Alexandria E. Loureiro, PhD

On Behalf of the EnerGeo Alliance

Written Testimony on

H.R. ___

Before the

U.S. House of Representatives Natural Resources Committee

Subcommittee on Water, Wildlife and Fisheries

"Hearing on wildlife, NOAA, fisheries bills"

October 25, 2023

Chairman Bentz, Ranking Member Huffman, and Members of the Subcommittee:

For the record, my name is Alex Loureiro and I am the Scientific Director for the EnerGeo Alliance. I hold an MS and PhD in marine biology from Texas A&M University at Galveston, and a BS in marine science and biology from the University of Miami. My prior research experience focuses on marine mammal behavior both in the laboratory and in field, and large-scale fisheries in the U.S. Gulf of Mexico. At EnerGeo, I work closely with our members, regulators, and other stakeholders around the world to ensure that energy resources are identified and developed in an environmentally sustainable manner. I head the Gulf of Mexico Proactive Regulatory and Observational Program, an EnerGeo program that supports industry Marine Mammal Protection Act compliance under the existing Gulf of Mexico Incidental Take Regulation, and collects key marine mammal protection data. I have led the development of numerous industry guidance documents, including best practices for environmental impact assessments for seismic surveys and guidance for geophysical survey crews to safely assist entangled wildlife encountered during operations. I am actively engaged in supporting research pertaining to the potential effects of industry operations, and provide input into ongoing member and government initiatives worldwide. Further, I participated as an expert in the 2021 workshops to inform recovery planning for the Rice's whale.

I present this testimony on behalf of the EnerGeo Alliance. Founded in 1971 as the International Association of Geophysical Contractors (IAGC), the EnerGeo Alliance is a global trade association for the energy geoscience industry, the intersection where earth science and energy meet. Providing solutions to revolutionize the energy evolution, the EnerGeo Alliance and its member companies span more than 50 countries, representing onshore and offshore survey operators and acquisition companies, energy data and processing providers, energy companies, equipment and software manufacturers, industry suppliers, service providers, and consultancies. Together, our member companies are the gateway to the safe discovery, development, and delivery of mainstay sources of energy, alternative energy, and low-carbon energy solutions that meet our growing world's needs.

Through reliable science- and data-based regulatory advocacy, credible resources and expertise, and future-focused leadership, the EnerGeo Alliance continuously works to develop and promote informed government policies that advance responsible energy exploration, production, and operations. As the global energy demand evolves, we believe that all policymakers and energy companies, providing mainstay, alternative, and low-carbon solutions, – should have access to reliable data and analysis to support their forward moving efforts.

I appreciate the opportunity to testify before the Subcommittee on Water, Wildlife and Fisheries regarding the scientific deficiencies contained within the National Marine Fisheries Service's (NMFS) proposal to designate Rice's whale (*Balaenoptera ricei*) critical habitat in the Gulf of Mexico (GOMx) ("Proposed Rule")[1], and the bill to prohibit implementation of the Stipulated Agreement to Stay Proceedings and the associated Notice to Lessees until such time as the Assistant Administrator issues a final rule for Rice's whale critical habitat, finalizes the revision of the rule titled, "Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Geophysical Surveys in the Gulf of Mexico"[2] to correct take estimation errors, and enters into an agreement to conduct a study on the occurrence and range of Rice's whales throughout the GOMx.

The Proposed Rule was released for pre-publication in the Federal Register at 8:45am on July 21, 2023, just hours before the announcement that the environmental non-governmental organizations and the U.S. federal government reached a private settlement agreement in *Sierra Club et al. v. NMFS et al.*, Case No. 8:20-cv-03060-PX, to settle litigation via the Stipulated Agreement to Stay Proceedings (Stipulated Agreement) challenging an Endangered Species Act Biological Opinion (BiOp) addressing all oil and gas activities in the GOMx. In that settlement, the Bureau of Ocean Energy Management (BOEM) – not even a party to the lawsuit – purported to agree to exclude the same area proposed for critical habitat designation from future oil and gas lease sales. It is difficult to not find this timing suspicious.

It is important to understand the history of Rice's whale scientific literature in the GOMx in order to properly evaluate the Proposed Rule. The Rice's whale was first designated a new species in 2021.[3] Previously, these animals were considered a GOMx subspecies of Bryde's whales. The Rice's whale is considered endangered based on risks to its current habitat, related to

[1] *Endangered and Threatened Species; Designation of Critical Habitat for the Rice's Whale*, 88 Fed. Reg. 47,453 (July 24, 2023) (proposing to add 50 C.F.R. § 226.230 designating critical habitat for Rice's whale). NMFS extended the period to submit comments on the Proposed Rule to October 6, 2023. *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Rice's Whale, Public Hearing and Extension of Public Comment Period*, 88 Fed. Reg. 62,522 (Sept. 12, 2023).

