

## Center for Regulatory Effectiveness

**Center for Regulatory Effectiveness' ("CRE") Comments on  
National Oceanic and Atmospheric Administrations/National Marine  
Fisheries Service ("NMFS") Proposed Regulations for  
Taking and Importing Marine Mammals:  
Incidental to Geophysical Surveys Related to Oil and Gas Activities in  
the Gulf of Mexico ("GOM Take rules").  
Comments submitted at  
<https://www.regulations.gov/docket?D=NOAA-NMFS-2018-0043>**

### I. Executive Summary

See Section IX, page 17 below, for Recommended Agency Actions.

NOAA's new methods and models for estimating GOM exposures and takes are not the best available science and should not be used in their current state. NOAA's proposed GOM Take Rules grossly overestimate exposures and takes, in large part because the proposed rules rely on inaccurate models and Risk Assessment Frameworks ("RAF") that have not been completed, validated and peer reviewed.

Model flaws include the failure to learn from previous geophysical surveys that demonstrate no effects when estimating takes and exposures.

NOAA does not need to use flawed models to estimate takes. NOAA has made quite clear that "The use of models for calculating Level A and Level B harassment zones and for developing take estimates is not a requirement of the MMPA incidental take authorization process."<sup>1</sup>

Until and unless NOAA develops or adopts accurate and reliable methods and models, NOAA should continue to use Line Transect to estimate exposures and takes. NOAA, BOEM, and industry have successfully used Line Transect for years to estimate exposures and takes. NOAA describes Line Transect as a "valid" and "conservative" method for estimating exposures and takes.

NOAA's inaccurate and excessive modeled take estimates are difficult to reconcile with the lack of any harm (Level A or Level B) after decades of oil and gas seismic in the GOM. NOAA has repeatedly stated:

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<sup>1</sup> *E.g.*, 83 FR 27954, 27956 col. 3 (June 15, 2018), at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-15/pdf/2018-12907.pdf>.

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“there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to [oil and gas] airgun pulses, even in the case of large airgun arrays.”<sup>2</sup>

BOEM, which petitioned for these take rules, emphasizes:

“Within the [GOM]... there is a long-standing and well-developed OCS Program (more than 50 years); there are no data to suggest that [seismic] activities from the preexisting OCS Program are significantly impacting marine mammal populations.”<sup>3</sup>

Level A physical injury takes should no longer be an issue when estimating exposures and takes from GOM seismic. NOAA’s proposed GOM Take Rules state:

“We do not believe that Level A harassment is likely to actually occur for mid-frequency cetaceans and therefore do not predict any take by Level A harassment for these species. The risk presented by Level A harassment to mid-frequency species is therefore expected to be none to very low.”<sup>4</sup>

Similarly, NOAA’s proposed GOM Take Rules state:

“We do not believe that Level A harassment will play a meaningful role in the overall degree of impact experienced by marine mammal populations as a result of the projected survey activity.”<sup>5</sup>

Given these and similar statements, NOAA should not be proposing extensive and costly protective mitigations for Level A takes, or wasting much time trying to estimate them.

NOAA’s future work on this issue should include peer reviewing any models it hopes to use in order to determine their compliance with Council for Regulatory Environment Modeling (“CREM”) standards and other Information Quality Act (“IQA”) requirements. These IQA requirements include Objectivity (*e.g.*, accuracy and reproducibility) and Pre-dissemination Review requirements. NOAA’s

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<sup>2</sup> *E.g.*, 79 FR 13626, 13635-36 (March 11, 2014), at <https://www.gpo.gov/fdsys/pkg/FR-2014-03-11/pdf/2014-05158.pdf>; 79 FR 12160, 12166 col. 1 (March 4, 2014), at <https://www.gpo.gov/fdsys/pkg/FR-2014-03-04/pdf/2014-04770.pdf>; 75 FR 49710, 49739 co. 1 (Aug. 13, 2010), at <https://www.gpo.gov/fdsys/pkg/FR-2010-08-13/pdf/2010-19950.pdf>.

<sup>3</sup> BOEM, Final EIS for Gulf of Mexico OCS Oil and Gas Eastern Planning Area Lease Sales 225 and 226, page 2-22 (2013), at <https://www.boem.gov/BOEM-2013-200-v1/>

<sup>4</sup> See, *e.g.*, 83 FR 29212, 29290 (June 28, 2018) col. 3 at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf>.

<sup>5</sup> *Id.* at 29296 col. 2.

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proposed GOM Take Rules and supporting documents do not comply with these IQA requirements.

NOAA's Acoustic Guidance's usefulness to this rulemaking is limited because the Guidance only addresses a small part of the exposure estimation process (Level A effects), and because it does not give take estimates. The Guidance violates IQA requirements because

- it does not include an Information Quality Act Pre-dissemination Review Certification;
- it relies heavily on models that have not been peer reviewed to determine whether they are validated and comply with CREM requirements;
- it relies heavily on models that were not peer reviewed in compliance with OMB's Peer Review Bulletin.

