

June 5, 2015

Via Regulations.gov Portal

National Marine Fisheries Service
Southeast Regional Office
263 13 Avenue South
St. Petersburg, FL 33701

Re: Comments of the American Petroleum Institute, the Independent Petroleum Association of America, the International Association of Geophysical Contractors, and the National Ocean Industries Association on the National Marine Fisheries Service's 90-Day Finding on a Petition to List Bryde's Whales in the Gulf of Mexico as an Endangered Distinct Population Segment under the Endangered Species Act (NOAA-NMFS-2014-0157)

Dear Sir/Madam:

This letter provides the public comments of the American Petroleum Institute ("API"), the Independent Petroleum Association of America ("IPAA"), and the International Association of Geophysical Contractors ("IAGC") (collectively, "the Associations") in response to the National Marine Fisheries Service's ("NMFS" or the "Service") request for information and public comment on the Natural Resources Defense Council ("NRDC") petition to list Bryde's whales (*Balaenoptera edeni*) in the Gulf of Mexico ("GoM") as a Distinct Population Segment ("DPS") under the Endangered Species Act ("ESA").¹ Specifically, NMFS has issued a 90-day finding that the NRDC Petition presented substantial scientific or commercial information and is seeking data to inform its more rigorous 12-month review, under which it will make a determination whether the Petitioned designation of the DPS is warranted. As explained in more detail below, neither the scientific evidence nor the Service's regulations and policies regarding DPSs currently support designating Bryde's whales in the GoM as a DPS.

¹ See 80 Fed. Reg. 18,343 (Apr. 6, 2015).

In addition to requesting designation of Bryde’s whales in the GoM as a DPS, the NRDC Petition also called on NMFS to separately list the Bryde’s whale in the GoM as an endangered DPS. Again, the NRDC Petition provides no statutory or scientific rational for delineating Bryde’s whales found in the GoM from their worldwide tropical and semi-tropical population. Even applying the ESA’s listing factors to a subset of the Bryde’s whale’s abundant global population, however, the best available evidence demonstrates that listing is not warranted.

The Associations appreciate the opportunity to provide this information and analysis. We hope and expect that the Service will give close consideration of the comments set forth below. Because these comments are somewhat lengthy, we herein provide a table of contents identifying the location of the headings and subheadings.

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I. INTRODUCTION

A. The Associations

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

IPAA represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts. Independent producers develop 95 percent of American oil and natural gas wells, produce 54 percent of American oil and produce 85 percent of American natural gas. The average independent has been in business for 26 years and employs 12 full-time and three part-time employees.

IAGC is the international trade association representing the industry that provides geophysical services (geophysical data acquisition, processing and interpretation, geophysical information ownership and licensing, associated services and product providers) to the oil and natural gas industry. IAGC member companies play an integral role in the successful exploration and development of offshore hydrocarbon resources through the acquisition and processing of geophysical data.

The Associations may be impacted by designation of the GoM Bryde's whales as an endangered DPS because a number of their members maintain significant offshore and shore-side operations in the GoM that could be subject to increased regulatory constraints and delays that are neither justified nor necessary. Every cetacean in the GoM is already protected under the Marine Mammal Protection Act as well as a number of international and domestic statutes, treaties and conventions. The members of our Associations work closely with the federal agencies to ensure that potential impacts on whales are mitigated.

Together, the members represented by these Associations provide a tremendous economic benefit to the region. In 2011, oil and gas development in the GoM resulted in nearly a quarter million jobs.² Those employment numbers are projected to have increased significantly in the ensuing years.³ From an investment perspective, the Bureau of Offshore Energy Management ("BOEM") has determined that over a 40-year period, the new 5-year drilling plan will result in "[b]etween \$1,050 million and \$2,180 million in income."⁴

² Quest Offshore Resources, Inc., *The State of the Offshore U.S. Oil and Gas Industry An in-depth study of the outlook of the industry investment flows offshore*, (Table 26) (Dec. 2011), available at http://www.api.org/~media/Files/Policy/Exploration/Quest_2011_December_29_Final.pdf

³ *Id.*

⁴ OGLP PEIS at 4-488.

B. Summary of Comments

As set forth in detail in Section II of this letter, the NRDC Petition is not permissible under the ESA or its implementing regulations. The ESA applies to distinct taxonomic species, “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature.”⁵ The NRDC Petition, however, requests that NMFS create a DPS from one species and two recognized subspecies: (1) worldwide population of Bryde’s whales (*B. edeni*); (2) *B. e. brydei*; (the larger, “offshore type”) and, (3) *B. e. edeni* (the smaller, “inshore type”). While the ESA allows NMFS to designate discrete populations of a single species, the statute does not permit NMFS to create, nor permit NRDC to petition to create, an entirely new species or subspecies not recognized in any scientific literature simply for the purpose of listing it on the ESA.

