



## Testimony

Before the Subcommittee on Energy  
and Mineral Resources, Committee on  
Natural Resources, House of  
Representatives

---

For Release on Delivery  
Expected at 9 a.m. ET  
Friday, January 19, 2018

# OFFSHORE SEISMIC SURVEYS

## Additional Guidance Needed to Help Ensure Timely Reviews

Statement of Jon Ludwigson, Acting Director,  
Natural Resources and Environment

Accessible Version

Chairman Gosar, Ranking Member Lowenthal, and Members of the Subcommittee:

I am pleased to be here today to discuss our recent report on the federal offshore seismic permitting process.<sup>1</sup> As you know, offshore oil and natural gas are important sources of energy and revenue for the United States—constituting about 18 percent of our nation’s total oil production and about 4 percent of our total gas production, and providing the federal government with about \$2.8 billion in revenue in fiscal year 2016.

Federal agencies and private companies use information about potential oil, gas, and other resources in the Outer Continental Shelf (OCS) to make regulatory, funding, and development decisions, respectively.<sup>2</sup> Oil and gas companies conduct offshore seismic surveys in the OCS to collect data on the geology that may indicate the presence of hydrocarbons—such as oil and gas. Seismic surveys—which can be conducted onshore and offshore—use mechanically generated sound waves from an acoustic source to transmit energy into the subsurface of the ocean floor. Various other entities, including the National Science Foundation, use offshore seismic surveys for other purposes, such as to identify possible earthquake fault zones.

Entities seeking to conduct geological and geophysical surveys, including seismic surveys, to identify oil, gas, and other mineral resources in the OCS must obtain a permit from the Department of the Interior’s Bureau of Ocean Energy Management (BOEM)—the federal agency responsible for the oversight of most offshore oil and gas leasing and exploration activities. Given the possibility that seismic surveys may disturb or injure marine mammals, referred to as “taking” marine mammals, entities may obtain an incidental take authorization to avoid potential liability for takes

---

<sup>1</sup>GAO, *Offshore Seismic Surveys: Additional Guidance Needed to Help Ensure Timely Reviews*, [GAO-18-60](#) (Washington, D.C.: Dec. 11, 2017).

<sup>2</sup>The Outer Continental Shelf (OCS) is outside the territorial jurisdiction of all 50 states but within the jurisdiction and control of the U.S. federal government, and consists of submerged federal lands, generally extending seaward between 3 geographical miles and 200 nautical miles off the U.S. coastline. The Department of the Interior has oversight over 1.7-billion acres of submerged lands in the OCS. There are four OCS regions in the United States: the Alaska, Atlantic, Gulf of Mexico, and Pacific regions. Companies that develop and produce oil and gas from federal waters do so over a specified period of time under leases obtained from and administered by the Bureau of Ocean Energy Management.

of a marine mammal. Incidental take authorizations are issued under the Marine Mammal Protection Act by the Department of Commerce's National Marine Fisheries Service (NMFS) or Interior's Fish and Wildlife Service (FWS), depending on the species that might be affected.<sup>3</sup> To authorize the taking of small numbers of marine mammals, NMFS and FWS must make certain findings as to the impacts of the activities, based on the best scientific evidence available. Several industry stakeholders and a research organization that applied for incidental take authorizations have raised questions about the timeliness of the federal seismic survey permitting process and incidental take authorization application reviews.

My testimony today discusses the key findings from our December 2017 report on the federal offshore seismic permitting process. Accordingly, this testimony examines (1) BOEM's review process, the number of permit applications reviewed from 2011 through 2016, and its review time frames; (2) NMFS's and FWS's review process, the number of incidental take authorization applications reviewed from 2011 through 2016, and their review time frames; and (3) the status of pending seismic survey permit applications and related incidental take authorization applications in the Atlantic OCS region. In addition, I will highlight several key actions that we recommended in our report that NMFS and FWS can take to address challenges associated with their review processes.

