



Submitted electronically via regulations.gov

October 6, 2023

Mr. David Bernhart
Assistant Regional Administrator
Protected Resources Division
NMFS Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

Re: Proposed critical habitat designation for Rice's whale (NOAA-2023-0028)

Dear Mr. Bernhart:

On behalf of our organizations and our millions of members, member organizations, and supporters, we thank you for the opportunity to comment on the National Marine Fisheries Service's (NMFS) proposed critical habitat designation for the endangered Rice's whale. 88 Fed. Reg. 47,453 (Jul. 24, 2023) (hereinafter "Proposed Habitat Rule"). While the proposed designation does not encompass the entirety of the whale's habitat, our organizations believe that it is prudent, determinable, consistent with the best available scientific information, and necessary both to prevent the species' extinction and to enable its recovery. We support the agency's proposal.

I. Background

Rice's whale (*Balaenoptera ricei*), also known as the Gulf of Mexico whale, is the only baleen whale species whose entire known range is limited to waters off the United States. It is also generally recognized, by NMFS and others, to be one of the most endangered marine mammals in existence.¹ Approximately 50 individuals remain, according to NMFS' best estimates, and the species can only afford to lose one animal about every fifteen years as a result of human impacts

¹ E.g., NMFS, "Rice's whale," available at fisheries.noaa.gov/species/rices-whale (accessed Sept. 2023) ("With likely fewer than 100 individuals remaining, Rice's whales are one of the most endangered whales in the world. Recovery of the species depends upon the protection of each remaining whale.").

if it is to achieve its optimum sustainable population consistent with federal law.² The whale is listed as endangered under the Endangered Species Act (ESA) and as “critically endangered”—the most severe rating short of extinction—on the International Union for Conservation of Nature (IUCN) Red List.³

As NMFS concluded in its endangered species listing, the population faces myriad threats to its survival and recovery. Such threats include the curtailment of habitat due to oil and gas development, oil spills and oil spill response, anthropogenic noise, vessel collisions, ingestion of marine debris, and potential fisheries interactions, as well as the deleterious genetic effects associated with limited abundance. 84 Fed. Reg. 15,446, 15,474-76 (Apr. 15, 2019). A number of these threats were separately deemed by NMFS’ most recent species Status Review, prepared in 2016, as “likely to eliminate or seriously degrade” the population.⁴ As the review unanimously concluded, the whales “are at high risk of extinction as a result of their small population size and the suite of anthropogenic threats posed primarily by energy exploration, development and production and vessel collisions. Small-scale incremental impacts over time or a single catastrophic event could result in extinction.”⁵

NMFS first suspected that Rice’s whales differed significantly from other baleen whales at least as far back as 2003, when researchers examined an individual stranded outside its Gulf habitat.⁶ But it was not until 2010, in the wake of the *Deepwater Horizon* disaster, that the agency was able to obtain the genetic samples necessary to establish the whale’s taxonomy. NMFS biologists compared the mitochondrial and microsatellite DNA from more than twenty whales to samples from whale populations in the North Atlantic and around the world, and found that the results

² S.A. Hayes, E. Josephson, K. Maze-Foley, P.E. Rosel, J. McCordic, and J. Wallace, eds., U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments 2022, at 114-22 (2023) (NOAA Tech. Memo. NMFS-NE-304). Under the Marine Mammal Protection Act, the annual rate of sustainable, human-caused loss of a marine mammal species or stock, known as Potential Biological Removal (PBR), is quantified as the product of the species’ minimum population size, one-half of its maximum net productivity rate, and a recovery factor. 16 U.S.C. § 1362. According to NMFS’ most recent Stock Assessment Report for the Rice’s whale (2022), the minimum population size for the species is 34, the maximum productivity rate is 0.04 (the default value for cetaceans), and the recovery factor is 0.1 because the stock is listed as endangered. We therefore calculate PBR for the Gulf of Mexico whale as 0.068, or about one whale lost to human impacts every fifteen years. (In our view, PBR should not be rounded up to 0.07, as is done in the Stock Assessment Reports.)

³ 50 C.F.R. §§ 17.11(h), 224.101(h) (ESA listing); P. Rosel, P. Corkeron, and M. Soldevilla, *Balaenoptera ricei*, in IUCN, *The IUCN Red List of Threatened Species* 2002: e.T215823373A208496244 (2022) (available at [iucnredlist.org/species/215823373/208496244](https://www.iucnredlist.org/species/215823373/208496244)) (IUCN listing). In its 2023 report, the Scientific Committee of the International Whaling Commission reiterated its “serious concern” about the whale’s conservation status, recommending that the United States “use all available legal and regulatory tools to provide maximum protection for this species.” International Whaling Commission, Report of the Scientific Committee (SC69A), at 30 (2023) (IWC/SC69A).

⁴ P.E. Rosel, P.J. Corkeron, L. Engleby, D. Epperson, K. Mullin, M.S. Soldevilla, and B.L. Taylor, Status review of Bryde’s whales (*Balaenoptera edeni*) in the Gulf of Mexico under the Endangered Species Act, at 130-32 (2016) (NOAA Tech. Memo. NMFS-SEFSC-692).

⁵ *Id.* at iv.

⁶ N. Mooney, “Rice’s whale: How UNCW played a role in the discovery of a new species,” *Spectrum News*, May 13, 2021 (available at <https://spectrumlocalnews.com/nc/charlotte/news/2021/05/13/uncw-helps-discover-new-species-of-whale>). As noted by Ann Pabst, a Professor of Marine Biology involved in the subsequent investigation, the whale “clearly left the Gulf of Mexico and is what’s called ‘extralimital’... Kind of outside the normal range of where the species is found.” *Id.*

suggested “a unique evolutionary trajectory worthy of its own taxonomic standing.”⁷ The whales were listed as an endangered subspecies in 2019, during the Trump administration (84 Fed. Reg. at 15,446); that listing was amended in 2021, when study of the whale’s morphology confirmed the uniqueness of the species (86 Fed. Reg. 47,022 (Aug. 23, 2021)). Their relative isolation in the Gulf was found to have contributed to that uniqueness, making them a special part of the region’s natural history.⁸

At the same time, NMFS initiated a five-year study, under funds made available through the RESTORE Science Program,⁹ to characterize the whale’s habitat using multiple lines of research. As described below, that study has since resulted in five peer-reviewed papers that, together with sightings data and a decade-long acoustic monitoring effort, support the present designation.

II. NMFS’ proposed designation meets the standards set forth in the ESA.

Recognizing that species cannot survive and recover unless their habitats are protected, Congress enacted the ESA to conserve not only endangered and threatened species but also the ecosystems on which they depend. 16 U.S.C. § 1531(b). The ESA’s clear recognition that protecting both species and their habitats are vital to population recovery is evidenced in its definitions of occupied and unoccupied critical habitat, both of which include the phrase “essential for the conservation of the species.” 16 U.S.C. § 1532(5)(A); *see also* ESA Amendments of 1978, Pub. L. No. 95-632, sec. 2, 92 Stat. 3751 1978. The statute defines “conserve” and “conservation” to mean “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.” 16 U.S.C. § 1532(3). Critical habitat designation and protection are therefore fundamental to the ESA’s ultimate mandate, *i.e.*, ensuring that listed species fully recover.

Under the ESA, NMFS is required to designate critical habitat “to the maximum extent prudent and determinable” (*id.* § 1533(a)(3)(A)), at the time a species is listed as threatened or endangered, or within one year thereafter upon extension by the agency “to the maximum extent prudent” (*id.* § 1533(b)(6)(C)). In designating critical habitat, NMFS “*may* exclude any area . . . if [the agency] determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat,” so long as doing so would not “result in the extinction of the species concerned.” *Id.* § 1533(b)(2). Under the statutory framework, the mandatory, first-

⁷ P.E. Rosel and L.A. Wilcox, Genetic evidence reveals a unique lineage of Bryde’s whales in the northern Gulf of Mexico, *Endangered Species Research* 25: 19-34 (2014).

