

August 21, 2017

VIA Federal e-Rulemaking Portal

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National Marine Fisheries Service, NOAA
Office of Sustainable Fisheries
1315 East-West Highway
Silver Spring, MD 20910

**Re: Streamlining Regulatory Processes and Reducing Regulatory Burden,
NOAA-NMFS-2017-0067**

Dear Ms. Denit:

This letter provides the comments of the American Petroleum Institute (“API”) and the International Association of Geophysical Contractors (“IAGC”) (the “Associations”) in response to the National Oceanic and Atmospheric Administration’s (“NOAA”) request for public input on actions the National Marine Fisheries Service (“NMFS”) and the National Ocean Service (“NOS”) should take to streamline their regulatory processes and reduce burdens on the regulated community.¹ See 82 Fed. Reg. 31,576 (July 7, 2017). This timely review, as mandated by executive order, is essential to fixing certain regulatory processes under NMFS’s and NOS’s jurisdictions that are presently inefficient, burdensome, and, in some cases, contrary to applicable law. We appreciate the agencies’ consideration of the comments set forth below, and would be pleased to discuss these issues in an in-person meeting. Our specific recommendations are concisely summarized in the “Conclusion” section at the end of this letter.

I. THE ASSOCIATIONS

API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers.

¹ The Associations will refer to NOAA throughout this letter, but will also identify NMFS and NOS when referring specifically to their regulatory activities.

IAGC is an international trade association representing more than 110 member-companies from all segments of the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, and associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data. For more than 45 years, IAGC has been the global voice of the geophysical industry and is the only trade organization solely dedicated to the industry.

II. COMMENTS

A. Context

Our comments are focused on the regulation of the offshore oil and gas, and geophysical, industries. To place our comments in the appropriate context, we describe below how our industries are regulated by NOAA, explain the regulatory challenges our industries have encountered, and provide a recent example to illustrate these challenges. As addressed in this letter, these regulatory challenges have become so severe that they seriously threaten the ability of our industries to explore and develop the oil and gas resources of the United States Outer Continental Shelf (“OCS”).

The primary roles of NMFS with respect to regulating offshore oil and gas activities involve issuing “incidental take” authorizations (“ITAs”) to offshore operators under the Marine Mammal Protection Act (“MMPA”) and consulting with the Bureau of Ocean Energy Management (“BOEM”) regarding the potential effects of offshore activities on marine animals listed as threatened or endangered under the Endangered Species Act (“ESA”). In addition, NMFS’s listing of marine species under the ESA and its designation of “critical habitat” for such species have significant regulatory ramifications for our industries because those decisions dictate the need for and scope of future ESA consultations.

NMFS’s actions under the MMPA and the ESA should complement BOEM’s actions under the Outer Continental Shelf Lands Act (“OCSLA”), which calls for the “expeditious and orderly development” of the OCS “subject to environmental safeguards.” 43 U.S.C. § 1332(3); *see California v. Watt*, 668 F.2d 1290, 1316 (D.C. Cir. 1981) (OCSLA’s primary purpose is “the expeditious development of OCS resources”). Congress enacted OCSLA to “achieve national economic and energy policy goals, assure national security, reduce dependence on foreign sources, and maintain a favorable balance of payments in world trade.” 43 U.S.C. § 1802(1). Congress expressly intended to “make [OCS] resources available to meet the Nation’s energy needs as rapidly as possible.” *Id.* § 1802(2)(A). In furtherance of this congressional policy, the President recently signed an Executive Order expressly stating that it “shall be the policy of the United States to encourage energy exploration and production, including on the Outer

Continental Shelf . . . while ensuring that any such activity is safe and environmentally responsible.”²

Although our industries face extensive regulation in all aspects of offshore operations, we focus here on the particularly difficult regulatory challenges we have encountered for offshore exploratory operations, such as seismic surveying. These difficulties (explained in more detail below) are exceptionally vexing because they serve no practical purpose and do not address any concrete problems that have been, or can be, identified with actual information and scientific data. In other words, the difficulties we have encountered derive from agency perceptions that are not based on actual science but instead upon extreme extrapolation of known minor effects or hypothetical imaginations of the worst possible effects that could be caused by certain activities. Our industries are then “precautionarily” regulated based upon those fictional scenarios, not the best available science. Compounding this problem, NMFS’s approach to establishing the regulatory baseline through ESA listings and critical habitat designations, and through agency initiatives untethered from statutory obligations (such as the “Ocean Noise Strategy Roadmap”), has proceeded in a similarly unscientific, “precautionary” manner.

For over six decades, extensive seismic operations for oil, gas and renewable energy have been conducted over virtually all OCS planning areas. The federal government and academic scientists have studied the potential impacts of these activities on marine life and have concluded, under multiple statutes, that any such potential impacts are insignificant. This conclusion has been publicly reaffirmed on multiple occasions by BOEM:

To date, there has been no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting marine animal populations or coastal communities. This technology has been used for more than 30 years around the world. It is still used in U.S. waters off of the Gulf of Mexico with no known detrimental impact to marine animal populations or to commercial fishing.

BOEM, Science Notes (Aug. 22, 2014), <http://www.boem.gov/BOEM-Science-Note-August-2014/> (Aug. 22, 2014); *see also* BOEM, Science Notes (Mar. 9, 2015), <https://www.boem.gov/BOEM-Science-Note-March-2015/> (Mar. 9, 2015) (there has been “no documented scientific evidence of noise from air guns used in geological and geophysical (G&G) seismic activities adversely affecting animal populations”). These conclusions—which have been confirmed in numerous regulatory documents prepared by BOEM, NMFS, and other agencies—

² Presidential Executive Order Implementing an America-First Offshore Energy Strategy (Apr. 28, 2017), <https://www.whitehouse.gov/the-press-office/2017/04/28/presidential-executive-order-implementing-america-first-offshore-energy>.

accurately summarize the best available scientific information regarding the potential effects of offshore seismic activities on marine mammals. There are no other data to the contrary.

Despite this record, the regulatory burdens imposed by federal agencies—including NMFS—have grown substantially, especially over the most recent decade. New, and sometimes conflicting, mitigation requirements, ancillary bureaucratic “red tape,” duplicative and inconsistent agency environmental analyses, inefficient and ineffective inter- and intra-agency coordination, unsupported “precautionary” analyses that are scientifically inaccurate, and permit processing delays have resulted in increased regulatory uncertainty and inefficiency to a point of almost complete governmental dysfunction. One recent example that highlights this trend is described as follows.

In 2014 and 2015, six companies submitted applications to NMFS for marine mammal incidental harassment authorizations (“IHAs”) under the MMPA related to seismic surveys they plan to undertake on the Atlantic OCS. Some of those companies amended their IHA applications in 2015. Despite the MMPA’s clearly expressed requirement that the “Secretary shall publish a proposed authorization not later than 45 days after receiving an [IHA] application”³ and request public comment, NMFS did not publish the proposed Atlantic IHAs until June 2017—two years after the applications were submitted.⁴ Additionally, the proposed IHAs finally issued by NMFS are premised upon highly “precautionary” (*i.e.*, worst-case) analyses that result in incidental take estimates far greater than the number of takes that can realistically occur based on past observations and data because the underlying analyses were derived from biased modeling that was intentionally designed to overestimate take.⁵ The

³ 16 U.S.C. § 1371(a)(5)(D)(iii) (emphases added). After holding a 30-day comment period, the Secretary “shall issue” the IHA within 45 days of the close of the comment period, so long as the required MMPA findings are made. *Id.*

⁴ In January 2017, the previous administration issued a single, blanket, arbitrary decision denying the BOEM permit applications for all six proposed seismic surveys. In May 2017, BOEM correctly reinstated the permit applications, which remain under agency review. During the period of time between these two decisions, NMFS improperly “halted” its review of the pending IHA applications.

⁵ The analysis upon which the estimated incidental takes are based was performed by BOEM, and described by BOEM as follows:

The take estimates include modeled numbers of both ‘Level A’ harassment, which is defined as having the potential to injure hearing, and ‘Level B’ harassment, which is defined as having the potential to disturb. Even as defined to include the sensitive threshold of Level B harassment, the numbers estimated for incidental take are higher than BOEM expects would actually occur. The marine mammal take estimates are estimates of

proposed IHAs then purport to mitigate the supposed effects of this worst-case hypothetical scenario with mitigation measures that are infeasible, burdensome, costly, and unnecessary. Final IHAs have yet to be issued, even though the statutory deadline for doing so passed long ago.

The Atlantic IHAs are indicative of the problems that offshore operators regularly encounter when attempting to obtain MMPA incidental take coverage for their operations or permits that are subject to ESA consultation with NMFS.⁶ These regulatory processes are never completed within the statutorily required timeframes. Applicants are frequently subjected to moving targets and ambiguous signals from the agency. For example, it is not uncommon for the NMFS office preparing an ESA biological opinion to belatedly propose new mitigation measures that are unanticipated by the applicant, or even the action agency. Moreover, because of the extreme regulatory delay that has become common practice, the final decisions are usually rushed at the last minute and often not released until immediately before (or after) projects are planned to begin, which results in project delays, unanticipated costs, and confusion regarding the proper implementation of unexpected or sometimes contradictory mitigation measures. The overwhelming uncertainty and unnecessary delays substantially increase the cost of doing business for offshore operators.

As a direct result of these regulatory impediments, the economic value of American offshore oil and gas resources is substantially reduced and viewed less favorably by private exploration companies when comparing investment opportunities among competing international provinces. This present reality is harmful to the U.S. economy, jobs, energy security, and government revenues. The lack of regulatory transparency and predictability, the reliance upon scientifically questionable decisions, and the continued disregard for congressionally mandated timelines cannot persist if the U.S. intends to chart a sustainable energy future. Below, we offer some solutions to these serious problems.

potential take. They do not represent expected levels of actual take. . . . Furthermore, the take estimates are based on acoustic and impact models that are by design conservative, which results in an over-estimate of take. Each of the inputs into the models is purposely developed to be conservative, and conservative assumptions accumulate throughout the analysis.

BOEM Record of Decision, Atlantic Seismic Permit Applications at 12.