To conduct the work for our December 2017 report, among other things, we analyzed relevant laws and regulations that govern the review processes, reviewed and analyzed agency guidance, and interviewed BOEM, NMFS, and FWS agency officials. In addition, we identified and interviewed knowledgeable stakeholders selected to reflect a range of industry groups, a research institution, and environmental organizations to obtain their views on the seismic survey permitting and incidental take authorization application processes.<sup>4</sup> In our preliminary work on all four OCS regions, we determined there had been no new oil and gas related seismic activity in the Pacific OCS region in the last two decades; as a result, we excluded the Pacific OCS from our review. We also obtained data from BOEM, NMFS, and FWS on the number of permit and incidental take authorization applications each agency reviewed and the

---

<sup>3</sup>Pub. L. No. 92-522, § 101, 86 Stat. 1027, 1029 (1972) (codified as amended at 16 U.S.C. § 1371).

<sup>4</sup>Because this was a nonprobability sample of stakeholders, their views are not generalizable beyond those groups but provide illustrative examples of the views of such stakeholders.

number of permits and authorizations the agencies issued in each of the three selected OCS regions.<sup>5</sup> We focused our review of pending applications on the Atlantic region because it was the only region that had applications pending at the time of our review. Our December 2017 report includes a detailed explanation of the methods used in our work. We conducted the work on which this testimony is based in accordance with generally accepted government auditing standards.

---

## BOEM's Review Process Differs by OCS Region

As we stated in our December 2017 report,<sup>6</sup> BOEM has a documented process for reviewing seismic survey applications in each of the three selected OCS regions that differs in one part depending on the region. In the Atlantic region, prior to issuing a permit, BOEM intends to require incidental take authorizations related to the seismic survey activities proposed in the permit application to be in place before issuing permits, but in the Alaska region, BOEM issues conditional permits while waiting for incidental take authorizations. In the Gulf of Mexico region, BOEM has generally issued permits without requiring incidental take authorizations to be in place, although it is working to address some aspects of its process in response to a recent settlement agreement.<sup>7</sup>

Based on our review of agency data, from 2011 through 2016, BOEM reviewed 297 applications for seismic survey permits. Of the 297 seismic survey permit applications reviewed, BOEM issued 264 permits during this period, and the number of applications reviewed and permits issued varied by OCS region (see table 1).

---

<sup>5</sup>To assess the reliability of the data, we used publicly available information on the number of permit and authorization applications to check the data provided by BOEM, NMFS, and FWS. We found the data on the number of permits and authorizations to be sufficiently reliable for our purposes.

<sup>6</sup>[GAO-18-60](#).

<sup>7</sup>Specifically, in response to the settlement agreement, BOEM agreed to consider prescribing additional mitigation measures as conditions of approval for seismic survey permits during the stay and issued a final programmatic environmental impact statement in August 2017. BOEM also submitted a revised request to NMFS for incidental take regulations governing geophysical surveys in the Gulf of Mexico, which is pending as of January 2018.

**Table 1: Bureau of Ocean Energy Management’s Seismic Survey Permit Applications Reviewed and Issued by Three Outer Continental Shelf Regions, 2011–2016**

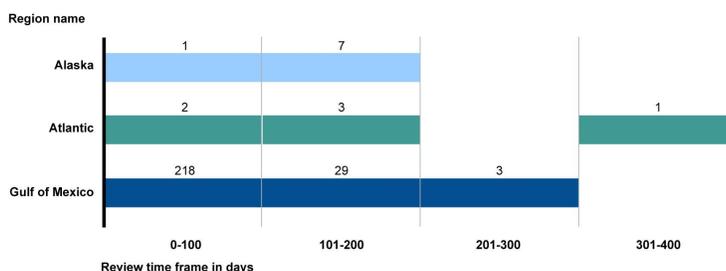
Seismic survey permit applications	Outer Continental Shelf Region			Total
	Alaska	Atlantic	Gulf of Mexico	
Reviewed	13	16	268	297
Pending	0	7	1	8
Withdrawn by applicant	4	3	17	24
Deferred by applicant	1	0	0	1
Issued	8	6	250	264