⁸ P.E. Rosel, L.A. Wilcox, T.K. Yamada, and K.D. Mullin, A new species of baleen whale (*Balaenoptera*) from the Gulf of Mexico, with a review of its geographic distribution, *Marine Mammal Science* 37: 577-610, at 596 (2021).

⁹ NOAA’s RESTORE Science Program is funded by civil penalties levied against BP, following the *Deepwater Horizon*, and has the mission of conducting research and monitoring to support the “long-term sustainability” of the Gulf’s ecosystem and fisheries.

order duty to establish critical habitat to the *maximum* extent prudent is separate from the discretionary, second-order ability to exclude *particular* areas from that designation based on a benefits analysis, but only if such exclusions will not result in extinction. Whether or not NMFS determines to exclude any particular area from designation, however, its designation must be based on the best scientific data available. *Id.* § 1533(b)(2); 50 C.F.R. § 414.12(a).

Critical habitat designation is central to the “heart of the ESA” (*Western Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 495 (9th Cir. 2011)), the substantive section 7(a)(2) requirement that all federal agencies ensure that their actions are neither likely to jeopardize the continued existence of a listed species nor likely to destroy or adversely modify critical habitat. 16 U.S.C. § 1536(a)(2); *see* 81 Fed. Reg. 7,414, 7,415 (Mar. 14, 2016) (critical habitat designation provides a “significant regulatory protection” given the federal government’s role in land, water, and resource management; regulation of extractive and other industries; and “the funding, authorization, and implementation of myriad other activities” likely to affect critical habitat).

Critical habitat designation also serves a wide range of the ESA’s conservation goals, through both regulatory and non-regulatory means, in addition to the section 7(a)(2) mandate. *See, e.g.*, 81 Fed. Reg. at 7,414-15; *see also* Proposed Habitat Rule at 47,455. Designating critical habitat facilitates the implementation of section 7(a)(1) (16 U.S.C. § 1536(a)(1)), that requires all federal agencies to use their authorities to further the ESA’s conservation purposes, by identifying specific areas on which to focus their efforts. 81 Fed. Reg. at 7,414. Similarly, designation also facilitates non-federal entities (state, Tribal, and local governments, NGOs, and individuals) in focusing their conservation efforts on specific areas essential to species recovery.

Moreover, critical habitat designation is an essential part of informing effective and coordinated recovery planning and conservation efforts across state and Tribal wildlife agencies, conservation NGOs, and the public. Research shows that a species is more likely to receive a recovery plan if it has critical habitat designated and better task implementation under recovery plans occurs for species with designated critical habitat.¹⁰ Research also shows that species with critical habitat designations are more than twice as likely to be moving toward recovery than species without it.¹¹

a. Designation of critical habitat for Rice’s whale is prudent and determinable.

Under its current regulations, NMFS may find that a particular designation is not prudent only if (i) designation would increase human threats to the species; (ii) designation would not benefit the species because the present or threatened destruction, modification, or curtailment of its habitat

¹⁰ E. Harvey, J.M. Hoekstra, R.J. O’Connor, and W.F. Fagen, Recovery plan revisions: Progress or due process? *Ecological Applications* 12: 682-89, at 688 (2002); C.J. Lundquist, J.M. Diehl, E. Harvey, and L.W. Botsford, Factors affecting implementation of recovery plans, *Ecological Applications* 12: 713-18, at 715 (2002).

¹¹ M. Taylor, K. Suckling, and J. Rachlinski, The Effectiveness of the Endangered Species Act: A Quantitative Analysis, *BioScience* 55: 360-67 (2005).

or range is not a threat or if threats to its habitat “stem solely from causes that cannot be addressed” through the interagency consultation process under ESA section 7(a)(2)); (iii) for species that occur primarily outside U.S. jurisdiction, areas within the jurisdiction of the U.S. provide no more than negligible, if any, conservation value; (iv) no areas meet the definition of critical habitat; or (v) the agency otherwise determines that designation would not be prudent based on the best available scientific data. 50 C.F.R. § 424.12(a)(1).

Because none of the circumstances set forth in the regulation is present here, the proposed designation is prudent. With respect to exception (i), there is no evidentiary basis for assuming that designation would increase any of the known anthropogenic threats to Rice’s whale, such as vessel strikes, exposure to chronic ocean noise, and catastrophic events such as oil spills. On the contrary, designation would facilitate management of these threats through the statute’s interagency consultation process (16 U.S.C. § 1536(a)(2)), through its mandate on federal agencies to use their authorities to further the statute’s conservation purposes (*id.* § 1536(a)(1)), and through the conservation efforts of non-federal entities, such as ports.

With respect to exception (ii), in listing the species as endangered in 2019, NMFS explicitly found that the present or threatened destruction, modification, or curtailment of the Rice’s whale’s habitat or range from multiple causes warranted listing under listing factor (A) (*id.* § 1533(a)(1)(A)). *See* 84 Fed. Reg. 15,446, 15,474-76 (Apr. 15, 2019). Nor do these threats to the species’ habitat or range “stem solely” from causes that fall outside the purview of the interagency consultation process, under ESA section 7(a)(2). Quite the opposite: many of them derive from federal activities that are already subject to the consultation process. Prominently, these include federal permitting, leasing, and exploration and production plan approvals for offshore oil and gas development, for which the Bureau of Ocean Energy Management (BOEM) presently undertakes consultation with NMFS.¹² Indeed, the agency’s current Biological Opinion on these activities, issued in 2020, specifies designation of the whale’s critical habitat as a basis for re-initiation of consultation, consistent with existing regulations.¹³

With respect to exception (iii), Rice’s whale is plainly not a species that occurs “primarily outside the jurisdiction of the United States,” being, in fact, the only great whale whose entire known habitat occurs *within* the U.S. territorial sea or Exclusive Economic Zone. *See* Proposed Habitat Rule at 47,460.¹⁴ And with respect to exceptions (iv) and (v), NMFS has determined in the present notice that certain areas meet the definition of critical habitat and that designation is prudent based on the best available scientific data. *See generally* Proposed Habitat Rule at 47,453-72. In sum, none of the circumstances described in the agency’s regulation, 50 C.F.R. § 424.12(a)(1), is applicable. The proposed designation is prudent.

¹² Rosel et al., Status Review, *supra*.

¹³ NMFS, Biological Opinion on the Federally Regulated Oil and Gas Program Activities in the Gulf of Mexico, at 618 (2020) (stating requirement under 50 C.F.R. § 402.16(a)(4)).

¹⁴ *See also* P. Corkeron et al., An Open Letter to the Biden Administration, Oct. 12, 2022 (statement of approximately 100 marine scientists, characterizing Rice’s whale as “the only large whale species resident year-round in the waters of the United States”).

Critical habitat is also clearly determinable for Rice's whale, supported by multiple lines of scientific evidence constituting the best available scientific data. As much of this evidence is set forth in NMFS' proposed designation and supporting documents, and is well described by the agency, we will note only some of the more salient elements here.

In 2021, NMFS completed its five-year study of the species' habitat, titled "Trophic Interactions and Habitat Requirements of Gulf of Mexico Rice's Whales." The study was designed to develop "a comprehensive ecological understanding" of the whales' habitat use by integrating research along multiple lines. In relevant part, the effort included photo-identification and mark-recapture analyses to help determine the size and site-fidelity of the population, tagging of individual whales to understand their foraging behavior, sampling of both the whales' fecal matter and the prey composition of the area they forage, monitoring of potential habitat with passive acoustics, mapping of the distribution of the whales' prey, and determination of the oceanographic features associated with their habitat.¹⁵ A detailed overview is available on NMFS' website.¹⁶

Several of the study's components have already been published, and at least one other is pending publication. Together and individually, these multiple lines of evidence strongly support the identification of habitat extending from the upper depths of the DeSoto Canyon along the continental shelf break, between the 100m and 400m isobaths, across the northern Gulf of Mexico, including waters off Louisiana and Texas.

