

**DECISION AND FINDINGS BY THE U.S. UNDER SECRETARY OF COMMERCE
FOR OCEANS AND ATMOSPHERE IN THE CONSISTENCY APPEAL OF
WESTERNGECO FROM AN OBJECTION BY THE STATE OF NORTH CAROLINA**

JUNE 15, 2020

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I. INTRODUCTION

WesternGeco has appealed the consistency objection of the State of North Carolina¹ (“the State”) to WesternGeco’s proposed Bureau of Ocean Energy Management (“BOEM”) permit to conduct a geological and geophysical seismic survey for oil and gas exploration in the Mid- and South Atlantic Outer Continental Shelf (“OCS”).² The State found that WesternGeco’s proposed survey was inconsistent with state enforceable policies because of adverse effects to recreational and commercial fisheries. WesternGeco appeals, requesting that the National Oceanic and Atmospheric Administration (“NOAA”) Administrator, as delegated,³ override the State’s objection.

The Coastal Zone Management Act (“CZMA”), 16 U.S.C. §§ 1451, *et seq.*, provides states with federally approved coastal management programs the opportunity to review a proposed project requiring federal licenses or permits if the project would affect any land or water use or natural resource of the state’s coastal zone. A timely objection raised by a state precludes federal agencies from issuing licenses or permits for such projects, unless, on appeal by the applicant, the NOAA Administrator finds that the activity is either consistent with the objectives of the CZMA or necessary in the interest of national security. 16 U.S.C. § 1456(c)(3)(A). If the NOAA Administrator finds that the activity is consistent with the objectives of the CZMA or necessary in the interest of national security, the federal agency may approve the proposed activity.

After considering the Parties’ briefs, past precedent, and the decision record, NOAA overrides the State’s objection. The proposed survey, which would collect information to support informed decision-making on energy development, furthers the national interest as articulated in sections 302 and 303 of the CZMA in a significant and substantial manner that outweighs any adverse coastal effects on fisheries, sea turtles, and marine mammals that are minor, limited, localized and, for the most part, short-term, both separately and cumulatively. Additionally, the State did not describe any reasonable alternatives that are consistent with enforceable policies pursuant to the requirements of the CZMA implementing regulations.

¹ WesternGeco likewise appeals the consistency objection by the State of South Carolina for the same proposed survey. While the appeals are substantially similar, the appeals are reviewed separately. Information on the South Carolina appeal is available at <https://www.regulations.gov/docket?D=NOAA-HQ-2019-0118>.

² The OCS begins at a state’s 3-mile seaward boundary and extends to the 200 mile exclusive economic zone boundary. 43 U.S.C. § 1331(a).

³ Under Department Organizational Order 10-15 Section 3.01.u, NOAA is delegated the authority to perform functions prescribed in the CZMA, 16 U.S.C. §§ 1451, *et seq.*, including administering and deciding consistency appeals.

II. BACKGROUND

A. Statutory Summary

Section 307 of the CZMA requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone, be consistent with the enforceable policies of a state's federally approved coastal management program. 16 U.S.C. § 1456. Federal license or permit activities that are listed in a state's federally approved coastal management program and that would occur within a state's coastal zone are subject to federal consistency review. 16 U.S.C. § 1456(c)(3)(A); 15 C.F.R. § 930.53. If the state agency chooses to review federal license or permit activities conducted outside of the coastal zone with reasonably foreseeable coastal effects, it must generally describe the geographic location of such activities. 15 C.F.R. § 930.53. If an activity is unlisted, or outside of the geographic location description, a state must request approval from NOAA's Office for Coastal Management ("OCM") to review the activity. 15 C.F.R. §§ 930.53, 930.54.

If OCM approves the state's request to review an unlisted activity, the license or permit applicant commences the federal consistency review by sending the state a certification that its activity is consistent with the state's enforceable policies (referred to as a consistency certification), accompanied by any necessary data and information. 15 C.F.R. §§ 930.57, 930.58, 930.60. The state then has six months from OCM's approval, or three months from receipt of the applicant's consistency certification and necessary data and information, whichever is later, to concur, concur with conditions, or object. 15 C.F.R. §§ 930.54, 930.60. If the state issues an objection, the federal agency may not issue the license or permit sought by the applicant unless the Secretary of Commerce finds that the activity is consistent with the objectives of the CZMA or is otherwise necessary in the interest of national security. 16 U.S.C. § 1456(c)(3)(A).

An applicant may obtain Secretarial review of a State agency objection by filing a notice of appeal with the Secretary within 30 days of receipt of a State agency objection. 15 C.F.R. § 930.125.

The CZMA provides an expedited timeline for the Secretary to review an appeal for an "energy project." The CZMA regulations define "energy project" as "projects related to the siting, construction, expansion, or operation of any facility designed to explore, develop, produce, transmit or transport energy or energy resources that are subject to review by a coastal State under subparts D, E, F or I of this part." 15 C.F.R. § 930.123(c). The distinction between energy projects and non-energy projects in the CZMA regulations responds to the Energy Policy Act of

2005, P.L. 109-58, which codified deadlines for consistency appeals and required the filing of a consolidated record for “energy project” appeals.⁴

Under 15 C.F.R. § 930.127(i)(1), the initial record for a consistency appeal of an energy project is the consolidated record maintained by the lead federal permitting agency. 16 U.S.C. § 1466; 15 C.F.R. § 930.127(i)(1). The notice of appeal must be accompanied by the consolidated record. 15 C.F.R. § 930.127(i)(2).

The Administrator of NOAA is delegated the responsibility for deciding consistency appeals filed under the CZMA. NOAA’s Office of the General Counsel assists the Administrator in carrying out this responsibility and has been delegated certain functions associated with processing consistency appeals, including issuing procedural orders and establishing schedules.

B. Factual Summary

1. WesternGeco’s Proposed Survey

WesternGeco is a private company that collects and processes geophysical data to support oil and gas exploration and development. WesternGeco proposes to conduct a marine, two-dimensional (“2D”) seismic survey. 2D surveys acquire subsurface, geological data over a large area to identify areas of potential oil and gas resources for further, more detailed exploration.

WesternGeco would use one vessel to tow an array of 24 airguns. These airgun arrays emit sound waves that penetrate the subsurface and are reflected off the different subsurface rock layers back up to receivers (hydrophones) that are also towed behind the survey vessel. CR 20 at 000793; 83 Fed. Reg. 63,268, 63,269 (Dec. 7, 2018) (also available as CR 26 at 002973).⁵ WesternGeco’s proposed survey would be conducted from approximately 30 kilometers (km) (~19 miles [mi]) offshore of the southeast coast of Maryland south to 80 km (~50 mi) offshore of St. Augustine, Florida. NCR 4 at 008104. Seismic operations are estimated to occur during 208 days over a period of about one year. *Id.*

⁴ See, e.g., Coastal Zone Management Act Federal Consistency Regulations, 71 Fed. Reg. 788-01, at *788-89 (Jan. 5, 2006).

⁵ The prefix “CR” is used for the Common Record portion of the Consolidated Record. The North Carolina portion of the Consolidated Record is identified as “NCR.” The prefix “SR,” which is also used by the Parties, is used to identify the documents in the supplemental record. WesternGeco’s supplemental record documents are labeled A–J and NNN, and the State’s supplemental record documents are labeled K–MMM. The portion of the record supplemented by NOAA is identified as “NOAA SR.” The docket for this appeal, including the final decision record, is available at <http://www.regulations.gov/#!docketDetail;D=NOAA-HQ-2019-0089>.

2. G&G Survey Permit Application and Environmental Reviews

In April 2014, WesternGeco applied for an exploration permit from the Department of the Interior’s BOEM to conduct a seismic survey in federally managed waters off the coasts of the Mid- and South Atlantic (“proposed survey”). CR 20 at 000793. BOEM authorizes exploration permits for geological and geophysical (“G&G”) surveys, including seismic surveys, under the Outer Continental Shelf Lands Act (“OCSLA”). 43 U.S.C. §§ 1331, *et seq.* BOEM has not approved seismic survey permits involving airguns in the Atlantic OCS for several decades, in part, due to public opposition to oil and gas development in the Atlantic OCS. *See, e.g.*, CR 23 at 000877–0878; CR 9 at 000754–0755; CR 31 at 008065, 008072; SR M–R at 008644–8750. Between 1990 and 2008, Congress maintained a moratorium on oil and gas leasing on the Mid- and South Atlantic Planning Areas. CR 23 at 000877. Since the moratorium expired in 2008, BOEM has sought the public’s input as to whether to authorize G&G seismic survey permits in the Mid- and South Atlantic OCS. CR 17 at 000787; CR 18 at 000788–0789.

In 2014, BOEM completed a Programmatic Environmental Impact Statement (“PEIS”) pursuant to the National Environmental Policy Act of 1969 (“NEPA”), 42 U.S.C. §§ 4321, *et seq.*, which requires federal agencies to prepare an Environmental Impact Statement (“EIS”) for major federal actions that significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C); CR 23–25 at 000815–2972. The PEIS assesses the environmental impacts of permitting a broad range of G&G survey activities, including seismic surveys, anticipated within the Mid- and South Atlantic OCS from 2012 through 2020 for oil and gas, renewable energy, and marine minerals. CR 23 at 000822. The PEIS is programmatic in that it does not examine any specific G&G application, but provides the framework for subsequent project-specific environmental documents that would be completed prior to issuance of specific permits. CR 23 at 000822.⁶

⁶ As stated in the 2014 PEIS, BOEM would also prepare a project-specific assessment for Essential Fish Habitat (“EFH”) and conduct EFH consultation if warranted, pursuant to Section 305(b) of the Magnuson Stevens Fishery Conservation and Management Act (“Magnuson-Stevens Act”), 16 U.S.C. § 1855(b). CR 23 at 000884.

On February 17, 2016, WesternGeco submitted a request to NOAA’s National Marine Fisheries Service (“NMFS”) for an incidental harassment authorization under the Marine Mammal Protection Act of 1972 (“MMPA”), 16 U.S.C. §§ 1361, *et seq.*, for its proposed survey. CR 2 at 000011–0207. Under the MMPA, U.S. citizens who engage in a “specified activity (other than commercial fishing) within a specific geographic region” may request authorization for the “taking by harassment of small numbers of marine mammals of a species or population stock” pursuant to that activity for a period of no more than one year, where such harassment will have a “negligible impact” on the species or stocks. 16 U.S.C. § 1371(a)(5)(D)(i)(I). This authorization is referred to as an IHA.

On January 6, 2017, BOEM denied all pending seismic survey applications involving airguns in the Atlantic, including WesternGeco’s application. CR 9 at 000750–0758. BOEM stated it was denying the applications “based on the diminished immediate need for seismic survey information in light of the Secretary’s decision to remove the Atlantic Program Area from the 2017-2022 Five Year Oil and Gas Program and the promise of emerging noise-quieting technologies.” CR 9 at 000752. BOEM also noted that, in light of the decision to stop considering leasing in the Atlantic and the effects analyzed in the PEIS, “the value of obtaining the information from the surveys does not outweigh the risks of obtaining said information.” *Id.*

On April 28, 2017, President Trump signed Executive Order 13795, Implementing an America-First Offshore Energy Strategy, requiring BOEM to give full consideration to revising the National OCS Oil and Gas Leasing Program (“National OCS Program”) and requiring BOEM and NMFS to expedite their consideration of seismic survey applications in the Atlantic OCS under OCSLA and the MMPA. 82 Fed. Reg. 20815, 20817 (Apr. 28, 2017).⁷ On May 1, 2017, the Secretary of the Interior issued Order No. 3350 to implement Executive Order 13795, directing BOEM to expedite consideration of appealed, new, or resubmitted seismic permitting applications for the Atlantic. SR L at 008640–008641; CR 10 at 000759. On May 16, 2017, BOEM notified WesternGeco that BOEM was rescinding the denial of its permit application and the January 5, 2017 memorandum. CR 10 at 000759.

On November 30, 2018, NMFS’s Office of Protected Resources (“OPR”) issued IHAs under the MMPA for five applicants, including WesternGeco, who applied for IHAs for similar seismic survey permits. 83 Fed. Reg. at 63,268. These applicants include WesternGeco, Spectrum Geo, Inc. (“Spectrum”), TGS-NOPEC Geophysical Company (“TGS”), ION GeoVentures/GXT

⁷ In *League of Conservation Voters v. Trump*, the district court vacated Section 5 of Executive Order 13795. 363 F. Supp. 3d 1013, 1031 (D. Alaska 2019), appeal filed May 29, 2019. Section 5 of Executive Order 13795, “Modification of the Withdrawal of Areas of the Outer Continental Shelf from Leasing Disposition,” is not at issue in this decision. Rather, the following sections of Executive Order 13795 are relevant: Section 1, “Findings”; Section 2, “Policy;” and Section 3, “Implementing an America-First Offshore Energy Strategy.”

Technologies (“ION/GXT”)⁸, and CGG Services Inc. (“CGG”). NMFS also prepared an Environmental Assessment (“EA”) and Finding of No Significant Impact (“FONSI”) under NEPA for the issuance of the IHAs, in which NMFS determined that the issuance of the IHAs would not result in significant direct, indirect, or cumulative impacts to the human environment. CR 4 at 000226, 000308; CR 5 at 000324.