Source: GAO analysis of Bureau of Ocean Energy Management data. | GAO-18-342T

Notes: This table includes seismic survey permits for high-resolution seismic surveys, deep-penetration seismic surveys, and vertical seismic profile surveys. The six permits issued in the Atlantic region were for high-resolution seismic surveys for non-oil and gas mineral resources and, according to Bureau of Ocean Energy Management officials, did not include the use of airguns. This table does not include the Pacific Outer Continental Shelf region because, from 2011 through 2016, the Bureau of Ocean Energy Management did not receive applications for or issue any seismic survey permits in that region. BOEM issued a permit for the pending application in the Gulf of Mexico region in April 2017. This table does not include Notices of Scientific Research, of which there were 2 in the Atlantic region, 13 in the Gulf of Mexico, and none in Alaska during this period. The Notices of Scientific Research do not result in a permit.

BOEM does not have statutory review time frame requirements for issuing geological and geophysical seismic survey permits. The range of BOEM’s review time frames—from the date the agency determined that an application was complete to when BOEM issued a seismic survey permit—varied by OCS region (see fig. 1).

**Figure 1: Number of Seismic Survey Permits Issued by Bureau of Ocean Energy Management Regions and Associated Time Frames, 2011–2016**



Source: GAO analysis of Bureau of Ocean Energy Management data. | GAO-18-342T

**Data Table for Figure 1: Number of Seismic Survey Permits Issued by Bureau of Ocean Energy Management Regions and Associated Time Frames, 2011–2016**

Days	Alaska issued permits	Atlantic issued permits	Gulf of Mexico issued permits
0-100	1	2	218

Days	Alaska issued permits	Atlantic issued permits	Gulf of Mexico issued permits
101-200	7	3	29
201-300	0	0	3
301-400	0	1	0

Notes: The Bureau of Ocean Energy Management records the date it determines an application is complete, or “accepted,” following the resolution of any missing information from the applicant in the initial application, and the date it issues or denies the permit. This figure does not include the Pacific Outer Continental Shelf region because the Bureau of Ocean Energy Management did not issue any seismic survey permits there from 2011 through 2016. The six permits issued in the Atlantic region were for high-resolution seismic surveys for non-oil and gas mineral resources.

## Neither NMFS nor FWS Guidance Sufficiently Describes How to Record Certain Review Dates

As we stated in our report,<sup>8</sup> NMFS and FWS follow a similar process for reviewing incidental take authorization applications related to seismic survey activities. From 2011 through 2016, NMFS and FWS reviewed 35 and approved 28 such applications across the three OCS regions we reviewed, including some authorizations related to BOEM permits as well as research seismic surveys not associated with BOEM permits.

However, neither NMFS nor FWS guidance sufficiently describes how to record certain review dates. As a result, NMFS was unable to provide accurate dates for when the agency determined an application was adequate and complete—and FWS does not record this date.<sup>9</sup> For example, based on our review of NMFS data, in at least two cases, the date NMFS recorded the application had been determined adequate and complete was after the date the proposed authorization was published in the *Federal Register*.

<sup>8</sup>GAO-18-60.

<sup>9</sup>NMFS and FWS begin formal processing of an incidental harassment authorization application—one type of incidental take authorization application—once it is deemed adequate and complete. See 50 C.F.R. §§ 18.27(d), 216.104. See also U.S. Fish and Wildlife Service, “Marine Mammal Protection Act Incidental Harassment Authorizations,” chap. 036 FW 2 in *U.S. Fish and Wildlife Service Manual* (June 6, 2016), accessed January 11, 2018, <https://www.fws.gov/policy/036fw2.html>; National Marine Fisheries Service, “Incidental Take Authorizations Under the MMPA,” accessed January 11, 2018, <http://www.nmfs.noaa.gov/pr/permits/incidental/>.