[2] 88 Fed. Reg. 916.

[3] Rosel, P.E., L.A. Wilcox, T. K. Yamada, and K. D. Mullin. (2021). A new species of baleen whale (*Balenoptera*) from the Gulf of Mexico, with a review of its geographic distribution. Marine Mammal Science 37:577-610.

anthropogenic activity and climate change.[4] There is no evidence to indicate that the population is declining, nor that animals are vulnerable to an acute anthropogenic threat.

NMFS has proposed to designated over 28,000 square miles of the GOMx continental shelf and slope as critical habitat, and asserts all are "occupied" by Rice's whales.[5] The most recent Stock Assessment Report (SAR) published by NMFS places the Rice's whale population in the GOMx at 51 individuals.[6] This equates to an area of about 550 square miles – about eight times the size of Washington, D.C. – for each *individual animal*, assuming the animals are uniformly distributed. However, historical detections, both visual and acoustic, are largely concentrated to the De Soto Canyon area in the northeastern GOMx, leaving an even broader swath of the designated habitat likely devoid of animals.

Indeed, Rice's whale detections are quite rare. In producing the new species designation, Rosel et al. (2021) described the Rice's whale detections in the GOMx between 1989-2019.[7] As part of this assessment, experts reviewed detection records from Protected Species Observers (PSOs) aboard seismic survey vessels in the western GOM between 2010-2014. Thirteen detections were recorded that may have been Rice's (then Bryde's) whales. Of these 13 sightings, nine were conclusively ruled out, and four could not be confirmed or definitively disproven. Two of these four had photographs indicating a baleen whale, but it was unclear whether the animal was a Rice's whale or sei whale.

Between 2002-2008, 15 unconfirmed Rice's whale detections were reported by PSOs aboard seismic vessels in the western GOM.[8] In total, 194,273 total hours of observer effort were necessary to produce these 15 unconfirmed detections. Even if all 15 were indeed Rice's whales (an assumption which seems improbable given the about 70% misidentification rate in the 2010-2014 analysis), this would still mean a Rice's whale was detected only once every 12,951 hours. That is, it would take *nearly a year and a half of 24-hour observer effort days to encounter a single animal* in areas where seismic operations occurred during this time – without even accounting for the likelihood that many, perhaps most, of these detections are not Rice's whales. If the 70% error rate from the prior dataset is applied, that figure approaches *five years* of round-the-clock effort for a single detection by PSOs. While it is possible that animals may avoid active seismic survey operations, it should be noted that the detection rate for all other protected species combined from

---

[4] *Endangered and Threatened Wildlife and Plants: Notice of 12-Month Finding on a Petition To List the Gulf of Mexico Bryde's Whale as Endangered Under the Endangered Species Act (ESA),* 80 Fed. Reg. 18343 (December 8, 2016).

[5] 88 Fed. Reg. at 47,455; *id.* at 47,460.

[6] Hayes, S.A., *et al*. 2023. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2022. NOAA Tech. Mem. NMFS-NE-304.

[7] Rosel, P. E., L. A. Wilcox, T. K. Yamada, and K. D. Mullin. (2021). A new species of baleen whale (*Balenoptera*) from the Gulf of Mexico, with a review of its geographic distribution. Marine Mammal Science 37:577-610.

[8] Barkaszi, M. J., M. Butler, R. Compton, A. Unietis, and B. Bennet. (2012). Seismic survey mitigation measures and marine mammal observer reports. OCS Study BOEM 2015-015. U.S. Department of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA.

this dataset was 20.15 sightings per 1,000 hours of observation – that is, one encounter about every 50 hours. Comparatively, Rice's whale detections in the western GOMx are vanishingly rare.

