-2046 cell

April 16, 2015

Jolie Harrison, Supervisor
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Re: 0648-XD773, Proposed Incidental Harassment Authorization; Proposal to issue an Authorization to Lamont-Doherty, Rutgers University and the University of Texas to incidentally take, by Level B harassment, 32 species of marine mammals during specified activity.

Dear Supervisor Harrison:

I am writing as the representative of the officers, staff and membership of NY4Whales, the New York Whale and Dolphin Action League (ny4whales.org), a 501c-3 non-profit cetacean advocacy organization, and the NY project of Cetacean Society International, who stand opposed to granting authorization for level B harassment take of marine mammals during the proposed seismic mapping project off the New Jersey shore.

Recently, the outer continental shelf of the western Atlantic Ocean adjacent to the New Jersey coastline has become an area of controversy. The waters support a rich and important fishing industry, both commercial and recreational, and a host of other ocean-related businesses. The public has responded adamantly to threats to the marine region which is considered priority issues of highest concern; threats that should be minimized at all costs and with all urgency.

A history of the region reveals that there have been numerous previous seismic activities in the very location of this NSF/Rutgers U, etal project. The project's team admittedly has repeated this project 4 times! The fact the work was done 4 times in the past and is being repeated yet again, for the fifth time, leads to speculation that either there is gross incompetency on the part of the research team or the technology being used is inadequate! Once mapped, the ocean floor will not have changed,

especially given the little natural seismic activity the area is known for. Simply put, new mapping is not required. In either case this project is unnecessarily repetitive and must not be approved.

NY4Whales objects to the lack of an Environmental Impact Statement in compliance with NEPA, the MMPA, ESA, CZMA. NY4Whales believes this project has a commercial component as the seismic information will be available to the oil and gas industries. We believe this project's commercial components have been disguised as a "climate impact project" while the work duplicates previous seismic mapping activities done by both the applicants and the oil industry. No new equipment or techniques will be used that will yield data that is already available for public use. In fact, not only has the proposed project area been mapped 4 times previously, it has been drilled 313 times! This work involves 30 days of intense airgun assaults on the seafloor in a large swath of ocean that is roughly the size of Barnegat Bay. No less than 32 species of cetaceans are in this area (many of them endangered and all are protected), making this project even more unacceptable. The region is the basis for a thriving and vital fishing industry that includes flounder, bluefish, scallops, lobster, crabs, clams. Benthic (non-swimming) species including lobster, crabs, clams, mussels are unable to flee airgun arrays and the fisheries will be destroyed here. This unnecessary project is a really bad idea.

A number of mitigation measures have been proposed by the team; these mitigations ignore common sense reasoning and simple facts of cetacean behavior and the marine environment. The airgun arrays will rip into the seabed non-stop for 24 hours a day, 7 days a week,at intervals of 5-6 seconds, creating a relentless assault with well over 240 dB of low frequency acoustic energy.

The team touts they conduct visual monitoring, and will carry Protected Species Observers on board, to "watch for whales". Yet the team forgets that most of the time, whales are completely invisible! Whales spend over 90% of their time underwater, where they can't be detected. Plus, at night, while airguns will continue to operate there is at most 0-1 meter visibility at sea. It doesn't matter whether observers are on deck or in a 70-tall tower looking for whales. Whales will not be seen! The same thing applies in fog, rain or stormy conditions. Observers will simply not see them. This is an astonishing yet simple fact ignored by this team. On top of all this, whales may remain submerged for as long as 90 minutes (sperm whales) at a time, further eluding observers in their fruitless endeavor to locate them. How is it that the applicants either do not know these simple broadly-known facts? Do they choose to ignore this most fundamental marine mammal and marine science?