Because the agencies either do not record the date the application is deemed adequate and complete or do not record the date consistently, the agencies are not able to determine how long their formal processing takes. As a result, in our December 2017 report, we recommended that the agencies should develop guidance that clarifies how and when staff should record the date on which the agency determines the “adequacy and completeness” of an incidental take authorization application.<sup>10</sup> NMFS agreed with our recommendation. FWS partially concurred with the recommendation, noting that it plans to develop guidance for recording the “adequate and complete” date of incidental harassment authorization applications; however, it did not indicate that it would develop such guidance for the other type of incidental take authorization—the incidental take regulations. As we stated in the report, we believe that FWS should develop guidance for both. Such guidance is necessary to maintain consistency with federal internal control standards, which call for management to use quality information to achieve agency objectives and design control activities, such as accurate and timely recording of transactions, to achieve objectives and respond to risk.

Further, under the Marine Mammal Protection Act, the agencies are to issue one type of incidental take authorization—incidental harassment authorizations—within 120 days of receiving an application. NMFS and FWS have not conducted an analysis of their review time frames. As a result, in our December 2017 report, we recommended that both agencies should analyze their time frames for reviewing incidental harassment authorization applications—from the date the agency determines that an application is adequate and complete until the date an application is approved or denied—and compare the agency’s review time frames to the statutory review time frame.<sup>11</sup> Both NMFS and FWS agreed with our recommendation.

---

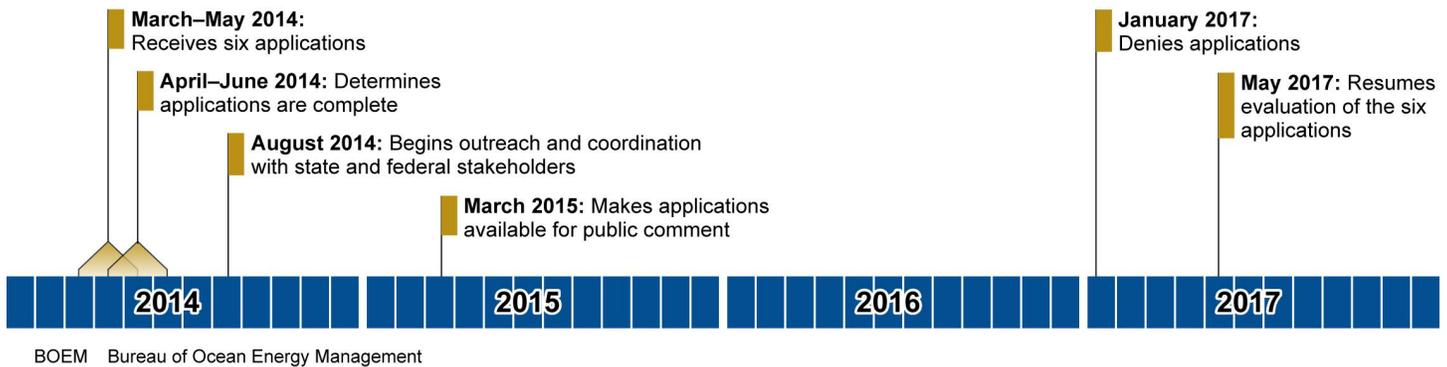
<sup>10</sup>GAO-18-60.

<sup>11</sup>GAO-18-60.

## BOEM and NMFS Have Been Reviewing Certain Seismic Survey Permit and Incidental Take Authorization Applications in the Atlantic OCS for Several Years

As we stated in our December 2017 report,<sup>12</sup> as of October 2017, in addition to the six permits BOEM issued in the Atlantic OCS from 2011 through 2016, another seven permits were pending a decision. Of these seven, BOEM received six applications for deep penetration seismic survey permits in the Atlantic region from March to May 2014 (see fig. 2).

**Figure 2: Bureau of Ocean Energy Management (BOEM) Review Timeline of Six Pending Seismic Survey Permit Applications in the Atlantic Outer Continental Shelf Region, 2014–2017**



Source: GAO Analysis of BOEM data and interviews with BOEM officials. | GAO-18-342T

### Data for Figure 2: Bureau of Ocean Energy Management (BOEM) Review Timeline of Six Pending Seismic Survey Permit Applications in the Atlantic Outer Continental Shelf Region, 2014–2017

- March–May 2014: Receives six applications
- April–June 2014: Determines applications are complete
- August 2014: Begins outreach and coordination with state and federal stakeholders
- March 2015: Makes applications available for public comment
- January 2017: Denies applications

<sup>12</sup>GAO-18-60.