In 2015, a density model was developed based on 25 Rice's whale (then GOMx Bryde's whale) detections. Of these 25, 17 were definitively Rice's whales and located in the De Soto Canyon; the remaining eight outside of the De Soto area were inconclusive and may or may not have been Rice's whales. All but two of these detections occurred within the De Soto Canyon.[9] With little additional information and a need for a density model for the purposes of NMFS's calculating marine mammal takes under the MMPA, the authors examined all 25 detections (even though only 17 were confirmed). The two western GOMx detections were ultimately excluded by the authors, given that at the time of drafting no Rice's whales had been detected in the western GOMx in over 20 years. From the 23 detections used, the authors developed a GOMx-wide model for Rice's whale distribution based only on two factors: geographic coordinates of the detections and water depth. The resultant model indicates a high concentration of Rice's whales in the eastern GOM, with very low densities along the central GOM shelf edge (see Figure 1).[10] It should be noted as well that the breaks in the scale of the density map are *logarithmic*. From this map, it is clear that the model suggests a high concentration of Rice's whales in the De Soto area, fewer along the shelf edge towards the Mississippi, and a precipitous drop along the shelf edge westward. (The "<0.0010" throughout the GOMx indicates that the animals are not physically constrained to the shelf edge, but are extremely unlikely to venture into shallower or deeper waters.)

This model also does not account for the unique oceanographic features present in the De Soto Canyon area that may make this region the species' preferred habitat. This area serves as an important upwelling site due to the physical habitat characteristics, making nutrients available to organisms.[11] This nutrient availability increases biotic productivity. Due to its physical structure and location relative to important water masses in the GOM, this geologic feature creates a unique environment in its immediate area.[12] These features do not exist in tandem across the entire continental shelf edge, and are likely one of the drivers for the concentration of Rice's whales in the De Soto area.

---

[9] Roberts, J.J., B.D. Best,, L. Mannocci, E. Fujioka, P.N. Halpin, D.L. Palka, L.P. Garrison, K.D. Mullin, T.V.N. Cole, C.B. Khan, W.M. McLennan, D.A. Pabst, and G.G. Lockhart. (2015). Density Model for Bryde's Whale (*Balaenoptera edeni*) for the U.S. Gulf of Mexico Version 3.1, 2015-11-06, and Supplementary Report. Marine Geospatial Ecology Lab, Duke University, Durham, North Carolina.

[10] Roberts *et al*. (2015).

[11] Kendall, J.J., and W.W. Schroeder. (2000). I. Physical/Biological Oceanographic Integration Workshop for the De Soto Canyon and Adjacent Shelf: How, and Why, We Got Here. In: Physical/Biological Oceanographic Integration Workshop for the DeSoto Canyon and Adjacent Shelf: October 19-21, 1999. W.W. Schroeder and C.F. Wood, eds. OCS Study MMS 2000-074. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. 168 pp. OCS Study MMS 2000-074. U.S. Department of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. 168 pp.

[12] Bortone, S.A., and W. Johnson. (2000). III. Working group Summaries, Working Group I. In: Physical/Biological Oceanographic Integration Workshop for the DeSoto Canyon and Adjacent Shelf: October 19-21, 1999.

The lynchpin of BOEM Notice to Lessees and Operators (NTL) No. 2023-G01 is, "one recent study," from Soldevilla et al. (2022).[13] (Unto itself, this is problematic; use of a single study to construct a paradigm on which to recommend sweeping changes across an essential industry is unscientific at best.) Further, the study in question draws a conclusion which merits reexamination: that the animals detected via passive acoustic monitoring (PAM) are part of the same population as the Rice's whales detected in the eastern GOM De Soto area. The authors note that, "The stereotyped long-moan calls are detected in such high numbers within the core habitat … that a manual review and logging is not feasible." Clearly, the De Soto Canyon (DC) site represents a concentrated population of Rice's whales present year-round. They note specifically that, "…more than 66,000 eastern GOM long-moan calls were detected at the DC site." Comparatively, 1,939 total calls were recorded at the Flower Garden West (WF) site; 429 at the Flower Garden East (EF) site; and three at the Eugene Isle South (EI) site (see Figure 2). ***Zero*** calls were recorded at the Grand Isle South (GI) site, which is geographically closest to the De Soto Canyon (Figure 2). (Note that the hydrophone at the East Main Pass (EP) site failed early in the study and was excluded from the analysis.) Assuming that Rice's whales follow the depth contour of 100-400 m, the animals would need to pass the GI site *en route* to the western GOM locations. The implication that these animals move from the eastern to western GOM along this shelf edge when not a *single* call was detected in 9,072 hours of recordings over the course of almost 13 months at this intermediate site seems rather implausible. The authors themselves state that, "Considering the lack of detections at site GI…it remains unknown whether animals are moving between the northwestern and northeastern sites or whether these represent different groups of animals."[14]