⁶ Another example pertains to the ongoing MMPA incidental take rulemaking for Gulf of Mexico seismic activities. NMFS and BOEM have been working on this action since 2002 and a proposed rule has not been issued.

B. The Implementation of NMFS's Statutory Obligations Can and Should Be Improved.

1. MMPA

The following recommendations are specifically intended to address the delays and other regulatory implementation problems that have negatively affected OCS permitting over the past decade. These recommendations are intended to make the regulatory process more efficient and predictable for NMFS, other related federal agencies (such as BOEM), and the regulated community, and to bring NMFS's functions into compliance with applicable law.⁷

a. Timing Improvements

The process for issuing ITAs is routinely delayed by NMFS. As indicated above, these delays directly violate statutory mandates.⁸ The statutory deadlines are particularly important because IHAs are issued for a period of only one year, and planning for offshore surveys is complicated and very time-sensitive. The solution to this problem is simply for NMFS to begin complying with its statutory obligations. Since that has not been occurring, we recommend the following actions be taken immediately to facilitate NMFS's statutory compliance:

- The Department of Commerce should issue a written directive to NMFS and all of its regional offices requiring strict compliance with the deadlines established in MMPA Section 101(a)(5)(D) for IHAs and requiring Section 101(a)(5)(A) incidental take regulations ("ITRs") to be issued in final no later than six months after a complete ITR application has been submitted.
- NMFS should issue regulations that affirm the MMPA Section 101(a)(5)(D) deadlines, establish a timing requirement for the issuance of ITRs (as indicated above), and establish a default approval of an IHA or ITR application when the agency does not meet those deadlines (or, alternatively, automatic elevation within the Department of Commerce).

⁷ In addition to the recommendations stated below, we continue to urge NMFS to prepare a new draft version of the Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing, provide that draft for public review and comment, and then promptly issue a new, improved version of the Technical Guidance. Our comment letter dated July 17, 2017, which includes our previous comment letters on this topic, sets forth the reasons why the Technical Guidance should be improved and reissued.

⁸ See 16 U.S.C. § 1371(a)(5)(D)(iii). Additionally, NMFS's website acknowledges that following an adequacy and completeness review of two to six weeks, a full application process should last six to nine months (which still exceeds statutory requirements). Some of our members have now waited over two years for Atlantic OCS IHAs.

- NMFS should re-affirm through guidance or internal policy that any ESA or National Environmental Policy Act (“NEPA”) review associated with an ITA must be completed on or before the date the ITA is issued, consistent with the timing requirements described above.

b. Mitigation Clarity

The MMPA requires an IHA or an ITR to set forth the “other means of effecting the least practicable impact.”⁹ However, this term is not defined in the statute or in NMFS’s implementing regulations. In practice, this term is the basis for the mitigation and monitoring measures included in ITAs, but, because the term is vague and ambiguous, there is no clarity for NMFS or the regulated community regarding the acceptable scope and content of mitigation and monitoring measures. As a result, the mitigation and monitoring measures included in ITAs allow for almost no agency accountability and are often operationally infeasible and economically burdensome (*i.e.*, impracticable).

To remedy this problem, NMFS should issue regulations (or guidance, at a minimum) that define “least practicable impact.” The definition should expressly state that operational concerns and economic feasibility are primary factors in determining what mitigation is “practicable.” The definition should also specify that mitigation and monitoring measures shall not result in more than a minor change to the specified activity and shall not alter the basic design, location, scope, duration, or timing of the specified activity.¹⁰ Additionally, we recommend that NMFS and BOEM work in conjunction to develop “standard” mitigation and monitoring measures, based on the best available science, applicable to certain categories of activities in each OCS region. A coordinated and proactive approach to mitigation and monitoring measures would provide more certainty for the regulated community.

c. Eliminating Administrative Redundancy

IHAs and letters of authorization (“LOAs”) issued under ITRs are intended to be simple authorizations for single, low-effect activities. ESA and NEPA reviews are currently conducted for each individual IHA. When issuing an LOA, NMFS typically relies upon the ESA and NEPA reviews conducted at the ITR stage. NMFS should issue guidance that provides reasonable mechanisms for making these reviews more efficient and eliminating unnecessary or redundant reviews. For example, NMFS could establish categorical exclusions for (i) all LOAs (on the basis that NEPA review was performed at the ITR stage) and (ii) certain types of IHAs.

⁹ 16 U.S.C. §§ 1371(a)(5)(A)(i)(II)(aa), 1371(a)(5)(D)(ii)(I).

¹⁰ This definition would create regulatory consistency between MMPA- and ESA-based permit conditions since the terms and conditions included in an ESA Section 7 biological opinion are already defined with similar regulatory language. *See* 50 C.F.R. § 402.14(i)(2).

NMFS could also establish a process for streamlined Section 7 consultation for IHAs. *See* ESA Section 7 Consultation Handbook § 5.4. Finally, NMFS should issue guidance prohibiting any processes or reviews that are not specifically required by the MMPA.¹¹

2. ESA

Our recommendations for improving NMFS's implementation of the ESA focus on three areas: (i) Section 7 consultation, (ii) listings, and (iii) critical habitat designation. Section 7 consultation has the most immediate regulatory impact for authorizations involving offshore activities. However, ESA listing and critical habitat decisions establish the "regulatory baseline" for these consultations and can render the regulatory landscape unworkable if not checked against statutory requirements.

a. Section 7 Consultation

Section 7 consultation is inefficient, time-consuming, and notorious for delaying the federal permitting process. As with MMPA ITAs, this delay is largely a product of NMFS's failure to adhere to applicable statutory deadlines. The ESA requires NMFS to complete Section 7 consultation under strict and specific timeframes. *See* 16 U.S.C. § 1536(b). However, over many years of agency practice, this statutory deadline has been rendered irrelevant and is rarely complied with by NMFS. The Department of Commerce should issue a directive to NMFS and all its regional offices requiring strict compliance with the ESA Section 7 deadlines and establishing significant consequences if those deadlines are not satisfied. NMFS (and the U.S. Fish and Wildlife Service) have been ignoring Congress's clearly expressed mandates for far too long to the detriment of the regulated community.

NMFS can also improve its communication and coordination with Section 7 "applicants" in the consultation process.¹² Specifically, NMFS must afford applicants reasonable notice and opportunity to participate in the consultation process, including a timely and fair opportunity to

¹¹ The ongoing delay for the issuance of the Atlantic IHAs was exacerbated by NMFS's decision to provide an unprecedented and unnecessary 30-day comment period on the IHA applications, which is not required by the MMPA.

¹² *See* 50 C.F.R. § 402.02 (definition of "applicant"); *Haw. Longline Ass'n v. NMFS*, No. 01-765, 2002 U.S. Dist. LEXIS 7263, at *22-23 (D.D.C. Apr. 25, 2002) (applicant status must be "broadly conferred" and any person seeking "any other form of authorization or approval issued by a Federal agency as a prerequisite for carrying out the action" is an applicant); *see also Or. Nat. Desert Ass'n v. Tidwell*, 716 F. Supp. 2d 982, 1000-01 (D. Or. 2010) (invalidating NMFS's biological opinion because it failed to allow livestock grazing permit holders an opportunity to participate in the consultation process).

review and comment on drafts of the biological opinion.¹³ As emphasized by the ESA Section 7 Consultation Handbook, applicants are entitled to at least the following rights:

- The action agency must provide the applicant an opportunity to submit information for consideration during the consultation;
- The applicant is entitled to review draft biological opinions obtained through the action agency, and to provide comments through the action agency;
- The consulting agency must discuss with the applicant its review and evaluation conducted pursuant to 50 C.F.R. § 402.14(g)(1)-(3);
- The consulting agency must discuss the basis of its biological determination with the applicant and seek the applicant's expertise in identifying reasonable and prudent alternatives to the action if a finding is likely to result in a determination of jeopardy or an adverse modification of critical habitat; and
- The applicant must be timely provided with a copy of the final biological opinion.¹⁴

If NMFS regularly adhered to these requirements—which it presently does not do—the ESA Section 7 process would be greatly improved.

In addition, NMFS should amend its Section 7 regulations to clarify issues that are not addressed uniformly by NMFS or its regional offices. For example, NMFS should revise the definition of “effects of the action” to ensure that consideration of “direct effects” and “indirect effects” incorporates the principles of proximate causation and reasonable foreseeability. *See* 50 C.F.R. § 402.02. There must be a close casual connection between the proposed action and any effects—*i.e.*, the action must “directly produce” the resulting effect on the species or critical habitat. A direct or indirect effect should not be included if it will occur irrespective of the proposed action. Similarly, NMFS should amend the Section 7 regulations to expressly state that consultation is not required for agency actions with discountable, insignificant, or beneficial effects on a species or its critical habitat. This guidance is currently contained in the Section 7

¹³ *See Haw. Longline Ass'n v. NMFS*, 2002 U.S. Dist. LEXIS 7263, at *12 (“The consultation regulations require that NMFS review all relevant information submitted by the applicant and discuss its analysis and grounds for the BiOp with the applicant.” (citing 50 C.F.R. § 402.14(d), (g))); *see also Haw. Longline Ass'n v. NMFS*, 281 F. Supp. 2d 1, 16 (D.D.C. 2003) (applicant is “entitled to reasonable time to review and comment on” draft biological opinions).

¹⁴ ESA Section 7 Consultation Handbook at 2-13; *see also Haw. Longline Ass'n v. NMFS*, 2002 U.S. Dist. LEXIS 7263 at *29-40; 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14(d), (e), (g)(5).