The persistent occurrence of Rice's whales in the northwestern Gulf of Mexico has recently been documented, in one component of the five-year study, through the use of passive acoustics, with hydrophones placed at multiple survey sites along the shelf break (Soldevilla et al. 2022).¹⁷ Acoustic monitoring is conventionally used in marine mammal science as an often necessary supplement to vessel surveys for determining the distribution and density of cetaceans; indeed, it is well established that vocalizing species may be detected far more frequently through acoustic recorders than through sightings.¹⁸ Here, vocalizations were detected as frequently as one in

¹⁵ NOAA RESTORE Science Program, "Trophic Interactions and Habitat Requirements of Gulf of Mexico Rice's Whales," available at restoreactscienceprogram.noaa.gov/projects/rices-whales (accessed Jun. 2022); NOAA Fisheries, "Trophic Interactions and Habitat Requirements of Gulf of Mexico Rice's Whales," available at <https://www.fisheries.noaa.gov/southeast/endangered-species-conservation/trophic-interactions-and-habitat-requirements-gulf-mexico> (accessed Jun. 2022).

¹⁶ *Id.*

¹⁷ M.S. Soldevilla, A.J. Debich, L.P. Garrison, J.A. Hildebrand, and S.M. Wiggins, Rice's whales in the northwestern Gulf of Mexico: call variation and occurrence beyond the known core habitat, *Endangered Species Research* 48: 155-74 (2022).

¹⁸ See, e.g., C.W. Clark, M.W. Brown, and P. Corkeron, Visual and acoustic surveys for North Atlantic right whales, *Eubalaena glacialis*, in Cape Cod Bay, Massachusetts, 2001-2005: Management implications, *Marine Mammal Science* 26: 837-54 (2010) (finding that aerial surveys did not observe whales on about one-third of the days that the whales were detected acoustically); K.E. Frasier, L.P. Garrison, M.S. Soldevilla, S.M. Wiggins, and J.A. Hildebrand, Cetacean distribution models based on visual and passive acoustic data, *Scientific Reports* 11: art. 8240 (2021) (Table 2, showing that, relative to visual survey data, passive acoustic data resulted in higher encounter rates and mean density estimations for Cuvier's beaked whale and sperm whale in the Gulf of Mexico); A. Rice, E. Chou, J.A. Hildebrand, S.M. Wiggins, and M.A. Roch, Seven years of blue and fin whale call

every six days sampled at the westernmost survey site (Flower Garden West), with no obvious evidence of seasonality: that is, the vocalizations documented a persistent occurrence of Rice's whales throughout the year.¹⁹ These findings, although significant, are likely to underestimate the frequency of Rice's whale calling in the northwestern Gulf, since background noise from shipping traffic and seismic surveys around the three westernmost survey sites may have reduced the detection distance of calls by 50 percent and the area sampled by 75 percent.²⁰ Notably, and contrary to statements from the American Petroleum Institute aimed at discounting this study's applicability,²¹ the new information was determined, by the study's authors, to be of a level of significance that "will be important to consider when designating critical habitat for this endangered species."²²

The shelf-break habitat identified through passive acoustic monitoring of the whales matches the habitat features identified, in another component of the five-year study, as essential to Rice's whale foraging. Using a trawl, researchers sampled aggregations of prey at particular water depths and locations used by the whale for feeding; and they supplemented these data with staple isotope and energy density analyses, based on skin biopsies, to determine the whale's primary prey.²³ They concluded that Rice's whale is a selective predator, focused on aggregations of certain high-energy content fish—primarily a schooling fish known as *Ariomma bondi*, with lesser contributions from several other small fish and squid.²⁴ Both historical catch records and near-bottom trawling data shows *A. bondi* favoring the same shelf-break habitat throughout the northern Gulf of Mexico where the whales have been shown to persistently occur.²⁵

This evidence is further complemented by newly available and forthcoming habitat suitability analyses from NOAA, both of which delineate the same shelf-break waters across the northern Gulf as highly suitable habitat for the whale. The first NOAA analysis (Farmer et al. 2022) identified extended habitat in the northwestern Gulf based on three largely independent lines of information: sightings data from the government's large-vessel surveys, acoustic data from NMFS' multi-year monitoring effort (described above), and a habitat suitability model rooted in salient oceanographic features, including water depth, bottom temperature, and primary

abundance in the Southern California Bight, *Endangered Species Research* 28(1): 61-76 (2015) (stating that an autumn offshore movement of fin whales indicated by visual survey data was not borne out by the acoustic record, "as fin whales were commonly detected coastally already during the fall").

¹⁹ Soldevilla et al., Rice's whales in the northwestern Gulf of Mexico, *supra*.

²⁰ *Id.* at 171.

²¹ Comments of Andy Radford, Senior Policy Advisor, American Petroleum Institute, at Public Hearing for the Proposed Rule to Designate Critical Habitat for Rice's Whale under the Endangered Species Act (Aug. 24, 2023) (convened virtually by NMFS).

²² Soldevilla et al., Rice's whales in the northwestern Gulf of Mexico, *supra*, at 172.

²³ J.J. Kiszka, M. Caputo, J. Vollenweider, M.R. Heithaus, L.A. Dias, and L.P. Garrison, Critically endangered Rice's whale (*Balaenoptera ricei*) selectively feed on high-quality prey in the Gulf of Mexico, *Scientific Reports* 13: art. 6710 (2023).

²⁴ *Id.* at 10.

²⁵ *Id.* (reviewing near-bottom trawl survey data collected by NMFS).

productivity.²⁶ It is our understanding that NMFS' second habitat suitability analysis has been reviewed internally by the agency and has been submitted for publication.²⁷ Of course, the timing of its publication would not justify the agency failing to consider that second analysis, along with the one that has already been published. *See Greenpeace v. Nat'l Marine Fisheries Serv.*, 80 F. Supp. 2d 1137, 1149-50 (W.D. Wash. 2000) (holding, where data are available but have not yet been analyzed, that NMFS may not lawfully fail to analyze whether that data constitutes best available data and thereafter develop appropriate projections based on such data).

Finally, the proposed designation is fully consistent with the agency's own spatial estimates of the whale's distribution and density across the Gulf. These estimates, which were revised by NMFS' Southeast Fisheries Science Center in 2022 as part of its broader mapping of cetacean and sea turtle densities in the region, indicate that about 94 percent of the population is contained within the same 100-400m strip of habitat that NMFS has proposed here for designation, with nearly half the population (about 48 percent) occurring outside the DeSoto Canyon area, albeit at somewhat lower densities.²⁸ It is worth noting that the Science Center's estimates do not incorporate the acoustic monitoring data that the oil and gas industry is presently struggling to discount, but relies on the agency's sightings information.²⁹

In any critical habitat designation, NMFS must make its decision on the basis of the best available scientific data. Courts have interpreted the "best available data" standard broadly. NMFS may not ignore available biological information (*Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988)), and must address all such available data in its decision making (*San Luis v. Badgley*, 136 F. Supp. 2d 1136, 1147 (E.D. Cal. 2000)). In any ESA listing rule or rule designating critical habitat, the agency has a duty under 16 U.S.C. § 1533(b)(8) to summarize the data on which the rule is based and demonstrate the relationship between the data relied on and the conclusion reached. *See San Luis*, 136 F. Supp. 2d at 1149. Credible anecdotal evidence may constitute the best available scientific data and the agency cannot ignore it, even if a full-scale study might be preferable. *Ctr. for Native Ecosystems v. U.S. Fish and Wildlife Serv.*, 795 F. Supp. 2d 1199, 1208 (D. Colo. 2011) (citing *Northwest Ecosystem Alliance v. U.S. Fish and Wildlife Serv.*, 475 F.3d 1136, 1147 (9th Cir. 2007)).