NOAA also needs to emphasize in the GOM Take rules that take permit applicants do not have to use the Acoustic Guidance, as NOAA has stated elsewhere.

With regard to other issues, CRE agrees with NOAA's use of Wood *et al* (2012) instead of Nowacek *et al* (2015) to calculate Level B takes.

CRE opposes NOAA's proposed creation of a 100m-400m-isopleth "habitat zone" that greatly exceeds the known range for the Bryde's whale. This is overly protective and unsupported by the population range studies to date.

Finally, environmental NGOs are misusing NOAA's excessive and inaccurate exposure and take estimates to claim that NOAA, BOEM and industry are harming millions of marine mammals. BOEM has already refuted these cynical and false claims in a similar context.<sup>6</sup> NOAA should refute them in this rulemaking. NOAA's refutation should include emphasizing the lack of harm after decades of GOM seismic.

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<sup>6</sup> See BOEM's rebuttal of NGO mischaracterization of take estimates at <https://www.boem.gov/BOEM-Science-Note-March-2015/>.

## II. NOAA Does Not Use the Best Available Science to Estimate Exposures and Takes in the Proposed GOM Take Rules

### A) The Proposed Rules Suffer from a Flawed and Inaccurate Modeling Approach and a Risk Assessment That Does Not Take Mitigation Measures Into Account

NOAA's proposed GOM take rules greatly overestimate both exposures and takes, in large part because the rules rely on flawed models and on Risk Assessment Frameworks that are unfinished and have not been peer reviewed. These inaccurate and excessive estimates are further undermined by the lack of any harm after decades of oil and gas seismic in the GOM.

As a threshold issue, marine mammal exposures to seismic sound levels do not equate to takes. Instead, through a rather murky process NOAA somehow "corrects" exposure estimates to estimate takes.<sup>7</sup> NOAA explains that

"while the exposure estimates presented in the modeling report identify instances of anticipated take, the 'corrected' take numbers identify a closer approximation, and relative comparison, of the numbers of individuals affected. However, **this method of correction still overestimates the numbers of individuals affected across the year ...**"<sup>8</sup>

These take overestimates stem primarily from NOAA's use of various models to convert exposures to takes. BOEM is emphatic about this very serious model problem. BOEM states in its 2016 revised petition to NOAA for GOM Take Rules that

"There are currently no available robust, quantitative models that fully translate exposures to takes at the broader programmatic and aggregate scale that is the subject of this petition."

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"As noted previously, there are currently no available robust, quantitative models that fully translate exposures to takes at the broader programmatic and aggregate scale that is the subject of this petition. BOEM and NMFS are co-funding a research project to develop a model to quantify takes at these aggregate scales, but this model is not available in time for this petition. This research project seeks to expand a recently developed Risk Assessment

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<sup>7</sup> For NOAA's attempt to explain this "correction" process, see, *e.g.*, 83 FR 29212, 29260-29261 (June 22, 2018), at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf>.

<sup>8</sup> *Id.* at 29261 col. 2 (emphasis added), at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf>.

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Framework (RAF) from the individual project level to analyses of aggregate and chronic effects.”<sup>9</sup>

BOEM’s 2016 petition details the many flaws and inadequacies in the current exposure/take estimation process, which relies on inaccurate models that have never been properly validated and peer reviewed, and which inevitably lead to greatly overestimating exposures/takes.<sup>10</sup>

NOAA’s current approach to take estimation is not now ready for regulatory application, assuming it ever will be. NOAA admits as much when it includes and relies heavily on the following report in the proposed GOM Take Rule record: *“Marine Mammal Risk Assessment: Expert Working Group... Application of an Adapted, Relativistic Risk Assessment Framework to Evaluate Modeled Marine Mammal Noise Exposures Resulting from Gulf of Mexico OCS Proposed Geological and Geophysical Activities....”* This “FINAL DRAFT REPORT” acknowledges that

“this project is in the early stages of development and fully developed products, including a peer-reviewed publication of the fully developed, modified risk assessment framework at both spatial and temporal levels, **are not presently available.**”<sup>11</sup>

### **B) Take Estimation Models Must Be Properly Validated and Peer Reviewed and Comply with the IQA Before NOAA Uses Them to Regulate**

The IQA requires that NOAA validate Models before using them to estimate takes and exposures in the GOM Take Rules or for any other regulatory purpose. Validation is necessary to determine whether the Models are accurate and reliable. Validation has to occur in accordance with published and peer reviewed procedures. NOAA has not validated its exposure and take estimation models.

The National Academy of Sciences (“NAS”) explains that IQA Guidelines require agencies, including NOAA, to ensure “that the models used in regulatory

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<sup>9</sup> BOEM Petition for Incidental Take Regulations (October 14, 2016), Pages 93 and 95, available at <https://www.fisheries.noaa.gov/action/incidental-take-authorization-oil-and-gas-industry-geophysical-survey-activity-gulf-mexico> .