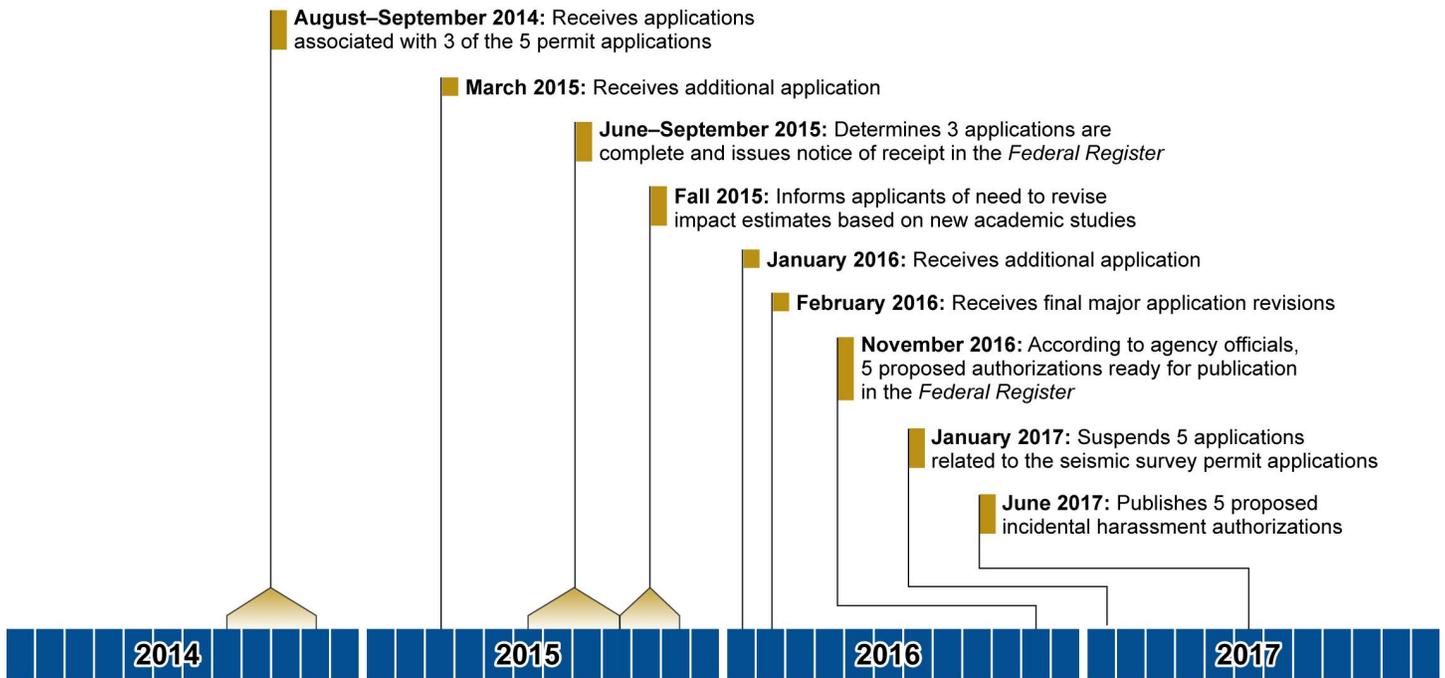
- May 2017: Resumes evaluation of the six applications

BOEM Bureau of Ocean Energy Management

Note: Five of the six applicants submitted their related incidental-harassment applications to the Department of Commerce's National Marine Fisheries Service (NMFS) from August 2014 through January 2016. According to BOEM officials, the agency was awaiting NMFS's issuance of incidental harassment authorizations before issuing seismic survey permits. Before such authorizations were issued, in January 2017, BOEM denied these applications, citing, among other things, the 5-year leasing plan, which removed the area from all leasing during the period from 2017 through 2022.