²⁶ The suitability model took account of the sightings, but not the acoustic data. N.A. Farmer, J.R. Powell, J.A. Morris, Jr., M.S. Soldevilla, L.C. Wickliffe, J.A. Jossart, J.K. MacKay, A.L. Randall, G.E. Bath, P. Ruvelas, L. Gray, J. Lee, W. Piniak, L. Garrison, R. Hardy, K.M. Hart, C. Sasso, L. Stokes, and K.L. Riley, Modeling protected species distributions and habitats to inform siting and management of pioneering ocean industries: A case study for Gulf of Mexico aquaculture, *PLoS ONE* 17: art. e0267333 (2022). Although this paper was not undertaken as part of the five-year study, it made use of some of the data acquired during the study.

²⁷ This appears to be the study cited in NMFS' supporting documents as L.P. Garrison, A. Martinez, M.S. Soldevilla, J. Ortega-Ortiz, and K.D. Mullin, The habitat of the critically endangered Rice's whale, *Balaenoptera ricei*, in the Gulf of Mexico, *Endangered Species Research* (in review).

²⁸ J. Litz, L. Aichinger Dias, G. Rappucci, A. Martinez, M. Soldevilla, L. Garrison, and K. Mullin, NOAA SEFSC Cetacean and Sea Turtle Spatial Density Models for the Gulf of Mexico: Additional Information and Data Dictionary (2022). The percentages cited here were calculated by Dr. Ben Best, a spatial modeler, from the density shapefiles provided by Litz et al.

²⁹ *Id.*

Here, NMFS has grounded its conclusions in a five-year, agency-led study that was expressly focused on characterizing the habitat of this species, as well as on years of sighting data and additional acoustic data. This information is clearly the best available—current, systematic, directly on point, and peer-reviewed—and all of it points to the same conclusion about the importance of the continental shelf break, between the 100 and 400m isobaths, across the northern Gulf.

For all these reasons, designating critical habitat for Rice’s whale is prudent and determinable.

b. The areas proposed for designation satisfy the statutory definition of critical habitat.

1. NMFS’ proposed designation contains physical and biological features essential to the conservation of the species.

The ESA defines occupied critical habitat as the geographical habitat occupied by a listed species at the time it is listed “on which are found those physical or biological features (i) essential to [its] conservation” and “(ii) which may require special management considerations or protection.” 16 U.S.C. § 1532(5)(A)(i). The ESA’s implementing regulations further define “physical or biological features essential to the conservation of a species” as those occurring in specific areas “that are essential to support the life-history needs of the species,” which may include water characteristics, geological features, prey, or other features. 50 C.F.R. § 402.02. “A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics.” *Id.*

Here, NMFS has identified a single feature with multiple attributes, rooted in the life history of the whale: “[Gulf of Mexico] continental shelf and slope associated waters between the 100-400m isobaths that support individual growth, reproduction, and development, social behavior, and overall population growth.” Proposed Habitat Rule at 47,461. In turn, the agency has described three attributes that support the habitat value of this feature for Rice’s whales to forage, develop, communicate, reproduce, rear calves, and migrate, specifically: (1) “sufficient density, quality, abundance of accessibility” of the small demersal and vertically migrating species that are the whale’s prey (referred to below as the “prey attribute”); (2) marine waters with elevated productivity, a defined bottom temperature range of 10-19 degrees Celsius, and levels of pollutants that do not “preclude or inhibit any demographic function” (the “water quality attribute”); and (3) “sufficiently quiet conditions for normal use and occupancy,” including but not limited to intraspecific communication and the detection of prey and predators (the “acoustic habitat attribute”). *Id.*

We agree that the identified feature and attributes are essential to the conservation of Rice’s whale, according to the best available scientific information.

Bathymetric feature.— Multiple lines of evidence indicate that Rice’s whales rely almost entirely on the Gulf of Mexico continental shelf and slope waters between the 100 and 400m isobaths to support all of their life history stages. The delineation of the species’ eastern distribution area, which encompasses the waters between the 100 and 400m isobaths in the northeastern Gulf of Mexico (and largely the waters of the DeSoto Canyon), is supported by sighting locations from surveys that took place from 1989-2018; additional sightings data collected during a 2019 survey including biopsy sample locations collected from free-ranging Rice’s whales in 2010 and between 2018 and 2019;³⁰ telemetry tag locations from a single Rice’s whale tagged in 2010; focal-follow sighting locations of a whale tagged in with a kinematic tag in 2015;³¹ and sightings and acoustic encounters of Rice’s whale vocalizations by sonobuoys in 2018.³² In addition to the eastern distribution area, additional sightings data from all baleen whale sighting locations recorded during surveys from 1998-2018, including a genetically verified sighting of a Rice’s whale along the shelf break off Corpus Christi, Texas, in 2017, as well as additional sightings attributable through acoustic data; regular acoustic detections of stereotypical Rice’s whale long-moan call types at three of four northcentral and northwestern Gulf recording sites;³³ and habitat suitability model predictions based on 154 Rice’s whale groups that were sighted on 14 directed and multi-species line transect surveys from 2003-2019,³⁴ support an extension of Rice’s whale critical habitat westwards across the northern Gulf, between the 100 and 400m depth contour, to the Texas/Mexico border.

Prey attribute.— Rice’s whales, like other baleen whales, are subject to high energetic demands in order to sustain their large body size, reproduction and nursing, and long-distance movements across the Gulf of Mexico.³⁵ Concerningly, their foraging lunge rate, which is low compared to the lunge rates of other deep-diving rorquals, suggests that their energy budget would not be optimized to meet those high demands if prey were limited.³⁶ Availability of and access to preferred prey species are therefore essential for individual Rice’s whales to maintain their energy budget and for the overall health, fitness, and recovery potential of the species. Habitat that supports aggregations of high energy content fish, and particularly *A. bondii*, the species’

³⁰ Kiszka, et al., Critically endangered Rice’s whale (*Balaenoptera ricei*) selectively feed on high-quality prey, *supra*.

³¹ M.S. Soldevilla, J.A. Hildebrand, K.E. Frasier, L.A. Dias, A. Martinez, K.D. Mullin, P.E. Rosel, and L.P. Garrison, Spatial distribution and dive behavior of Gulf of Mexico Bryde’s whales: Potential risk of vessel strikes and fisheries interactions, *Endangered Species Research* 32: 533-50 (2017).

³² M.S. Soldevilla, K. Ternus, A. Cook, J.A. Hildebrand, K.E. Frasier, A. Martinez, and L.P. Garrison, Acoustic localization, validation, and characterization of Rice’s whale calls, *Journal of the Acoustical Society of America* 151: 4264-78 (2022).

³³ Soldevilla et al. 2022, Rice’s whales in the northwestern Gulf of Mexico, *supra*.

³⁴ L.P. Garrison, Physical oceanography and the habitat of Gulf of Mexico Bryde’s Whales (Rice’s whales) (2021) (cited in the Proposed Habitat Rule as Garrison et al. 2022). *See also* Farmer et al., Modeling protected species distributions and habitats, *supra*; J.J. Roberts, B.D. Best, L. Mannocci, E.L. Fujioka, P.N. Halpin, D.L. Palka, L.P. Garrison, K.D. Mullin, T.V. Cole, C.B. Khan, and W.A. McLellan, Habitat-based cetacean density models for the US Atlantic and Gulf of Mexico, *Scientific Reports* 6: art. 22615 (2016).

³⁵ C. Lockyer, All creatures great and smaller: A study in cetacean life history energetics, *Journal of the Marine Biological Association of the United Kingdom* 87: 1035-45 (2007).

³⁶ A.C.M. Kok, M.J. Hildebrand, M. MacArdle, A. Martinez, L.P. Garrison, M.S. Soldevilla, and J.A. Hildebrand, Kinematics and energetics of foraging behavior in Rice’s whales of the Gulf of Mexico, *Scientific Reports* 13: 8996 (2023).

preferred and primary prey,³⁷ is critical to the species' survival and recovery and therefore an essential attribute of Rice's whale habitat.