<sup>10</sup> See, *e.g.*, *id.*, pages 93-95.

<sup>11</sup> Page 6 (emphasis added), at <https://www.regulations.gov/document?D=NOAA-NMFS-2018-0043-0006> . The “Expert Working Group” document has many Other Flaws. For example, it omits any mention of risk mitigation and therefor, inaccurately states the risks from any survey. Takes must be calculated after identified risks have been mitigated. Also, the authors do not mention how they compute the final results for the tables.

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proceedings are objective, transparent, and reproducible....”<sup>12</sup> Objectivity includes demonstrating that the ESA Models are accurate and reliable.<sup>13</sup> This demonstration is part of model validation.

Other NAS reports emphasize that modeled ecological effects must be compared with field data in order to determine whether the modeled effects are real.<sup>14</sup> One of these NAS reports explains that

“[c]omparing model results with observations is a central component of a ny effort to evaluate models.”<sup>15</sup>

Therefore, NOAA’s “Elements of Model Evaluation” for take estimation should include

“Corroboration of model results with observations – Comparison of model results with data collected in the field or laboratory to assess the accuracy and improve the performance of the model.”<sup>16</sup>

The NAS rendered this advice during its peer review of models guidance being developed by EPA’s Council for Regulatory Environmental Modeling (“CREM”). After NAS peer review, EPA published final CREM Guidance that explains:

“Model evaluation is the process for generating information over the life cycle of the project that helps determine whether a model and its analytical results are of sufficient quality to serve as the basis for a decision. Model quality is an attribute that is meaningful only within the context of a specific model application. In simple terms, model evaluation provides information to help answer the following questions: (a) How have the principles of sound science been addressed during model development? (b) How is the choice of model supported by the quantity and quality of available data? (c) How closely does the model approximate the real system of interest? (d) How well

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<sup>12</sup> National Academy of Sciences, *Models in Environmental Regulatory Decision Making* (2007), pages 68-69, at

[http://www.nap.edu/download.php?record\\_id=11972#](http://www.nap.edu/download.php?record_id=11972#)

<sup>13</sup> *E.g.*, NOAA IQA Guidelines, Part I, “Definitions,” “Objectivity,” at

[http://www.cio.noaa.gov/services\\_programs/IQ\\_Guidelines\\_103014.html](http://www.cio.noaa.gov/services_programs/IQ_Guidelines_103014.html).

<sup>14</sup> National Academy of Sciences, *Models in Environmental Regulatory Decision Making* (2007), pages 122 and 147, at

[http://www.nap.edu/download.php?record\\_id=11972#](http://www.nap.edu/download.php?record_id=11972#). *See also* Guidance on the Development, Evaluation, and Application of Environmental Models (EPA 2009) (“CREM Guidance”), page vii, at [https://www.epa.gov/sites/production/files/2015-04/documents/cred\\_guidance\\_0309.pdf](https://www.epa.gov/sites/production/files/2015-04/documents/cred_guidance_0309.pdf).

<sup>15</sup> National Academy of Sciences, *Models in Environmental Regulatory Decision Making*, page 122, at <https://www.nap.edu/download/11972#>.

<sup>16</sup> *Id.*, page 114, at [http://www.nap.edu/download.php?record\\_id=11972#](http://www.nap.edu/download.php?record_id=11972#).

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does the model perform the specified task while meeting the objectives set by quality assurance project planning.”<sup>17</sup>

The CREM Guidance and the NAS Reports constitute the Gold Standard for developing, validating and using regulatory models. They are not limited to EPA. They have already been adopted by other agencies, including NOAA to evaluate models used to estimate MMPA take estimates.

For example, NOAA commissioned external peer review to determine whether the Acoustic Integration Model (“AIM”) meets CREM Guidelines, and is therefore properly validated and acceptable for regulatory use under the Marine Mammal Protection Act. The Peer Review Panel’s report explains:

“The three terms of reference [by NOAA] required that the Panel evaluate whether AIM correctly implements the models and data upon which it was based; whether animal movements are adequately simulated; and whether AIM meets the Council for Regulatory Monitoring (CREM) guidelines for model development and evaluation.”<sup>18</sup>

Additional guidance on validating exposure and take estimates is available at Jakeman *et al* (2006), which agrees that one essential question in model evaluation is “Does its behaviour approximate well that observed in respect of the real thing?”; and which emphasizes that

“Checking of a model for feasibility and credibility is given little prominence in the literature because it is largely informal and case-specific, but it is plainly essential for confidence in the model’s outputs. Again this is a very important step, not only to check the model’s believability, but to build the client’s confidence in the model.”<sup>19</sup>

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<sup>17</sup> CREM Guidance, page vii, at <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1003E4R.PDF> (emphasis added).