On November 28, 2018, following completion of formal Endangered Species Act (“ESA”) Section 7 consultation, NMFS OPR, Interagency Cooperation Division, issued to BOEM and NMFS OPR, Permits and Conservation Division, a final Biological Opinion (“BiOp”) including an Incidental Take Statement (“ITS”) for BOEM’s proposed issuance of the five seismic survey permits under the OCSLA and NMFS’s issuance of associated IHAs under the MMPA. CR 7 at 000346. Section 7(a)(2) of the ESA directs each federal agency to ensure, in consultation with NMFS or the U.S. Fish and Wildlife Service (“FWS”) (the “consulting agency”), that “any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of” any listed species⁹ or destroy or adversely modify designated critical habitat. 16 U.S.C. § 1536(a)(2). If formal consultation is conducted, the consulting agency (in this case, NMFS) must prepare a BiOp stating its expert opinion on whether the proposed action is likely to “jeopardize the continued existence of” any listed species, or destroy or adversely modify critical habitat. *Id.* § 1536(a)(2); 50 C.F.R. § 402.14(h)(3). If NMFS issues a “no jeopardy” opinion, but determines that the action may incidentally take members of a listed species, the agency must include an ITS in the BiOp specifying the amount or extent of anticipated take, reasonable and prudent measures that are necessary or appropriate to minimize the impact of the take, and mandatory terms and conditions to implement the reasonable and prudent measures. 16 U.S.C. § 1536(b)(4). Any incidental take in compliance with the terms and conditions of the ITS is exempt from ESA Section 9’s take prohibition. *Id.* § 1536(o)(2).

As of the date of this decision, BOEM has not approved any of the five pending seismic survey permits that are the subject of the IHAs and BiOp, including WesternGeco’s proposed survey.¹⁰

3. North Carolina’s Consistency Review

On August 20, 2014, the North Carolina Division of Coastal Management (“State”) requested approval from OCM to review nine federal permit applications to BOEM for G&G seismic surveys, including WesternGeco’s application, as unlisted activities. NCR 1 at 008082. On

⁸ As a Notice from NMFS explains, the IHA application incorrectly listed ION as the IHA applicant, when ION’s subsidiary “GX Technology Corporation” should have been listed instead. 83 Fed. Reg. 66,175 (Dec. 3, 2019).

⁹ The ESA provides for the listing of species as endangered or threatened. 16 U.S.C. § 1533.

¹⁰ As of the date of this decision, BOEM has not completed a project specific NEPA analysis, or initiated EFH consultation, for any of the five seismic survey applicants, including WesternGeco.

November 18, 2014, OCM granted the State’s request to review the proposed surveys of seven of the nine applicants, including WesternGeco, after determining that the State met its burden of showing these proposed surveys may have reasonably foreseeable effects on the coastal uses (commercial and recreational fishing) of North Carolina’s coastal zone. NCR 2 at 008093.

In 2015, four of the seismic survey applicants, Spectrum, TGS, ION/GXT, and CGG, submitted Consistency Certifications to the State. The State concurred with each, conditioned on the applicants agreeing to conduct pre-survey meetings with the North Carolina Division of Coastal Management and Division of Marine Fisheries to review and discuss survey transects to avoid, minimize, and mitigate possible impacts or conflicts with resources. SR III–MMM; *see, e.g.*, SR III at 010333 (identifying condition). The State also included recommendations for the applicants to conduct mitigation measures for fisheries habitat, foraging, spawning, and refuge areas and for avoiding potential use conflict with commercial and recreational fishing. SR III–MMM; *see, e.g.*, SR III at 010332 (identifying mitigation measures). In 2017, the State sent requests for supplemental consistency certifications to these four seismic survey applicants, stating that since 2015, the State had become aware of new information and studies published regarding the impacts of G&G activities on marine resources.¹¹ SR M–P at 008644–8671; *see, e.g.*, SR M at 008645.

On March 12, 2019, WesternGeco submitted a Consistency Certification to the State for its proposed seismic survey, wherein WesternGeco committed to comply with the mitigation measure condition and recommendations included in the State’s consistency concurrences for the other four surveys. NCR 3 at 008101. On June 11, 2019, the State objected to WesternGeco’s consistency certification. NCR 4 at 008103.

C. Procedural Background

On September 20, 2019, WesternGeco submitted to NOAA a timely Notice of Appeal which included the consolidated record of BOEM, the lead federal permitting agency for WesternGeco’s proposed permit.¹² Over the next several months, the matter was fully briefed by the Parties. After other Federal agencies were invited to comment, and the Parties’ requests to supplement the consolidated record were resolved, the record closed on March 30, 2020. 85 Fed. Reg. 17,539. On May 29, 2020, NOAA published a Federal Register Notice stating that NOAA

¹¹ For federal license or permit activities that a state previously determined to be consistent with the state’s enforceable policies, but which have not yet begun, applicants shall further coordinate with the state and prepare a supplemental consistency certification if the proposed activity will affect any coastal use or resource substantially different than originally described. 15 C.F.R. § 930.66.

¹² NOAA issued an Order that found that WesternGeco’s proposed survey is an “energy project” within the meaning of the CZMA regulations. August 5, 2019 Order; 15 C.F.R. § 930.123(c).

was extending for 15 days the deadline for issuing the decision in the appeal, consistent with 16 U.S.C. § 1465(c). 85 Fed. Reg. 32,360.

III. STANDARD OF REVIEW

To override the State’s consistency objection, it is necessary to find that the activity is either consistent with the objectives of the CZMA or necessary in the interest of national security.¹³ 16 U.S.C. § 1456(c)(3)(A). An activity is consistent with the objectives of the CZMA if it furthers the national interest as articulated in the CZMA in a significant or substantial manner (referred to herein as “Element 1”), if the national interest furthered by the activity outweighs the activity’s adverse coastal effects, considered separately or cumulatively (“Element 2”), and if there is no reasonable alternative available that would permit the activity to be conducted in a manner consistent with the enforceable policies of the management program (“Element 3”). 15 C.F.R. § 930.121.

The review on the merits is *de novo*¹⁴—on appeal NOAA reviews the proposed project based on national interest and coastal effects considerations specified in the CZMA and NOAA’s regulations, and does not review the correctness of the state’s consistency review. *Chevron 1990*

¹³ A proposed activity is necessary in the interest of national security if “a national defense or other national security interest would be significantly impaired were the activity not permitted to go forward as proposed.” 15 C.F.R. § 930.122. Neither WesternGeco nor the State have raised any arguments regarding the national security prong. Comments were solicited from the Departments of Defense, Homeland Security, Justice, State, and Energy, as well as from the Homeland Security Council, National Security Council, and Coast Guard. None of these federal agencies raised any national defense or other national security concerns with respect to the proposed survey. Indeed, the Department of Defense stated that, although it had made no determinations as to whether the proposed survey would have an adverse impact on military operations or readiness or whether it would result in an unacceptable risk to national security of the United States, “DoD has no reason to conclude that WesternGeco’s proposed activity is necessary in the interest of national security, within the meaning of 15 C.F.R. § 930.122.” NOAA SR 17 at 010395. For these reasons, WesternGeco has not demonstrated that the proposed seismic survey is necessary in the interests of national security, and this decision does not further discuss the national security issue.

¹⁴ “De novo” means new, Black’s Law Dictionary (11th ed. 2019), which means that the Administrator assesses the proposed project for the first time, rather than reviewing a state’s determination with any deference, such as would be the case under an arbitrary and capricious standard of review under the Administrative Procedure Act (“APA”), 5 U.S.C. § 706(a)(2)(A).

at 5–7.¹⁵ The Appellant bears the burden of proof on the preponderance of the evidence. *Id.* at 5; *Mobil 1993* at 11.¹⁶

IV. THRESHOLD ISSUES

Procedural challenges to a state’s federal consistency review are reviewed as a threshold matter (e.g., prior to reaching the merits of the appellant’s arguments). NOAA shall override a state’s objection if the appellant demonstrates that the state’s consistency objection is in violation of the federal consistency provisions of the CZMA and its implementing regulations. 15 C.F.R. § 930.129(b). The threshold review does not provide an avenue for an appellant to challenge the merits, or substance, of a state’s objection because NOAA presumes the substantive validity of a state’s objection on appeal. *Chevron 1990* at 7.

WesternGeco argues that the State’s consistency objection fails to comply with section 930.63(b) of the CZMA regulations, which requires the state “describe how the proposed activity is inconsistent with specific enforceable policies of the management program.”¹⁷ First, WesternGeco argues that the State’s objections do not provide a “nexus” between its concerns and inconsistencies with specific enforceable policies. WesternGeco Principal Brief (“WG Br.”) at 5–6. Second, WesternGeco asserts that the State’s objections do not describe how any new information justifies changing its position from when the state issued conditional consistency concurrences for substantially similar surveys in 2015. WG Br. at 5–7. WesternGeco contends that the State failed to explain how allegedly new information created inconsistencies with enforceable policies. *Id.* at 7. Instead, WesternGeco contends that the change reflects a political change in the State government leadership rather than inconsistency with the State’s enforceable policies. *Id.* at 7; WG Reply Br. at 1.

WesternGeco has not demonstrated that the State failed to meet the CZMA procedural requirement in 15 C.F.R. § 930.63(b). Accordingly, and as described below, a threshold override of the State’s objections is not warranted.

Section 930.63(b) requires that a state describe how the proposed project is inconsistent with specific, enforceable elements of the coastal management program. 15 C.F.R. § 930.63(b). This provision requires nothing more than is found in its plain meaning—the state’s objection must

¹⁵ *Decision and Findings by the U.S. Secretary of Commerce in the Consistency Appeal of Chevron U.S.A. Inc. from an Objection by the California Coastal Commission*, October 29, 1990 (“*Chevron 1990*”). NOAA’s CZMA appeal decisions cited here are available at <https://coast.noaa.gov/czm/consistency/appeals/fcappealdecisions/> (last visited Apr. 30, 2020).

¹⁶ *Decision and Findings in the Consistency Appeal of Mobil Exploration & Producing U.S. Inc. from an Objection by the State of Florida*, Jan. 7, 1993 (“*Mobil 1993*”).

¹⁷ 15 C.F.R. § 930.63(b).

simply identify specific enforceable policies and must describe how the proposed project is inconsistent with those policies. *Colon* at 4;¹⁸ *Asociación De Propietarios De Los Indios* at 6.¹⁹ The appellant must demonstrate that the state has outright failed to meet this minimal procedural bar, and disagreements with the substance of this description are irrelevant to the analysis.

The State, in its objection, identified specific enforceable policies and described how the proposed project is inconsistent with those policies. First, the State identified enforceable policies from its approved management program, pertaining to the protection and conservation of estuarine and coastal waters and resources, NCR 4 at 008105–8107; and to ensure that development of energy facilities and energy resources shall avoid significant adverse impact on coastal uses or resources, *id.* at 008106, 008110. Second, the State described adverse impacts to commercial and recreational fisheries and their habitats from seismic activities, relied on a separate analysis prepared by North Carolina’s Division of Marine Fisheries, *id.* at 008113, and provided citations to supporting scientific literature. *Id.* at 008109, 008122. Third, WesternGeco has not demonstrated why further explanation is needed to make the connection between the State’s identified enforceable policies and alleged adverse impacts. Indeed, this argument appears to be an invitation to re-examine and second-guess the analysis underlying the State’s objection, which, as explained above, is simply not germane to this proceeding. The State satisfies the minimum requirements of 15 C.F.R. § 930.63(b).

Second, the State has explained why it objected to WesternGeco’s proposed survey, but concurred with similar surveys in 2015, and the State’s explanation is sufficient for purposes of this threshold procedural review. The State explained that new information had come to light since it concurred with similar proposed surveys in 2015. NCR 4 at 008113–8114. The State then identified several published studies that post-date 2015, and described how these studies provide a basis for the State’s objection. *Id.* at 008101-8109, 008114, and 008122. WesternGeco takes issue with whether these studies contain any “new” scientific information, WG Br. at 7, 18, or provide any “actual evidence” of adverse effects. WG Br. at 16. But WesternGeco’s arguments amount to disagreements with the substance of the State’s finding of adverse effects, rather than allegations of a procedural deficiency. *Chevron 1993* at 4 (Rejecting threshold argument that the state’s consistency objection was improper because the State found similar surveys consistent, because the Secretary does not review the merits of the State’s objection).²⁰

¹⁸ *Decision and Findings in the Consistency Appeal of Carlos A. Cruz Colon From an Objection By the Puerto Rico Planning Board*, Sept. 27, 1993 (“*Colon 1993*”).

¹⁹ *Decision and Findings in the Consistency Appeal of the Asociación De Propietarios De Los Indios, Inc. From an Objection By the Puerto Rico Planning Board*, Feb. 19, 1992 (“*Asociación De Propietarios De Los Indios 1992*”).

²⁰ *Decision and Findings in the Consistency Appeal of Chevron U.S.A. Inc. From an Objection By the State of Florida*, Jan. 8, 1993 (“*Chevron 1993*”).

In sum, WesternGeco has failed to identify a threshold procedural violation warranting a procedural override of the State’s consistency objection.

V. THE PROJECT IS CONSISTENT WITH THE OBJECTIVES OR PURPOSES OF THE CZMA

A. Element 1: The Proposed Survey Furthers the National Interest, as Articulated in Sections 302 or 303 of the CZMA, in a Significant or Substantial Manner.

To satisfy Element 1, WesternGeco must demonstrate that its proposed survey furthers the national interest, as articulated in Sections 302 or 303 of the CZMA, in a significant or substantial manner. 15 C.F.R. § 930.121(a). WesternGeco invokes the following national interests set forth in the CZMA Sections 302 and 303:

- “There is a national interest in the effective management, beneficial use, protection, and development of the coastal zone.” 16 U.S.C. § 1451(a). (CZMA § 302(a)).
- “The national objective of attaining a greater degree of energy self-sufficiency would be advanced by providing Federal financial assistance to meet state and local needs resulting from new or expanded energy activity in or affecting the coastal zone.” 16 U.S.C. § 1451(j). (CZMA § 302(j)).
- “[P]riority consideration being given to coastal-dependent uses and orderly processes for siting major facilities related to . . . energy” 16 U.S.C. § 1452(2)(D). (CZMA § 303(2)(D)).

The State contends that not all of the sections of the CZMA relied upon by WesternGeco in fact state a national interest, and moreover, that WesternGeco has not demonstrated that any speculative benefits of the proposed survey would further a CZMA national interest in a significant or substantial manner. North Carolina Principal Brief (“NC Br.”) at 12–22.