Consultation Handbook, but should be formally adopted in regulations to provide certainty and to further inform the “not likely to adversely affect” determination.¹⁵

Finally, as indicated above, the consulting division of NMFS and the NMFS permitting division (or BOEM) should coordinate more closely on all aspects of Section 7 consultation and, specifically, on the terms and conditions that will be included in biological opinions and in permits, respectively. Often, because the ESA consultation lags behind, the consulting division includes impromptu mitigation measures in its terms and conditions very late in the permitting process. Earlier and more frequent communication with the permitting agency and the applicant will help to avoid this problem.

b. Listings

In recent years, NMFS has made listing decisions that expansively apply the ESA’s definition of “threatened species” in a manner that was never contemplated by Congress. As two examples, NMFS listed Arctic ringed seals and Arctic bearded seals as “threatened species” based solely on the hypothetical effects of sea ice decline projected to occur in the year 2100 by climate-based modeling. NMFS issued these decisions despite both species presently existing in very high numbers (hundreds of thousands to millions), occupying their entire historical ranges (the entire U.S. jurisdictional Arctic OCS), and having experienced no observed adverse impacts as a result of recent reductions in sea ice. Indeed, both species are categorized by the International Union for Conservation of Nature—the entity recognized as the most comprehensive apolitical organization for evaluating the conservation status of plant and animal species—as “Least Concern,” along with other ubiquitous species such as the common coyote and the white-tailed deer.¹⁶

These listing decisions open the door to almost unlimited future listings of healthy species based solely upon 100-year speculative projections, all of which will result in heavy burdens on the regulated community. Such listings cause substantial regulatory hardship and economic impacts because NMFS must, *inter alia*, designate “critical habitat” for listed species, engage in Section 7 consultation for any activity that “may affect” listed species, and prepare “recovery plans” for listed species (despite the fact that species like ringed and bearded seals presently exist in a “recovered” state). Moreover, such listings provide no benefit whatsoever

¹⁵ We further recommend that NMFS, in conjunction with the U.S. Fish and Wildlife Service, immediately begin work on updating the Section 7 Consultation Handbook. The Consultation Handbook is almost 20 years old and is now outdated in many respects. The Consultation Handbook should be updated to reflect changes in ESA law over the past 20 years and to make the Section 7 regulatory process more predictable and efficient.

¹⁶ See The IUCN Red List of Threatened Species, Version 2017-1, <http://www.iucnredlist.org/search>

because the species are presently healthy and the hypothetical climate-based impacts upon which the listings are based cannot, as both NMFS and the U.S. Fish and Wildlife Service have repeatedly conceded, be addressed by the ESA.

To correct NMFS's improper ESA listing practices, we recommend that NMFS issue regulations, or guidance, that specifically interpret the ESA's "endangered species" and "threatened species" definitions to provide clarity for both NMFS and the regulated community.¹⁷ Those interpretations should make clear that endangered or threatened listings (i) must be based upon localized and imminent or reasonably foreseeable threats that will have a demonstrated impact on the species; and (ii) apply to species that are actually in decline and for which the ESA's conservation tools can be meaningfully implemented.¹⁸

c. Critical Habitat Designation

NMFS's "critical habitat" designation practices have also strayed far from the ESA's language and intent, to the detriment of the regulated community. For example, within the last five years, NMFS has issued the largest critical habitat designation in the history of the ESA and has proposed an even larger designation.¹⁹ To make matters worse, NMFS has issued a final rule (jointly with the U.S. Fish and Wildlife Service) that allows for even more expansive designations in the future. *See* 81 Fed. Reg. 7413 (Feb. 11, 2016) (amending 50 C.F.R. part 424) ("Final Rule"). The Final Rule is contrary to the plain language and intent of the ESA and will exacerbate the already enormous regulatory and economic impacts associated with unchecked critical habitat designations.

Among other things, the Final Rule improperly allows NMFS to designate unoccupied critical habitat without first exhausting occupied critical habitat as well as unoccupied critical habitat that currently lacks essential habitat features. In other words, under the Final Rule, NMFS may designate as "critical habitat" areas where the listed species is not found and that contain no features essential to the listed species. *See, e.g.*, 50 C.F.R. §§ 424.12(b) (allowing Services to designate areas "at a scale determined by the Secretary to be appropriate"), 424.02 (allowing designation of areas based upon "habitat characteristics that support ephemeral or dynamic habitat conditions"). This makes no legal or practical sense. The ESA strictly

¹⁷ The generalized statutory definitions of "threatened species" and "endangered species" are found at 16 U.S.C. §§ 1532(20) and 1532(6).

¹⁸ *See* 16 U.S.C. § 1531(a)(2) (ESA is intended to ensure conservation of "species of fish, wildlife, and plants [that] have been so depleted in numbers that they are in danger of or threatened with extinction" (emphasis added)).

¹⁹ *See* 79 Fed. Reg. 39,756, 39,856 (July 10, 2014) (designating approximately 317,000 square miles as critical habitat for the loggerhead sea turtle); 79 Fed. Reg. 73,010 (Dec. 9, 2014) (proposed designation of 350,000 square miles as critical habitat for the Arctic ringed seal).

constrains critical habitat designations to “specific areas within the geographical area occupied by the species . . . on which are found those physical and biological features . . . essential to the conservation of the species.” 16 U.S.C. § 1532(5)(A)(i) (emphases added); *see* 124 Cong. Rec. 38,131 (1978) (ESA critical habitat requirements intended to prevent the designation of broad expanses of land and water “as far as the eyes can see and the mind can conceive”).

We strongly recommend that NMFS revoke the Final Rule and apply the ESA’s critical habitat provisions as Congress intended. We also recommend that the Department of Commerce, in coordination with the Department of Interior, initiate a detailed examination of agency critical habitat designation practices over the past decade, identify the legal and administrative flaws in the process, and take meaningful steps to eliminate those flaws.

3. National Marine Sanctuaries Act

The difficulties experienced by the regulated community are not limited to MMPA and ESA processes. NMFS currently engages in the arbitrary practice of imposing permit conditions as a result of National Marine Sanctuaries Act (“NMSA”) consultation that are unrelated to, or do not meaningfully protect, the specific resources that justified the sanctuary designation in the first place. For example, in its proposed Atlantic IHAs, NMFS requires 15 km “buffers” around the boundaries of the Gray’s Reef and Monitor National Marine Sanctuaries for the supposed purpose of protecting marine mammals from seismic sound. However, neither of these sanctuaries was established to protect marine mammals. The Gray’s Reef Sanctuary was established to primarily “protect and preserve the live bottom ecosystem,” and the Monitor Sanctuary was established to protect historic wreckage.²⁰ Accordingly, the proposed IHA condition has no applicability to the resources these sanctuaries were intended to protect.²¹

NMFS has improperly construed the NMSA to protect any living or non-living resources that may be found within a designated marine sanctuary, regardless of whether they are the resources the sanctuary is intended to protect. This interpretation is contrary to the language and intent of the NMSA and has no practical value because it results in no benefits to sanctuary resources. To eliminate meaningless conditions that severely burden the regulated community, NMFS should end this practice immediately. To the extent NMSA resources are likely to be

²⁰ *See* 15 C.F.R. § 938.2; 15 C.F.R. §§ 922.60-.62; Monitor National Marine Sanctuary, Final Management Plan and Environmental Assessment at 15, https://nmsmonitor.blob.core.windows.net/monitor-prod/media/archive/management/final_mp.pdf.

²¹ In fact, regulations applicable to the Monitor National Marine Sanctuary only prohibit actions that could damage the historic shipwreck (*i.e.*, the sanctuary resource).

adversely affected by a proposed action, NMFS and NOS should consult to determine whether additional measures are necessary to protect those specific resources.²²

C. The Ocean Noise Strategy Roadmap Should Be Eliminated.

NMFS and NOS jointly released the final “Ocean Noise Strategy Roadmap” (“ONSR”) in September 2016. The agencies released a draft ONSR in July 2016, took public comment, and largely ignored the public comments provided by the Associations. For the reasons stated in our previous comments (attached), we urge NMFS and NOS to eliminate the ONSR.

We endorse the need for more baseline data and scientific study of potential acoustic effects and impacts, and we similarly endorse efforts to better coordinate, collaborate and share information within agencies and among all stakeholders. However, as addressed in our previous comments, much of the ONSR is premised upon unwarranted policy assumptions that the desired goal is a return to pre-human conditions instead of balanced use of ocean resources, that existing statutory mandates and regulatory measures are inadequate despite ongoing successes, and that an un-mandated comprehensive ocean noise regulatory regime may somehow be cobbled together and scaled up through unilateral actions of NOAA to address assumed chronic and cumulative potential acoustic impacts for which there is little to no scientific evidence. We welcome additional opportunities to collaborate and share insights with NOAA on marine sound issues. However, we question whether there is any legal or practical value in the ONSR given the unsurmountable challenges laid out in the current ONSR and NOAA’s current ability to meet its statutory goals in a resource-constrained environment.

D. The “Precautionary Principle” Should Be Eliminated from NMFS’s Regulatory Functions.

The common denominator among all of the overly broad or arbitrary applications of the MMPA, ESA, and NMSA described above is an overriding effort on the part of NMFS to impose “precautionary” regulatory burdens to address hypothetical and unproven worst-case scenarios. NMFS and other agencies have relied upon this so-called “precautionary principle” to implement regulatory restrictions even where there is no evidence of harm and notwithstanding the costs of such measures.²³ NMFS usually justifies this approach by stating that it must apply the “precautionary principle” when the best available data are uncertain or incomplete. However, all

²² NMFS and NOS have a history of working at cross-purposes and, in some cases, this has resulted in decisions that have created additional burdens on regulated entities. There is a significant need for both agencies to improve their respective processes, communication, and coordination when it comes to regulating activities in the marine environment.

²³ See Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. Pa. L. Rev. 1003 (2003) (defining and criticizing the use of the “precautionary principle”); Frank B. Cross, *Paradoxical Perils of the Precautionary Principle*, 55 Wash. & Lee L. Rev. 851 (1996) (same).

decisions involve some uncertainty (particularly those under the MMPA or ESA), and NMFS is statutorily obligated to make decisions that are objective, based upon the best available science, and not conservatively biased—even when the data are uncertain or incomplete.²⁴

NMFS must expressly eliminate its use of the “precautionary principle.” This alleged “principle” has no basis in any of the statutes governing NMFS’s decisions and is otherwise absent from all applicable law. In fact, NMFS’s sister agency, the U.S. Fish and Wildlife Service, has expressly recognized that the ESA does not require a “precautionary approach to wildlife management,” but instead mandates the use of “the best available scientific and commercial data.”²⁵ NMFS has tacitly recognized the same.²⁶ Moreover, the U.S. Supreme Court has stated that the “obvious purpose” of the ESA’s “best scientific and commercial data” requirement is “to ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise.” *Bennett v. Spear*, 520 U.S. 154, 176 (1997). Like the ESA, the MMPA says nothing about a “precautionary principle,” but does expressly require the use of the “best available scientific information.”²⁷ In short, when agencies base their decisions on “precautionary” assumptions, they fail to use only the best available science, as required by law.