The latest density models produced have not yet undergone peer review in the scientific literature and have only recently been published in NMFS and BOEM reports.[15,16] These density models incorporate seafloor water temperature and intermediate Chlorophyll-*a* concentration (a proxy for primary productivity) commonly associated with Rice's whale detections. However, these detections have almost exclusively occurred within the De Soto Canyon. The authors proceed to extrapolate *far* beyond the data frame – a practice widely frowned upon by the scientific and modelling communities – to produce a density map for the *entire* GOMx (see Figure 3). The

[13] Soldevilla, M.S., A.J. Debich, L.P. Garrison, J.A. Hildebrand, and S.M. Wiggins. (2022). Rice's whales in the northwestern Gulf of Mexico: call variation and occurrence beyond the known core habitat. Endangered Species Research 48:155-174.
[14] Soldevilla *et al*. (2022).
[15] Garrison, L. P, Ortega-Ortiz, J., Rappucci. G, Aichinger-Dias, L, Mullin, K., Litz, J. (NOAA Southeast Fisheries Science Center, Miami, FL). 2023. Gulf of Mexico Marine Assessment Program for Protected Species (GOMMAPPS): marine mammals. Volume 2: appendix C: Gulf of Mexico marine mammal spatial density models. New Orleans (LA): US Department of the Interior, Bureau of Ocean Energy Management. 1264 p. Obligation No.: M17PG00013. Report No.: OCS Study BOEM 2023-042.
[16] Rappucci, G., Garrison, L. P., Soldevilla, M., Ortega-Ortiz, J., Reid, J., Aichinger-Dias, L., Mullin, K., and Litz, J. 2023. Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS): marine mammals. Volume 1: report. New Orleans (LA): US Department of the Interior, Bureau of Ocean Energy Management. 104 p. Obligation No.: M17PG00013. Report No.: OCS Study BOEM 2023-042.

assumption that primary production, temperature at the seafloor, and water depth drive Bryde's whale distribution, rather than simply correlating with the few documented detections in a small portion of the GOMx, is highly suspect. Moreover, these reports only became available in June 2023, providing very little time for interested parties to review the information prior to publication of the Proposed Rule.

From this information, it is clear that NMFS's determination that the entire GOMx is "occupied" is not supported by the best available science or the record before the agency. Just a few years prior, in its 2019 listing determination, NMFS noted that Rice's whales are, "restricted primarily to a small region along the continental shelf break in the De Soto Canyon area."[17] Just weeks after releasing the Proposed Rule, NMFS *again* reiterated in its stock assessment report that, "Sighting records and acoustic detections of Rice's whales in the northern Gulf of Mexico (i.e., U.S. Gulf of Mexico) occur primarily in the northeastern Gulf in the De Soto Canyon area, along the continental shelf break between 100 m and 400 m depth."[18] NMFS cannot rationally determine that the entire GOMx is occupied, while also explicitly stating that the De Soto Canyon hosts the majority of the species and that the species has not been documented outside of a narrow depth range.

The Reasonable and Prudent Alternative (RPA) of the BiOp provides measures to minimize and mitigate potential risks to Rice's (then Bryde's) whales. These measures include visual monitoring when transiting the Rice's whale area, reporting transit plans to BOEM or BSEE, observing a speed restriction to 10 knots during daylight hours, avoiding nighttime or low visibility transit, and maintaining a separation distance of 500 m from Rice's whales. The Rice's whale area proposed in the BiOp is focused around the De Soto Canyon, with a buffer included (see Figure 4). Nearly all documented Rice's whale visual detections have occurred in this area, and therefore, mitigation measures intended to reduce the risk of ship strikes in this region are appropriate. Applying similar measures outside of the Rice's whale area put forward in the BiOP RPA would be unlikely to provide additional benefit or protection to the animals given the infrequency with which they are observed in the central and western GOMx.

Applying these measures outside of the BiOp RPA as detailed in the NTL would not only provide no tangible benefit to the species, but would significantly disrupt industry operations in the GOMx to the point of inflicting unintended negative consequences on other protected species. The ultimate goal of mitigation measures is to prevent the need for their use in the first place by decreasing the likelihood of interaction. Applying mitigation measures that are not risk-based delays operations, leading to increased time on the water. Given that the historical detection rate for other protected species is a sighting about every 50 hours, it is not difficult to see that application of these arbitrary measures across the entire shelf edge to protect Rice's whales – which are exceedingly rare in the western and central GOMx – would increase the likelihood of

---

[17] *Endangered and Threatened Wildlife and Plants; Endangered Status of the Gulf of Mexico Bryde's Whale*, 84 Fed. Reg. 15,446, 15,460 (Apr. 15, 2019). NMFS revised the common name of the species from Bryde's whale to Rice's whale in 2021. *Endangered and Threatened Wildlife and Plants; Technical Corrections for the Bryde's Whale (Gulf of Mexico Subspecies)*, 86 Fed. Reg. 47,022 (Aug. 23, 2021).