<sup>18</sup> Summary Report: Review of Acoustic Integration Model, at [http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa\\_aim\\_review.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa_aim_review.pdf). For additional discussion of NOAA’s use of the CREM Model Validation Guidance see, *e.g.*, 72 FR 46846, 46883 col. 3 (August 21, 2007), at <https://www.gpo.gov/fdsys/pkg/FR-2007-08-21/pdf/07-4044.pdf>; CRE White Paper: NMFS should Regulate Seismic Under the Marine Mammal Protection Act in a Two-Tier Manner, pages 6-7, at <http://thecre.com/pdf/20080626/TUIHAWWhitePaper.pdf>; and Summary Report: Review of Marine Mammal Acoustics Exposure Analysis Model, pages 2-5, at [http://www.nmfs.noaa.gov/pr/pdfs/permits/navy\\_acoustics\\_model.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/navy_acoustics_model.pdf).

<sup>19</sup> Jakeman, page 603 and page 611, at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.87.1877&rep=rep1&type=pdf>.

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NOAA's models for estimating exposures and takes do not meet these evaluation standards. For example, everyone agrees they overestimate actual takes.

NOAA's IQA Guidelines have very clear and very specific Pre-dissemination Review requirements that apply to these proposed rules.<sup>20</sup> The proposed GOM Take rules and their supporting documents violate every one of these requirements. Any additional model development, review and validation must comply with these and other IQA requirements, including pre-dissemination review.

The IQA also requires the reproducibility of model results. Reproducibility is different from the replication of data. CRE believes that the replication of data is a poor and distant cousin to reproducibility. In our view, reproducibility means that if one were to conduct a de novo review of the data, with any protocol of choice, the review would yield a result identical to study under review. On the other hand the replication of data means if one were to review a study using a protocol identical to that of the author of the original study, the resultant analysis would yield a result identical to that of the original study.

NOAA's future work on this issue should include peer reviewing any models it hopes to use in order to determine their compliance with CREM standards and other IQA requirements, including without limitation Objectivity, reproducibility and Pre-dissemination Review.

### **III. NOAA Doesn't Need Models to Estimate Exposures and Takes; Use Line Transect Instead**

There are many undisputed flaws and omissions in NOAA's use of models to estimate exposures and takes. Everyone agrees that this process overstates exposures and takes. Everyone agrees that this process is unfinished, incomplete, not validated and not peer reviewed. Consequently, NOAA's new model-based methods for estimating GOM exposures and takes should not and cannot be considered the best available science.

Fortunately, Models are not required to estimate takes. In 2017, NOAA told L-DEO:

“The use of models for estimating the size of ensonified areas and for developing take estimates is not a requirement of the MMPA incidental take authorization process....”<sup>21</sup>

In a separate 2018 FR take notice, NMFS repeated that:

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<sup>20</sup> [http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html) .

<sup>21</sup> 82 FR 44565, 44567, col. 1 (Sept. 25, 2017), at <https://www.gpo.gov/fdsys/pkg/FR-2017-09-25/pdf/2017-20362.pdf> .



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“The use of models for calculating Level A and Level B harassment zones and for developing take estimates is not a requirement of the MMPA incidental take authorization process.”<sup>22</sup>

If NOAA believes that it must promulgate GOM Take Rules before developing IQA-compliant models, then NOAA should continue to use Line Transect until it develops accurate, reliable, validated, and peer-reviewed models.

NOAA, BOEM and industry have successfully used Line Transect for years to estimate takes. Line Transect estimates takes “based upon line miles of survey effort, animal density and the calculated zone of influence (ZOI).”<sup>23</sup> NOAA describes this Line Transect estimation process as “valid” and “conservative.”<sup>24</sup>

NOAA has frequently used Line transect to estimate Takes in IHAs it issues under the MMPA.<sup>25</sup>

BOEM (then MMS) used Line Transect to estimate takes in its original 2004 petition to NMFS for GOM Take Rules for oil and gas seismic. These take estimates were explained and supported in an entire chapter of MMS’ Final Programmatic Environmental Assessment, Geological and Geophysical Exploration for Mineral Resources on the Gulf of Mexico Outer Continental Shelf (OCS EIS/EA MMS 2004-054).<sup>26</sup> This EA, which relies on Navy and L-DEO EISs, explains that

“Recent estimates of the incidental take of marine mammal species routinely utilize, at a minimum, the following factors or data sources, including:

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<sup>22</sup> 83 FR 27954, 27956 col. 3 (June 15, 2018), at

<https://www.gpo.gov/fdsys/pkg/FR-2018-06-15/pdf/2018-12907.pdf>.

<sup>23</sup> 71 FR 43112, 43121 col. 3 (2006), at <https://www.gpo.gov/fdsys/pkg/FR-2006-07-31/pdf/06-6584.pdf>.