The team also states they will be using passive monitoring involves "listening" devices, which will detect the sounds of whales underwater. This blatantly absurd mitigation is yet again, simply meaningless. Whale are very often silent underwater, especially under stress, which was proven in recent marine mammal science studies. (http://www.telegraph.co.uk/news/science/science-news/9068202/Shipping-noise-causes-major-stress-in-whales.html) Not only this, the noise from the airgun arrays - reaching a brain and lung-shattering 240+ dB is comparable to the noise from the explosion of one kiloton of TNT, effectively masking any vocalizations or cries of whales in the area. This deadly noise will be projected every 5-6 seconds and will deflect out into the marine environment not allowing the sound of a whale close by or far away to be heard, even if a whale were so inclined to make noise under such a grave acoustic assault. Without whale vocalizations on the vessel's passive acoustic monitoring equipment, researchers can claim there are/were "no whales in the area," a statement that can never be accurately verified. The airguns will easily block out any vocalizations from whales while Rutgers, etal, can claim there were no marine mammals in the vicinity. This simple reasoning reveals the lack of responsible thought that is going into the project in the first place. The impossible use of passive acoustic monitoring to "protect whales" screams of illogic and reckless negligence in the team's attitude toward whales and the marine environment.

The proposed vessel speed reduction and minor course alteration mitigations represent ignorance of

simple whale behavior. Cetaceans do not follow a predictable route that can be avoided with any accuracy. Cetaceans are 90%+ underwater. They and their vertical or horizontal “course” are both simply invisible to those on board. Directing a moving vessel to change its course to avoid cetaceans, or even slow down, is for the most part impossible. How many times has anyone seen a whale submerge during a whale watch excursion, then guess where it will appear next, only to be stumped every time! We never have our cameras in the location where the whales resurface - as it is impossible to know! The elusive course direction of the whale under water is an example of simple normal whale behavior. Either there is incompetence on the part of the applicants as to how elusive overall whale movement is, or they believe the project’s application reviewers are equally ignorant. Perhaps the applicants simply don’t care and are hoping the application reviewers are equally apathetic.

Based on the unsound, illogical and ineffective proposed mitigation measures for this project the application should be rejected. Mitigations measure such as these reveal overwhelming incompetence, recklessness and negligence.

Further enhancing this reckless attitude toward the marine environment, the team grossly underestimated the expected impacts to whales and marine line. The Marine Mammal Commission stated that the numbers provided by these scientists are flatly incorrect.

ENUMERATING TAKES FOR SURVEYS IN A SMALL AREA

To determine the numbers of marine mammals that could be taken incidental to the proposed geophysical survey, LDEO multiplied the total ensonified area of 2,502 km^2 (which includes a 25 percent contingency) by the applicable densities. However, LDEO would be conducting the survey, consisting of 4,900 km of tracklines (spaced 150 m apart), in an area of 12 by 50 km. The survey would occur in that small area for approximately 30 days, 24 hours per day. At the March 2013 meeting, the Commission discussed with NMFS and the other relevant entities the fact that a simple area*density method is not appropriate in such circumstances. Rather, the applicant should be determining the total ensonified area in a given day, which then should be multiplied by the number of survey days (30) and the applicable densities. Otherwise, the method LDEO used in the current request (and has used in the past) very likely underestimated the numbers of marine mammals that could be taken. Therefore, the Commission recommends that NMFS require LDEO to estimate the numbers of marine mammals that could be taken based on the total ensonified area in any given day multiplied by 30 and the applicable densities.” (Marine Mammal Commission, Letter to NMFS/Ms. Jolie Harrison, Appendix G, Page 6, 31 March 2014.) https://www.nsf.gov/geo/oce/envcomp/nj-seismic-research/appendix-g-nmfs-iha-public-comments.pdf

Despite the devastating impacts of 240+ dB of acoustic low frequency airgun blasts every 5-6 seconds 24 hours a day, 7 days a week, the team attempts to deceive its application reviewers by asserting that there little or no impacts at all to the marine environment. Their failure to consider the basic science of seismic projects, or include the impacts and cumulative effects to marine life after repeated exposures over time. This is yet another reason to deny the team’s application.