[18] Stock Assessment Report at 114; *see Final 2022 Marine Mammal Stock Assessment Reports*, 88 Fed. Reg. 54,592 (Aug. 11, 2023) (announcing release of Stock Assessment Report).

interacting with another protected species. Further still, increasing operational duration will increase environmental emissions, ultimately leading to even more broad-scale effects.

The EnerGeo Alliance appreciates and supports inclusion of requirements, in the bill, that NOAA Fisheries ensure that parties directly impacted by the Stipulated Agreement or Notice to Lessees shall be engaged in the reinitiated consultation on the Biological Opinion – particularly including the opportunity to review drafts and provide comment which shall be afforded due consideration. Robust consultation with the energy geoscience industry on development of a revised Biological Opinion and resultant RPAs, as required by the bill, will contribute to more accurate and scientifically valid agency actions on the Rice's Whale in the GOMx.

Finally, the EnerGeo Alliance strongly supports the provision requiring that the Assistant Administrator enter into an agreement with the National Academies of Science, Engineering, and Medicine to conduct a study to determine the occurrence of Rice's whales in the GOMx. The EnerGeo Alliance is eager to continue to improve the state of our knowledge of Rice's whales and is actively engaged in planning future research to accomplish this objective because conservation of marine resources is a top priority for the organization.

The Proposed Rule, and therefore Stipulated Agreement and NTL, are not based upon the best available science, and therefore the EnerGeo Alliance supports prohibition of implementation until such time as the agency undertakes additional work to update these conclusions. In my opinion, compliance with the BiOp RPA ensures strong protection for the Rice's whale to ensure the continued survival and fecundity of the species. Expanding the Rice's whale area across the 100-400 m isobath throughout the central and western GOMx is unlikely to provide additional protection, but certain to drive unintended consequences that may contribute to deleterious effects on other species and global emissions reduction goals. In my professional opinion, settling for an unscientific, overly broad critical habitat designation ultimately fails the species, and limits our ability to provide appropriate protection to individuals and the population.

Included here by reference, and attached for the record, are the comments submitted by the EnerGeo Alliance and the American Petroleum Institute (API) along with other U.S. focused energy trade associations. The comment letter was submitted October 6, 2023, entitled, "Comments of Trade Associations regarding the proposed rule to designate Rice's whale critical habitat – NOAA-NMFS-2023-0028". The submission includes two 3rd party reports: "Review of the Rice's Whale Proposed Critical Habitat and Related Scientific Literature", and "The Economic Impacts of Gulf of Mexico Oil and Natural Gas Vessel Transit Restrictions".

I appreciate the opportunity to testify today.