<sup>24</sup> *Id.*

<sup>25</sup> *E.g.*, UT IHA for seismic surveys of methane vents in northeastern Pacific Ocean, 73 FR 22922, 22928 cols. 2 and 3 (April 28, 2008), at

<https://www.gpo.gov/fdsys/pkg/FR-2008-04-28/pdf/E8-9264.pdf>; L-DEO’s

Acoustic Calibration & Seismic Testing Program in the Northern Gulf of Mexico, 71 FR 58790, 58802 (Oct. 5, 2006), at <https://www.gpo.gov/fdsys/pkg/FR-2006-10-05/pdf/E6-16412.pdf>; GX Seismic Survey in the Chukchi Sea, 71 FR 49418, 49422, 49426 (August 23, 2006), at

<https://www.federalregister.gov/documents/2006/08/23/06-7097/small-takes-of-marine-mammals-incidental-to-specified-activities-seismic-surveys-in-the-chukchi-sea> ; and Conoco IHA for Chukchi Sea. 71 FR 43112, 43122 (July 31, 2006),

at <https://www.federalregister.gov/documents/2006/07/31/06-6584/small-takes-of-marine-mammals-incidental-to-open-water-seismic-operations-in-the-chukchi-sea> .

<sup>26</sup> Pages L-3 to L-37, at <https://www.boem.gov/Oil-and-Gas-Energy-Program/GOMR/2004-054.aspx> .

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- Number of line miles (or line kilometers) traversed;
- Estimated radial distance to the edge of a safety, impact, or exclusion zone; and
- Densities of marine mammals present.”<sup>27</sup>

Thirty-seven pages of data and calculations later, MMS produced the take estimates in EA Tables L-7 to L-7. These take estimates assume various combinations of the MMS-required mitigation provisions that are still required today.<sup>28</sup> These take estimates are explained in extensive detail in MMS’ EA.<sup>29</sup>

They are orders of magnitude smaller than the take estimates in NMFS’ proposed GOM Take Rules, which everyone agrees are too high. NOAA has previously expressed concern that Line Transect was so ‘conservative’ that it might overestimate takes in some instances. The great difference between GOM takes as estimated by Line Transect, and as estimated by NOAA’s current models, demonstrates just how inaccurate and exaggerated the model take estimates are.<sup>30</sup>

Line Transect has long been successfully used to estimate exposures and takes. It should continue to be used until and unless NOAA can produce completed, properly validated, and demonstrably accurate models and RAFs. We believe that the agencies and the public can wait for the development of such models and RAFs. After all, it has been 14 years since MMNS/BOEM first asked NMFS for GOM Take Rules, and there’s been no harm in the interim, much of which has occurred under Line Transect.

This delayed use of models would allow time for better exposure data to be developed pursuant to the PAM and other monitoring and reporting requirements in t NOAA’s proposed GOM Take Rules.<sup>31</sup>

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<sup>27</sup> *Id.*, page L-3, at <https://www.boem.gov/Oil-and-Gas-Energy-Program/GOMR/2004-054.aspx>.

<sup>28</sup> *Id.*, pages L-22 to L-31, at <https://www.boem.gov/Oil-and-Gas-Energy-Program/GOMR/2004-054.aspx>.

<sup>29</sup> *Id.*, pages L-17 to L-35, at <https://www.boem.gov/Oil-and-Gas-Energy-Program/GOMR/2004-054.aspx>.

<sup>30</sup> For NOAA’s concern that Line Transect may over estimate Takes in some circumstances, see 71 FR 43121, col. 3 (2006), at <https://www.gpo.gov/fdsys/pkg/FR-2006-07-31/pdf/06-6584.pdf>.

<sup>31</sup> See, *e.g.*, the PAM and other proposed monitoring requirements at pages 29267-29277, 29284-29289, 29300-2901. <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf>.

#### IV. No Harm from Oil and Gas Seismic

NOAA's exaggerated exposure and takes estimates are impossible to reconcile with the absence of any evidence of harm from GOM seismic, after decades of GOM operations.

NOAA's Federal Register preamble to the proposed GOM Take Rules presents no real world evidence of any harm caused by oil and gas seismic in the GOM.<sup>32</sup> NOAA's Regulatory Impact Analysis ("RIA") admits that NOAA's proposed rules would have no effect on any marine mammal population:

"The estimated changes in Level A and B harassment from the requirements of the rule do not directly translate into the presence or absence of a given marine mammal population or into changes in population levels..."<sup>33</sup>

The NAS has correctly stated, "No scientific studies have conclusively demonstrated a link between exposure to sound and adverse effects on a marine mammal population."<sup>34</sup>

BOEM correctly stated with regard to oil and gas sound in the Gulf of Mexico

"NTL 2012-JOINT-G02, 'Implementation of Seismic Survey Mitigation Measures and Protected Species Observer Program,' minimizes the potential of harm from seismic operations to marine mammals. These mitigations include onboard observers, airgun shut-downs for whales in the exclusion zone, ramp-up procedures, and the use of a minimum sound source. Therefore, no significant cumulative impacts to marine mammals would be expected as a result of the proposed exploration activities when added to the impacts of past, present, or reasonably foreseeable oil and gas development in the area, as well as other ongoing activities in the area. **Within the [GOM] CPA, which is directly adjacent to the EPA, there is a long-standing and well-developed OCS Program (more than 50 years); there are no data to**

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<sup>32</sup> See, e.g., pages 83 FR 29212, 29264-29266 (June 22, 2018), at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf>.