The CZMA provides, “[t]here is a national interest in the effective management, beneficial use, protection, and development of the coastal zone.” 16 U.S.C. § 1451(a) (CZMA Sec. 302(a)). It further establishes a national policy “to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation’s coastal zone for this and succeeding generations.” 16 U.S.C. § 1451(a) (CZMA Sec. 303(1)). Stated broadly, Congress has defined the national interest in coastal zone management to include both protection and development of coastal resources.

*Broadwater*²¹ at 7. Past consistency appeal decisions have held that oil and gas exploration and development on the OCS furthers the national interest sufficiently for CZMA purposes.²²

After carefully considering the Parties' arguments, past precedent, and the findings specific to the proposed survey as set forth below, the preponderance of the evidence in the record establishes that the proposed survey – which would result in data collection that would help inform policy decisions regarding oil and gas exploration and development – would, as a whole, further the national interest set forth in Sections 302 and 303 of the CZMA in a significant and substantial manner.

1. The Proposed Survey Furthers the National Interest in Developing the Resources of the Nation's Coastal Zone.

WesternGeco argues that its proposed survey “balances the competing policies of the national interest” in the protection and development of the coastal zone by providing data to assess resource potential on the Atlantic OCS with minimal physical impact. WG Br. at 10.

Development, as articulated in the national policies of the CZMA, has been understood in past consistency appeal decisions to encompass a wide variety of activities, including oil and gas exploration, development, and production activities. *Broadwater* at 9; *see also AES Sparrows Point*²³ at 12–13 (noting that oil and gas exploration has previously been determined to develop the resources of the coastal zone), *Mobil 1993* at 12 (“Previous consistency appeal decisions have also noted that OCS exploration, development and production activities and their effects on land and water uses of the coastal zone are included within the objectives and purposes of the CZMA.”), *Amoco* at 14 (“In all previous appeals involving oil and gas exploration or development, there has been the finding that OCS exploration, development and production activities and their effects on land and water uses of the coastal zone are encompassed by the objectives and purposes of the CZMA.”).

²¹ *Decision and Findings in the Consistency Appeal of Broadwater Energy LLC and Broadwater Pipeline LLC From An Objection By State of New York*, Apr. 13, 2009 (“*Broadwater*”).

²² *See, e.g., Decision and Findings in the Consistency Appeal of Mobil Exploration & Producing U.S. Inc. from an Objection by the State of Florida*, June 20, 1995 (“*Mobil 1995*”); *Decision and Findings in the Consistency Appeal of Mobil Exploration & Producing U.S. Inc. from an Objection by the State of Florida*, January 7, 1993 (“*Mobil 1993*”); *Decision and Findings in the Consistency Appeal of Amoco Production Company from an Objection by the Division of Governmental Coordination of the State of Alaska*, July 20, 1990 (“*Amoco*”); *Decision and Findings in the Consistency Appeal of Texaco, Inc. from an Objection by the California Coastal Commission*, May 19, 1989 (“*Texaco 1989*”).

²³ *Decision and Findings by the U.S. Secretary of Commerce in the Consistency Appeal of AES Sparrows Point LNG, LLC and Mid-Atlantic Express, L.L.C. from an Objection by the State of Maryland*, June 26, 2008 (“*AES Sparrows Point*”).

The record demonstrates that WesternGeco’s proposed survey would further the national interest in developing the resources of the nation’s coastal zone by acquiring and providing subsurface, geological and geophysical data over a large area to identify areas of potential oil and gas resources and to inform potential policy decisions regarding further exploration and development.

First, the purpose of the proposed survey is to identify areas of potential oil and gas resources, which would contribute to BOEM’s statutory mission under the OCSLA “to insure that the extent of oil and natural gas resources of the Outer Continental Shelf is assessed at the earliest practicable time.” 43 U.S.C. § 1802(9). BOEM’s PEIS evaluating proposed Atlantic G&G seismic survey permitting states that the purpose of the proposed surveys is to gather “data about the ocean bottom and subsurface. This data, collected through G&G surveys, would provide information about the location and extent of oil and gas reserves, bottom conditions for oil and gas or renewable energy installations, and marine minerals off the Atlantic coast of the U.S.” CR 23 at 000877–0878. BOEM further states, “[c]ertain G&G surveys are required . . . for operators to determine sea bottom conditions; the physical extent or economic valuation of oil, gas, or minerals on their lease; efficient production from their leases; or completion of decommissioning activities.” *Id.* at 000877.

This survey information is also needed by BOEM to prepare and maintain the National OCS Program pursuant to the requirements of the OCSLA. Every five years the Secretary of the Interior must create a schedule of lease sales that “will best meet national energy needs.” 43 U.S.C. 1344(a). In developing that program, the Secretary must consider information concerning the geological characteristics and the oil and gas bearing potential of the areas of the OCS in making his leasing decisions. Having this information is therefore important before BOEM makes a decision to lease at even the earliest stages of leasing program development.

The State disagrees. The State argues that none of WesternGeco’s activities would actually occur in the coastal zone, and therefore the proposed survey does not constitute development of the coastal zone and that only the negative effects of the proposed survey would be felt in the coastal zone, NC Br. at 13; that WesternGeco’s assertion that its proposed survey has a lesser physical impact than other options for oil and gas exploration does not suffice to demonstrate that the proposed survey furthers the national interest of protecting the coastal zone, *id.* at 14; and that that in reaching a determination on Element 1, it is necessary to take into account all of the relevant national interests identified in the CZMA, including protection of the coastal zone, to determine whether the proposed survey would further the national interests and it is necessary to consider the potential adverse effects of the proposed survey on the resources of the coastal zone, *id.* at 13, 18.

In light of past precedent and the record information on the purpose of the proposed survey, the State's arguments are not persuasive. First, the purposes and objectives of the CZMA are broad, and they are not confined to activities occurring only in the coastal zone. 16 U.S.C. § 1456(c)(3)(A) (establishing consistency review requirements for “any applicant for a required Federal license or permit to conduct an activity, *inside or outside of the coastal zone*, affecting any land or water use or natural resource of the coastal zone”) (emphasis added); *Amoco* at 15. Moreover, the context of the CZMA contemplates federal consistency appeals of OCS activities, including exploration, development, and production. 16 U.S.C. § 1456(c)(3)(B) (establishing a consistency review and appeal process for submission of “any plan for the exploration or development of, or production from, any area which has been leased under the Outer Continental Shelf Lands Act (43 U.S.C. § 1331, *et seq.*) and regulations....”). Given that the CZMA expressly authorizes consistency objections, and federal consistency appeals, of activities outside the coastal zone and of OCS plans, it would be contrary to the statutory language to find that only activities in the coastal zone could further the national interest in coastal resource development. As such, NOAA declines to make this finding. *See Amoco* at 14–15 (rejecting the argument that only oil and gas exploration or development in the coastal zone could further the purposes or objectives of the CZMA).

Second, past precedent, including consistency appeal decisions applying the post-2006 amended CZMA regulations, establish that adverse coastal effects of the proposed activity are appropriately considered in Element 2, not Element 1. *See, e.g., Weaver's Cove 2008*²⁴ at 12 (determining that safety and navigational concerns with the proposed activity were properly addressed in the analysis of Element 2 but did not diminish the national interest of the proposed activity under Element 1). And while the full context of the policies and findings set forth in CZMA sections 302 and 303 are considered in reaching a determination on Element 1, there is no requirement that a proposed project may only further the national interest in development of coastal resources if the proposed project would be performed in a manner protective of the environment. *See Mobil 1995* at 12 (rejecting the argument that Element 1 is satisfied only by examining whether an oil and gas activity is performed in a manner protective of the environment and stating that in prior appeal decisions, “the Secretary has consistently determined that an assessment of the impacts of such proposed activities is appropriately considered under element two.”) (citations and quotation marks omitted); *see also AES Sparrows Point* at 12–15 (determining that the proposed project furthered the national interest in developing the resources of the coastal zone, without considering whether the proposed project would also protect the resources of the coastal zone). To find otherwise would obviate the

²⁴ *Decision and Findings by the U.S. Secretary of Commerce in the Consolidated Consistency Appeals of Weaver's Cove Energy, L.L.C. and Mill River Pipeline, L.L.C. from Objections by the Commonwealth of Massachusetts*, June 26, 2008 (“*Weaver's Cove 2008*”).

balancing test established under the CZMA regulations that weighs the national interest and the coastal effects considerations.

As such, the State's arguments are not persuasive. Moreover, for the reasons explained above, WesternGeco's argument is more compelling that recent and accurate information on the resource potential of the Atlantic OCS is important not only to support BOEM's planning process, CR 23 at 000878, but "without it, time and energy is spent on policy debates without the benefit of scientific data to reveal the resource potential." WG Br. at 13. Existing data is lacking to support decision-making. As BOEM explains, the existing data, last collected in the 1970's and 1980's, "have been eclipsed by newer instrumentation, technology, and data processing that make seismic data of that time period inferior for making business decisions." CR 23 at 000878. New up-to-date information is needed by industry and BOEM to inform decision-making. Because exploratory surveys are an important component of the OCS oil and gas exploration and development process, and because WesternGeco's proposed survey would provide data to further informed decision-making, the proposed survey would further the development of the resources of the nation's coastal zone within the meaning of the CZMA.

For these reasons, the proposed survey furthers the national interest in developing the resources of the coastal zone.

2. The Proposed Survey Furthers the National Interest in Attaining a Greater Degree of Energy Self-Sufficiency.

WesternGeco argues that its proposed survey would further the national interest in attaining a greater degree of energy self-sufficiency by gathering scientific information necessary to locate energy resources that, if developed, could help increase domestic resources on a national scale and obviate unnecessary exploration activities where resources are absent. WG Br. at 9, 13.

WesternGeco has demonstrated that its proposed survey, the purpose of which would be to ascertain information regarding available oil and gas reserves in the Atlantic OCS, would further the national interest in energy self-sufficiency. *See Texaco 1989* at 30–31 (the national interest in attaining energy self-sufficiency is furthered by "ascertaining information concerning the oil and gas reserves actually available for production."). As stated in BOEM's PEIS:

Certain G&G surveys are required before operators may lease Federal land, and after leasing for operators to determine sea bottom conditions; the physical extent or economic valuation of oil, gas, or minerals on their lease; efficient production from their leases; or completion of decommissioning activities. Orderly development of the Mid- and South Atlantic may help reduce the Nation's need for oil imports and lessen our dependence on foreign oil.

CR 23 at 000877–0878.

The link between the information-gathering purpose of G&G seismic survey exploration in the Atlantic and energy self-sufficiency is further identified in Executive Order 13795, Implementing an America-First Offshore Energy Strategy. 82 Fed. Reg. 20,815. Executive Order 13795 finds that “[i]ncreased domestic energy production on Federal lands and waters strengthens the Nation’s security and reduces reliance on imported energy.” Executive Order 13795 Sec. 1. It also establishes the policy of the United States “to encourage energy exploration and production, including on the Outer Continental Shelf, in order to maintain the Nation’s position as a global energy leader and foster energy security and resilience for the benefit of the American people, while ensuring that any such activity is safe and environmentally responsible.” EO 13795 Sec. 2.

The State argues that WesternGeco has not demonstrated that its proposed survey would further energy self-sufficiency because the United States has already, or soon will, achieve energy self-sufficiency. NC Br. at 14. The State relies on models and projections of the U.S. Energy Information Administration (EIA) to support its assertion that the United States will soon become a net energy exporter and, therefore, the national interest in energy self-sufficiency has already been achieved. *Id.* at 14–16, relying on SR S²⁵ SR V; ²⁶ also relying on SR W.²⁷

In light of the CZMA and the record information, the State’s argument is without merit. The EIA emphasizes the evolving nature of its projections for domestic oil production, the high level of uncertainty involved in estimating technically recoverable resource (“TRR”), and the EIA’s reliance on updated data to produce its projections. SR V at 008835–8836. The EIA states in its 2019 Oil & Gas Supply Module, “The outlook for domestic crude oil production is highly dependent on the production profile of individual wells over time, the cost of drilling and operating those wells, and the revenues generated by those wells.” *Id.* at 008835. It goes on to explain:

A common measure of the long-term viability of U.S. domestic crude oil and natural gas as an energy source is the remaining technically recoverable resource, which consists of proved reserves and unproved resources. Estimates of TRR are highly uncertain, particularly in emerging plays where relatively few wells have been drilled. Early estimates tend to vary and shift significantly over time as new geological information is gained through additional drilling, as long-term productivity is clarified for existing wells, and as

²⁵ EIA Annual Energy Outlook 2019 (Jan. 24, 2019).

²⁶ EIA Oil & Gas Supply Module (Jan. 2019).

²⁷ BOEM 2019–2024 National Outer Continental Shelf Oil & Gas Leasing Draft Proposed Program; 83 Fed. Reg. 829 (Jan. 8, 2018).

the productivity of new wells increases with technology improvements and better management practices. TRR estimates used by EIA for each Annual Energy Outlook (AEO) are based on the latest available well production data and on information from other federal and state governmental agencies, industry, and academia.

Id. at 008836.

Moreover, BOEM's analysis in its 2019–2024 National Outer Continental Shelf Oil & Gas Leasing Draft Proposed Program articulates the need for continued OCS oil and gas production to continue improving the balance of trade. SR W at 008896 (“The country’s transition away from being a net importer of energy will continue to improve the balance of trade. OCS production will remain an important contributor to domestic U.S. oil supplies, helping to further improve the trade balance.”). BOEM further states, “OCS production continues to provide a vital source of domestic production that can reduce the Nation’s vulnerability to a supply disruption.” *Id.*

What is more, in EIA’s Reference Case (EIA’s “best assessment of how U.S. and world energy markets will operate through 2050,” SR S at 008753), the projection of the United States maintaining the status of net energy exporter after 2020 is premised on the assumption of large increases in crude oil and natural gas production and continued growth in exports. *Id.* at 008756–08757. And in the Reference Case, “[n]ear the end of the projection period, the United States returns to being a net importer of petroleum and other liquids . . . as a result of increasing domestic gasoline consumption and falling domestic crude oil production in those years.” *Id.* at 008757.