This seismic projects has garnered negative attention and opposition from critics both near and far. Elected officials, local industries and the public, even government agencies stand opposed to this project. The NJ EPA even filed a lawsuit to stop Rutgers, etal, from proceeding. Many believe the oil industry is behind the project. As research, the project warranted an Environmental Assessment, not a full Environmental Impact Statement, with its concommitant public hearings and comment periods. This project had no Environmental Impact Statement, despite the serious impacts this kind of activity generates.

So here we are less than two years later and the oil industry has figured out that if they can disguise their seismic testing for oil as some other scientific research that can benefit humanity then because

this is scientific research and not private/industrial, they can do it without the public's knowledge or input. There are no public hearings, and no notice for the public to comment on this proposal. [sic] (James Lovgren. Press Release. Jersey Coast Anglers Association. http://jcaa.org/JCNL1406/1406SeismicTesting.htm)

How can we be fairly certain the oil industry will use this data for commercial endeavors?

"NSF will launch a Public Access Initiative that will make the results of NSF-funded research broadly available with minimal barriers. NSF's public access policy will accelerate progress in scientific research, encourage citizens to become scientifically literate, and foster creative partnerships with the private sector." https://www.nsf.gov/about/budget/fy2014/pdf/45_fy2014.pdf

Widespread opposition to this project throughout the state and along the coast exposes the public's real concern for the inevitable effects of this work. In a press release from June, 2014, the Jersey Coast Angler's Association blasted Rutgers, etal, and the project, as they recount the reality marine species the fishing industry depends on in th project area of impact.

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If this project is approved, consequences for marine life, fisheries and the economy of the Jersey shore and far beyond, will be dire. Marine mammals protected under the MMPA and ESA will be severely harmed. The livelihoods of millions of people will be negatively and severely impacted. This project will bring no viable, new data to science, in fact the risks far outweigh the benefits. As the project's team has demonstrated a reckless, irresponsible, even ignorant approach to the basic science of the marine environment, whales and fisheries, the applicant's request for a Letter of Authorization for Level B Harassment Take of Marine Mammals during this seismic mapping project should be denied.

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914-793-9186
www.ny4whales.org
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Follow/Tweet @ny4whales

New York State Department of Environmental Conservation
Special Licenses Unit
Class One Wildlife Rehabilitator
tlwilliams@optonline.net
914-793-9186
407-404-2046 cell

cc Rutgers President Barchi
cc UTexas/Austin Presidents Powers and Fenves

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2 attachments

Comments re RUTGERS-NSF seismic mapping.pdf
80K

pastedGraphic.pdf
18K

NY4WHALES
New York Whale and Dolphin Action League NY4WHALES.ORG
191 Westchester Ave. / Tuckahoe, NY 10707 / 914-793-9186 / 407-404-2046 cell

April 16, 2015

Jolie Harrison, Supervisor
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Re: 0648-XD773, Proposed Incidental Harassment Authorization; Proposal to issue an Authorization to Lamont-Doherty, Rutgers University and the University of Texas to incidentally take, by Level B harassment, 32 species of marine mammals during specified activity.

Dear Supervisor Harrison:

I am writing as the representative of the officers, staff and membership of NY4Whales, the New York Whale and Dolphin Action League (ny4whales.org), a 501c-3 non-profit cetacean advocacy organization, and the NY project of Cetacean Society International, who stand opposed to granting authorization for level B harassment take of marine mammals during the proposed seismic mapping project off the New Jersey shore.

Recently, the outer continental shelf of the western Atlantic Ocean adjacent to the New Jersey coastline has become an area of controversy. The waters support a rich and important fishing industry, both commercial and recreational, and a host of other ocean-related businesses. The public has responded adamantly to threats to the marine region which is considered priority issues of highest concern; threats that should be minimized at all costs and with all urgency.