<sup>33</sup> RIA, page 5-1, at <https://www.regulations.gov/document?D=NOAA-NMFS-2018-0043-0007>.

<sup>34</sup> Book: Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects (2005). Authors; Committee on Characterizing Biologically Significant Marine Mammal Behavior; Ocean Studies Board; Division on Earth and Life Studies; National Research Council; Page 15, at <https://www.nap.edu/download/11147#>.

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**suggest that activities from the preexisting OCS Program are significantly impacting marine mammal populations.”<sup>35</sup>**

NOAA itself has repeatedly explained that “there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to [oil and gas] airgun pulses, even in the case of large airgun arrays.”<sup>36</sup>

Line Transect’s lower exposure and take estimates are more consistent with this real world absence of harm than are NOAA’s inaccurate and inflated model estimates.

Environmental NGOs are misusing NOAA’s excessive and inaccurate exposure and take estimates to claim that NOAA, BOEM and industry are harming millions of marine mammals.<sup>37</sup> BOEM has already refuted these cynical and false claims in a similar context.<sup>38</sup> NOAA should refute them in this rulemaking.

### V. Level B Takes

CRE supports NOAA’s continued use of the 160 dB for Level B Take Estimates.<sup>39</sup> In this regard, CRE supports NOAA’s use of Wood *et al* (2012) instead of Nowacek *et al* (2015) for the reasons stated by NOAA in its Proposed GOM Take Rules.

On the issue of behavioral response of mysticetes to airgun arrays, CRE refers NOAA to

Rebecca A. Dunlop, Michael J. Noad, Robert D. McCauley, Eric Kniest, Robert Slade, David Paton, Douglas H. Cato; “The behavioural response of migrating humpback whales to a full seismic airgun array,” *Proc. R. Soc. B* 2017 284

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<sup>35</sup> BOEM, Final EIS for Gulf of Mexico OCS Oil and Gas Eastern Planning Area Lease Sales 225 and 226, page 2-22 (2013), at <https://www.boem.gov/BOEM-2013-200-v1/>.

<sup>36</sup> *E.g.*, 79 FR 13626, 13635-36 (March 11, 2014), at <https://www.gpo.gov/fdsys/pkg/FR-2014-03-11/pdf/2014-05158.pdf>; 79 FR 12160, 12166 col. 1 (March 4, 2014), at <https://www.gpo.gov/fdsys/pkg/FR-2014-03-04/pdf/2014-04770.pdf>; 75 FR 49710, 49739 co. 1 (Aug. 13, 2010), at <https://www.gpo.gov/fdsys/pkg/FR-2010-08-13/pdf/2010-19950.pdf>.

<sup>37</sup> See, *e.g.*, Center for Biological Diversity Press Release, at [https://www.biologicaldiversity.org/news/press\\_releases/2018/oil-and-gas-exploration-06-22-2018.php](https://www.biologicaldiversity.org/news/press_releases/2018/oil-and-gas-exploration-06-22-2018.php).

<sup>38</sup> See BOEM’s rebuttal of NGO mischaracterization of take estimates at <https://www.boem.gov/BOEM-Science-Note-March-2015/>.

<sup>39</sup> See 83 FR 29212, 29247-29249 (June 22, 2018), at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf> for NOAA’s discussion of this issue.

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20171901; DOI: 10.1098/rspb.2017.1901. Published 13 December 2017<sup>40</sup>

With regard to sperm whales, CRE refers NOAA to SWSS and subsequent GoM (Winsor, Irvine and Mate 2017 “Analysis of the Spatial Distribution of Satellite-Tagged Sperm Whales in Close Proximity to Seismic Surveys in the Gulf of Mexico”; *Journal of Aquatic Mammals*)<sup>41</sup> research that indicates sperm whale vulnerability is low with no horizontal response movement to the presence of an active airgun array. Consequently, CRE agrees with NOAA that sperm whale shutdowns are not warranted.

### VI. Acoustic Guidance

The Acoustic Guidance’s usefulness in this rulemaking is limited because it only addresses a small part of the exposure estimation process (*e.g.*, it’s only applicable to Level A physical injury, which is non-existent here), and because it does not give take numbers.

The Acoustic Guidance also violates IQA requirements because it does not include a Pre-dissemination Review certification.<sup>42</sup> It also relies heavily on models that have not been peer reviewed for CREM compliance,<sup>43</sup> and which have not been peer reviewed for validation in compliance with OMB’s Peer Review Bulletin.<sup>44</sup>

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<sup>40</sup> <http://rspb.royalsocietypublishing.org/content/284/1869/20171901>.