Imposing regulatory measures based on “precaution” rather than the best available science not only violates the law, but is also eminently impractical and unreasonable because it imposes extremely high costs on the regulated community while providing no environmental benefits. The Supreme Court spoke directly to this issue when it observed that although the ESA’s best available science requirement “no doubt serves to advance the ESA’s overall goal of species protection, we think it readily apparent that another objective (if not indeed the primary one) is to avoid needless economic dislocation produced by agency officials zealously but unintelligently pursuing their environmental objectives.” *Bennett*, 520 U.S. at 176-77. NMFS’s continuing application of the “precautionary principle” directly contradicts this U.S. Supreme Court mandate.

For these reasons, it is imperative that NMFS affirmatively eliminate the use of the “precautionary principle” from all of its regulatory decisions. Doing so will restore consistency with the “best available science,” as required by law, align NMFS’s decision-making processes with Supreme Court precedent, and relieve the regulated community of the severe and

²⁴ See, e.g., 16 U.S.C. §§ 1361(19), 1361(27), 1371(a)(3)(A), 1373(a); 50 C.F.R. § 216.104(c).

²⁵ 82 Fed. Reg. 30,502, 30,559 (June 30, 2017).

²⁶ See 81 Fed. Reg. 62,260, 62,271 (Sept. 8, 2016).

²⁷ See, e.g., 16 U.S.C. §§ 1361(19), 1361(27), 1371(a)(3)(A), 1373(a); 50 C.F.R. § 216.104(c).

unnecessary economic and regulatory burdens imposed by decisions that are based upon hypothetical worst-case scenarios rather than objective application of the best available science.

E. The Agency Departments Responsible for Offshore Permitting Should Be Administratively Restructured.

The Departments of Commerce and Interior should establish a Joint NMFS-BOEM Permitting Office (“JPO”) with the goal of providing the regulatory certainty and efficiency necessary to fully develop domestic energy resources on the OCS. Pursuant to the Executive Order entitled “Promoting Energy Independence and Economic Growth,” executive departments and agencies are to develop regulatory agendas that promote the development of domestic energy resources by, among other things, eliminating regulatory burdens.²⁸ Regulatory burdens include agency actions (or inaction) that “unnecessarily obstruct, delay, curtail, or otherwise impose significant costs on the siting, permitting, production, utilization, transmission or delivery of energy resources.”²⁹ As described above, the permitting and environmental review processes presently associated with domestic oil and gas development on the OCS are fraught with uncertainty, delay, and high costs that stifle the full development of these resources. NMFS’s administration of the MMPA and its consultations with BOEM under the ESA are primary contributing factors for this regulatory disarray. The establishment of the JPO, as described below, would help to alleviate these problems.

The JPO would have the exclusive responsibility of addressing all permit applications related to energy development on the OCS. JPO responsibilities would therefore include, among other things, completing all relevant regulatory processes related to OCSLA (*e.g.*, issuing geological and geophysical permits), the MMPA (*e.g.*, issuing IHAs, ITRs, and LOAs), the ESA (*e.g.*, preparing biological opinions and incidental take statements), and NEPA (*e.g.*, preparing environmental impact statements and environmental assessments). The JPO could be jointly managed by senior-level managers with dedicated staff from both BOEM and NMFS unencumbered by other agency issues.³⁰ Because the JPO would consist of BOEM and NMFS permitting teams, duties could be allocated in a manner that is faithful to statutory jurisdictional

²⁸ Presidential Executive Order on Promoting Energy Independence and Economic Growth § (1)(a), (c) (Mar. 28, 2017), <https://www.whitehouse.gov/the-press-office/2017/03/28/presidential-executive-order-promoting-energy-independence-and-economy-1>; *see also* Commerce.gov, Mission Statement, <https://www.commerce.gov/tags/mission-statement> (“The mission of the Department [of Commerce] is to create the conditions for economic growth and opportunity.”).

²⁹ Presidential Executive Order on Promoting Energy Independence and Economic Growth, § 2(b).

³⁰ These senior managers could be required to regularly monitor processing performance and oversee a webpage providing the status of permit applications.

requirements. In connection with completing these regulatory processes, the JPO should establish and adhere to deadlines for issuing permit decisions and develop clear standards and protocols for mitigation measures so that the regulated community may assess—in advance—what types of mitigation will be associated with certain activities.

Centralizing the above-described decision-making processes in the JPO, ensuring appropriate involvement and oversight by senior agency leaders, and holding agency personnel accountable to pre-established deadlines and mitigation protocols will significantly reduce regulatory uncertainty and inefficiencies. This, in turn, will decrease unnecessary economic costs and improve the ability of the United States to explore and develop its OCS.

III. CONCLUSION

We appreciate your consideration of all the comments and recommendations set forth in this letter, which are intended to be constructive and to inform the actions NMFS takes to streamline regulatory processes and reduce regulatory burdens. Our recommendations are summarized for easy reference as follows:

- The Department of Commerce should issue a written directive to NMFS and all of its regional offices requiring strict compliance with the deadlines established in MMPA Section 101(a)(5)(D) for IHAs and requiring Section 101(a)(5)(A) ITRs to be issued in final no later than six months after a complete ITR application has been submitted.
- NMFS should issue regulations that affirm the MMPA Section 101(a)(5)(D) deadlines, establish a timing requirement for the issuance of ITRs (as indicated above), and establish a default approval of an IHA or ITR application when the agency does not meet those deadlines (or, alternatively, automatic elevation within the Department of Commerce).
- NMFS should re-affirm through guidance or internal policy that any ESA or NEPA review associated with an MMPA ITA must be completed on or before the date the ITA is issued, consistent with the timing requirements described above.
- NMFS should issue regulations (or guidance, at a minimum) that define “least practicable impact.” The definition should expressly state that operational concerns and economic feasibility are primary factors in determining what mitigation is “practicable.” The definition should also specify that mitigation and monitoring measures shall not result in more than a minor change to the specified activity and shall not alter the basic design, location, scope, duration, or timing of the specified activity.
- NMFS and BOEM should work in conjunction to develop “standard” mitigation and monitoring measures, based on the best available science, applicable to certain categories of activities in each OCS region.

- NMFS should issue guidance that provides reasonable mechanisms for making the various agency reviews and processes under the MMPA, ESA, and NEPA more efficient, and should eliminate unnecessary or redundant reviews.
- The Department of Commerce should issue a directive to NMFS and all its regional offices requiring strict compliance with the ESA Section 7 deadlines and establishing significant consequences if those deadlines are not satisfied.
- NMFS should improve its communication and coordination with Section 7 “applicants” and strictly adhere to the requirements governing NMFS’s interactions with Section 7 applicants.
- NMFS should amend its Section 7 regulations to clarify issues that are not addressed uniformly by NMFS or its regional offices, and update key regulatory standards.
- The consulting division of NMFS and the NMFS permitting division (or BOEM) should coordinate more closely on all aspects of Section 7 consultation and, specifically, on the terms and conditions that will be included in biological opinions and in permits, respectively.
- NMFS should issue regulations, or guidance, that specifically interpret the ESA’s “endangered species” and “threatened species” definitions to provide clarity for both NMFS and the regulated community. Those interpretations should make clear that endangered or threatened listings (i) must be based upon localized and imminent or reasonably foreseeable threats that will have a demonstrated impact on the species; (ii) apply to species that are actually in decline and for which the ESA’s conservation tools can be meaningfully implemented.
- NMFS should revoke the most recent amendments to the ESA critical habitat regulations and apply the ESA’s critical habitat provisions as Congress intended. Additionally, the Department of Commerce, in coordination with the Department of Interior, should initiate a detailed examination of agency critical habitat designation practices over the past decade, identify the legal and administrative flaws in the process, and take meaningful steps to eliminate those flaws.
- NMFS and NOS should apply the NMSA as Congress intended and ensure that any NMSA-based requirements are specifically tailored to protect the resources for which the relevant sanctuary was intended to protect.
- Because of its insurmountable legal and practical infirmities, NMFS should eliminate the ONSR.

- NMFS must affirmatively eliminate the use of the “precautionary principle” from all of its regulatory decisions. Doing so will restore consistency with the “best available science,” as required by law, and relieve the regulated community of the severe and unnecessary economic and regulatory burdens imposed by decisions that are based upon hypothetical worst-case scenarios, rather than objective application of the best available science.
- The Departments of Commerce and Interior should establish a Joint NMFS-BOEM Permitting Office with the goal of providing the regulatory certainty and efficiency necessary to fully develop domestic energy resources on the OCS.

The importance of improving the regulatory implementation of NOAA’s obligations, as recommended above, cannot be overstated. These recommendations will create tangible economic, energy, and environmental benefits that will accrue to both NOAA and the regulated community. We urge NMFS to undertake these important reforms immediately. Should you have any questions, please do not hesitate to contact Andy Radford (202.682.8584) or Nikki Martin (713.957.5068).

Sincerely,



Andy Radford
American Petroleum Institute
Sr. Policy Advisor – Offshore

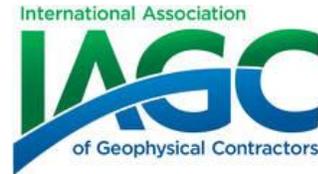


Nikki Martin
International Association of Geophysical Contractors
President

cc: Chris Oliver, Assistant Administrator, NOAA Fisheries
Chairman Rob Bishop, Natural Resources Committee
Chairman John Thune, Commerce Committee

Attachment

ATTACHMENT



July 18, 2016

Ocean Acoustics Program
NOAA Office of Science & Technology
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225
Attn: Jason Gedamke, Ph.D.