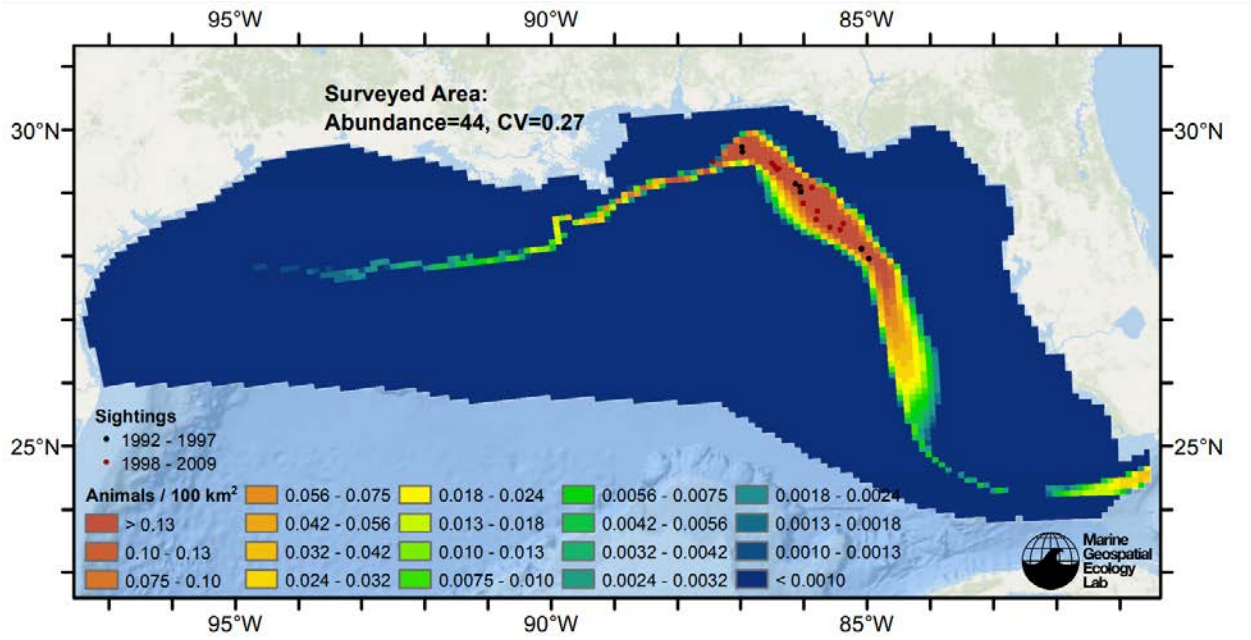
95°W
90°W
85°W
30°N
25°N
Surveyed Area:
Abundance=44, CV=0.27
Sightings
1992 - 1997
1998 - 2009
Animals / 100 km²
> 0.13
0.10 - 0.13
0.075 - 0.10
0.056 - 0.075
0.042 - 0.056
0.032 - 0.042
0.024 - 0.032
0.018 - 0.024
0.013 - 0.018
0.010 - 0.013
0.0075 - 0.010
0.0056 - 0.0075
0.0042 - 0.0056
0.0032 - 0.0042
0.0024 - 0.0032
0.0018 - 0.0024
0.0013 - 0.0018
0.0010 - 0.0013
< 0.0010
Marine Geospatial Ecology Lab

Figure 1.

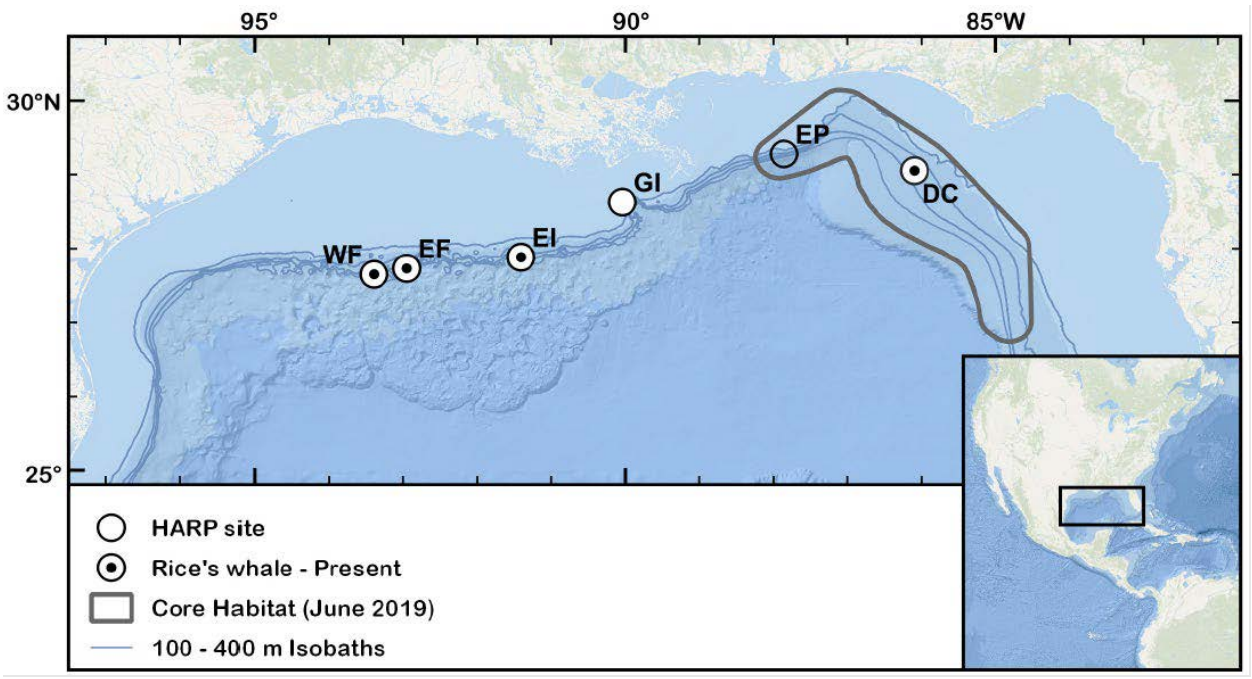
95°
90°
85°W
30°N
25°
WF
EF
EI
GI
EP
DC
HARP site
Rice's whale - Present
Core Habitat (June 2019)
100 - 400 m Isobaths

Figure 2.