In light of this material, the preponderance of the record evidence does not support a conclusion that energy self-sufficiency has been achieved such that continued oil and gas exploration and development is unnecessary. Rather, the energy projections emphasize the need for both continued data on oil and gas resources and for continued production. The record also clarifies that a projection of net energy export status for a projection period does not necessarily mean energy self-sufficiency has been permanently achieved; on the contrary, the EIA projection contemplated that the United States would again return to being a net importer due in part to falling domestic crude oil production. For these reasons, the record evidence supports the conclusion that oil and gas exploration furthers the CZMA national interest in energy self-sufficiency even in the immediate context where the United States is a net exporter.

3. The Proposed Survey Furthers the National Interest in Priority Consideration Being Given to Coastal-Dependent Uses and Orderly Processes for Siting Major Facilities Related to Energy.

WesternGeco argues that the CZMA establishes a national policy of priority consideration for orderly processes for siting major energy facilities, and that the collection of seismic data is one of the first steps in the siting process. WG Br. at 10. The State argues that the national interest articulated in the CZMA is for creating a state planning process, not for prioritizing development, and that WesternGeco’s proposed survey is not a major energy facility that would receive priority consideration. NC Br. at 17–18.

Based on past precedent and the CZMA regulatory history, the CZMA sets forth a national interest in the siting of major energy projects. *AES Sparrows Point* at 12 (“[T]he national interest set forth in the CZMA to give ‘priority consideration’ to ‘orderly processes’ for the siting of major coastal-dependent energy facilities has been interpreted in past decisions to encompass the actual siting of major energy projects rather than mere expedited processing.”). The interpretive guidance in the preamble to the 2000 CZMA regulatory amendments states, “An example of an activity that significantly or substantially furthers the national interest is the siting of energy facilities or OCS oil and gas development.” 65 Fed. Reg. 77124, 77150 (Dec. 8, 2000).

WesternGeco’s proposed survey would further the national interest in siting major energy facilities. As BOEM has stated, “G&G data and information are required for business decisions in furtherance of prospecting for OCS oil and gas in an orderly manner, assessing sites for renewable energy facilities, or using marine mineral resources in the Mid- and South Atlantic Planning Areas.” CR 23 at 000878.

Because the collection of G&G data is an important early step in the process of making business decisions in furtherance of OCS oil and gas prospecting—and, therefore, an important early step in the process of siting potential major energy facilities on the Atlantic OCS—the proposed

survey furthers the national interest in priority consideration being given to coastal-dependent uses and orderly processes for siting major facilities related to energy.²⁸

4. The Proposed Survey Furthers Certain National Policies in a Significant and Substantial Manner.

Not only must the Project further the national interest as articulated in Sections 302 or 303 of the CZMA, it must do so in a significant or substantial manner. 15 C.F.R. § 930.121(a). In the preamble to the Department’s 2000 CZMA regulatory amendments, the term “significant” is interpreted to encompass projects that provide a valuable or important contribution to a national interest, without necessarily being large in scale or having a large impact on the national economy. 65 Fed. Reg. at 77,150. The term “substantial” is interpreted to encompass projects that contribute to a CZMA objective to a degree that has a value or impact on a national scale. *Id.* Together, these terms encompass both the import and scale of a proposed activity.²⁹ *Broadwater* at 10–11; *AES Sparrows Point* at 14; *Weaver’s Cove 2008* at 10–11.

The regulations provide examples of activities that significantly or substantially further the national interest, such as the siting of energy facilities or oil and gas development on the OCS. 65 Fed. Reg. at 77,150. Such activities have economic implications beyond the immediate locality where they are located. Other activities, such as a marina, may contribute to the economy of the coastal municipality or state, but may not provide significant or substantial economic contributions to the national interest as defined by the objectives in Sections 302 or 303 of the CZMA. *Broadwater* at 11; *AES Sparrows Point* at 14; *Weaver’s Cove 2008* at 10–11.³⁰ Whether

²⁸ WesternGeco also invokes various other provisions of CZMA sections 302 and 303: 16 U.S.C. § 1451(c) (CZMA § 302(c)) (establishing a finding of Congress regarding the increasing and competing demands on the nation’s coastal zone); 16 U.S.C. § 1451(f) (CZMA § 302(f)) (establishing a finding of Congress regarding new and expanding demands for energy and other resources). WesternGeco argues that its proposed survey would balance the competing policies of the national interest in both development and conservation of the coastal zone, and that it would contribute to environmental conservation in a significant way because it would be a more targeted and less invasive option for identifying potential oil and gas reservoirs. WG Br. at 9–10, 12–13. The State rebuts that WesternGeco has not shown its proposed survey would further the national interest in protecting the coastal zone and that WesternGeco improperly relied on CZMA §§ 302(c) and 302(f). Ultimately, WesternGeco has not met its burden of demonstrating based on record evidence that its proposed survey would further the national interest of protecting and preserving the resources of the coastal zone. WesternGeco does not identify record evidence regarding the extent of exploratory drilling that would occur in the absence of the proposed seismic survey or the impacts of exploratory drilling compared with seismic surveys; moreover, the potential adverse impacts of exploratory drilling are not an issue in this appeal.

²⁹ The definitions articulated in the preamble apply to the terms “significant” and “substantial” only for purposes of the Element 1 discussion.

³⁰ In the preamble to the 2006 CZMA regulatory amendments, NOAA stated, “at this time, it cannot foresee a case where OCS oil and gas activities do not further the national interest in a significant or substantial manner. NOAA cannot, however, say that this will always be the case or will be the case in any particular situation.” 71 Fed. Reg. at 803.

a project significantly or substantially furthers the national interest in the objectives of Sections 302 or 303 will depend on the evidence in the decision record. 65 Fed. Reg. at 77,150.

Here, the proposed survey is both significant and substantial in acquiring information about the resource potential of the Atlantic OCS to contribute to development of the resources of the coastal zone and attain a greater degree of energy self-sufficiency. The recent and accurate information on the resource potential of the Atlantic OCS is important not only to support BOEM's energy planning, but also to inform significant policy debates on development in the Atlantic OCS.

The proposed survey is significant because gathering this information would provide an important contribution to the national interest in developing the resources of the coastal zone and in attaining a greater degree of energy self-sufficiency. BOEM has articulated that "Oil and gas resource assessments are critical components of energy policy analysis and provide important information about the relative potential of U.S. offshore areas as sources of oil and natural gas." SR W at 008929. The proposed G&G data would be required for informed business decisions regarding exploratory drilling for oil and gas on the Atlantic OCS in an orderly manner. CR 23 at 000877–0878.

The proposed survey is substantial given its anticipated contribution of up-to-date data and information on potential resources in the Atlantic OCS, an area that was most recently surveyed decades ago. In its PEIS, BOEM articulated the existing data gaps and the need for proposed G&G survey permitting in the Atlantic:

The G&G surveys acquired during the period when Atlantic oil and gas leasing took place in the 1970's and 1980's have been eclipsed by newer instrumentation, technology, and data processing that make seismic data of that time period inferior for making business decisions. More up-to-date data would reduce risk involved with all leasing, drilling, and development on these OCS lands and help to evaluate the environmental impacts of future potential leasing, drilling, and development. The need for the proposed action is to use the information obtained by the G&G surveys to make informed business decisions regarding oil and gas reserves, engineering decisions regarding the construction of renewable energy projects, and informed estimates regarding the composition and volume of marine mineral resources. This information would also be used to ensure the proper use and conservation of OCS energy resources and the receipt of fair market value for the leasing of public lands.

Id. at 000878. The value and import on a national scale of the proposed survey and the anticipated data it would generate are further supported by the policy statements in Executive Order 13795, which identified a national policy of developing and implementing streamlined

permitting for privately funded seismic data research and collection in the Mid- and South Atlantic.³¹

The State argues that the proposed survey would not further the national interest in a significant or substantial manner. For the reasons detailed below, the State’s arguments on this point lack merit.

The State argues that WesternGeco fails to show data from its proposed survey would inform policy debates, that data is not a goal in and of itself, that WesternGeco never indicated it would make its data publicly available, that the process of oil and gas leasing is lengthy and uncertain, and that WesternGeco could be one of many companies that generate data for the same region. NC Br. at 20–21. However, as discussed above, the preponderance of the record evidence sufficiently demonstrates that resource assessment data from seismic surveys informs both United States energy policy analysis and industry development. *See, e.g.*, CR 23 at 000976 (“Data from these surveys can be used to assess potential hydrocarbon structural and stratigraphic traps and reservoirs and additionally help to optimally locate exploration and development wells, thus maximizing extraction and production from a reservoir.”); SR W at 008929 (stating that oil and gas resource assessments “provide the Secretary with information on

³¹ By contrast, the record is insufficient to conclude that the proposed survey furthers, in a significant and substantial manner, the national interest in priority consideration for orderly processes for siting major energy facilities because WesternGeco has not demonstrated that its proposed survey involves the siting of a major, coastal-dependent energy facility. Prior appeals evaluating this factor have specifically considered whether an appellant is able to demonstrate its project is related to the siting of an actual, particular facility. *See, e.g., Broadwater* at 7–9 (determining that the proposed liquefied natural gas project would constitute a major coastal-dependent energy facility, considering the capacity and coastal-dependent nature of the proposed structures); *AES Sparrows Point* at 12 (“[T]he national interest set forth in the CZMA to give ‘priority consideration’ to ‘orderly processes’ for the siting of major coastal-dependent energy facilities has been interpreted in past decisions to encompass the actual siting of major energy projects rather than mere expedited processing.”); *Weaver’s Cove* (2008) at 8 (determining that “[t]he Project would constitute a major coastal-dependent energy facility that would be sited in an area where similar industrial activities currently exist”); *Decision and Findings in the Consistency Appeal of Islander East Pipeline Co., L.L.C. From an Objection By the State of Connecticut*, May 5, 2004, at 4–9 (considering the siting of a natural gas pipeline and determining that the proposed project involved the location of a coastal dependent major energy facility in the coastal zone). Although the proposed survey could provide valuable data informing the future siting of oil and gas facilities, WesternGeco admits that its proposed survey could reveal that resources are not present in the survey area such that further time and investment are not warranted, WG Br. at 13, a situation in which, presumably, no siting of major energy facilities would occur. This conclusion is consistent with the finding in the August 5, 2019 Order that the proposed survey is an “energy project” within the meaning of the CZMA regulations. That Order determined that the vessel and associated equipment for the proposed survey fit within the CZMA’s definition of “energy facilities” (although the Order did not opine on whether the vessel and equipment was a major energy facility or on energy facilities in the context of the national interest determination) and that it was foreseeable that the proposed survey could lead to the siting of an energy facility. Order at 3-4. This determination is consistent with the findings here that the proposed survey furthers the national interest in priority consideration for siting major energy facilities but that there is insufficient information to conclude that the proposed survey provides a significant and substantial contribution to this factor, because the proposed survey is not tied to the siting of a particular major energy facility.

the geological characteristics of OCS regions, as required by Section 18(a)(2)(A) of the OCS Lands Act.”).

With respect to the State’s assertion that there is no indication WesternGeco would share its data, BOEM’s implementing regulations for G&G explorations of the OCS contemplate submission to the BOEM Regional Director of the analyzed, processed, and interpreted geologic and geophysical data and information for inspection and/or permanent retention by BOEM. 30 C.F.R. §§ 551.11–551.15. This information is useful to inform BOEM leasing decisions, for the reasons explained above. Moreover, while not available without cost to the public, the information may be acquired for commercial use and purchased by companies interested in investing in U.S. energy development. *See, e.g.*, CR 23 at 000977.

Nor does the State prevail on its argument that because WesternGeco is one of five seismic survey permit applicants that could collect data in the Atlantic OCS, there is a lesser interest in WesternGeco’s proposed survey. That argument would seem to inaccurately assume duplication of effort and data should all five surveys be permitted. But the path and tracks for the proposed surveys are not the same, and as BOEM explained, “Each geophysical contractor has a proprietary method of data acquisition that may vary depending on their seismic target and data processing capabilities. This makes each contractor’s data set unique and does not lend itself to combining with other surveys.” CR 23 at 000977.

Finally, the State’s arguments that the area to be surveyed is currently off-limits to leasing and that there is no national interest in optimizing the business of OCS development are unavailing. The BOEM Acting Director, Walter Cruickshank, stated in a declaration prepared for litigation challenging NMFS’s MMPA and ESA authorizations,³² “BOEM regulations provide that it may authorize seismic survey activity in the OCS even in areas of the OCS that are not open to oil and gas leasing, and BOEM has done so in the past.” And as previously explained, there is a national interest in developing the resources of the coastal zone; and “in the context of the CZMA, the term ‘develop’ has been defined to mean commercial improvement.” *State of Connecticut v. U.S. Dep’t of Commerce*, No. 3:04-cv-1271-SRU, 2007 WL 2349894, at *6 (D. Conn. Aug. 15, 2007). As such, the State’s arguments do not rebut this finding that the proposed survey would further the national interest in developing the resources of the coastal zone in a significant and substantial manner.

In light of past precedent and the foregoing record, the proposed survey would further the national interest in developing the resources of the coastal zone, in attaining a greater degree of energy self-sufficiency, and in priority consideration being given to coastal-dependent uses and orderly processes for siting major facilities related to energy. The record also establishes that the

³² SR EEE, Decl. of Walter D. Cruickshank, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.), 010297.

proposed survey would further these first two national interests in a significant and substantial manner. As such, the proposed survey would, as a whole, further the national interest as articulated in sections 302 and 303 of the CZMA in a significant and substantial manner.