Even if the NRDC Petition identified a single species from which NMFS could designate a discrete population, the best available information strongly suggests that Bryde’s whales in the GoM can (and do) move freely in and out of the GoM, are genetically, physiologically, and morphologically indistinct from contiguous populations, and are not markedly discrete from the abundant worldwide population of Bryde’s whales.

Moreover, even if NMFS were to analyze a subset of Bryde’s whales found in or passing through the GoM under the ESA’s listing factors, the best available information does not support the NRDC Petition’s conclusions of peril. Again, the best available information suggests that Bryde’s whales in the GoM are part of a larger indistinct population for which there is no credible evidence of endangerment. Even if the analyzed subset of Bryde’s whales were small, small population size alone is not an indicator of extinction risk particularly where, as here, the species does not occupy a high trophic level and is not constrained to a small geographic range.

Bryde’s whales are protected domestically and internationally under a number of statutes, treaties and conventions. Whaling, their largest historic threat, has almost entirely been eliminated. Ship strikes of Bryde’s whales are exceptionally rare. Bryde’s whales are very unlikely to become entangled in fishing gear, particularly because they are incidental beneficiaries of gear restrictions and spatial and temporal closures in place for other species. Further, the only type of gear that could potentially interfere with the whale, the large pelagic longline fishery, has been prohibited since 2001 in DeSoto Canyon. Similarly, there is no evidence that Bryde’s whales were harmed by the Deepwater Horizon incident, no direct evidence that Bryde’s whales are adversely impacted by anthropogenic noise, and yet, extensive regulatory protections are already in place to protect Bryde’s whales from hydrocarbon development activities.

Bryde’s whales are elusive and notoriously difficult to observe and study. All available evidence suggests that the species occupies its full historic range, is protected throughout that range, and that its population is at or near its pre-whaling levels. NRDC’s petition is a strategic attempt to find peril where none exists through an arbitrarily narrow delineation of a species. There is no information that Bryde’s whales are at all discrete (markedly or otherwise) from whales observed or stranded in the Northwest Atlantic, Caribbean, or Southwest Atlantic.

⁵ 16 U.S.C. § 1532(16).

NRDC is correct that some very recent and very preliminary evidence suggests that Bryde's whales observed in the GoM are somewhat varied from Bryde's whales in different oceans and off other continents, but those distinctions are not marked or significant. Indeed, the best available information suggests that Bryde's whales observed in the GoM are likely part of a larger, more abundant population that ranges throughout the Atlantic Ocean and adjoining seas.

II. DETAILED COMMENTS

A. Overview of Bryde's Whale

Bryde's whales are a species of baleen whales that are found in tropical and warm temperature waters in the Atlantic, Pacific, and Indian Oceans and several adjoining seas. While, as discussed more below, the Bryde's whale has two identified subspecies, all whales in the Bryde's whale complex are typically found between 40° N and 40° S.⁶

The IUCN considers Bryde's whales to be "data deficient." Indeed, "Bryde's whales are the least known of the large baleen whales."⁷ Bryde's whales have the least well-defined populations and their distribution is not completely known but appears to be composed of relatively localized sub-populations in tropical and sub-tropical regions, which carry out only limited migrations.⁸

Our lack of understanding of Bryde's whales is a function of both low survey effort and the natural behaviors of this incredibly elusive species. Bryde's whales are typically evasive, have variable dive times, and often lack a visible blow.⁹ Normally, Bryde's whales do not travel in groups that would make them more observable through either visual or acoustic techniques.¹⁰ Bryde's whales are found most often alone (93% of the time) or with one other whale.¹¹ The Bryde's whale is similar in size and appearance to the sei whale (*Balaenoptera borealis*). Strandings of Bryde's whales along the U.S. East Coast, GoM and Caribbean islands have been consistently misidentified as sei whales.¹² The difficulty distinguishing between these species has hampered efforts globally to determine distribution and population estimates.¹³

Unlike other whale species, Bryde's whales do not surface in linear or predictable patterns.¹⁴ Their patterns (likely the product of opportunistic feeding activity) are haphazard and limit the ability of surveyors to track Bryde's whales for additional observation or to confirm the

⁶ Kanda (2005).

⁷ Steiner (2007); Kato (2002).

⁸ Steiner (2007).

⁹ http://animaldiversity.org/accounts/Balaenoptera_edeni/ (accessed 5/15/15).

¹⁰ http://animaldiversity.org/accounts/Balaenoptera_edeni (accessed 5/15/15).

¹¹ http://animaldiversity.org/accounts/Balaenoptera_edeni (accessed 5/15/15).

¹² Steiner *et al.* (2008).

¹³ UNEP (2001).