Water quality attribute.— Rice's whale requires waters that are free of harmful pollutants. Oil spills and spill response are significant threats that have adversely modified the whale's habitat in the past.³⁸ In particular, the 2010 *Deepwater Horizon* catastrophic oil spill released nearly 134 million gallons (507 million liters) of oil into the Gulf of Mexico, exposing an estimated 48 percent of the Rice's whale population to oil.³⁹ NOAA estimated that 17 percent of the population died in the spill, that 22 percent of reproductive females experienced reproductive failure, and that 18 percent of the population has suffered adverse health effects due to lung and adrenal disease and poor body condition.⁴⁰ These issues persist. In the two years following the *Deepwater Horizon* spill, 46 oil spills of more than 1000 barrels were associated with oil and gas activities in the Gulf of Mexico.⁴¹ The water-quality attribute that the agency has proposed, which includes, in its description, "levels of pollution that do not preclude or inhibit any demographic function" (Proposed Habitat Rule, 88 Fed. Reg. at 47,461), is necessary to ensure a sustainable habitat for the whale.

Acoustic habitat attribute.— NMFS has included an acoustic habitat feature in two prior critical habitat designations for listed marine mammals, for the Cook Inlet beluga whale in 2011 (76 Fed. Reg. 20,179, 20,214 (Apr. 11, 2011)) and for the Main Hawaiian Islands insular false killer whale in 2018 (83 Fed. Reg. 35,062, 35,092 (Jul. 24, 2018)). This inclusion reflects NMFS' longstanding recognition of the importance of underwater sound to marine species and ecosystems, as registered both in its scientific production and in the adaption of its agency-wide Ocean Noise Strategy.⁴² As the agency stated in its Strategy Roadmap, "sound is *a fundamental component of the physical and biological habitat* that many aquatic animals and ecosystems have evolved to rely on over millions of years."⁴³

Here, as the Proposed Habitat Rule indicates, the whales' "normal use and occupancy" of their habitat require quiet conditions sufficient to "receive and interpret sound for the purposes of

³⁷ Kiszka et al., Critically endangered Rice's whale (*Balaenoptera ricei*) selectively feed on high-quality prey, *supra*. The study is summarized at sec. II(A) above.

³⁸ Rosel et al., Status Review, *supra*.

³⁹ *Deepwater Horizon* Damage Assessment Trustees, *Deepwater Horizon* Oil Spill: Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (2016); *Deepwater Horizon* Marine Mammal Injury Quantification Team (DWH MMIQT), Models and analysis for the quantification of injury to Gulf of Mexico cetaceans from the *Deepwater Horizon* oil spill (2015).

⁴⁰ *Deepwater Horizon* Damage Assessment Trustees, *Deepwater Horizon* Oil Spill, *supra*; see also *Deepwater Horizon* Marine Mammal Injury Quantification Team (DWH MMIQT), Models and analysis for the quantification of injury, *supra* (estimating an overall population decrease of 22 percent).

⁴¹ Rosel et al., Status Review, *supra*, at 30 (citing BOEM data).

⁴² L.T. Hatch, C.M. Wahle, J. Gedamke, J. Harrison, B. Laws, S.E. Moore, J.H. Stadler, and S.M. van Parijs, Can you hear me here? Managing acoustic habitat in U.S. waters, *Endangered Species Research* 30: 171-86 (2016); NOAA, Ocean Noise Strategy Roadmap (2016).

⁴³ NOAA, Ocean Noise Strategy Roadmap, *supra*, at 1 (emphasis added).

navigation, communication, and detection of prey, predators, and other threats,” without significant impediment. Proposed Habitat Rule at 47,461. For example, masking of the quiet contact calls between baleen whale mothers and their calves, which have been documented in diverse baleen whale species,⁴⁴ could lead to separation, with potentially deadly consequences to the calf, or a reduction in calf feeding events leading to energetic consequences for the calf. Masking of other calls can result in missed breeding opportunities or affect social cohesion, especially in species that, like Rice’s whale,⁴⁵ do not always vocalize or can go hours or days without vocalizing. The whales’ long-moan calls are likely to be of significant import to the species (*e.g.*, for breeding or foraging),⁴⁶ given their rate of production, the distances they propagate (20 to 75 kilometers), their association with groups in at least some instances, and the evolution of a western variant; and they, like other Rice’s whale calls, are susceptible to low-frequency masking.⁴⁷ Other baleen whales exposed to chronic noise have been found to undergo changes in physiology, foraging, and vocal behavior.⁴⁸ Rice’s whales, as year-round residents of the Gulf of Mexico, require sufficiently quiet conditions for all their life functions.

NMFS’ acoustic data provide an indication of the extent to which acoustic habitat, as reflected in the whales’ communication space, has been limited by chronic noise in certain parts of the proposed critical habitat area. Ambient noise levels at Rice’s whale call frequencies (*i.e.*, the 60-160 Hz band) are approximately 6 dB re 1 μ Pa²/Hz higher at the Flower Garden West recording location in the western Gulf relative to the DeSoto Canyon. As a result, detection ranges are expected to decrease at Flower Garden West to approximately 25-50 percent of those at De Soto Canyon under spreading conditions ranging from spherical to cylindrical. This reduction would yield a decrease in detection area at Flower Garden West to only 12.5-25 percent of that at De Soto Canyon.⁴⁹ The Flower Garden West location had the lowest median sound pressure spectrum in the 60-160 Hz band after the DeSoto Canyon; ambient noise levels were even higher

⁴⁴ M.L. Nielsen, L. Bejder, S.K. Videsen, F. Christiansen, and P.T. Madsen, Acoustic crypsis in southern right whale mother–calf pairs: Infrequent, low-output calls to avoid predation? *Journal of Experimental Biology* 222(13): p.jeb190728 (2019); S.E. Parks, D.A. Cusano, S.M. Van Parijs, and D.P. Nowacek, Acoustic crypsis in communication by North Atlantic right whale mother-calf pairs on the calving grounds, *Biology Letters* 15: art. 20190485 (2019); S.K. Videsen, L. Bejder, M. Johnson, and P.T. Madsen, High suckling rates and acoustic crypsis of humpback whale neonates maximise potential for mother-calf energy transfer, *Functional Ecology* 31: 1561-73 (2017). An example of crypsis in Rice’s whales may have been recorded by an archival tag. See Soldevilla et al., Acoustic localization, validation, and characterization of Rice’s whale calls, *supra*.

⁴⁵ Soldevilla et al., Acoustic localization, validation, and characterization of Rice’s whale calls, *supra*, at 4271 (summarizing results from acoustic tags deployed on Rice’s whales).

⁴⁶ *Id.*

⁴⁷ See Soldevilla et al. 2022, Rice’s whales in the northwestern Gulf of Mexico, *supra*, at 170-71.

⁴⁸ See, *e.g.*, Blair, H.B., Merchant, N.D., Friedlaender, A.S., Wiley, D.N. and Parks, S.E., 2016. Evidence for ship noise impacts on humpback whale foraging behaviour. *Biology Letters* 12(8): p.20160005 (2016) (alterations in foraging from chronic noise); Castellote, M., Clark, C.W. and Lammers, M.O., 2012. Acoustic and behavioural changes by fin whales (*Balaenoptera physalus*) in response to shipping and airgun noise. *Biological Conservation*, 147(1), pp.115-122 (changes in vocalizations over large foraging area); Parks, S.E., Johnson, M., Nowacek, D. and Tyack, P.L., 2011. Individual right whales call louder in increased environmental noise. *Biology letters*, 7(1), pp.33-35 (changes in vocalization from chronic noise); Rolland, R.M., Parks, S.E., Hunt, K.E., Castellote, M., Corkeron, P.J., Nowacek, D.P., Wasser, S.K. and Kraus, S.D., Evidence that ship noise increases stress in right whales, *Proceedings of the Royal Society B: Biological Sciences* 279: 2363-68 (evidence of chronic stress response) (2012).