B. Element 2: The National Interest Furthered by the Project Outweighs the Project's Adverse Coastal Effects.

To satisfy Element 2, WesternGeco must demonstrate that the national interest furthered by the project outweighs the project's adverse coastal effects. 15 C.F.R. § 930.121(b). The Parties' arguments pertaining to the national interest are discussed above, and this section addresses the Parties' arguments on adverse coastal effects, followed by balancing the national interest with the adverse coastal effects. As an initial matter, this analysis begins with a discussion of the sufficiency of the record.

1. Sufficiency of Evidence in the Record

The burden is on WesternGeco to demonstrate, by a preponderance of the evidence in the record, that the national interest outweighs any adverse coastal effects. *Chevron 1990* at 5; *Mobil 1993* at 11. In the absence of information on effects, the appellant will not carry its burden of proof and persuasion that its activity is consistent with the objectives of the CZMA. The legal standard requires weighing the information in the record to determine the nature and severity of adverse coastal effects against the national interest, which includes considering the "completeness and the scientific quality of the information." *Weaver's Cove 2008* at 13.

Here, the record is sufficient to analyze coastal adverse effects. *See e.g., Weavers Cove 2008* at 16. BOEM and NMFS have provided detailed and extensive analyses of the potential effects of seismic surveys on commercial and recreational fisheries, sea turtles, marine mammals, and their habitats. CR 23–25 at 000815–2972; CR 22 at 000803; NOAA SR 25 at 010455; CR 26 at 002973; CR 7 at 000346; CR 4–5 at 000226–0335. The information is reliable in that it discusses likely effects with a high level of scientific rigor. Moreover, with respect to NMFS's analyses, NMFS is a resource agency with expertise in fisheries, sea turtles, and marine mammals. These are the same resources the potential effects to which are contested in this appeal.³³

All of the Parties' requests to submit supplemental record materials have been granted, including scientific declarations, in order to support the analysis of adverse coastal effects. SR A–NNN; SR AA at 009287 (Rice Decl.); SR CC at 009348 (Suppl. Rice Decl). And NOAA sought the input of several federal agencies with expertise and interests at stake in both energy exploration

³³ Throughout this analysis of adverse coastal effects, the analysis of NMFS and BOEM in documents those agencies prepared under MMPA, ESA, and NEPA is considered. Because each statute has a different analytical standard, the agencies' underlying analysis—and not just their statutory conclusions—is closely reviewed, evaluated, and applied to make findings on the question of adverse coastal effects.

and development, and environmental impacts of these activities. NOAA SR 1–12 at 010364–10387; NOAA SR 13–24 at 010388–010454; NOAA SR 27–28 at 010855–010869. As such, the record contains sufficient evidence to allow us to analyze the adverse effects.

2. Adverse Coastal Effects

The State argues that WesternGeco’s seismic survey will adversely affect³⁴ coastal resources of commercial and recreational fisheries, invertebrates, endangered sea turtles, marine mammals, and their habitats. The State relies on studies and literature published after 2015 that, it alleges, demonstrate impacts of seismic surveys on fish and zooplankton. WesternGeco, in turn, argues that the adverse coastal effects alleged by the State are speculative and based on flawed studies. WesternGeco relies on BOEM and NMFS analyses of impacts to argue that there will be no adverse coastal effects.

a) Commercial and Recreational Fisheries and Invertebrates.

The State argues that the proposed survey will adversely affect the State’s commercial and recreational fishing industries. NC Br. at 22. The coastal fishing industry is economically significant to the State; it is estimated to support almost 50,000 jobs, create over \$1.5 billion in annual income, and account for \$3.9 billion in sales annually. NC Br. at 22; NCR 4 at 008114. The State identifies a number of species of particular commercial importance, including Atlantic croaker, blue crab, brown shrimp, pink shrimp, white shrimp, summer flounder, wahoo, dolphinfish, king mackerel, Spanish mackerel, bluefish, catfishes, spiny dogfish, snapper-grouper complex, and tuna, *id.* at 008130 (Table 2); fishing tournaments, *id.* at 008123–8129 (Table 1); as well as essential fish habitat and habitat areas of particular concern. *Id.* at 008116. Seismic surveys, according to the State, adversely affect fisheries indirectly by threatening the foundation of the food chain, zooplankton, and directly, by killing, injuring, and displacing finfish and billfish from important habitats and fishing grounds, resulting in decreased catch rates. NCR 4 at 008118–8119. The State also argues that studies have demonstrated injury from seismic surveys to benthic invertebrates, such as scallops, clams, crabs, and lobsters, which are

³⁴ “Effect on any coastal use or resource (coastal effect)” means “any reasonably foreseeable effect on any coastal use or resource resulting from a Federal agency activity or federal license or permit activity. . . . Effects include both direct effects which result from the activity and occur at the same time and place as the activity, and indirect (cumulative and secondary) effects which result from the activity and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects are effects resulting from the incremental impact of the federal action when added to other past, present, and reasonably foreseeable actions, regardless of what person undertakes such actions.” 15 C.F.R. § 930.11(g). “Coastal zone” means “the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches.” 16 U.S.C. § 1453(1).

commercially important to the State. NC Br. at 24. In support of its arguments regarding impacts of seismic surveys on fish and zooplankton, the State relies on several recent studies, including McCauley et al. 2017 and Paxton et al. 2017. The State also relies on declarations referring to and interpreting the recent studies. NC Br. at 23–24, 28–30, relying on SR SS³⁵ at 26–27 (providing opinion that McCauley et al. points to previously unrecognized and fundamentally destructive impact of seismic surveys on marine ecosystem), SR CC³⁶ at 009348, 9350 (asserting that recent studies show harm to marine invertebrates from anthropogenic noise, and providing opinion that the limitations of McCauley et al. do not negate its results), SR AA³⁷ at 009296, 009299–9300 (asserting that recent studies demonstrate impacts of seismic surveys to marine invertebrates, and providing opinion that McCauley et al. used a single airgun and therefore underestimated potential impacts of propose seismic projects), and SR DDD³⁸ at 010290–10291 (responding to criticisms of Paxton et al. 2017).

WesternGeco rebuts that the designs of the studies relied on by the State are flawed and the results inconclusive. WG Br. at 16–20. WesternGeco argues that the available science, including that relied upon by BOEM and NMFS, demonstrates that adverse impacts on fisheries would be minor and temporary. *Id.* At 18–21.

In the face of a scientific dispute over the impacts of acoustics on marine fish and fish habitat and prey species, it is appropriate to turn to the expert agency, NMFS.³⁹ While BOEM has not initiated consultation for impacts to essential fish habitat under the Magnuson-Stevens Act, NMFS has had several occasions to analyze impacts of seismic surveys on fish pursuant to the ESA, MMPA, and NEPA. CR 4 at 000293–0294; CR 7 at 000407–0412, 000423–0424, 000540–0541, 000548–0551; 83 Fed. Reg. at 63,274, 63,279–280; NOAA SR 25 at 010671. NMFS’s

³⁵ Decl. of D. Ann Pabst, Ph.D, Exh. C (comment letter submitted to NMFS Permits and Conservation Division, July 5, 2017).

³⁶ Suppl. Decl. of Dr. Aaron Rice, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Mar. 25, 2019).

³⁷ Decl. of Dr. Aaron Rice, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Feb. 20, 2019).

³⁸ Decl. of Douglas P. Nowacek, Ph.D. (Nov. 27, 2019).

³⁹ See 15 C.F.R. § 930.127 (“As noted in § 930.128(c)(1), the Secretary gives deference to the views of interested Federal agencies when commenting in their areas of expertise and takes notice of relevant administrative decisions, including licenses or permits, related to an appellant’s proposed activity when submitted to the appeal decision record.”); 71 Fed. Reg. 788-01 (Jan. 5, 2006) (“The views of the Fish and Wildlife Service and NMFS would be accorded greater weight than the authorizing Federal agency, or another Federal agency who might also happen to comment on the ESA or MMPA issues.”)

analyses rely on the best available literature on the impacts of seismic surveys on fish, including Carroll 2017, which compiles over 70 studies pertaining to seismic survey impacts on fish. CR 7 at 000540–0541. The NMFS analysis demonstrates that there is a large body of literature available on the impacts of seismic surveys on fish and invertebrates. This literature reflects the variation and complexity of responses of fish and invertebrates to seismic surveys, and not an absence of study. As explained below, NMFS considers the variation and draws conclusions from the majority of the studies that the most likely impacts of seismic surveys would be minor, temporary avoidance behaviors.

While NMFS performed its analyses pursuant to the specific statutory criteria provided in the ESA and MMPA, its underlying analyses and conclusions are applicable to the analysis of adverse coastal effects under the CZMA. In particular, in order to come to these conclusions on the impacts of the surveys on marine mammals and sea turtles under the MMPA and ESA, NMFS analyzed impacts on the prey species, including zooplankton, invertebrates, and fish.

First, NMFS analyzed the study by McCauley et al. 2017 that concluded that the acoustic energy emitted by seismic surveys can lead to a significant reduction in zooplankton as far as 1.2 km from the survey equipment, potentially having cascading effects through all levels of the food chain. CR 7 at 000550; 83 Fed Reg at 63,327. NMFS found that the results of this study are inconsistent with a large body of research that finds limited spatial and temporal impacts to zooplankton (e.g., Dalen and Knutsen, 1987; Payne, 2004; Stanley et al., 2011). *Id.* NMFS also considered a more recent study by Richardson et al. 2017 that extrapolated the results of McCauley et al. 2017 to a hypothetical full-scale seismic survey. Richardson determined that the effects found by McCauley would be minimized by ocean currents and the short-life cycle of copepods. 83 Fed. Reg. at 63,327. NMFS also considered that effects to zooplankton would be less for 2-D surveys, compared to the more intensive 3-D surveys analyzed by McCauley, which involve the use of multiple overlapping tracklines to extensively and intensively survey a particular area. CR 7 at 000423. NMFS concluded that reductions in zooplankton would be temporary and spatially-limited, and, as such, would not likely translate into impacts up the food

chain, including to fish (prey species for protected sea turtles and whales).⁴⁰ CR 7 at 000548–0549; 000550–0551.

Second, NMFS also analyzed physical and behavioral effects of airguns directly to fish (as opposed to through its prey, zooplankton) and concluded that effects of seismic surveys would be limited to temporary, localized, and minor reduction in fish abundance near an airgun array CR 7 at 000540–0541; 83 Fed. Reg. at 63,279–63,280; CR 4 at 000293–0294. Specifically, NMFS considered Carroll et al. 2017. As for physical impacts, NMFS concluded that “some fishes and invertebrates may experience physical and physiological effects, including mortality, but in most cases, such effects are only expected at relatively close distances to the seismic source.” CR 7 at 000540–0541. As to behavioral responses, NMFS explained that Carroll’s review of literature demonstrates “considerable variation exists in how fishes behaviorally respond to seismic activity, with some studies indicating no response and others noting startle or alarm responses and/or avoidance behavior.” CR 7 at 000541. But, NMFS found that the “bulk of studies indicate no or slight reaction to noise,” 83 Fed. Reg. at 63,327, and “no effects to foraging or reproduction have been documented.” CR 7 at 000541.

Third, among these studies showing a variation of responses, NMFS considered studies addressing changes in fish abundance following a seismic survey, including Paxton et al. 2017. 83 Fed. Reg. at 63279–80, 63,327. Again, NMFS found a variation of effects in the literature, explaining that “while a few studies found negative effects of seismic activity on catch rates, most found no effects, and a few even found that surprisingly seismic activity lead [sic] to an increase in catch rates.” CR 7 at 000548. As for the studies finding reductions in fish abundance, NMFS found that any reductions were short term, with fish abundance quickly returning to normal after the survey vessel exited an area. 83 Fed. Reg. at 63,279–80. Ultimately, NMFS concluded that “while the potential for disruption of spawning aggregations or schools of important prey species can be meaningful on a local scale, the mobile and temporary nature of

⁴⁰ In response to the NOAA Administrator’s request for input on this appeal, NMFS reviewed a study performed by Fields et al. 2019, which supports NMFS’s earlier conclusions. NOAA SR 28 at 010868. Fields produced results inconsistent with those of McCauley et al. 2017, finding that seismic blasts have limited effects on the mortality or displacement of zooplankton within close proximity of the blast (less than 10 m) and no measurable impact at greater distances. NOAA SR 27 at 010855. The State has also submitted to the record a declaration rebutting the conclusion of Fields 2019. SR MMM, Decl. of Douglas Nowacek, Ph.D., In Support of the State of North Carolina’s Opposition to WesternGeco’s Request to Override its Coastal Zone Management Act Consistency Determination (April 29, 2020). The declarant, Dr. Nowacek, critiques the methodology of the Fields study and asserts that the methodology in McCauley was more representative of realistic exposure levels than was Fields. SR MMM at 010873–10875. Dr. Nowacek asserts that Fields’ methodology of exposing zooplankton to a single airgun shot is a significant shortcoming, and states that the two studies are not necessarily inconsistent. *Id.* The Fields study and Dr. Nowacek’s declaration are informative, but as before, in the face of a scientific dispute, it is appropriate to turn to the expert agency, NMFS. NMFS’s conclusion is persuasive that reductions in zooplankton would be temporary and spatially-limited and would not likely translate into impacts up the food chain.

the surveys and the likelihood of temporary avoidance behavior suggest that impacts would be minor.” 83 Fed. Reg. at 63,280.

NMFS’s analyses and conclusions discussed here are consistent with BOEM’s determinations from the 2014 PEIS that proposed G&G seismic surveys in the Atlantic have the potential for negligible to minor impacts on commercial and recreational fisheries. CR 23 at 000815.⁴¹ With respect to commercial fisheries, BOEM stated that active acoustic sound produced by anthropogenic sources such as airguns can affect fish in a variety of ways, including “short-term effects such as temporary avoidance of or movement out of specific areas.” CR 23 at 001182. BOEM further concluded that commercial fisheries would be temporarily affected by acoustic noise of G&G seismic surveys, and that catch rates “would potentially decline but would be expected to return to normal levels following the cessation of the seismic operation.” CR 23 at 001183. BOEM determined that potential impacts to commercial fisheries from acoustic sources would be “minor, with no population-level effects.” CR 23 at 001183. “Impacts, including behavioral changes and avoidance, are expected at a few locations, with likely impacts being intermittent, temporary, and short-term,” and “an increased potential for a localized and temporary decrease in catchability of one or more commercial fish species.” CR 23 at 001183.