Of the six applicants that applied to BOEM during that time, five also applied to NMFS for incidental harassment authorizations related to their seismic survey permit applications, from August 2014 to January 2016 (see fig. 3). The sixth applicant that applied to BOEM for a seismic survey permit in the Atlantic OCS region did not apply for an incidental harassment authorization with NMFS, according to NMFS officials. These five incidental harassment authorizations were pending a decision by NMFS, as of October 2017, and NMFS did not have an estimate as to when it would issue a decision.

**Figure 3: National Marine Fisheries Service (NMFS) Review Timeline of Five Pending Incidental Harassment Authorization Applications Related to Seismic Survey Permit Applications in the Atlantic Outer Continental Shelf Region, 2014–2017**



NMFS National Marine Fisheries Service

Source: GAO Analysis of NMFS data and interviews with NMFS officials. | GAO-18-342T

---

**Data for Figure 3: National Marine Fisheries Service (NMFS) Review Timeline of Five Pending Incidental Harassment Authorization Applications Related to Seismic Survey Permit Applications in the Atlantic Outer Continental Shelf Region, 2014–2017**

- August–September 2014: Receives applications associated with 3 of the 5 permit applications
- March 2015: Receives additional application
- June–September 2015: Determines 3 applications are complete and issues notice of receipt in the Federal Register
- Fall 2015: Informs applicants of need to revise impact estimates based on new academic studies
- January 2016: Receives additional application
- February 2016: Receives final major application revisions
- November 2016: According to agency officials, 5 proposed authorizations ready for publication in the Federal Register
- January 2017: Suspends 5 applications related to the seismic survey permit applications
- June 2017: Publishes 5 proposed incidental harassment authorizations

NMFS National Marine Fisheries Service

Chairman Gosar, Ranking Member Lowenthal, and Members of the Subcommittee, this concludes my prepared statement. I would be pleased to answer any questions that you may have at this time.

---

## GAO Contact and Staff Acknowledgment

If you or your staff have any questions about this testimony, please contact Jon Ludwigson, Acting Director, Natural Resources and Environment at (303) 572-7309, or [ludwigsonj@gao.gov](mailto:ludwigsonj@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. GAO staff who made key contributions to this testimony are Maggie Childs, Marissa Dondoe, Christine Kehr, Jessica Lewis, Patricia Moye, and Kiki Theodoropoulos.

---

---

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

---

---

## GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

---

## Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's website (<http://www.gao.gov>). Each weekday afternoon, GAO posts on its website newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to <http://www.gao.gov> and select "E-mail Updates."

---

## Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's website, <http://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

---

## Connect with GAO

Connect with GAO on [Facebook](#), [Flickr](#), [LinkedIn](#), [Twitter](#), and [YouTube](#).  
Subscribe to our [RSS Feeds](#) or [E-mail Updates](#). Listen to our [Podcasts](#).  
Visit GAO on the web at [www.gao.gov](http://www.gao.gov) and read [The Watchblog](#).

---

## To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

---

Website: <http://www.gao.gov/fraudnet/fraudnet.htm>  
E-mail: [fraudnet@gao.gov](mailto:fraudnet@gao.gov)  
Automated answering system: (800) 424-5454 or (202) 512-7470

---

## Congressional Relations

Orice Williams Brown, Managing Director, [WilliamsO@gao.gov](mailto:WilliamsO@gao.gov), (202) 512-4400,  
U.S. Government Accountability Office, 441 G Street NW, Room 7125,  
Washington, DC 20548

---

## Public Affairs

Chuck Young, Managing Director, [youngc1@gao.gov](mailto:youngc1@gao.gov), (202) 512-4800  
U.S. Government Accountability Office, 441 G Street NW, Room 7149  
Washington, DC 20548

---

## Strategic Planning and External Liaison

James-Christian Blockwood, Managing Director, [spel@gao.gov](mailto:spel@gao.gov), (202) 512-4707  
U.S. Government Accountability Office, 441 G Street NW, Room 7814,  
Washington, DC 20548