A history of the region reveals that there have been numerous previous seismic activities in the very location of this NSF/Rutgers U, etal project. The project's team admittedly has repeated this project 4 times! The fact the work was done 4 times in the past and is being repeated yet again, for the fifth time, leads to speculation that either there is gross incompetency on the part of the research team or the technology being used is inadequate! Once mapped, the ocean floor will not have changed, especially given the little natural seismic activity the area is known for. Simply put, new mapping is

not required. In either case this project is unnecessarily repetitive and must not be approved.

NY4Whales objects to the lack of an Environmental Impact Statement in compliance with NEPA, the MMPA, ESA, CZMA. NY4Whales believes this project has a commercial component as the seismic information will be available to the oil and gas industries. We believe this project's commercial components have been disguised as a "climate impact project" while the work duplicates previous seismic mapping activities done by both the applicants and the oil industry. No new equipment or techniques will be used that will yield data that is already available for public use. In fact, not only has the proposed project area been mapped 4 times previously, it has been drilled 313 times! This work involves 30 days of intense airgun assaults on the seafloor in a large swath of ocean that is roughly the size of Barnegat Bay. No less than 32 species of cetaceans are in this area (many of them endangered and all are protected), making this project even more unacceptable. The region is the basis for a thriving and vital fishing industry that includes flounder, bluefish, scallops, lobster, crabs, clams. Benthic (non-swimming) species including lobster, crabs, clams, mussels are unable to flee airgun arrays and the fisheries will be destroyed here. This unnecessary project is a really bad idea.

A number of mitigation measures have been proposed by the team; these mitigations ignore common sense reasoning and simple facts of cetacean behavior and the marine environment. The airgun arrays will rip into the seabed non-stop for 24 hours a day, 7 days a week,at intervals of 5-6 seconds, creating a relentless assault with well over 240 dB of low frequency acoustic energy.

The team touts they conduct visual monitoring, and will carry Protected Species Observers on board, to "watch for whales". Yet the team forgets that most of the time, whales are completely invisible! Whales spend over 90% of their time underwater, where they can't be detected. Plus, at night, while airguns will continue to operate there is at most 0-1 meter visibility at sea. It doesn't matter whether observers are on deck or in a 70-tall tower looking for whales. Whales will not be seen! The same thing applies in fog, rain or stormy conditions. Observers will simply not see them. This is an astonishing yet simple fact ignored by this team. On top of all this, whales may remain submerged for as long as 90 minutes (sperm whales) at a time, further eluding observers in their fruitless endeavor to locate them. How is it that the applicants either do not know these simple broadly-known facts? Do they choose to ignore this most fundamental marine mammal and marine science?

The team also states they will be using passive monitoring involves "listening" devices, which will detect the sounds of whales underwater. This blatantly absurd mitigation is yet again, simply meaningless. Whale are very often silent underwater, especially under stress, which was proven in recent marine mammal science studies. (http://www.telegraph.co.uk/news/science/science-news/9068202/Shipping-noise-causes-major-stress-in-whales.html) Not only this, the noise from the airgun arrays - reaching a brain and lung-shattering 240+ dB is comparable to the noise from the explosion of one kiloton of TNT, effectively masking any vocalizations or cries of whales in the area. This

deadly noise will be projected every 5-6 seconds and will deflect out into the marine environment not allowing the sound of a whale close by or far away to be heard, even if a whale were so inclined to make noise under such a grave acoustic assault. Without whale vocalizations on the vessel's passive acoustic monitoring equipment, researchers can claim there are/were "no whales in the area," a statement that can never be accurately verified. The airguns will easily block out any vocalizations from whales while Rutgers, etal, can claim there were no marine mammals in the vicinity. This simple reasoning reveals the lack of responsible thought that is going into the project in the first place. The impossible use of passive acoustic monitoring to "protect whales" screams of illogic and reckless negligence in the team's attitude toward whales and the marine environment.