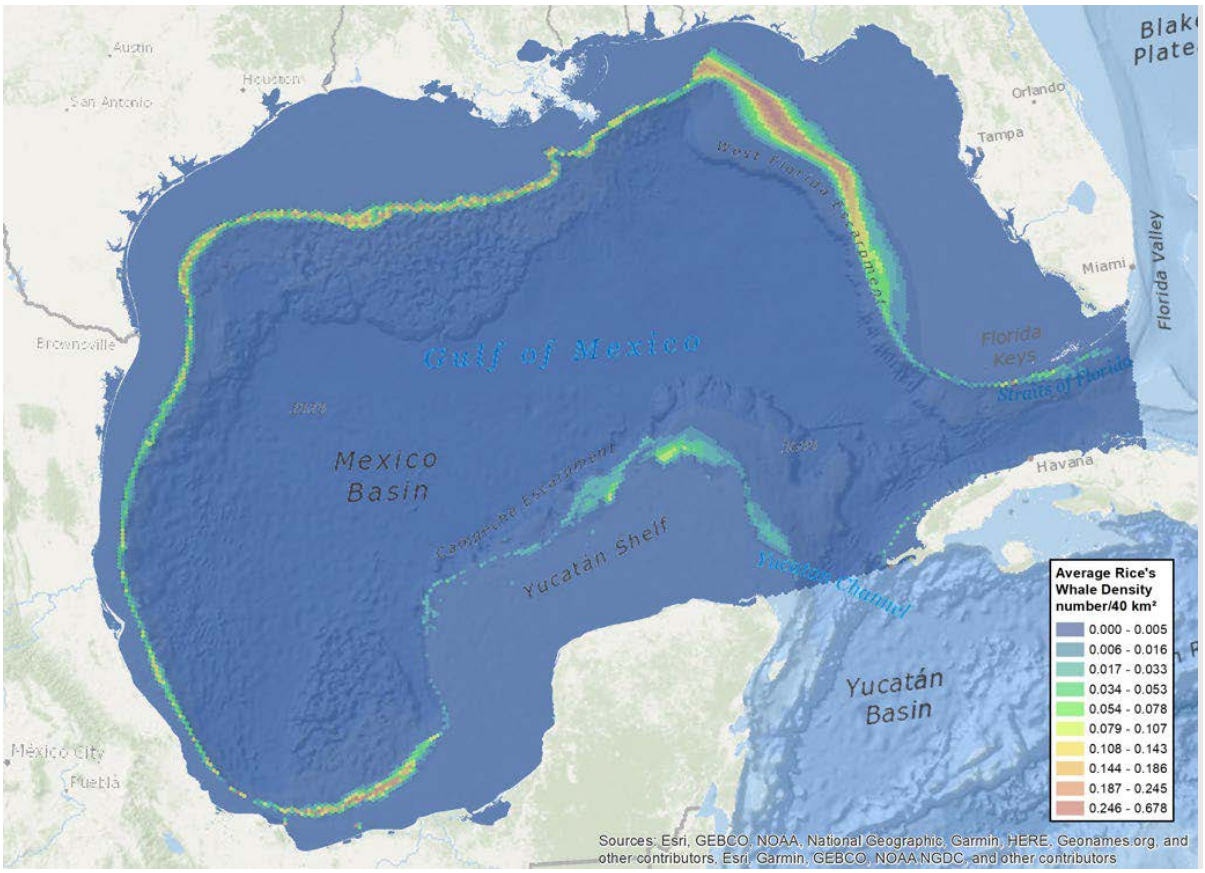
Austin
San Antonio
Houston
Orlando
Tampa
Miami
Florida Valley
Brownsville
Gulf of Mexico
Florida Keys
Straits of Florida
Mexico Basin
Campeche Escarpment
Yucatán Shelf
Yucatán Channel
Havana
Yucatán Basin
México City
Puebla
Average Rice's Whale Density number/40 km²
0.000 - 0.005
0.006 - 0.016
0.017 - 0.033
0.034 - 0.053
0.054 - 0.078
0.079 - 0.107
0.108 - 0.143
0.144 - 0.186
0.187 - 0.245
0.246 - 0.678
Sources: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org, and other contributors, Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Figure 3.