⁴⁹ Soldevilla, et al., Rice’s whales in the northwestern Gulf of Mexico, *supra*.

at other recording locations across the proposed critical habitat area,⁵⁰ meaning that detection areas would be even more limited at other locations. With such limitations, as NMFS' expert Status Review put it, "whales would be unlikely to hear their nearest neighbors."⁵¹ Similar decrements in communication space, resulting from chronic noise, have raised conservation concerns for other baleen whale species.⁵²

The cause of this loss in habitat value is demonstrably anthropogenic. Multiple studies have shown that seismic airguns dominate the soundscape through much of the northern Gulf, including in Rice's whale habitat, with other industrial noise and shipping also contributing.⁵³ It has repeatedly been hypothesized, including by NMFS, that the lower Rice's whale densities detected outside the DeSoto Canyon may be due to higher levels of ambient noise.⁵⁴

Baleen whales are limited in their ability to compensate for impairments in their foraging regimes, as can be caused by habitat degradation. For example, North Atlantic right whales undertake a high-drag ram-filtering foraging strategy that involves filtering large volumes of water at low speeds with a high duty cycle. This high-drag strategy is energetically expensive, and so the species has evolved to preferentially target high-energy prey that occur in dense aggregations to compensate for a high-drag foraging strategy.⁵⁵ A reduction in the availability of dense aggregations of the right whales' primary prey, *Calanus finmarchicus*, has led to significant levels of weight loss and ill health in the species, with consequences for species'

⁵⁰ *Id.*

⁵¹ Rosel et al., Status Review, *supra*, at 55.

⁵² See, e.g., D. Cholewiak, C.W. Clark, D. Ponirakis, A. Frankel, L.T. Hatch, D. Risch, J.E. Stanistreet, M. Thompson, E. Vu, and S.M. Van Parijs, Communicating amidst the noise: Modeling the aggregate influence of ambient and vessel noise on baleen whale communication space in a national marine sanctuary, *Endangered Species Research* 36: 59-75 (2018); L.T. Hatch, C.W. Clark, S.M. Van Parijs, A.S. Frankel, and D.W. Ponirakis, Quantifying loss of acoustic communication space for right whales in and around a U.S. National Marine Sanctuary, *Conservation Biology* 26: 983-94 (2012); R.L. Putland, N.D. Merchant, A. Farcas, and C.A. Radford, Vessel noise cuts down communication space for vocalizing fish and marine mammals, *Global Change Biology* 24: 1708-21 (2017); R. Williams, C.W. Clark, D. Ponirakis, and E. Ashe, Acoustic quality of critical habitats for three threatened whale populations, *Animal Conservation* 17(2): 174-85 (2014).

⁵³ See, e.g., B.J. Estabrook, D.W. Ponirakis, C.W. Clark, and A.N. Rice, Widespread spatial and temporal extent of anthropogenic noise across the northeastern Gulf of Mexico shelf ecosystem, *Endangered Species Research* 30: 267-282 (2016); M.R. Rafter, K.E. Frasier, M.S. Soldevilla, L. Hodge, H. Frouin-Mouy, and I. Perez Carballo, LISTEN GoMex, 2010-2021: Long-term investigations into soundscapes, trends, ecosystems, and noise in the Gulf of Mexico (2022) (MPL Tech. Memo. No. 662); S.M. Wiggins, J.M. Hall, B.J. Thayre, and J.A. Hildebrand, Gulf of Mexico low-frequency soundscape impacts by airguns, *Journal of the Acoustical Society of America* 140: 176-83 (2016).

⁵⁴ See, e.g., 84 Fed. Reg. 15,446, 15,474 (Apr. 15, 2019); NMFS, Endangered Species Act Rice's Whale Critical Habitat Report: Proposed Information Basis and Impact Considerations of Critical Habitat Designation, at 19 (2023); Rosel and Wilcox, Genetic evidence reveals a unique lineage of Bryde's whales, *supra*, at 31.

⁵⁵ J.M. Van der Hoop, A.E. Nousek-McGregor, D.P. Nowacek, S.E. Parks, P. Tyack, and P.T. Madsen, Foraging rates of ram-filtering North Atlantic right whales, *Functional Ecology* 33: 1290-1306 (2019).

fitness.⁵⁶ Blue whales⁵⁷ and humpback whales⁵⁸ have likewise been observed to adapt their foraging strategies in response to available prey density. Such adaptations are logical in diving predators that face the conflicting metabolic demands of energy intake and oxygen conservation during a breath-hold, even as they work to sustain their large body size through highly demanding life functions, including reproduction and nursing.

Based on this literature, it can be assumed that Rice's whales have similar requirements to carefully maintain their energy budgets, and that impairment can lead to energetic and fitness consequences for the species, as documented in other marine mammals. Indeed, avoiding impairment may be of particular concern for Rice's whales given what a tagging study has documented of their foraging behavior: deep, energetically costly dives with comparatively low rates of feeding lunges, undertaken in some cases by individuals in poor body condition.⁵⁹ As the authors of that tagging study have stated, "any direct impact on their fitness" could lead to the species' extinction.⁶⁰ As with the other habitat attributes proposed by NMFS, sufficiently quiet conditions are necessary to ensure a sustainable environment for the whale.

The Marine Mammal Commission, while fully concurring in the appropriateness of the three attributes set forth in the Proposed Habitat Rule, has further recommended that NMFS develop a quantitative descriptor for each attribute that does not presently have one, including, to the extent possible, the attributes for prey abundance, levels of pollution, and sufficient quiet.⁶¹ We agree with the Commission that such a descriptor for sufficient quiet would help substantially in ensuring that "research and management actions are effective at protecting" acoustic habitat value.⁶² We also believe that developing a quantitative descriptor is practicable given the guidance provided by the scientific community⁶³ and given NMFS' already extensive library of acoustic data on the Gulf of Mexico. Indeed, the agency has been gathering acoustic data in the whales' proposed critical habitat for more than a decade, through both its five-year habitat-characterization study and the LISTEN project, which it has undertaken in collaboration with

⁵⁶ See, e.g., F. Christiansen, S.M. Dawson, J.W. Durban, H. Fearnbach, C.A. Miller, L. Bejder, M. Uhart, M. Sironi, P. Corkeron, W. Rayment, and E. Leunissen, Population comparison of right whale body condition reveals poor state of the North Atlantic right whale, *Marine Ecology Progress Series* 640: 1-16 (2020).

⁵⁷ E.L. Hazen, A.S. Friedlaender, and J.A. Goldbogen, Blue whales (*Balaenoptera musculus*) optimize foraging efficiency by balancing oxygen use and energy gain as a function of prey density, *Science Advances* 1(9): p.e1500469 (2015).

⁵⁸ Y. Akiyama, T. Akamatsu, M.H. Rasmussen, M.R. Iversen, T. Iwata, Y. Goto, K. Aoki, and K. Sato, Leave or stay? Video-logger revealed foraging efficiency of humpback whales under temporal change in prey density, *PLoS ONE* 14(2): p.e0211138 (2019).

⁵⁹ Kok et al., Kinematics and energetics of foraging behavior in Rice's whales, *supra*, at 7.

⁶⁰ *Id.*

⁶¹ Comment letter from P. Thomas, Executive Director, Marine Mammal Commission, to D. Bernhardt, Assistant Regional Administrator of Protected Resources, NMFS, at 2-3 (Sept. 28, 2023).

⁶² See *id.* at 3.

⁶³ J.F. Borsani, M. Andersson, M. André, A. Azzellino, M. Bou, M. Castellote, L. Ceyrac, D. Dellong, T. Folegot, D. Hedgeland, C. Juretzek, A. Klauson, R. Leaper, F. Le Courtois, A. Liebschner, A. Maglio, A. Mueller, A. Norro, A. Novellino, O. Outinen, A. Popit, A. Prospathopoulos, P. Sigra, F. Thomsen, J. Tougaard, P. Vukadin, and L. Weilgart, Setting EU Threshold Values for Continuous Underwater Sound (2023) (produced under the Common Implementation Strategy for the EU Marine Strategy Framework Directive) (Publications Office of the European Union, doi:10.2760/690123, JRC133476).