Re: Comments on the Draft Ocean Noise Strategy Roadmap

Dear Dr. Gedamke:

We write on behalf of the American Petroleum Institute (“API”) and the International Association of Geophysical Contractors (“IAGC”) (together, the “Associations”) to provide our collective comments on the recently circulated draft Ocean Noise Strategy Roadmap (“ONS Roadmap”). Thank you for your attention to the Associations’ comments and concerns addressed in this letter.¹ We look forward to future opportunities to work with the National Oceanic and Atmospheric Administration (“NOAA”) in the development of regulatory and voluntary programs that are science-based and that balance ocean uses with acoustic protection and mitigation.

THE ASSOCIATIONS

API is a national trade association representing over 650 member companies involved in all aspects of the oil and natural gas industry, including offshore exploration and development. IAGC is the international trade association representing geophysical services companies that support and provide critical data to the oil and natural gas industry. IAGC members play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data. Collectively, the Associations represent nearly all of the stakeholders engaged in the exploration and development of offshore

¹ The original comment deadline established by NMFS was July 1, 2016; however, the Associations were granted an extension of time until July 18, 2016. We sincerely appreciate NMFS’ accommodation of our request for additional time.

oil and gas resources in and adjacent to U.S. coastal and Outer Continental Shelf (“OCS”) ocean waters.

COMMENTS ON THE DRAFT ONS ROADMAP

The Associations commend NOAA for the long-term planning, transparency and agency coordination principles underlying development and publication of the ONS Roadmap. The Associations further commend and strongly support advancement of science-based coordinated programs such as envisioned in the ONS Roadmap. As emphasized in the current draft, there is much that is unknown and, accordingly, a great deal to be gained for all stakeholders in ocean resources, through well-designed and focused data collection and studies directed at filling important gaps in our present knowledge and understanding of marine animal abundance, soundscape characteristics, noise sources and their potential acoustic impacts, and effective mitigation strategies. The Associations especially appreciate NOAA’s express acknowledgement that its statutory mandates require management that *balances* competing needs and uses of ocean resources.² Further, as a roadmap and strategy, we understand that this document is not intended to reach conclusions as to acoustic effects or to establish specific criteria or requirements regarding evaluation, identification or mitigation of potential noise impacts. Accordingly, as further addressed below, the goal of the ONS Roadmap should be to serve as a resource for science and collaboration planning that contributes to responsible use of ocean resources, and not be treated as a formal policy or enforceable instrument.

The remainder of our comments, organized below according to the four chapters of the draft ONS Roadmap, focus on identifying our high level concerns. In addition, where feasible, we have also provided alternative recommendations for your consideration and an Attachment with specific comments.

A. Executive Summary and Chapter 1

The Associations agree with a key premise of Chapter 1 - that the starting point for assessing acoustic effects must be a reliable understanding of resource presence, abundance, density, habitat use and trends. We agree that the existing body of scientific information may not be as comprehensive as NOAA would like, but decisions related to resource management and industrial activities must be based on the “best available science.” This is not to suggest, however, that additional scientific research should not be conducted. The Associations are committed to advancing public-private scientific partnerships, and even identifying new and creative opportunities to expand our collective understanding of ocean noise and its potential impacts on marine resources.

² ONS Roadmap at pp. 1, 29.

In general, we agree that the list of baseline science needs identified in Chapter 1 is useful. However, we urge NOAA to prioritize science directed at species or stocks that are exhibiting a decline in abundance or other important measures of biological fitness for which ocean noise is a plausible significant factor. We also recommend that NOAA prioritize science directed at sound sources that have been less studied but are known to pose more risk to species or known to be the predominate source of observed ocean noise increases.

As stated at the outset, the Associations strongly endorse NOAA's acknowledgement that existing statutory authorities mandate balancing competing needs and uses. Unfortunately, it appears that this important concept of achieving balance is not carried forward into the body of the draft strategy. This shortcoming undermines the vitality and promise of the roadmap. Moreover, there is a lack of clarity surrounding the interplay between the proposed Roadmap and existing statutory and regulatory programs.

The policy foundation of the ONS Roadmap starts from the perspective that the natural state, or baseline conditions, of the oceans and their soundscapes are defined by conditions before human influence.³ This perspective, by definition, makes the assumption that all anthropogenic sounds (and the activities that emit them) are unnatural and harmful. This policy perspective and the regulatory regime it dictates are one-sided, reflecting a judgment that human activity is "bad" and that the absence of human activity is "natural." The Associations are concerned that NOAA's perspective, based on factors not enumerated in law, could bias the outcome of future regulatory processes. Such a policy and regulatory approach is most likely to lead to discord and conflict. Moreover, there is no statutory mandate that NOAA regulates oceans generally or with specific respect to ocean noise so as to return to conditions before human existence (nor would such a goal be attainable). Rather, Congress has mandated that NOAA balance species preservation and habitat protection with the conduct of responsible and valued commercial activity.

The policy perspective that human-caused effects are not natural, and assumed as always harmful, is carried forward through a series of one-sided statements about the purpose of the ONS Roadmap. For example, the widely used term "management" is narrowly defined in the ONS Roadmap as actions by NOAA to reduce or eliminate acoustic effects, not actions to achieve the broader and more functional goal of balancing responsible use and preservation of ocean resources.⁴ Every subsequent restatement of the purpose of the Roadmap identifies resource protection only, not balanced resource management, as the basis for NOAA's ocean

³ See ONS Roadmap at p. 45 ("By their very nature, therefore, the introduction of these man-made sources of sound into the aquatic environment alters soundscapes from their natural and historical states."); *id.* at p. 46.

⁴ ONS Roadmap at p. 2, n.3.

noise strategy.⁵ Similarly, although the ONS Roadmap often identifies cooperation and collaboration as key elements, this document was assembled by NOAA without stakeholder participation and, as a whole, encourages a very prescriptive regulatory approach to acoustic effects and issues.⁶ In doing so, the Roadmap takes the form of a unilateral policy that seeks to further control and eliminate anthropogenic ocean noise, uninformed by Congress's intent for balance or the perspectives, knowledge, and experience of those whose activities would be controlled or eliminated.

NOAA's one-sided policy perspective is also evident in the discussion of scientific understanding. One key premise of the ONS Roadmap is a working assumption that there are significant adverse chronic and cumulative acoustic impacts. However, the ONS Roadmap repeatedly acknowledges that scientific support for this presumption is lacking, and there are well-documented examples of long-term exposures of acoustically-sensitive species where no biologically significant chronic or cumulative impacts have occurred.⁷ Further study and improved understanding of these issues is well-warranted; however, a presumption that ocean noise is having undetected and pervasive adverse chronic and cumulative impacts is not.

Finally, with respect to Chapter 1, the Associations urge great caution in the early endorsement of models to predict risk in an area where basic species abundance data are mostly lacking and so much else, like habitat use and availability, is poorly understood. Particularly, NOAA's statutory authorities and regulatory programs almost universally require the use of best available scientific information or an equivalent standard. Further, this standard incorporates a level of granularity in modeling of potential impacts, standards for data quality, and related thresholds that ensure that the information is not only the best available but that it meets appropriate standards of quality and specificity for use in particular agency decisions. There is

⁵ *E.g.*, ONS Roadmap at pp. 3, 5, 18.

⁶ The draft document appears to suggest that NOAA's strategy should include advocacy that engages the public in acoustic issues against commercial and industrial stakeholders. *See* ONS Roadmap at p. 41 (encouraging "conversations [that] expose people to new scientific information regarding environmental effects as well as more nuanced perspectives on the practices of industries").

⁷ For example, oil and gas seismic exploration activities have been regularly conducted in the Beaufort and Chukchi Seas of the Arctic Ocean for decades, with regular monitoring and reporting to National Marine Fisheries Service under the auspices of Marine Mammal Protection Act ("MMPA") incidental take authorizations issued since the early 1990s. During this lengthy period of acoustic exposures, and despite annual lethal takes by Alaska Natives engaged in subsistence activities, bowhead whales have consistently increased in abundance to the point that they are believed to have reached carrying capacity.

limited data and scientific information to test and calibrate model results against reliable real-world conditions. Our experience suggests that a cascading series of conservatively-biased assumptions will be used for all uncertain parameter inputs and that this leads to accumulating bias as the cumulative conservative assumptions add up to increasingly unlikely statistical probabilities (NAS, 2012).⁸ As a consequence, the results from otherwise well-designed models quickly become little more than improbable precautionary worst-case scenarios, not a fair simulation or representation of likely environmental conditions.

B. Chapter 2

Building on Chapter 1, we understand Chapter 2 to express a core policy preference for taking a programmatic large-scale approach to acoustic management based upon the premise that current activity-specific and place-based permitting under existing authorities is inadequate. Respectfully, we question the premises for this policy preference for at least the following reasons:

- NOAA's end goal of the ONS Roadmap is not clear except to comprehensively regulate ocean soundscapes to the point of eliminating human sound sources. However, Congress has chosen not to create such a regulatory regime, and alternative interpretations of existing authorities are highly questionable.
- Indeed, the ONS Roadmap does not address, and we are unaware of any evidence, that unilateral actions by an agency to scale up components of multiple existing programs into an unmandated comprehensive regulatory program has led to increased effectiveness by any measure.
- The scientific data and regulatory tools to programmatically and effectively regulate soundscapes at the scale envisioned in the ONS Roadmap do not exist.
- NOAA has authority to address, and is addressing, acoustic issues under existing statutory authorities. In the Associations' experience, acoustic management of specific commercial and industrial noise sources at specific locations under authorities such as the MMPA has been rigorous (*e.g.*, holding activities to a negligible impact standard) and successful over long time scales. We are aware of no examples of MMPA-authorized commercial and industrial activities where existing regulatory management proved inadequate to address ocean noise effects.

⁸ National Academies of Science. 2012. *Assessing the Reliability of Complex Models: Mathematical and Statistical Foundations of Verification, Validation, and Uncertainty Quantification*. National Research Council ISBN 978-0-309-25634-6, doi: 10.17226/13395

- A balanced approach dictates that NOAA not unfairly and disproportionately regulate certain stakeholders. For example, NOAA acknowledges that the commercial shipping industry is a significant contributor to ocean noise, but admits it is “impossible” to regulate this industry under existing law. NOAA should not put forth new soundscape management regimes that risk unfair burdens on presently regulated entities absent additional authority from Congress to regulate additional stakeholders.
- Before launching a new strategy to address ocean noise, NOAA should complete work to finalize the Technical Memorandum, “National Standards for a Protected Species Observer and Data Management Program” (Baker et al, 2013) and to revise the thresholds for assessing acoustic impacts on marine mammals. In addition, NOAA should also review and process the Protected Species Observer and other data it has yet to analyze.