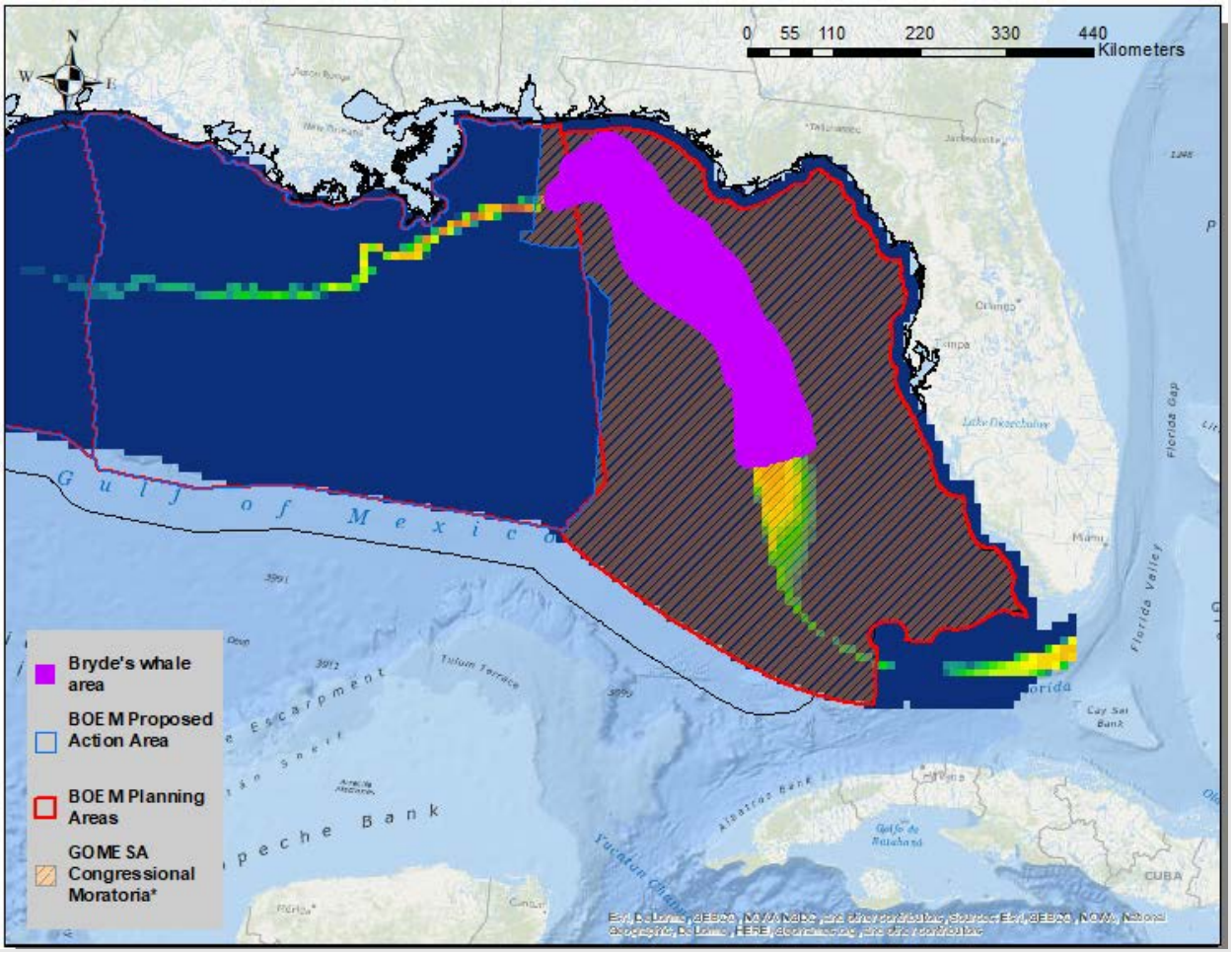
0 55 110 220 330 440
Kilometers
N
W
E
Bryde's whale area
BOEM Proposed Action Area
BOEM Planning Areas
GOMESA Congressional Moratoria*
Gulf of Mexico
Florida Escarpment
Tortugas Terrace
Florida Valley
Florida Gap
Campeche Bank
Yucatan Channel
Cay Sal Bank
CUBA

Figure 4.