<sup>41</sup>

[https://www.aquaticmammalsjournal.org/index.php?option=com\\_content&view=article&id=1672:analysis-of-the-spatial-distribution-of-satellite-tagged-sperm-whales-physeter-macrocephalus-in-close-proximity-to-seismic-surveys-in-the-gulf-of-mexico&catid=161&Itemid=157](https://www.aquaticmammalsjournal.org/index.php?option=com_content&view=article&id=1672:analysis-of-the-spatial-distribution-of-satellite-tagged-sperm-whales-physeter-macrocephalus-in-close-proximity-to-seismic-surveys-in-the-gulf-of-mexico&catid=161&Itemid=157) .

<sup>42</sup> NOAA/NMFS’ Pre-dissemination Review and other IQA requirements are at [http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html) .

<sup>43</sup> *E.g.*, Acoustic Guidance, pages 108-109, 115, 135-136, at <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance> . For CREM peer review requirements, see, *e.g.*, 72 FR 46883 col. 3 (August 21, 2007), at <https://www.gpo.gov/fdsys/pkg/FR-2007-08-21/pdf/07-4044.pdf> ; CRE White Paper: NMFS should Regulate Seismic Under the Marine Mammal Protection Act in a Two-Tier Manner, pages 6-7, at <http://thecre.com/pdf/20080626/TUIHAWWhitePaper.pdf> ; Summary Report: Review of Marine Mammal Acoustics Exposure Analysis Model, pages 2-5, at [http://www.nmfs.noaa.gov/pr/pdfs/permits/navy\\_acoustics\\_model.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/navy_acoustics_model.pdf) ; and Summary Report: Review of Acoustic Integration Model, at [http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa\\_aim\\_review.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa_aim_review.pdf) .

<sup>44</sup> *E.g.*, CRE Comments, pages 3-4, at [http://www.thecre.com/creipd/wp-content/uploads/2016/11/mm\\_cre\\_comments\\_nmfs\\_acoustic\\_icr\\_filed.pdf](http://www.thecre.com/creipd/wp-content/uploads/2016/11/mm_cre_comments_nmfs_acoustic_icr_filed.pdf) . OMB’s

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NOAA needs to emphasize in the GOM Take Rules that no one has to use the Acoustic Guidance.<sup>45</sup>

### VII. Bryde's Whale

CRE incorporates by reference its previous comments to NOAA on the Bryde's Whale.<sup>46</sup>

CRE opposes NOAA's proposed creation of 100m-400m-isopleth "habitat zone" that greatly exceeds the known range for the species. This is overly protective and unsupported by the population range studies to date.

### VIII. Summary of Take Issues

This is a complicated rulemaking that has occurred over a long period of time, beginning in 2004 when MMS first petitioned NOAA for GOM Take Rules for oil and gas seismic. Some major points are now clear.

First, Level A physical injury effects/takes are not a significant issue of concern.<sup>47</sup>

Second, NOAA's Acoustic Guidance is not very relevant because it is limited to Level A physical injury, which does not occur here, and because it provides no guidance on converting exposures to takes. The Acoustic Guidance, and much of the rest of the proposed GOM Take Rules record, does not comply with Pre-dissemination Review and other IQA requirements. NOAA should correct it in this regard and emphasize in the GOM Take Rules that its use is not required.

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Peer Review Bulletin requirements are at

[http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html).

<sup>45</sup> NOAA emphasizes elsewhere that use of the Acoustic Guidance is voluntary. *E.g.*, Acoustic Guidance page 1, available at

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>

<sup>46</sup> These previous CRE comments are available online at

<http://www.thecre.com/forum13/?p=3135> and at <http://www.thecre.com/creipd/wp-content/uploads/2017/02/finalBrydeswhale2comments.pdf>.

<sup>47</sup> See, *e.g.*, 83 FR 29212, 29247 col. 2, 29290 col. 1-2, 29263 Table 9 (June 22, 2018), at <https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-12906.pdf>.

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Third, Level B take estimation remains a major issue. NOAA's current models should not be used for this or any other purpose because they are incomplete, unfinished, inaccurate, unreliable, have never been validated, and have never been peer reviewed. They do not include the impact of mitigation measures. They have no credible framework for converting exposure to takes. As a result of these and other flaws, they greatly overestimate takes. These failings and flaws violate the IQA Objectivity requirements; the IQA Pre-dissemination Review requirements; and the OMB Peer Review Bulletin requirements. These failings and flaws preclude NOAA's current take estimation methods and models from being considered the best available science.

Fourth, future monitoring under the proposed rules and future peer review may help provide a basis for developing accurate and reliable models, which might then be used to accurately estimate GOM exposure and takes.

Fifth, models are not required to estimate GOM takes. Line Transect is available as, in NOAA's own terms, a "valid" and "conservative" alternative.

Sixth, the National Academy of Sciences made the following statement to EPA: "Requirements such as those in the Information Quality Act may increase the susceptibility of models to challenges because outside parties may file a correction request for information disseminated by agencies."<sup>48</sup> No place in NOAA's ninety-nine page NPRM is there any mention of the Information Quality Act. Rest assured if NOAA continues to utilize models that violate the Information Quality Act, those models will be subject to a challenge under the Act.