In sum, the Associations encourage NOAA to work within existing statutory mandates, rather than to conceive of a strategy premised upon a comprehensive ocean noise regulatory scheme that does not exist. We do so not to discourage or deter NOAA from addressing potential ocean noise impacts and effects, but rather because our experience is that (i) existing authorities are more than adequate and effective, and (ii) efforts to increase regulatory effectiveness should come through advancing the best available science, not creating a new programmatic ocean noise regulatory scheme.

C. Chapter 3

The Associations do not have any specific comments pertaining to Chapter 3 beyond those concerns expressed above and below.

D. Chapter 4

The Associations appreciate and support the authors’ decision to provide case studies as a means of giving better definition to how NOAA envisions implementing and benefiting from its ocean noise strategy. However, we think that these examples better highlight the shortcomings of the ONS Roadmap as now envisioned, rather than its strengths.

Case Study 1 focuses on soundscape characterization and potential acoustic risk to blue, humpback and fin whales in the portion of their range off the coast of Southern California. The fundamental premises of this study are that (i) blue, humpback and fin whales represent important acoustically-sensitive species; (ii) NOAA has concluded that ocean noise in Southern California ocean waters has substantially increased and is likely to continue to increase; and (iii) NOAA believes that noise and risk characterization for these three cetacean species and their Southern California habitats will provide important information for regulatory soundscape management of chronic noise impacts.

From our perspective, NOAA's selection of these circumstances as its lead example of how the ONS Roadmap may serve to focus and guide future coordinated agency action highlights at least two major flaws. First and foremost, although reliable abundance information for many species is lacking, it is well-documented that blue, humpback and fin whales in this region of the Pacific Ocean have experienced decades of sustained population growth, with one or more of these species reaching its carrying capacity. This sustained period of reproductive success and population growth has occurred over the same time period during which data show ocean noise in Southern California waters has been increasing (McDonald et al 2008).⁹ Accordingly, although blue, fin and humpback whales are important ocean resources with well-acknowledged acoustic sensitivities, and although there is a great deal that we do not know or understand about these whales and environmental stressors, we do know to a very high degree of certainty that these species are not just surviving, but have flourished to the point of a remarkable recovery. The end of commercial whaling and existing regulatory protections have proven sufficient for this recovery. Given limited agency resources, the number of ocean resources at risk, and the number of significant data and information gaps, focusing time and attention on the undetected risks to healthy populations from a stress source that abundance data demonstrates has neither alone nor cumulatively impeded a robust population recovery, seems misguided and unwarranted. Indeed, this case study highlights an example of just how some of the policy biases embedded in the ONS Roadmap may turn an otherwise promising initiative into a solution in search of a problem (*i.e.*, a search for adverse acoustic effects and impacts not known to exist and not likely to be biologically significant).

Case Study 1 also serves to highlight a second shortcoming of the ocean noise strategy as currently envisioned. As discussed previously, one fundamental premise underlying the ONS Roadmap is that broad programmatic soundscape management would significantly improve the effectiveness of regulatory management of potential acoustic impacts. However, all noise sources are not equally responsible for increased ocean noise, and all noise sources are not equally regulated. In the instance of ocean noise off the coast of Southern California, NOAA has identified increases in commercial shipping as the predominant cause.¹⁰ However, noise from commercial shipping is unregulated by NOAA under existing authorities. Insofar as increases in commercial shipping traffic are an important source of increased ocean noise, but are unregulated by NOAA, broad soundscape analysis and greater regulatory management seem unlikely to produce positive results. Specifically, risk management efforts under such circumstances will inevitably focus on tightening regulation of noise sources that are already highly managed under existing authorities even though these sources are not the predominate

⁹ McDonald MA, Hildebrand JA, Wiggins SM, Ross D. 2008. A 50 year comparison of ambient ocean noise near San Clemente Island: a bathymetrically complex coastal region off Southern California. *J Acoust Soc Am* 2008 124(4):1985-92. Doi: 10.1121/1.2967889.

¹⁰ ONS Roadmap at p. 63.

cause of increased ocean noise. Were this to occur, already highly regulated industries will bear the regulatory brunt of NMFS's strategy while such additional requirements may have no productive result for ocean resources, since significant unregulated noise sources will continue to operate with little management or incentive to analyze acoustic effects and to innovate operating solutions.

In brief, Case Study 2 highlights several similar shortcomings. This example starts from the premise that there are certain acoustically sensitive fishes and invertebrate species. However, little if any evidence is provided that (i) fish stocks are depressed other than as a result of commercial overfishing that is directly regulated by NMFS under the Magnuson-Stevens Act, (ii) acoustic effects have ever been demonstrated or thought to have population-level impacts to any invertebrate population, or (iii) enhanced acoustic risk assessment and noise management would meaningfully contribute to recovery of fish stocks that are overfished or to the health of invertebrate populations. Accordingly, as with Case Study 1, this example also has strong elements of a solution in search of an acoustical problem under circumstances where the problem is known to be something else (overfishing) or where there is no known problem at all (invertebrates). Also similar to Case Study 1, the predominate source of increased ocean noise under discussion is commercial shipping vessel engines that are generally not regulated by NOAA.

In sum, an ocean noise strategy that drives NOAA to (i) focus on risk assessments of species and areas that are flourishing despite noise increases, or of species where the key environmental risk is well-known and not acoustic, and (ii) to characterize risk untethered from the ability of NOAA to regulate the predominate noise sources of concern, is not a useful roadmap to achieving balanced and responsible use of ocean resources.

CONCLUSION

Thank you for the opportunity to provide comments on the draft ONS Roadmap. In general, the Associations endorse the need for more baseline data and scientific study of potential acoustic effects and impacts, and we similarly endorse efforts to better coordinate, collaborate and share information within agencies and among all stakeholders. However, as addressed above, much of the ONS Roadmap appears to be premised upon unwarranted policy assumptions that the desired goal is a return to pre-human conditions instead of balanced use of ocean resources, that existing statutory mandates and regulatory measures are inadequate despite ongoing successes, and that an un-mandated comprehensive ocean noise regulatory regime may somehow be cobbled together and scaled up through unilateral actions of NOAA to address assumed chronic and cumulative potential acoustic impacts for which there is little to no scientific evidence. As to these latter issues, we respectfully urge your careful reconsideration. Finally, we welcome additional opportunities to collaborate and share insights with NOAA on marine sound issues. However, we question whether working to reform this document into a more realistic and workable long term strategy to guide future planning is worthwhile, given the

API and IAGC Comments - ONS Roadmap

July 18, 2016

Page 9

seemingly unsurmountable challenges laid out in the ONS Roadmap and NOAA's current ability to meet its statutory goals in a resource constrained environment.

Sincerely,



Andy Radford

American Petroleum Institute

Sr. Policy Advisor - Offshore



Nikki Martin

International Association of Geophysical Contractors

President

cc: Jolie Harrison, NMFS

Attachment – Specific Technical Comments

Executive Summary:

Page 1, Generally:

- The Associations suggest NOAA be more explicit in the Introduction that its noise strategy and any regulation of activities applies across all anthropogenic sound sources and it should apply the strategy consistently across all industries.
- No definitions are provided for ‘sound’ or ‘noise’. These terms are used interchangeably throughout. Chapter 4 on ‘soundscapes’ uses ‘sound’ more than other chapters. Noise is mentioned related to anthropogenic activities (implying a definition that noise is all sound from human activities), but the use of both terms is still mixed. Suggest either using one term throughout (preferably sound as it can be used independent of whether it’s the source or receptor that is being considered.) or provide a definition and apply it consistently throughout. It should be noted that the national and international standard definitions of “noise” refer to it as “unwanted sound”, implying a judgement by the listener that we cannot obtain from nonhumans. All too often the word noise is used to refer to sound that is “unwanted” by a particular advocacy group, but has not been demonstrated to be “unwanted” by the receiver of concern (e.g. marine mammals). Overuse and misuse of the word “noise” therefore carries political implications that do not further dispassionate, thoughtful consideration of the evidence for or against manmade sound having, or not having, adverse environmental consequences.
- The assertion that there is increasing human activity and that is leading to rising levels of noise is treated as an indisputable fact. However, it is actually only documented for few areas and in those cases there have often been both upward and downward trends, usually with economic conditions (e.g. recession of 2008).
- The document places heavy emphasis throughout on increasing the inclusion of acoustic habitat in NOAA assessments of all types (permit process, stock assessment report, EFH reviews, inter-agency consultation, etc.). Acoustic habitat is not precisely defined and can be very broadly interpreted. It seems that one of the major overall intents of this document is to encourage NOAA to expand regulation of anthropogenic sound sources through the establishment of “acoustic habitat” as a term of art to allow the use of existing regulations protecting habitats.
- The sentence in Paragraph 1, “[n]umerous studies illustrate specific adverse physical and behavioral effects that exposure to certain sound types and levels can have on different species”, needs modification. There is a tangible difference between effects that “can” occur and those that have been actually demonstrated to occur. In fact there are very few studies that have shown or demonstrated an effect, and most of those have not demonstrated any biologically adverse consequences from the demonstrated effect (such as temporary cessation of vocalization or short term movement away from the sound source). The fact that there are numerous studies that have speculated or hypothesized

API and IAGC Comments - ONS Roadmap - Attachment

about possible, plausible or potential effects does not change the fact that such effects remain undemonstrated.

- Likewise the sentence, “[t]hese changes can lead to reduced ability to detect and interpret environmental cues that animals use to select mates, find food, maintain group structure and relationships, avoid predators, navigate, and perform other critical life functions”, implies a certainty or inevitability that has not been demonstrated or documented. Not only are positive effects not considered, but hypothetical consequences are being used as a rationale for an extensive scope of evaluation and proposed effort while more substantively demonstrated effects like competition with fisheries, bycatch, introduced disease, chemical contaminants and ship strike are not given consideration proportional to their impact, nor to the benefit that would accrue to the marine species if greater mitigations were applied in proportion with the mitigations in place and under consideration for sound.