Scripps Institution of Oceanography and other partners.⁶⁴ Like the Commission, we recommend that NMFS make full use of its research investment and develop a quantitative descriptor for acoustic habitat, as for the other attributes.

2. The areas proposed for designation require special management and protection.

The ESA defines critical habitat, in part, to include areas occupied by the listed species that “may require special management considerations or protection.” 16 U.S.C. § 1532(5)(A). NMFS’ regulations define such special management, in turn, as “[m]ethods or procedures useful in protecting the physical or biological features essential to the conservation of listed species.” 50 C.F.R. § 404.02.

Here, one need hardly speculate about the need for “special management considerations or protection” in the critical habitat area proposed by NMFS. Indeed, the federal government has already incorporated Rice’s whale habitat at least twice into its siting of offshore facilities. Last year, NMFS biologists included the whale’s habitat in the “protective species layer” it developed for the Gulf, for the purpose of identifying Aquaculture Opportunity Areas “with the least conflict with protected species.”⁶⁵ Separately, in commenting on BOEM’s siting of offshore wind energy lease areas, NMFS strongly recommended that no wind leasing or development occur “within the boundaries of the currently known distribution of Rice’s whales in the western and central GOM, between the 100 and 400 meter isobaths,”⁶⁶ *i.e.*, the shelf-break habitat identified in the present designation. And BOEM took account of that habitat in its subsequent identification of proposed wind lease areas, designating it “unsuitable” for offshore wind development and completely excluding it from leasing.⁶⁷

Likewise, the government has explicitly recognized the salience of Rice’s whale critical habitat to its environmental decision-making on offshore oil and gas. Only one week ago, for example, in the Environmental Impact Statement supporting its new five-year leasing program, BOEM stated that the critical habitat designation, which reflect the new information, would be

⁶⁴ Rafter et al., LISTEN GoMex, 2010-2021, *supra*; NMFS, “LISTEN GoMex: Long-term investigations into soundscapes, trends, ecology, and noise in the Gulf of Mexico,” available at <https://www.fisheries.noaa.gov/science-data/passive-acoustic-research-southeast-fisheries-science-center#listen-gomex> (accessed Sept. 2023); *see also, e.g.*, Soldevilla et al., Acoustic localization, validation, and characterization of Rice’s whale calls, *supra*; Soldevilla et al., Rice’s whales in the northwestern Gulf of Mexico, *supra*.

⁶⁵ Farmer et al., Modeling protected species distributions and habitats to inform siting and management, *supra*. The whale’s habitat, along with that of the leatherback sea turtle, received the lowest “suitability score” for development. *Id.* at 6 (Table 2). Consistent with this, the Scientific Committee of the International Whaling Commission was informed that data on Rice’s whale are “being used to inform site placement of potential aquaculture sites.” International Whaling Commission, Report of the Scientific Committee (SC69A): Annex M, at 6 (2023) (IWC/SC69A/Ann.M).

⁶⁶ Comments of A.J. Strelcheck, NMFS Regional Administrator for the Southeast Regional Office, to Tershara Matthews, Chief of Emerging Programs, BOEM, at 6 (Feb. 9, 2022) (scoping comments on Draft Environmental Assessment for commercial leasing wind power development on the Outer Continental Shelf in the Gulf of Mexico) (original recommendation in bold type).

⁶⁷ Memorandum from M. Celata, Regional Director for BOEM Gulf of Mexico Regional Office, to Amanda Lefton, BOEM Director, at 12-13, 34 (July 20, 2022) (request for concurrence on Preliminary Wind Energy Areas for the Gulf of Mexico).

considered “in the analyses and preparation leading to individual lease sale decisions”; and asserted that BOEM “may offer additional mitigations or exclude acreage from the sale area to protect listed species and their habitat, including but not limited to the Rice’s whale.”⁶⁸

In the Proposed Habitat Rule, NMFS identifies a number of anthropogenic threats that may negatively impact the whales’ habitat and the essential features and attributes that sustain it—including, but not limited to, “in-water construction, energy development, commercial shipping, aquaculture, military activities, and fisheries.” Proposed Habitat Rule at 47,462. Fishing on the whale’s prey could negatively affect the prey attribute; energy development could inhibit passage between important habitat areas. *Id.* It is plain that the whale’s critical habitat may require—for protection of both individual whales and habitat values—“special management considerations or protection.”

3. The areas proposed for determination do not include the entire geographical area that can be occupied by Rice’s whale.

Definitionally, under the ESA, critical habitat should not include “the entire geographical area which can be occupied by the threatened or endangered species,” except in circumstances determined by the agency. 16 U.S.C. § 1532(5)(C). Plainly, in this case, the area proposed for designation does not include the entirety of the whale’s habitat. The sightings record includes observations seaward of the 400-meter isobath, demonstrating that some individuals at least occasionally occupy habitat outside the proposed area.⁶⁹ Further, NMFS’ habitat suitability analyses indicate that viable habitat may extend into the southern Gulf of Mexico, beyond the existing designation. Proposed Habitat Rule at 47,458. For these reasons, the proposed designation does not include “the entire geographic area which can be occupied” by Rice’s whale.

c. Exclusion of the identified areas from the critical habitat designation is not justified.

Under the ESA, NMFS may, but is not required to, exclude an area from critical habitat designation if the benefits of excluding that area “outweigh” the benefits of including it, unless the agency determines that failing to include it will result in the species’ extinction. 16 U.S.C. § 1533(b)(2). NMFS has considered the potential economic and national security effects of the proposed designation and determined that the expected incremental effects will be minimal. Furthermore, given the whale’s extremely vulnerable conservation status, excluding any portion

⁶⁸ BOEM, 2024-2029 National Outer Continental Shelf Oil and Gas Leasing Program: Final Programmatic Environmental Impact Statement, at 111 (2023) (BOEM 2023-054).

⁶⁹ M.S. Soldevilla, J.A. Hildebrand, K.E. Frasier, L.A. Dias, A. Martinez, K.D. Mullin, P.E. Rosel, and L.P. Garrison, Spatial distribution and dive behavior of Gulf of Mexico Bryde’s whales: Potential risk of vessel strikes and fisheries interactions, *Endangered Species Research* 32: 533-50 (2017). The study reports the location of a satellite tagged whale at 408 m depth (Figure 2), the exact depth provided by M.S. Soldevilla, NMFS, *via pers. comm.* to J. Roman, U. Vermont.

of the proposed critical habitat would substantially increase the risk of extinction, and any benefits of doing so would not outweigh the economic and conservation costs.

In its informational report on the present designation, NMFS evaluates the consequences that the designation might have for offshore projects and federal actions and finds that they are likely to be co-extensive with other statutory requirements. It is true that the ESA prohibits activities subject to consultation under 16 U.S.C. § 1536(a)(2) from destroying or adversely modifying the critical habitat of a listed species. But, as NMFS observes, project modifications intended to avoid that result are already likely to be recommended, in the form of Reasonable and Prudent Alternatives, for the purpose of avoiding jeopardy, or would be required by the ESA for other listed species whose range overlaps with the whales' critical habitat, or would be implemented under another statute, such as the Outer Continental Shelf Lands Act or Marine Mammal Protection Act.⁷⁰ For this reason, NMFS, after methodically assessing each of ten regulated activities (including military activities) with the potential to affect the proposed habitat, has found that the incremental cost of designation is likely to be low.⁷¹ On this point, the agency's conclusion is borne out by the history of interagency consultation under the ESA.⁷²

At the same time, NMFS correctly observes, in reviewing the relevant economic literature, that critical habitat designation for Rice's whale is likely to produce an undetermined amount of economic benefit and conservation value. As a general matter, designation has been shown to stimulate "research, voluntary conservation actions, and outreach and education services," all of which would hold conservation benefit for the whale and can also generate positive economic activity.⁷³ Additionally, recovering the whale has non-use economic value for the public, which is measured, according to longstanding guidance from the Office of Management and Budget, as "willingness-to-pay."⁷⁴ That value is not insignificant for endangered and threatened whales: Economic preference studies indicate that U.S. households would be willing to pay, on average, between \$76 and \$108 per household per year, for ten years (in 2021 dollars), for purposes of recovering various individual whale species.⁷⁵ This holds true for both iconic marine mammal populations like the Southern Resident orca and lesser-known species like the North Pacific right whale, which is not an object of significant whale-watching or tourism.⁷⁶

⁷⁰ NMFS, Endangered Species Act Rice's Whale Critical Habitat Report, *supra*, at 34-35.