Seventh, NOAA's proposed GOM Take Rules are designated by OMB as "economically significant" under Executive Order 12866.<sup>49</sup> Therefore, they are subject to a stringent cost benefit analysis requirement.<sup>50</sup> There is no harm from GOM seismic. Consequently, it is not surprising that NOAA has not produced a quantitative statement of benefits for the proposed rules.

***Since the benefits of the proposed rule are minimal at best, the resultant benefit-cost ratio is less than one, making the proposed rule non-compliant with Executive Order 12866.***

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<sup>48</sup> Models in Environmental Regulatory Decision Making, NAS, page 167, at <https://www.nap.edu/download/11972#>

<sup>49</sup>OIRA Conclusion of EO 12866 Regulatory Review, at <https://www.reginfo.gov/public/do/eoDetails?rrid=127604> .

<sup>50</sup> See, e.g., Counting Regulations: An Overview of Rulemaking, Types of Federal Regulations, and Pages in the Federal Register, CRS, pages 1,4,10, at <https://fas.org/sgp/crs/misc/R43056.pdf> .

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Eighth, oil and gas seismic is not harming marine mammals or any other aspect of the environment with or without NOAA's proposed GOM Take Rules. NOAA needs to make this crucial fact clear to the public, in rebuttal to Environmental NGOs who are using NOAA's inaccurate, exaggerated take estimates for their own political purposes.

Ninth, in Section of Executive Order 13795, the President stated a rebuttable presumption that the Acoustic Guidance should be rescinded or revised:

“Review of National Oceanic and Atmospheric Administration (NOAA) Technical Memorandum NMFS-OPR-55. The Secretary of Commerce shall review NOAA's Technical Memorandum NMFS-OPR-55 of July 2016 (Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing) [‘Acoustic Guidance’] for consistency with the policy set forth in section 2 of this order and, after consultation with the appropriate Federal agencies, take all steps permitted by law to rescind or revise that guidance, if appropriate.”<sup>51</sup>

The referenced “section 2 of this order” states: “Policy. It shall be the policy of the United States to encourage energy exploration and production, including on the Outer Continental Shelf, in order to maintain the Nation's position as a global energy leader and foster energy security and resilience for the benefit of the American people, while ensuring that any such activity is safe and environmentally responsible.”<sup>52</sup>

Commerce/NOAA have not met the requirements of Executive Order 13795. The Acoustic Guidance should either be rescinded or substantially revised.

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<sup>51</sup> <https://www.federalregister.gov/documents/2017/05/03/2017-09087/implementing-an-america-first-offshore-energy-strategy>.

<sup>52</sup> *Id.*



## IX. Recommended Actions

Until and unless peer review determines that the models are accurate and properly validated, NOAA should use Line Transect to estimate exposures and takes.

NOAA should also:

- (1) use Wood *et al* (2012) instead of Nowacek *et al* (2015) for Level B takes.
- (2) not impose sperm whale shutdowns.
- (3) not create a 100m-400m-isopleth “habitat zone” for the Bryde’s whale.

NOAA must comply with **Administration policy decisions** specific to its marine mammal programs and therefore should:

- (1) emphasize in the GOM Take Rules that no one has to use the Acoustic Guidance.
- (2) emphasize in the GOM Take Rules that there is no evidence of harm from decades of oil and gas seismic in the Gulf of Mexico and therefore there are minimal or no benefits resulting from the NPRM and therefore it is in violation of Executive Order 12866.
- (3) The adoption of Line Transect as the basis for the Take Rule will pre-empt any challenges under the Data Quality Act.
- (4) *Note that environmentalists have already sued BOEM on GOM take rules and NOAA is apparently afraid that it too will be sued by environmental NGOs if it does not promulgate GOM Take rules soon.<sup>53</sup> NOAA appears to believe that it has to use its current models, Risk Assessment Factors and Acoustic Guidance in order to be responsive to a judicial decree to promulgate Take rules.*

*The aforementioned fear is unfounded because Line Transect is an available and proven technology which can satisfy any judicial demand for the issuance of a take rule because NOAA’s underlying models, Risk Assessment Factors and*

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<sup>53</sup> See NOAA’s Regulatory agenda at <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201710&RIN=0648-BB38> , where NOAA states : “Absent the rule, oil and gas industry operators would face a highly uncertain regulatory environment due to the imminent threat of litigation. BOEM currently issues permits under a stay of ongoing litigation, in the absence of the proposed rule the litigation would continue and NMFS would be added as a defendant.”

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*Acoustic Guidance are too flawed to be used at this time and the Acoustic Guidance is not relevant to the bulk of the proposed rules.*

(5) NOAA should revisit the use of its models as a substitute for line transect subsequent to its demonstration in a public forum that they comply with the requirements of the Data Quality Act.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jim J. Tozzi". The signature is stylized with a large, sweeping initial "J" and "T".

Jim J. Tozzi, PhD  
Member, CRE Board of Advisors  
[www.TheCRE.com](http://www.TheCRE.com)