Page 4, paragraph 1:

- The ONS Roadmap recommends coordination among agencies, but primarily to advance NOAA’s agenda. The Associations believe that some recognition is needed of partner needs, mission, and mandates (such as the Outer Continental Shelf Lands Act). Also important is more recognition of national and international standards bodies like ISO, ANSI, which may already have developed standards for things like PAM technology or terminology for characterizing properties of underwater noise. Even if this is a NOAA internal document, NOAA needs to recognize that not all authorities and expertise reside within NOAA and any actions taken pursuant to the strategy must be done in a manner consistent with existing federal authorities.

Chapter 1 – Managed Species

Page 6, paragraph 1:

- The term “acoustically sensitive” is unnecessary. All animals from coelenterates on up have acoustic sensing capacity.
- Why is only seismic characterized as “high energy”? The per-pulse energy of impact pile driving and explosives is equal to or greater than seismic.
- It should be noted that that seismic surveys are widely used for purposes other than oil and gas exploration.

Page 6, Paragraphs 2 and 3:

- The Associations believe that the characterization of the issue in these paragraphs is overstated. The word choices present an overly dramatic scenario that is not supported by evidence. In addition, these paragraphs include a chain of cascading, increasingly

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speculative outcomes: the aforementioned effects can translate into adverse (and apparently only adverse) effects, they can ultimately lead to only negative vital rate consequences, and that in turn is treated as leading (inevitably?) to adverse (again, only adverse) population consequences. The agency needs to modify its language so that these chains of conclusions are not represented as necessarily adverse and inevitable when there is little or no evidence to support this outcome. The Associations understand the difficulties with obtaining the needed evidence, but while “absence of evidence may not be evidence of absence” it also is most certainly not evidence of effects that remain undemonstrated and controversial.

Paragraph 4:

- The Associations believe that the sentence, “[e]xamples of the effects described in previous paragraphs are known across many marine taxa...” is vastly overstated and needs to be stricken or modified considerably. As noted in our comments earlier, there are few studies that have shown or demonstrated an effect and numerous studies that have speculated or hypothesized effects that remain undemonstrated.

Page 7, last of four bullets:

- The noted “high priority science” needs to be characterized as NOAA internal priorities, not general multi-stakeholder priorities.

Page 8, *Sound Use and Production:*

- The use of swim bladder in hearing is not related to whether swim bladder is physoclistous or physostomous. The subsequent more detailed explanation is better, but much of the discussion is the personal speculation of the author without references.
- Throughout paper there is frequent reference to sea turtle hearing not being well studied. But references drop off after 2008, and there is no reference to:
 - Lavender, A.L., Bartol, S.M., and Bartol, I.K. (2014). Ontogenetic investigation of underwater hearing capabilities in loggerhead sea turtles (*Caretta caretta*) using a dual testing approach. *J. Exp. Biol.*, 2014, 217(14):2580-2589.
 - Martin, K.J., S.C. Alessi, J.C. Gaspard, A.D. Tucker, G.B. Bauer, and D.A. Mann. (2012) Underwater hearing in the loggerhead turtle (*Caretta caretta*): a comparison of behavioral and auditory evoked potential audiograms. *J. Exp. Biol.*, 215:3,001-3,009.

Page 8, *Impacts of Noise:*

- The Associations find this discussion to be overstated and needs to be qualified. In addition, at end of second paragraph only seismic is mentioned with regard to behavioral change, while behavioral effects from other sounds like pile driving or sonar are actually equally if not better documented.

Page 8, *Species Presence, Abundance and Distribution:*

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- The statistics regarding the percentage of marine mammal stocks with good data is important and is documented in even more detail in Appendix B. There should be a reference to Appendix B in this section.

Page 9, Evaluating Population-level and Cumulative Impacts of Noise:

- This section mentions stress as a potential impact that has not typically been comprehensively addressed, but doesn't provide any further context in relation to sound. The Associations believe that clarifying that it's important to understand the relationship between stress and sound before a potential impact can be 'addressed'.

Page 10, paragraph 2:

- References are needed for assertions about potential for adverse effects on immune suppression, inhibition of other hormonal systems, disruption of reproductive function, rather than to say "such studies within marine systems remain rare".
- At end of that paragraph there is a statement about current inability to interpret stress markers. We could say the same about other potential stressors, such as interaction with fisheries (e.g. ETP tuna fisheries), and other stressor, some of which have been studied and documented even more than noise and are nonetheless entirely missing from the discussion in the ONS Roadmap.

Page 10, Acoustic Habitat Effects

- The Associations believe that the explanation for emphasis on Acoustic Habitat Effects is too short and, in conjunction with Appendix A, is unconvincing in rectifying the decision to shift NOAA's focus.

Page 11, PCoD

- We agree with increasing emphasis on PCoD framework for linking exposure-effect-consequence. However, the reliability of the expert elicitation process in the marine mammal field is unknown.

Page 12, Aggregate of Cumulative Effect of Sound:

- The first sentence should be modified to read, "While there is not as yet any supporting evidence, there is general belief that cumulative effects..."

Page 13, paragraph 1:

- Streever, 2012 reference. This work has recently been published; here is a more robust reference: <http://www.int-res.com/articles/esr2016/30/n030p095.pdf>

Page 14, paragraph 4:

- There needs to be additional specificity added about sonar-related strandings, particularly "Mediterranean Sea, Spain 2006" which would be better described as occurring in the

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Alboran Sea. The list is also out of date and incomplete, as it fails to mention similar strandings in Malta in 2011 and Corfu/southern Italy in 2011, among others. Also, including a speculative and very inconsistent event in Madagascar with five other very consistent and well documented cases of military mid-frequency sonar strandings needs additional footnotes or qualifications.

Page 16, Acoustic Thresholds:

- The subject of historical RMS SPL acoustic thresholds and their use is discussed, but there is no mention of the shortcomings of the RMS SPL approach and the reasoning to develop updated threshold guidance. The update efforts to move away from RMS SPL numbers are mentioned later in the document (Page 19). By not mentioning the update effort in the context of the old RMS SPL thresholds, the audience is not made aware of the limited scientific basis for the RMS SPL approach.
- Measurements of hearing from AEP; Auditory Evoked Potential are available but not used in the NMFS acoustic criteria.

Page 17, Mitigation:

- The first sentence suggests NOAA may be interested in pursuing a one-size-fits-all strategy to mitigating effects of ocean noise. The Associations strongly believe that actions need to be assessed based on their individual merits; mitigation for one action need not be the same as other activities.
- The omission of the importance of particle motion for fish hearing and injury needs to be addressed, both here and throughout the document.

Page 18, paragraph 1

- The NOAA Technical Memorandum on “National Standards for PSO and Data Management Program” is identified as a guidance document that should be used more heavily. This is an example of an internal guidance document getting closer to formal regulation without having gone through the formal process. Industry has submitted comment on this technical memorandum that have never been acknowledged or addressed.

Page 18, last paragraph:

- The ONS Roadmap needs to reference relevant new and in-development ISO and ANSI standards. As noted earlier, NOAA needs to recognize standards and protocols developed outside NOAA.

Page 19, paragraph 3:

- Need to update the date for final issuance of acoustic criteria.

Page 19, paragraph 4:

- Guidance from agency on how to do source verification, estimate isopleths (e.g. TL model) and design PAM would be welcome, but is long overdue and has been taken over by other processes (JIP projects on source modeling, TNO development of standards for metrics, ASA towed PAM standards, etc.)

Page 20, paragraph 5:

- The proposed use of risk assessment approaches is, in general, a move in the right direction. However, the Associations believe that switching emphasis to acoustic habitat is still a secondary surrogate for the explicitly stated primary NOAA mandate to manage species and populations. There will still be a need to verify that the effect of managing the acoustic habitat is indeed having the desired population effect. At worst, the creation of an entirely *de nova* method of acoustic habitat management without associated metrics to verify that actions taken under that methodology create the potential for consequences that are the opposite of what was intended, i.e. a negative impact on the species of concern due to an incomplete and incorrect understanding of their acoustic habitat needs and the consequences of altering that habitat.

Page 21, third full paragraph

- The referenced model for acoustic space (Clark 2009) has numerous widely recognized defects. Foremost is the tendency to oversimplify masking, especially for intermittent signals; also tendency to confuse maximum range of audibility with effective or typical communication space, which is usually much smaller than max range of audibility. Additional references such as Erbe et al 2016, Mar Poll Bull, should also be provided, along with a discussion of the dangers of overly simplistic interpretation of equal-energy models of masking; something that Clark (2009) recognizes in principle, but which has frequently been omitted in application examples, like the current NOAA plan.

Page 21, last paragraph

- The Associations question whether contextual factors are “critical” for assessing noise impacts, or is population status and trend sufficient? One cannot know context for each and every individual, but can generate statistical metrics of time spent in different behavioral states, or places or other contexts. In the end, it is only possible to know the statistical distribution of contextual factors such as behavioral states, which then become part of the statistical population model. In other words, it is not necessary or “critical” to know whether an individual exposed to sound is breeding or feeding, whether it is winter or summer, or whether the sound source is moving toward or away from an individual. It is only necessary, or critical, to know what the aggregate sound exposure has been for that population and what population outcomes, if any, have ensued. While it may be “important” for some people to understand whether mothers and calves are more sensitive or whether animals are more or less reactive to sound on the feeding grounds, in the end whether the population remains healthy and stable is the aggregate product of the

unknown and not at all critical information from mothers and calves, males, juveniles; in summer and winter; and whether feeding, breeding or resting. Just as it is not necessary to know whether one individual exercises and another does not in order to evaluate the effect of exercise on human health, similarly it is not necessary to know the context of each and every sound exposure in order to assess the effect of sound on marine life.

Page 22, Prioritize Baseline Science Needs:

- The list of Baseline Science Needs is quite comprehensive. An evaluation of how well NOAAs current structure and internal funding decision align with these needs would be valuable and may suggest ways the administration could reorganize or reprioritize funding to better address basic population level data gaps.
- Bullet 6 fails to explain how noise related stress would be distinguished from other sources of stress. Is the science sufficiently mature to support confidence in the collected data?