⁷¹ *Id.* at 35-49, 56-57.

⁷² D. Owen, Critical habitat and the challenge of regulating small harms, *Florida Law Review* 64: 141-99, 180-81 (2012) (concluding after comprehensive review of interagency consultations and interviews with wildlife agency biologists that critical habitat designations have little effect on consultation processes, although they may have subtle, difficult-to-evaluate effects, such as providing information that aids the agencies in implementing other statutory requirements).

⁷³ NMFS, Endangered Species Act Rice's Whale Critical Habitat Report, *supra*, at 58.

⁷⁴ *Id.* at 59 (citing 2003 OMB guidance on regulatory analysis, presumably Circular A-4).

⁷⁵ *Id.* at 61-62 (citing 2012 and 2015 preference studies, involving interviews, in one case, with more than 8,000 U.S. households). Projected over the 129 million households in the United States, the collective willingness-to-pay for the recovery of North Pacific right whales, for example, would exceed \$11 billion per year—an indication of the high value the country places on whale conservation.

⁷⁶ *See id.*

NMFS finds these various conservation and economic benefits impossible to predict and quantify, primarily because (as noted above) it has not identified any incremental conservation effort—such as a Reasonable and Prudent Alternative required to avoid an adverse modification finding—that would be triggered by the designation.⁷⁷ In short, the agency has not determined, and cannot find, that the benefits of excluding any part of the designated habitat outweigh the benefits of including it. 16 U.S.C. § 1533(b)(2).

Even if some incremental cost could be identified, however, the ESA would prohibit excluding any part of the proposed area from designation, both because the benefits of doing so would not outweigh the conservation benefits to the species, and because failing to include the habitat would result in extinction.

Rice’s whale, as NMFS has repeatedly stated, is one of the most endangered marine mammal species on earth, with a dangerously small population size, a highly restricted range, and evidence of poor body condition in individual animals.⁷⁸ Consistent with this, the agency has stated that “the loss of even a single reproductive female could lead this species to extinction” and has indicated, in at least regulatory context, that “[a]ssessing potential co-occurrence of this species and avoiding impacts to it” should be a top priority.⁷⁹ The best available scientific information supports these conclusions. NMFS’ expert Status Review determined that “habitat destruction” and “modification or curtailment of habitat range during energy exploration and development” are among the factors posing the greatest threat to the species’ survival.⁸⁰ Moreover, the costly foraging behavior exhibited in tagged animals leaves the whales particularly vulnerable to decrements in the availability and accessibility of their prey, as well as to other degradations in their habitat.⁸¹ As stated above, “any direct impact on their fitness” could lead to the species’ extinction.⁸²

With regard to particular habitat, the DeSoto Canyon is considered by NMFS to contain the species’ “core distribution area.” Proposed Habitat Rule at 47,456. Whales have been observed feeding in the canyon and exhibiting dive behavior associated with foraging.⁸³ Associations between larger and smaller whales (based on evidence from a vessel-based sighting and tagging

⁷⁷ *Id.* at 58.

⁷⁸ *See, e.g.*, 84 Fed. Reg. at 15,484-85 (listing decision, determining that the whale is at a “high risk of extinction” under three statutory factors); comments of A.J. Strelcheck, *supra*, at 6 (formal comments to BOEM on wind energy leasing in the Gulf); NMFS, “Rice’s whale,” *supra* (public-facing website).

⁷⁹ Comments of A.J. Strelcheck, *supra*, at 6.

⁸⁰ Rosel et al., Status Review, *supra*, at iv, 85.

⁸¹ Kok et al., Kinematics and energetics of foraging behavior in Rice’s whales, *supra*, at 7.

⁸² *Id.*

⁸³ Soldevilla et al., Spatial distribution and dive behavior of Gulf of Mexico Bryde’s whales, *supra*; Kiszka et al., Critically endangered Rice’s whales (*Balaenoptera ricei*) selectively feed on high-quality prey, *supra*.

data) have also been observed within this area,⁸⁴ and low-amplitude vocalizations resembling mother-calf contact calls in other baleen whale species have been detected as well, indicating that the core distribution area also represents calving habitat.⁸⁵

The “extended habitat” in the central and western Gulf is also essential to the whales’ survival. As discussed above, the whales occur persistently in the northwestern Gulf, and are likely to be targeting their preferred prey species, which occurs between the 100-400 meter isobaths along the continental shelf break. Conserving this habitat is crucial. As NMFS notes in the Proposed Habitat Rule, impairment of the whales’ movement could inhibit “safe, unconstructed” passage through their narrow strip of habitat, impeding their access to important foraging areas. Proposed Habitat Rule at 47,462. Furthermore, as the agency observed in its Status Review, broad spatial distribution is critical to avoiding serious impacts to the species from catastrophic or stochastic events, such as oil spills,⁸⁶ as well as to afford sufficient habitat for the species’ recovery. Extensive human activity puts the whales’ central and western Gulf habitat at particular risk, as can be seen from years of acoustic data (discussed above at II(b)(1)) as well as from the agency’s 2020 analysis of vessel interactions.⁸⁷ Indeed, as NMFS has found, such activity may already have degraded the species’ habitat to an extent that the whales’ life functions have been compromised.⁸⁸ Yet excluding an area from a critical habitat designation can make it harder to protect.⁸⁹

For all the reasons above, excluding parts of the whales’ identified critical habitat from designation does not “outweigh,” and cannot be found to outweigh, the benefits of including them; moreover, given all the factors contributing to the whales’ extreme vulnerability, excluding the habitat would result in the species’ extinction. 16 U.S.C. § 1533(b)(2). The ESA does not support excluding any part of the proposed critical habitat area from designation.

* * *

Thank you for the opportunity to comment on this proposed critical habitat designation, which is integral to the conservation of one of the world’s most endangered whale species. We believe the agency’s proposal is consistent with the best scientific information available, informed by multiple lines of evidence from the recent, five-year, agency-led study of Rice’s whale habitat.

⁸⁴ Soldevilla et al., Spatial distribution and dive behavior of Gulf of Mexico Bryde’s whales, *supra*; Rosel et al., A new species of baleen whale (*Balaenoptera*) from the Gulf of Mexico, *supra*.

⁸⁵ Soldevilla et al., Acoustic localization, validation, and characterization of Rice’s whale calls, *supra*.

⁸⁶ Rosel et al., Status Review, *supra*, at 89. In part because of the whales’ higher densities in the DeSoto Canyon, the *Deepwater Horizon* spill was estimated, by the government, to have caused a 22 percent decline in the population. *See Deepwater Horizon Marine Mammal Injury Quantification Team (DWH MMIQT), Models and analysis for the quantification of injury, supra*

⁸⁷ NMFS, Biological Opinion, *supra*, at 356, 357, 360 (figures showing highest relative vessel strike risk for Rice’s whale in the central and western Gulf). Notably, this analysis was completed before the agency’s density estimates were revised to reflect higher numbers of Rice’s whales in the central and western Gulf.

⁸⁸ *See, e.g.*, 84 Fed. Reg. at 15,474-76.

⁸⁹ Owen, Critical habitat and the challenge of regulating small harms, *supra*, at 180.

Mr. David Bernhart

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Please do not hesitate to reach out to Francine Kershaw (fkershaw@nrdc.org) if we can provide any further information. We are available to meet with you or your staff to discuss these comments at any time.

Very truly yours,

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