The proposed vessel speed reduction and minor course alteration mitigations represent ignorance of simple whale behavior. Cetaceans do not follow a predictable route that can be avoided with any accuracy. Cetaceans are 90%+ underwater. They and their vertical or horizontal "course" are both simply invisible to those on board. Directing a moving vessel to change its course to avoid cetaceans, or even slow down, is for the most part impossible. How many times has anyone seen a whale submerge during a whale watch excursion, then guess where it will appear next, only to be stumped every time! We never have our cameras in the location where the whales resurface - as it is impossible to know! The elusive course direction of the whale under water is an example of simple normal whale behavior. Either there is incompetence on the part of the applicants as to how elusive overall whale movement is, or they believe the project's application reviewers are equally ignorant. Perhaps the applicants simply don't care and are hoping the application reviewers are equally apathetic.

Based on the unsound, illogical and ineffective proposed mitigation measures for this project the application should be rejected. Mitigations measure such as these reveal overwhelming incompetence, recklessness and negligence.

Further enhancing this reckless attitude toward the marine environment, the team grossly underestimated the expected impacts to whales and marine line. The Marine Mammal Commission stated that the numbers provided by these scientists are flatly incorrect.

> ENUMERATING TAKES FOR SURVEYS IN A SMALL AREA
>
> To determine the numbers of marine mammals that could be taken incidental to the proposed geophysical survey, LDEO multiplied the total ensonified area of 2,502 km^2 (which includes a 25 percent contingency) by the applicable densities. However, LDEO would be conducting the survey, consisting of 4,900 km of tracklines (spaced 150 m apart), in an area of 12 by 50 km. The survey would occur in that small area for approximately 30 days, 24 hours per day. At the March 2013 meeting, the Commission discussed with NMFS and the other relevant entities the fact that a simple area*density method is not appropriate in

> such circumstances. Rather, the applicant should be determining the total ensonified area in a given day, which then should be multiplied by the number of survey days (30) and the applicable densities. Otherwise, the method LDEO used in the current request (and has used in the past) very likely underestimated the numbers of marine mammals that could be taken. Therefore, the Commission recommends that NMFS require LDEO to estimate the numbers of marine mammals that could be taken based on the total ensonified area in any given day multiplied by 30 and the applicable densities." (Marine Mammal Commission, Letter to NMFS/Ms. Jolie Harrison, Appendix G, Page 6, 31 March 2014.) https://www.nsf.gov/geo/oce/envcomp/nj-seismic-research/appendix-g-nmfs-iha-public-comments.pdf

Despite the devastating impacts of 240+ dB of acoustic low frequency airgun blasts every 5-6 seconds 24 hours a day, 7 days a week, the team attempts to deceive its application reviewers by asserting that there little or no impacts at all to the marine environment. Their failure to consider the basic science of seismic projects, or include the impacts and cumulative effects to marine life after repeated exposures over time. This is yet another reason to deny the team's application.

This seismic projects has garnered negative attention and opposition from critics both near and far. Elected officials, local industries and the public, even government agencies stand opposed to this project. The NJ EPA even filed a lawsuit to stop Rutgers, etal, from proceeding. Many believe the oil industry is behind the project. As research, the project warranted an Environmental Assessment, not a full Environmental Impact Statement, with its concommitant public hearings and comment periods. This project had no Environmental Impact Statement, despite the serious impacts this kind of activity generates.

> So here we are less than two years later and the oil industry has figured out that if they can disguise their seismic testing for oil as some other scientific research that can benefit humanity then because this is scientific research and not private/industrial, they can do it without the public's knowledge or input. There are no public hearings, and no notice for the public to comment on this proposal. [sic] (James Lovgren. Press Release. Jersey Coast Anglers Association. http://jcaa.org/JCNL1406/1406SeismicTesting.htm)

How can we be fairly certain the oil industry will use this data for commercial endeavors?

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