Page 23, paragraph 2:

- It is not clear how the interests of regions will be reconciled with a national, headquarters level process for establishing priorities and then coordinating those with other stakeholders who will be impacted by and might be able to contribute to addressing internal NOAA goals.

Page 23, Enhance Efficacy and Transparency of Monitoring Approaches:

- We agree that mitigation should be commensurate with reasonably anticipated impact, not any imaginable impact. If this is a ‘precautionary’ area, there needs to be some boundary to precaution within the limits of what is practicable and has some likelihood of producing a detectable and quantifiable benefit after having been put into practice.

Chapter 2, Managing Acoustic Habitat in U.S. Waters

Page 27, paragraph 2:

- The only sufficiently supported role for mysticete vocalizations is sexual; either male display or courtship. In many cases only males produce the vocalizations of interest. Use of vocalizations to “share food resource information” or “navigate at ocean basic scales” lack any substantive scientific support decades after first being hypothesized. They most certainly should not be taken seriously as a phenomenon that requires regulatory action.

Page 29, paragraph 2:

- NOAA properly acknowledges the very high levels of natural variation in sound levels on large spatial and temporal scales and that this variation must be accounted for when evaluating impacts from anthropogenic sources.

Page 29, paragraph 1

- The discussion related to ‘life spans of marine organisms’ relative to the ‘rapid rise’ of human activities includes a statement suggesting marine life is not able to adapt to increased sound levels in its environment. No reference is provided to support this.

Page 30, paragraph 2

- Most, if not all, of the cited studies for effects of sound on foraging success or predator awareness use surrogate metrics in a laboratory setting with unrealistic sound sources. Five days of exposure to continuous sound at levels not normally encountered for more than a few seconds, and altering the sound to fall within the technical limits of playback sound sources are not metrics of real consequences from exposure to real sound sources. This differs from, and should not be confused with, the development of psychophysical sensory performance metrics generated by artificial signals like pure tones, where the relationship between the signal in the laboratory and complex stimuli in the field is well understood and carefully documented.

Page 34, paragraph 2:

- The Association note that Biologically Important Areas (BIA) not only lack statutory authority, they were also internally developed, without adequate stakeholder input or input from the broader expert community.

Page 35, Table 2-2

- NOAA should review the last two columns of the table with an eye towards what constitutes a “wish list” of what the agency would like to do under these statutory authorities versus an accurate statement as to what the agency has authority to undertake vis a vis monitoring, management or mitigation measures.
- 4th row discussing monitoring – NOAA states it “must require monitoring” for science, but it “can require monitoring” for management. Why is there a difference? What makes one mandatory and the other permissive?

Page 36, last paragraph:

- The Associations question if actions involving international policy or regulatory vehicles should be led by NOAA or the State Department?

Page 39, paragraph 2:

- The Associations believe the ONS Roadmap encourages regulatory overreach through the use of very broadly defined areas such as HAPCs and CetMap boundaries, which have not undergone a formal rulemaking process nor scientific peer review, to influence management decisions. For example, there is a clear statement that CetMap-based BIAs are intended to “inform management action across the many permitting and consultation actions currently being taken to address noise impacts on these species.” The CetMap products have not undergone full scientific peer review, validation, or rulemaking

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processes and should not be given the same weight as habitat designations that have been through such processes. Again, rationale for BIAs is insufficient and unconvincing. Isn't this need met by ESA Critical Habitat designations, and if not, how does ESA Critical Habitat fall short? If animals rely on more biologically important area than Critical Habitat then isn't the species recovery plan and Critical Habitat inadequate, by definition?

Page 40, paragraph 2:

- The document contains clear suggestion that National Marine Sanctuaries should be used to regulate sources outside the boundaries of the Sanctuaries that may be causing impacts within the Sanctuaries. Before doing so, NMFS should have to clearly show how sounds produced outside of a sanctuary are truly having biologically meaningful effects within the sanctuary.
- In addition, MPAs are not National Parks and the two should not be compared. Much of the referenced National Park action is focused on visitor experience and not the creation of acoustically "pristine" or "aboriginal" environments.

Chapter 3

Page 45, paragraph 3:

- The list of anthropogenic sounds is incomplete. For instance, it should include noise from fishing activities, including gear and fish finding sonars.

Page 49:

- It is important to note that although time-compressed representations of sound exposure can be useful, for phenomena like masking the sound must also be resolved to biologically relevant time scales (< 1 second) in order to appropriately assess the potential for masking by many sounds, especially those that are amplitude modulated or operate at a low duty cycle, such as shipping sounds or seismic survey sounds.

Page 56, *Establishment of NOAA-led, long-term, standardized passive acoustic research capacity across the agency*

- The Associations cannot overemphasize how important it is for the agency to acknowledge that there are national and international standards that NOAA should be aware of and follow. Even for a document that seems to aim mainly at internal agency goals, it is necessary to acknowledge that there are other sources of information and expertise, and that agency conformity with standards of practice that go beyond the agency are vital to the success of internal agency protocols.

Page 57, *Standardization of basic data analysis routines and output metrics:*

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- For “a.”, it is not clear that this set of metrics has any biological or ecosystem relevance. It seems arbitrary and may be driven by habit or convenience more than biological relevance.

Page 61, paragraph 1:

- Estimates of loss of communication space can be a valuable tool, but current methods of estimating communication space and loss due to noise are not established enough to provide meaningful guidance.

Chapter 4

Page 61, paragraph 3:

- “Gisner” misspelled (see reference at the bottom of the page).

Page 61, paragraph 4:

- It is not clear what the “proposed risk assessment framework” is. If it is PCOD, it should be made clear.

Appendix A

Page 92, paragraph 1:

- The statements regarding “electrical” methods typically underestimate, and “[g]ender and age issues” need references.

Page 94, Fish with Swim Bladders:

- Information on physoclistous vs physostomous is incorrect and rationale for effect on swim-bladder mediated hearing is speculative and lacks references. Remove the second and third paragraphs of this section.

Page 95, fish without swim bladders:

- Having “relatively poor hearing” is not correct. Sharks and other fish that hear primarily through particle motion have good hearing and directional hearing. They may detect dipole sources (like other fish) and low frequency sources below 10 Hz better than fish with swim bladder mediated hearing. The ability to hear at greater ranges and at higher frequencies are only two aspects of hearing capability.

Page 97, final paragraph:

- The statement that the mammalian ear is believed to be “highly conserved” needs more information. While shape of hearing curve, frequency resolution, critical bandwidth, critical ratio, dynamic range and other features are similar, there are differences in

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cochlear architecture and innervation that are worth noting. Also note the ideas Cranford and Krysl have put forth about the function of the middle ear in both low frequency and mid – high frequency cetaceans are very novel and still controversial within the expert scientific community.

Page 98, paragraph 3:

- NOAA needs to further research the difference between shock wave or “blast” and the acoustic wavefront. The shock wave is not “sound” – it travels faster than sound, decays faster and has other properties that differ from sound. Shock wave in water is considerably diminished by the rho-c (density and viscosity) of water relative to air. It is important to understand the physics behind these phenomena.

Page 100:

- First sentence is missing an important reference – Erbe et al 2016 Mar Poll Bull

Pages 101-103 on fish:

- The Association noted many problems in this area and suggest extensive rewriting, including but not limited to the following:
 - No evidence of fish kills from seismic.
 - Citation of Gisiner 1998 is inappropriate. That was a review that Gisiner edited; need to cite the chapter, and chapter authors.
 - Sverdrup used blasting caps to simulate old type explosive seismic; explosives do not mimic seismic air sources – signal duration, frequency content, bubble oscillation phenomena all differ.
 - Discussion of fish mortality and injury needs to mention particle motion. Absence of info on particle motion, Scholte waves, etc. is a major defect in this document.
 - Paragraph 3 and paragraph 4 on page 102 end in unsupported speculations about outcomes; “could lead” to increased predation risk; “could affect” species fitness. Or maybe it could not. Stick to the cited information; don’t create hypothetical outcomes unsupported by data.
 - Masking does not “result from” a sound “impeding” an animal’s “ability to hear” “other” sounds of interest. Review proper definition and don’t deviate.
 - This paragraph contains several speculative statements that are unsupported.
 - Strike entire first paragraph of page 103; it is overly speculative.
 - Work by Andre’ et al has methodological problems; results are not from “seismic exposure” but a prolonged loudspeaker in close proximity to specimens in a small tank with unrecorded particle motion data. There is better work on squid hearing – Mooney et al, e.g. Research indicating damage by a continuous sound is not appropriate to predicting effects of seismic which is an intermittent source with a low duty cycle.
 - First paragraph on sea turtles is out of date. See references 2012, 2014 by Moein and colleagues on hearing of multiple age/size classes.

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- Strike second paragraph; no evidence of effect – There is no evidence of effect, which should be identified before speculating on the potential meaning. Or explore all equally plausible alternatives, e.g. no effect, beneficial effect, etc.

Appendix B

Page 113, paragraph 1:

- Not all would agree that NOAA’s data for marine mammals and ESA listed species provides the best overview of the status etc. Even NMFS is using more “outsider” data from mark-recapture (photo-ID), PAM, or purpose designed surveys by Navy, others.

Tables B4-B7:

- Very good and very helpful, but they paint a discouraging picture with respect to NOAA’s ability to support its own data needs with the resources it is given and how it applies them.

Page 117:

- The structured, semi-quantitative process by which NOAA ranks the quality of its data for stock assessments is very useful. The Associations believe that similar structured evaluations born out of greater stakeholder and expert community participation should be in place for setting Critical Habitat, BIAs, establishing and defining MPAs, etc.

Page 121, Table of Authorities – Cooperative Agreement cell:

- Why would cooperative agreements only be with states and AK Native Organizations when the statute allows for agreements with private and public partners? The comment needs to be revised to reflect a broader pool of potential partnerships.

Page 134, Table of Authorities

- The Associations are confused as to why there are references to Department of the Interior administered statutes in a NOAA document. It is misleading to include the Park Systems Resource Protection Act where NOAA doesn’t administer the program.

Page 135, Table of Authorities

- Why is the International Whaling Commission referenced in a Table of Authorities when its measures are not enforceable against states?