Similarly, BOEM determined that the potential impacts of active acoustic sound sources from proposed G&G seismic surveys on recreational fisheries were negligible. CR 23 at 001191–1192. BOEM determined that the proposed surveys were unlikely to cause serious injury or mortality to reef-type fishes, inshore fishes, or pelagic fishes, in part due to the seasonal restrictions on the proposed surveys. CR 23 at 001191–1192. BOEM concluded that, “[g]iven the absence of serious injury or mortality to recreational fishes and the potential for behavioral changes from active acoustic sound exposure, it is likely that potential impacts would be intermittent, temporary, and short-term in terms of duration or frequency.” *Id.* at 001192.

The State argues that studies demonstrate seismic activity results in injury to benthic invertebrates, and in particular, to increased mortality of scallops and compromised immune

⁴¹ NMFS was a cooperating agency on the 2014 BOEM PEIS. CR 23 at 000878-879; CR 5 at 000325. Under the NEPA regulations, cooperating agencies participate in the NEPA process of the lead agency for those actions that the other agency has jurisdiction by law or special expertise to any environmental issue addressed in the statement. 40 C.F.R. § 1501.6. NMFS also “adopted” the 2014 BOEM PEIS, CR 6 at 000336, and relied on it in its 2018 EA and FONSI for NMFS’s issuance of the MMPA IHAs. CR 5 at 000326. Under the NEPA regulations, if the actions covered by an original EIS, in this case, the 2014 BOEM PEIS, are “substantially the same” as the agency’s, in this case, NMFS’s, proposed action, the adopting agency may rely on that EIS as its own without recirculating the EIS for public comment. 40 C.F.R. § 1506.3.

function of spiny lobsters. NC Br. at 24; SR KK;⁴² SR JJ.⁴³ The same studies on which the State relies are discussed by NMFS in its Notice of Availability of IHAs. CR 26; 83 Fed. Reg. at 63,327. NMFS explains:

Exposure to airgun signals was found to significantly increase mortality in scallops, in addition to causing significant changes in behavioral patterns and disruption of hemolymph chemistry during exposure (Day et al., 2017). However, the implications of this finding are not straightforward, as the authors state that the observed levels of mortality were not beyond naturally occurring rates. Fitzgibbon et al. (2017) found significant changes to hemolymph cell counts in spiny lobsters subjected to repeated airgun signals, with the effects lasting up to a year post-exposure. However, despite the high levels of exposure, direct mortality was not observed. Further, in reference to the study, Day et al. (2016) stated that “[s]eismic surveys appear to be unlikely to result in immediate large scale mortality [. . .] and, on their own, do not appear to result in any degree of mortality” and that “[e]arly stage lobster embryos showed no effect from air gun exposure, indicating that at this point in life history, they are resilient to exposure and subsequent recruitment should be unaffected.”

83 Fed. Reg. at 63,327. NMFS also noted that some studies showed no short-term or long-term adverse effects to benthic communities from airgun exposure. *Id.*

With respect to potential user conflicts, WesternGeco argues that it has proactively agreed to a condition to mitigate space and user conflicts by providing advanced notice of its survey tracks, which is the same mitigation condition the State imposed on the four other seismic survey permit applicants in 2015. WG Br. at 20. The State argues that WesternGeco fails to demonstrate the conditions it agreed to for the other surveys would actually mitigate space and user conflicts to avoid impacts to catch rates. NC Br. at 24–25.

In BOEM’s 2014 PEIS considering potential impacts of G&G seismic surveys in the Atlantic, BOEM determined that potential space and use conflicts could lead to negligible or minor impacts on commercial and recreational fisheries. CR 23 at 000815. BOEM noted that vessel exclusion zones and vessel traffic issues resulting from proposed G&G seismic activity have the potential to directly and indirectly affect some commercial fishing activities. CR 23 at 001184. BOEM concluded, “G&G vessel traffic and vessel exclusion zones are expected to produce minor impacts, with no population level or regional effects. Impacts are expected at a few

⁴² Quinn P. Fitzgibbon et al., “The impact of seismic air gun exposure on the haemolymph physiology and nutritional condition of spiny lobster, *jasus edwardsii*,” *Marine Pollution Bull* (Aug. 2017).

⁴³ Ryan D. Day et al., “Exposure to seismic air gun signals causes physiological harm and alters behavior in the scallop *pecten fumatus*,” *Proceedings of the Nat’l Acad. of Science* (Sept. 18, 2017).

locations and would be intermittent, temporary, and short-term.” CR 23 at 001184. BOEM further determined that potential impacts from vessel traffic/space and use conflicts on recreational fisheries were expected to be negligible to minor. CR 23 at 001192-1193. BOEM stated that the proposed G&G seismic activities had the potential to interfere with recreational fishing, “especially those engaged in amateur and professional fishing tournaments.” CR 23 at 001192. “Temporary loss of access to fishing grounds or lost fishing time could affect the success of recreational landings, with potential for economic impact to local businesses.” *Id.* at 001192–1193. But given the short-term, temporary, and limited nature of potential space and use conflicts from vessel traffic and vessel exclusion zones, BOEM anticipated that expected impacts to recreational fisheries ranged from negligible to minor. *Id.* at 001193.

In conclusion, taking into account this record evidence in the PEIS, any potential user conflicts for fishing would be negligible to minor, and would be further mitigated at least in part by WesternGeco agreeing to provide advanced notice of its survey tracks.

Based on the foregoing, the preponderance of the evidence demonstrates that the adverse coastal effects to commercial and recreational fishing and invertebrates would be localized, minor, and temporary.

b) Sea Turtles.

The State argues that the proposed seismic survey would adversely affect threatened and endangered turtle species, including the Loggerhead. NC Br. at 25–26. The State’s beaches serve as critical habitat for important nesting sites for a subpopulation of Loggerhead sea turtles, the Northwest Atlantic Distinct Population Segment. *Id.* at 25. The State argues that acoustic disturbances in the environment could interfere with nesting activities, and that sea turtles could also be injured by increased vessel traffic and accidental fuel discharges. *Id.* at 26.

NMFS, in fulfilling its statutory duties under the ESA, thoroughly analyzed the best available information and determined that sea turtles are expected to experience minor and temporary hearing loss (temporary threshold shifts, or “TTS”) and behavioral and stress responses. CR 7 at 000557–0558. NMFS concluded that these responses were not likely to result in negative consequences to the fitness of any individual sea turtle, and therefore, they are also unlikely to have any population-level consequences for sea turtle species. *Id.* at 000558.

In conducting its analysis, NMFS acknowledges that, “[c]ompared to cetaceans, much less data exist on how anthropogenic sound may impact sea turtles.” *Id.* at 000549. But NMFS concludes that “nearly all data that do exist suggest that sea turtles are much less sensitive to anthropogenic sound than cetaceans. This may be in part because sea turtles appear to be less reliant on sound.” *Id.* NMFS likewise explains that “sea turtles do not appear particularly sensitive to seismic airguns,” *id.* at 000521, and that, based on the available data, in response to exposures to seismic

surveys, NMFS “anticipate[s] some change in swimming patterns” and “expect[s] only temporary displacement of exposed individuals from some portions of the action area as seismic vessels transit through.” *Id.* at 000539.

Additionally, NMFS relies on numerous studies to derive its conclusions of the full range of potential effects to sea turtles, including the risk of hearing loss, behavioral responses, stress, and prey reduction. *Id.* at 000519–0526, 0538–0540, 0549–0550. As part of this analysis, NMFS also considered Nelms 2016, CR 7 at 000549, which compiled the results of 29 studies on sea turtles in order to identify research gaps and policy recommendations for mitigation. Ultimately, while the literature available on sea turtles is more limited than that available on fish and marine mammals, the best available information is sufficient to conclude that impacts to sea turtles from the proposed survey are likely to be minor and temporary behavioral harassments.

The State also argues that sea turtles could be injured by an increase in traffic or by accidental fuel discharges. In NMFS’s BiOp, NMFS considered the risks of pollution from vessels discharges, vessel strikes, and vessel disturbance, and determined that while all were potential stressors, none of these potential stressors were likely to adversely affect sea turtles. CR 7 at 000490–0495. NMFS determined that “[o]il, fuel, and other vessel-associated chemicals are unlikely to leak or spill into the ocean in volumes that would be expected to have adverse effects to ESA-listed species.” *Id.* at 000490. NMFS evaluated the number and expected speed of the vessels involved in the proposed seismic surveys and concluded that the likelihood of a vessel associated with the five proposed seismic surveys striking an ESA-listed turtle is “extremely low and discountable.” *Id.* at 000491–0492. NMFS also concluded that while it was possible sea turtles could exhibit a startle response or other avoidance response to the visual or auditory disturbance of vessels, NMFS expected:

[T]hat any vessel disturbance that may result from the proposed seismic surveys would be minimal for many of the same reasons that we find vessel strikes extremely unlikely (low vessel activity and mostly small vessels, slow transit speeds, airgun sounds to alert animals of vessel presence, PSO and/or crew monitoring for nearby ESA-listed species, and closures that limit vessel traffic in certain areas at certain times of the year . . .).

Id. at 000494. In consideration of the foregoing, the likelihood of vessel fuel spills, vessel strikes, and/or vessel disturbance is low, and these potential stressors are unlikely to lead to reasonably foreseeable adverse effects on ESA-listed sea turtles.

In conclusion, the preponderance of the evidence demonstrates that the adverse coastal effects of the proposed survey on sea turtles would be minor, and temporary behavioral harassments.

c) Marine Mammals.

The State argues that acoustics from the proposed survey would cause adverse effects to marine mammals, and in particular, to North Atlantic right whales. NC Br. at 23, 25.⁴⁴ The State contends that airgun noise is a major potential stressor for right whales and that the mitigation measures in NMFS's IHAs are insufficient to prevent harm to right whales. *Id.* at 25.⁴⁵ WesternGeco refers to the findings in NMFS's and BOEM's analyses in the EA (CR 4), BiOp (CR 7), and PEIS (CR 23) regarding lack of significant cumulative effects to marine mammals or their habitat. WG Br. at 21.

NMFS, in fulfilling its statutory duties under the ESA, thoroughly analyzed the best available information and determined that marine mammals listed under the ESA, including blue whales, fin whales, North Atlantic right whales, sei whales, and sperm whales, are expected to experience minor and, for the most part, temporary⁴⁶ impacts to behavior, stress, and hearing threshold shifts. CR 7 at 000346, 000557. NMFS determined that the proposed survey was not likely to jeopardize the continued existence or recovery of marine mammals listed under the ESA. NMFS considered that, given the proposed time/area closures,⁴⁷ across all issued IHAs and proposed survey permits, approximately 10 percent or less of the population of North Atlantic right whales that occurs within the action area for the proposed surveys are expected to be

⁴⁴ The State also raises an argument regarding cumulative adverse effects to marine mammals, which is addressed *infra*.

⁴⁵ The State asserts, and WesternGeco does not dispute, that marine mammals are biological resources of the State's coastal zone, and that the marine mammals in and near the State's coastal zone support North Carolina-based tourism and scientific research in the State. NC Br. at 23, 23 n.9, 25. *See also* SR QQ at 009615, Harry E. Le Grand, Jr. *et al.*, "The Mammals of North Carolina—Second Approximation" (May 2017) (identifying marine mammals in North Carolina); SR PP at 009606, Letter from N.C. Governor Roy Cooper to Wilbur L. Ross, Jr., Secretary, U.S. Dep't of Commerce (July 21, 2017) (identifying marine mammals species found offshore of North Carolina); SR Docs. SS at 009770 (Dec. of D. Ann. Pabst, Ph.D. (Nov. 25, 2019), TT (White, "Ask the Aquarium: When's the Best Time to See Whales Off Our Coast?" The Pilot (Jan. 24, 2015)), VV at 009805 (N.C. Whales & Whaling Symposium), WW at 009809 (Randall R. Reeves *et al.*, "History of Whaling In and Near North Carolina," NOAA Tech. Report (Mar. 1988) (demonstrating linkage between marine mammal species and tourism, recreation, and scientific research in North Carolina).

⁴⁶ As explained in more detail below, NMFS concluded that it was possible several individual fin whales could experience minor permanent hearing loss. CR 7 at 000558. However, NMFS concluded that while it was possible that the proposed action would have minor effects on the fitness of several fin whales, it was not expected to have any population-level consequences for the species. *Id.*

⁴⁷ The proposed time and area closures are described in the Biological Opinion. CR 7 at 000381–0382. The closures are designed to protect a variety of ESA-listed and non-ESA-listed species, and they include proposed closures from NMFS's Permits and Conservation Division identified in issuing the IHAs, proposed permit restrictions from BOEM, and additional closures to which the seismic survey applicants agreed in the CZMA review process. *Id.*; *see also* NCR 3 at 008101 (WesternGeco's Consistency Certification and Necessary Data and Information to North Carolina Division of Coastal Management) (providing that WesternGeco would commit to conditions identified in the consistency review process for the other four permit applicants).

exposed to active acoustic sources associated with the proposed surveys at a level that may result in adverse effects. *Id.* at 000557. NMFS further considered that “[d]ue to animal and vessel movement, and the proposed seismic survey protocols, these exposures are expected to be brief (less than a day), and except for fin and sperm whales, individuals are not expected to be exposed more than once across all five IHAs/permits.” *Id.*

NMFS concluded that based on the best available data, blue whales, North Atlantic right whales, and sei whales are expected to experience minor and temporary hearing threshold shifts, fin whales are expected to experience minor temporary and permanent hearing threshold shifts and minor and temporary masking and behavioral and stress responses, and sperm whales are expected to experience minor and temporary behavioral and stress responses and a minor and temporary reduction in prey availability. *Id.* at 000557–0558.

With respect to fin whales, NMFS stated that “a greater numbers [sic] of fin whales are expected to be exposed to sound levels that would result in behavioral harassment [and] 14 fin whales are expected to experience minor permanent hearing loss.” *Id.* at 000558. NMFS explained that it was “possible that minor permanent hearing loss may affect the fitness of individual fin whales.” *Id.* NMFS noted that the proposed seismic survey protocols would minimize the severity of permanent hearing loss in fin whales, and determined that “even if several individuals experience a minor reduction in fitness, we do not expect that this would affect the viability of the population to which those fin whales belong.” *Id.*

NMFS stated that, of the cetaceans considered in the ESA consultation, North Atlantic right whales are at greatest risk due to their current status, but that the potential exposure of North Atlantic right whales is greatly limited by the proposed North Atlantic right whale closure. *Id.* at 000558. NMFS determined, “[i]t is highly unlikely that any individual North Atlantic right whale would experience a reduction in fitness as a result of the proposed action.” *Id.*

NMFS, in fulfilling its statutory duties under the MMPA, conducted a thorough analysis of the best available scientific information and anticipated very few takes of marine mammals in the form of auditory injury, with the anticipated takes primarily being short-term behavioral responses (constituting Level B harassment under the MMPA or harassment under the ESA). CR 26 at 002973; 83 Fed. Reg. 63,268, at 63,273–79, 63,340 (Table 6). NMFS determined that, taking into consideration the implementation of the required monitoring and mitigation measures, the total marine mammal take from WesternGeco’s proposed survey activities would have a negligible impact on all affected marine mammal species or stocks. *Id.* at 63,374. NMFS further determined that any stress responses would be short-term with the marine mammals quickly recovering. *Id.* at 63,278, 63,282–84.

In issuing the IHAs, NMFS required protective mitigation and monitoring measures to avoid or reduce the likelihood of adverse impacts, including time and area restrictions. NMFS prohibited

surveys either seasonally or year-round in areas important to certain species, including beaked whales and North Atlantic right whales. 83 Fed. Reg. at 63,344. In addition to time restrictions, NMFS also imposed area restrictions, including restrictions based on both North Atlantic right whale habitat and beaked whale habitat. *Id.* at 83 Fed. Reg. at 63,332, 63,344, 63,351-52. With respect to North Atlantic right whales, NMFS explained:

The North Atlantic right whale is endangered, has a very low population size, and faces significant additional stressors. Therefore, regardless of impact rating, we believe that the required mitigation described previously is critically important in order for us to make the necessary finding and it is with consideration of this mitigation that we find the take from Western's survey activities will have a negligible impact on the North Atlantic right whale.

Id. at 63,373. NMFS also concluded that seismic surveys would result in only short-term adverse effects on any prey habitat or populations of prey species near the airgun array immediately following the use of active seismic sources, and that such effects were not likely to have downstream effects on marine mammals. *Id.* at 63,327-28.

In its EA evaluating potential impacts of issuance of the IHAs, NMFS acknowledged that the authorized incidental take could potentially result in direct short-term and long-term adverse impacts to individual marine mammals, including threshold shift, masking, behavioral response, temporary displacement, and stress, and to marine mammal prey, although with respect to prey species, temporary displacement is the more likely outcome. CR 4 at 000306. NMFS determined that when exposure to acoustic sources ends, behavioral and/or physiological responses are expected to end fairly quickly. *Id.* at 000307. NMFS stated, "NMFS's assessment is focused on whether the predicted level of take, when considered in context, will have a meaningful biological consequence at a species or population level." *Id.* at 000306. NMFS anticipated no significant direct, indirect, or cumulative impacts from the issuance of the IHAs. NMFS concluded, "[w]e expect impacts to marine mammals to be temporary and localized around the active source vessels, remain within the bounds of the established take authorizations (Table 7), and that the required mitigation and monitoring provide substantial protection to marine mammals and their habitat." *Id.* at 000308.⁴⁸

⁴⁸ NMFS also issued a record of decision (ROD) adopting BOEM's PEIS. CR 6 at 000336. In the ROD, NMFS found that BOEM modeled and estimated marine mammal acoustic exposure from a variety of potential G&G survey activity. *Id.* at 000344. NMFS determined that "BOEM used these exposure estimates, combined with qualitative scientific information and its impact rating evaluation, to conclude that none of the alternatives will result in any adverse population level effects on any of the affected species or stocks. This modeling found that airguns have the potential to result in both disruption of behavioral patterns and auditory injury, but that no mortalities are expected and most exposures will result in behavioral effects only." *Id.* NMFS concluded that BOEM's PEIS adequately addresses, on a programmatic level, the potential direct, indirect, and cumulative impacts to marine mammals and their habitat resulting from the use of active acoustic sources deployed during G&G surveys.

Comments on the potential adverse coastal effects to marine mammals as relevant to this appeal were specifically requested from resource management agencies, including NMFS and FWS. NOAA SR 8 at 010378; SR 10 at 010382. In its response, NMFS referred to the materials discussed here: the IHAs, the Biological Opinion, and the EA/FONSI that NMFS issued.⁴⁹ NOAA SR 16 at 010394. NMFS also referred to BOEM's PEIS.⁵⁰

As noted above, the State argues that airgun noise is a major potential stressor for right whales. NC Br. at 23–24, 25 (citing SR FF⁵¹ at 009416–9419 ¶¶ 27–32). In the analysis for its IHAs, NMFS considered that while there was a connection between noise exposure and stress in right whales, “the number of vessels associated with the surveys is unlikely to contribute to significant additive vessel traffic and associated vessel noise as compared with vessel activity already occurring in the region.” 83 Fed. Reg. at 63,282–83. NMFS concluded, “[w]hile noise from the surveys, whether due to use of the airgun arrays or from the vessels themselves, may cause stress responses in exposed animals, NMFS finds it unlikely that such responses will significantly impact individual whales as chronic noise exposure is not expected.” *Id.*

The State further argues that the mitigation measures in NMFS's IHAs are insufficient to prevent harm to right whales. NC Br. at 25. In support of its argument, the State relies on research summarized in a comment letter by Dr. Ann Pabst,⁵² which asserts that an evaluation of the seasonal presence of right whales in the waters of Maryland, Virginia, and North Carolina showed that of a total of 188 right whale sightings, 37 were observed farther offshore than 47 km and five were observed farther than 30 km offshore outside of the November to April time frame.⁵³ SR SS at 009795. The State has also submitted a declaration of Dr. Douglas Nowacek.

⁴⁹ FWS responded to state that “these activities are well offshore and outside of [its] purview” and that it did not plan to submit comments. NOAA SR 15 at 010392.

⁵⁰ In a memorandum dated March 27, 2020, NMFS stated, “NMFS has reviewed the best currently available science and determined that there is no new information that would affect the aforementioned findings.” NOAA SR 28 at 010868. NMFS further concluded, “[w]ith respect to North Atlantic right whales, there is no new information regarding the impacts of seismic surveys on right whale populations.” *Id.*

⁵¹ Decl. of Dr. Scott D. Kraus, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Feb. 20, 2019).

⁵² Decl. of D. Ann Pabst, Ph.D, Exh. C (comment letter submitted to NMFS Permits and Conservation Division, July 5, 2017).

⁵³ As explained in the next paragraph, the time-area closures identified by NMFS as mitigation measures prohibited surveys within 90 km of shore from November to April, and prohibited surveys within 30 km of shore for the remainder of the year.

SR Z at 009241.⁵⁴ Dr. Nowacek's declaration asserts that exposure to unwanted sounds causes behavioral and physiological harm to animals, *id.* at 009244–9245, ¶¶ 8–9, and the declaration argues that NMFS's mitigation measures of time-area closures are insufficient because low-frequency sounds from ships and seismic surveys travel well in the ocean and would reach right whale calving grounds, leading to behavioral change, and because the IHAs do not account for updated information regarding right whale distribution. *Id.* at 009259–9260, ¶¶ 41–43.

NMFS based its right whale time-area closures on the migratory behavior of right whales, which spend winter months (from November to April) in the Mid- and South Atlantic in their calving grounds or traveling. 83 Fed. Reg. at 63,321–33. During these months, right whales may be found in relatively high densities up to 80 km offshore, but NMFS determined that for the remainder of the year, few whales remain in the proposed survey area. *Id.* at 63,282–83, 63,303, 63,319, 63,332, 63,351–52. NMFS prohibited surveys within 90 km of shore in the months when right whales are most likely to be in the area (November to April), and for the remainder of the year, NMFS prohibited surveys within 30 km of shore. *Id.* at 63,332, 63,344, 63,351–52. NMFS estimated no more than nineteen takes of right whales through behavioral harassment for all surveys. *Id.* at 63,368.

In establishing the time-area closure requirements, NMFS took into account updated modeling information and revised its proposed seasonal restriction, which originally prohibited survey efforts within 47 km of the coast, to prohibit survey effort within 90 km of the coast. *Id.* at 63,351. NMFS also addressed Dr. Pabst's research, stating:

While this analysis (as well as more recent acoustic monitoring data; e.g., Davis et al. (2017)) suggests that right whales are present in the area in all months of the year, it also shows that very few occurred outside of the time window and outside of the year-round 30-km coastal restriction. During this period, only five archived sightings occurred outside of the November through April period and outside of 30 km from shore. Further, it would be impracticable to completely close this area to survey activity year round. As we have acknowledged, it is possible that whales will be present beyond this area, or that whales will be present within this area but at times outside when migration is expected to occur. However, we base the time-area restriction on our best understanding of where and when most whales will be expected to occur.

Id. at 63,303.

In evaluating the potential adverse coastal effects in a CZMA appeal, it is appropriate to consider the extent to which mitigation measures resulting from consultations with resource agencies limit

⁵⁴ Decl. of Douglas Nowacek, Ph.D., submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Mar. 25, 2019).

the significance of potential impacts. *AES Sparrows Point* at 31–34. Here, the mitigation measures, the thorough analysis conducted by NMFS in the IHAs, BiOp, and EA, and the deference accorded to NMFS as an expert resource agency have been taken into account.⁵⁵ NMFS, the expert agency, thoroughly considered the issues that the State has identified in its brief.

In conclusion, in light of the foregoing, the preponderance of the evidence in the record demonstrates that, with avoidance, minimization and mitigation measures, any adverse effects on marine mammals would be limited to minor, localized, and for the most part, temporary effects.

d) Cumulative Adverse Coastal Effects

The State argues that cumulative effects would result from the five reasonably foreseeable seismic surveys covering an overlapping area of the State’s coastal zone, including chronic stress to right whales and beaked whales. NC Br. at 26–28. *WesternGeco* refers to the findings in NMFS’s and BOEM’s analyses in the EA (CR 4), BiOp (CR 7), and PEIS (CR 23) regarding lack of significant cumulative effects to marine mammals or their habitat. WG Br. at 21.

In the context of CZMA consistency appeals, cumulative adverse coastal effects have been defined in past decisions as “the effects of an objected-to activity when added to the baseline of other past, present, and future activities in the area of, and adjacent to, the coastal zone in which the objected-to activity is likely to contribute to adverse effects on the natural resources of the coastal zone.” *Broadwater* at 32; *AES Sparrows Point* at 39; *Weaver’s Cove 2008* at 18. Thus, an analysis of cumulative effects considers the adverse coastal effects of a project when added to the temporary or permanent effects associated with other activities that already are likely to occur. *Broadwater* at 32.

NMFS, in the Notice of Availability of the IHAs (CR 26) and the EA prepared for the issuance of the IHAs (CR 4), thoroughly analyzed the potential cumulative impacts of the proposed survey when combined with the potential effects associated with other activities that are likely to occur—including the potential aggregate impacts of the five proposed seismic surveys when considered collectively—and reasonably determined that the potential cumulative impacts would be temporary and fairly minor.

In the Notice of Availability of the IHAs, NMFS evaluated the potential for cumulative or aggregate impacts of the five surveys, taking into account contextual factors such as species’ life history and biology, distribution, abundance, and status of the stock, mitigation and monitoring,

⁵⁵ See *supra* n.40.

and characteristics of the surveys and sound sources. 83 Fed. Reg. at 63,284. NMFS expected that, in all cases:

[S]ound levels will return to previous ambient levels once the acoustic source moves a certain distance from the area, or the surveys cease, and it is unlikely that the surveys will all occur at the same time in the same places, as the area within which the surveys will occur is very large and some will occur for less than six months.

Id.

NMFS considered that the duration of a sound source would not be greater than “moderate and intermittent” in any area, and that mitigation measures were expected “to meaningfully reduce the severity of the takes that do occur by limiting impacts that could reduce reproductive success or survivorship.” *Id.* NMFS concluded that “when the required mitigation and monitoring is considered in combination with the large spatial extent over which the activities are spread across for comparatively short durations (less than one year), the potential impacts are both temporary and relatively minor.” *Id.* For this reason, NMFS did not expect aggregate impacts from the five surveys on marine mammals to affect rates of recruitment or survival. *Id.*

Similarly, NMFS’s EA reviewed the potential cumulative impacts of the issuance of the IHAs in association with the five surveys and determined that “the effects of issuing the five IHAs independently and collectively will not result in significant cumulative effects to marine mammals and their habitat.” CR 4 at 000303. In reaching this conclusion, NMFS noted that it did not expect substantial physical overlap between the surveys. *Id.*

The State argues that the proposed surveys would be temporally and spatially pervasive in the survey area, with a months-long continuously increasing sound level saturating the area. NC Br. at 26–27. In support of this proposition, the State relies on submitted declarations, including declarations considering a composite trackline of the five surveys and evaluating the potential for multipath acoustic propagation and reverberation. SR AA at 009287;⁵⁶ SR Z at 009241; SR AAA at 010180.⁵⁷ However, the record demonstrates that NMFS reasonably took into account the tracklines of the surveys, the potential for overlap, and acoustic properties in determining that NMFS “would not expect the duration of a sound source to be greater than moderate and intermittent in any given area.” 83 Fed. Reg. at 63,284. *See id.* (explaining the expectation for sound to return to ambient levels once the acoustic source moved from the area, and that it was

⁵⁶ Decl. of Dr. Aaron Rice, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Feb. 20, 2019).

⁵⁷ Decl. of Oona Watkins, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Feb. 7, 2019).

unlikely the surveys would occur in the same time at the same place); *id.* at 63,275 (evaluating the highly variable nature of propagation and received sound levels); CR 4 at 000303 (explaining that NMFS did not expect substantial physical overlap among the surveys).

The State also contends that chronic disturbance and chronic stress would adversely affect immune, endocrine, and reproductive fitness in marine mammals, and in particular, would cause chronic physiological stress in right whales, and would cause behavioral reactions in beaked whales that could lead to serious injury or death. NC Br. at 23–24, 27. In support of its arguments, the State relies on submitted declarations. SR Z at 009248–9255 (asserting that seismic surveys have been shown to cause harm to marine mammals, including displacement, physiological stress, disruption of vocalizations, and masking); *id.* at 009262–9263 (providing the opinion that the proposed seismic surveys would adversely affect right whales at the individual and population level, including behavioral and physiological consequences such as displacement and interruption of communication); SR BB⁵⁸ at 009336–9341 (identifying potential harms to marine mammals, including masking, communications disruption, and foraging disruption); SR FF at 009418 (asserting that the proposed seismic surveys would constitute a chronic disturbance leading to chronic stress in marine mammals); SR DD⁵⁹ at 009368 (stating that anthropogenic noise disrupt important beaked whale behaviors); SR EE⁶⁰ at 009397–9400 (asserting that literature demonstrates that beaked whales are highly sensitive to sound, and that extended periods of repeated exposure to proposed surveys would adversely affect beaked whales); SR GG⁶¹ at 009443–9444, ¶¶ 8–10 (asserting that underwater noise elevates stress hormones and induces chronic physiological stress in right whales); SR HH⁶² at 009455–9457 (asserting that seismic survey acoustics could trigger behavioral responses in beaked whales leading to injury or death); SR II⁶³ at 009539, ¶¶ 4–8 (asserting that the proposed seismic surveys could lead to harm to beaked whales and other marine mammals).

⁵⁸ Supp. Decl. of Dr. Douglas P. Nowacek, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Mar. 25, 2019).

⁵⁹ Decl. of Dr. Andrew J. Read, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Feb. 20, 2019).

⁶⁰ Supp. Decl. of Dr. Andrew J. Read, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Mar. 25, 2019).

⁶¹ Supp. Decl. of Dr. Scott D. Kraus, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Mar. 25, 2019).

⁶² Decl. of Dr. Peter L. Tyack, submitted in *S.C. Coastal Conservation League, et al. v. Ross, et al.*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Feb. 20, 2019).

⁶³ Suppl. Decl. of Dr. Peter L. Tyack, submitted in *S.C. Coastal Conservation League, et al. v. Ross*, Civ. No. 2:18-cv-03326-RMG (D.S.C.) (Mar. 25, 2019).

The preponderance of evidence in the appeal record demonstrates that NMFS carefully considered and incorporated the risk of chronic stress from the proposed surveys, considered the particular risks to both right whales and to beaked whales, identified mitigation measures designed to address these risks, and reached conclusions regarding potential impacts to these species based on the best available science and in light of the identified mitigation measures. NMFS recognized that stress from acoustic exposure is a potential impact of the proposed surveys, and that “chronic stress can have fitness, reproductive, etc. impacts at the population-level scale.” 83 Fed. Reg. at 63,278. NMFS further explained that the possibility for chronic stress was low given the “transitory and intermittent nature of the sound source” and that NMFS evaluated the risk for chronic stress in making NMFS’s negligible impact determinations. *Id.*

With respect to right whales, NMFS explained:

While it is likely not possible to completely avoid acoustic exposures of North Atlantic right whales, NMFS finds that such exposures will be minimized and that, importantly, the impact of acoustic exposures will be minimized by avoiding entirely the habitat expected to be important for right whales for calving and migratory behavior (or that comparable protection is achieved through implementation of a NMFS-approved mitigation and monitoring plan at distances between 47–80 km offshore). In the event that right whales are encountered outside these areas, the expanded shutdown requirement will minimize the severity and/or duration of acoustic exposures. Finally, while exposures of right whales at levels below those expected to result in disruption of behavioral patterns but above the level of ambient noise may occur, NMFS does not consider such potential exposures as likely to constitute “chronic noise exposure,” as a result of the relatively brief duration of any given survey in any particular location; therefore, it is unlikely that the specified activities could result in impacts such as those assessed through the analysis of Nowacek et al.

83 Fed. Reg. at 63,282.

With respect to beaked whales, NMFS considered that, in most instances, the potential for repeated exposures resulting from overlap of the proposed seismic surveys was unlikely due to the size of the proposed survey areas and the different survey tracks. *Id.* NMFS acknowledged that “beaked whales are considered to be particularly acoustically sensitive,” *id.* at 63,368, and indicated that NMFS “ha[s] given special consideration to mitigation focused on beaked whales and ha[s] defined time-area restrictions . . . specifically designed to reduce such impacts on beaked whales in areas expected to be of greatest importance (i.e., shelf edge south of Cape Hatteras and deepwater canyon areas).” *Id.* NMFS concluded that, given the mitigation measures imposed—including the time-area closures and the requirement for shutdown of the acoustic source upon observation of a beaked whale at an extended distance—and because most of the

behavioral harassment would be temporary, the impacts on the beaked whale species or stocks would be negligible. *Id.* at 63,373.

Finally, the State asserts that it relies on recently identified environmental impacts from current research to support its claim of aggregate impacts to marine mammals. NC Br. at 28 (citing SR DDD⁶⁴ at 010266 for the proposition that studies over the past five years are identifying impacts from anthropogenic ocean noise on marine life that were not previously known). However, the State does not identify specific studies or demonstrate that developing information was not considered by NMFS. In fact, in establishing the mitigation measures, NMFS took into account updated modeling information and new information submitted in public comment to revise its proposed seasonal restriction. 83 Fed. Reg. at 63,351.

NMFS, the expert agency, thoroughly considered the issues that the State has identified in its brief and concluded that it did not expect the aggregate impacts to marine mammals from the five surveys to affect rates of recruitment or survival. In conclusion, and in light of NMFS's persuasive analysis, cumulative adverse effects of the proposed survey on marine mammals are expected to be limited and fairly minor.

Potential cumulative impacts to commercial and recreational fisheries from proposed seismic surveys were considered in BOEM's PEIS. CR 23 at §§ 4.2.7.4, 4.2.8.4. BOEM determined that no significant cumulative impacts were expected to commercial fisheries. BOEM concluded that cumulative effects to commercial fisheries from active acoustic sound from reasonably foreseeable sources were expected to be negligible, due to the spatial and temporal characteristics and nature of the sound sources. CR 23 at 001186. Cumulative impacts to commercial fisheries arising from the vessel exclusion zones associated with the proposed surveys would be intermittent, temporary, and short-term, with possible negligible economic impact to specific fisheries or individuals. *Id.* at 001187. BOEM also determined that potential cumulative impacts to commercial fisheries from seafloor disturbance were expected to range from negligible to minor, and potential cumulative impacts to commercial fisheries from accidental fuel spills were expected to be minor. *Id.* at 001188.

BOEM determined that no significant cumulative impacts were expected to recreational fisheries. *Id.* at 001194. BOEM concluded that cumulative effects to recreational fisheries from active acoustic sound from reasonably foreseeable sources were expected to be negligible to minor, spatially located and short term in duration. CR 23 at 001195. Vessel traffic or vessel disturbance associated with the proposed surveys had the potential to affect several recreational fishing activities, with potential impacts ranging from negligible to minor. *Id.* at 001195. Potential cumulative impacts to recreational fishing from vessel exclusion zones were expected

⁶⁴ Decl. of Douglas P. Nowacek, Ph.D. (Nov. 27, 2019).

to be negligible. *Id.* Finally, BOEM determined that potential cumulative impacts to recreational fisheries from accidental fuel spills were expected to range from negligible to minor depending on location. *Id.* at 001196.

With respect to potential cumulative impacts on sea turtles, NMFS considered potential cumulative effects in reaching its determination in its BiOp that sea turtles are expected to experience minor and temporary hearing loss (threshold shifts) and behavioral and stress responses. CR 7 at 000555–558. NMFS determined that the best scientific and commercial data provided little specific information on any long-term effects of potential future state or private activities on sea turtle and cetacean populations, and therefore, the consultation assumed effects in the future would be similar to those in the past and were reflected in the environmental baseline and analysis of anticipated trends accordingly. *Id.* at 000555.

In conclusion, the preponderance of evidence in the record, including the Notice of Issuance of the IHAs, the BiOp the EA, and the PEIS indicate that cumulative or aggregate effects of the proposed surveys would not be significant, but rather, would be primarily limited, minor, and short-term. Accordingly, factoring in the temporary or permanent effects associated with other activities that are occurring or are likely to occur does not affect the magnitude of the potential adverse coastal effects from the proposed survey.

3. Balancing - The National Interest Furthered by the Project Outweighs the Project's Adverse Coastal Effects.

For WesternGeco to succeed on Element 2, the national interests furthered by the proposed survey must outweigh its adverse coastal effects, when those effects are considered separately or cumulatively. 15 C.F.R. § 930.121(b). The balancing of the national interest against the adverse coastal effects of a project, both separately and collectively, is a discretionary judgment based upon a preponderance of the evidence. *Broadwater* at 34–35; *AES Sparrows Point* at 41.

As discussed above, the proposed survey furthers two national interests articulated in sections 302 or 303 of the CZMA in a significant and substantial manner. The proposed survey would further the national interests in developing the resources of the nation's coastal zone and in attaining a greater degree of energy self-sufficiency in a significant and substantial manner. The proposed survey is significant because the information it would gather would be an important component of energy policy analysis and would be required for informed business decisions regarding prospecting for oil and gas on the Atlantic OCS. The proposed survey is substantial given its anticipated contribution of up-to-date data and information on potential resources in the Atlantic OCS, an area that was most recently surveyed decades ago.

On the other hand, the record does not show any significant adverse coastal effects. The determinations in this decision with respect to adverse coastal effects are based on, among other

things, the judgment of NMFS as a resource agency with expertise in the fisheries, sea turtles, and marine mammals cited by the State as the basis for its alleged adverse coastal effects. For the reasons described in detail above, the preponderance of the evidence demonstrates that adverse coastal effects to commercial and recreational fishing would be localized, minor, and temporary, with acoustic energy from the proposed survey resulting in limited spatial and temporal impacts to zooplankton, temporary, localized, and minor reduction in fish abundance, and the potential for minor impacts relating to disruption of spawning aggregations or schools of important prey species. The preponderance of evidence demonstrates that the adverse coastal effects of the proposed survey on sea turtles would be minor and temporary behavioral harassments. The preponderance of evidence demonstrates that, in light of the identified mitigation measures for marine mammals, that adverse effects on marine mammals from the proposed survey would be limited to minor, localized, and for the most part, temporary effects. The preponderance of evidence demonstrates that cumulative or aggregate effects of the proposed surveys would not be significant, but rather, would be primarily limited, short-term, and minor.

Short-term, minor, limited, and localized adverse effects are outweighed by the national interests in collecting information to support informed decision-making on energy development. *See Union Oil 1984*⁶⁵ at 13, 17–20 (relying on opinions of FWS and NMFS to determine that the uncertainty of risk of harm to endangered pelicans from exploratory well drilling is outweighed by the national interest in oil and gas development); *Texaco 1989* at 31 (finding national interest in attaining energy self-sufficiency by ascertaining information concerning oil and gas reserves available for production outweighs potential for adverse impacts to resources, including gray whales, based in part on NMFS findings and mitigation measures).

In conclusion, the preponderance of the evidence in the record demonstrates that the national interests furthered by the proposed survey outweigh the proposed survey’s adverse coastal effects.

C. Element 3: There is no Reasonable Alternative Available That Would Permit the Project to be Conducted in a Manner Consistent with the Enforceable Policies of the State Management Program.

For WesternGeco to succeed on Element 3, there must be “no reasonable alternative available which would permit the activity to be conducted in a manner consistent with the enforceable policies of the management program.” 15 C.F.R. § 930.121(c). No alternative may be considered unless the State agency submits a statement that the alternative would permit the activity to be conducted in a manner consistent with the enforceable policies of the management program. *Id.* In this appeal, Element 3 is not contested. The State does not contend that there is any reasonable

⁶⁵ *Decision and Findings in the Consistency Appeal of Union Oil Company of California to an Objection from the California Coastal Commission, Nov. 9, 1984 (“Union Oil 1984”).*

alternative that would permit the activity to be conducted in a manner consistent with the enforceable policies of its coastal management program. NC Br. at 30 n.10.

VI. CONCLUSION

NOAA overrides the State's objection to the proposed survey. For the reasons set forth above, the record establishes that the proposed survey is consistent with the objectives of the CZMA: it furthers the national interest in a significant or substantial manner; the national interest furthered by the proposed survey outweighs the proposed survey's adverse coastal effects; and there is no reasonable alternative available for the proposed survey. Given this decision, the State's objection to the proposed survey no longer operates as a bar under the CZMA to federal agencies issuing, in accordance with all applicable law, licenses or permits necessary to conduct the proposed survey. The decision to override the State's objection does not supplant other state and federal license and permit requirements and review processes.



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