¹⁴ Alves (2010).

identity of the species. For Bryde's whales, which are among the most commonly misidentified cetaceans, additional observation is frequently necessary. The primary characteristic for identification of the species are the presence of three prominent longitudinal ridges on the rostrum which are often difficult to observe.¹⁵ Even if a surveyor were able to initially observe the infrequent and subdued surfacing of a solitary Bryde's whale, the inability to track the whale for a confirmatory observation can often result in the species not being counted in a survey and classified instead as an unidentified whale.¹⁶

Bryde's whales are also habitat generalists (within the broad confines of their tropical and sub-tropical preferences).¹⁷ They feed on schools of mid-trophic prey like anchovies, sardines, herring, mackerel, and copepods.¹⁸ The absence or presence of preferred prey species can cause Bryde's whales to populate, abandon, or repopulate an area.¹⁹ It also causes Bryde's whales to aggregate in areas that offer superior feeding opportunities.²⁰

One such area of unusually high productivity occurs along the shelf break of the DeSoto Canyon outside of major influences of eddies.²¹ The increased prevalence of Bryde's whales in the DeSoto Canyon is similar to that in other upwelling areas holding predictable biological abundance such as off the Chilean coast²² or in the eastern tropical Pacific.²³

The distribution of Bryde's whales, therefore, is a function of prey availability, which is secondarily influenced by these hydrographic features.²⁴ Aggregations of, as well as the periodic lack of, Bryde's whales in the DeSoto Canyon area may be due to unpredictable high concentration of food, especially small pelagic fishes that form large schools, which are necessary to sustain lunge-feeding whales. NRDC misconstrues DeSoto Canyon as holding the only population of Bryde's whales in the GoM. In reality, the DeSoto Canyon is more likely characterized as a prime location for observing Bryde's whales, and one of the few places in the GoM that has been surveyed for Bryde's whales.

¹⁵ <http://acsonline.org/fact-sheets/sei-whale/> (accessed 5/15/15).

¹⁶ Given the great difficulty in observing, and surveying, Bryde's whales visually, researchers are working on techniques to observe the whales acoustically. While they are known to produce species-specific vocalizations, passive acoustic monitoring has just started to be used, which may eventually prove useful in determining whale presence, observing temporal and spatial dynamics, and estimating population abundance.

¹⁷ http://animaldiversity.org/accounts/Balaenoptera_edeni (accessed 5/15/15).

¹⁸ http://animaldiversity.org/accounts/Balaenoptera_edeni (accessed 5/15/15).

¹⁹ Tershy (1993); Figueiredo and Tardin (2014).

²⁰ Tershy (1993); Figueiredo and Tardin (2014).

²¹ Davis *et al.* (2002).

²² Gallardo *et al.* (1983).

²³ Palacios (2003).

²⁴ Davis *et al.* (2002).

B. Range, Abundance, and Trends

Even within the confines of low survey effort/quality and difficult observability, we are beginning to learn more about the Bryde's whale's global distribution, and, as relevant here, its distribution in the Atlantic and its attendant seas and gulfs.

1. Global

While, without additional survey data, Bryde's whales should not be viewed as an abundant species, there is no evidence that their populations are declining or their range is contracting. To the contrary, the greatest historic threat to Bryde's whales (whaling) has all but been eliminated, and global Bryde's whale abundance is believed to be at or near its all-time highs,²⁵ and Bryde's whales seem to occupy the full extent of what is believed to be their historic range.²⁶

Bryde's whales range throughout the Atlantic, Pacific, and Indian oceans preferring highly productive tropical, subtropical and warm temperate waters around 61–72 °F (16–22 °C).²⁷ Generally, these water temperatures, and therefore Bryde's whales, are most frequently found between 40° N and 40° S.²⁸ It has been suggested, however, that the intermittent sightings of Bryde's whales beyond these parallels may be connected to larger scale climate variability and long-term climate trends.²⁹ Indeed, to the extent an increase in ocean temperatures can be predicted, given the Bryde's whale's habitat preferences, those increases could substantially increase the range of the species.³⁰

To date, in the North Atlantic, Bryde's whales have been found stranded in North Carolina, South Carolina, and as far north as the Chesapeake Bay.³¹ Bryde's whales have also been observed off Madeira,³² the Canary Islands,³³ and in 2004 were observed for the first time near the Azores.³⁴

²⁵ <http://acsonline.org/fact-sheets/sei-whale/> (accessed 5/15/15);
<http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/brydeswhale.htm> (accessed 6/5/15).

²⁶ <http://acsonline.org/fact-sheets/sei-whale/> (accessed 5/15/15).

²⁷ Kerosky *et al.* (2012).

²⁸ Kanda (2005).

²⁹ Kerosky *et al.* (2012).

³⁰ Two unprecedented strandings as well as anomalous sightings were reported in Washington State in 2010 and 2011. Kerosky *et al.* (2012).

³¹ Mead (1977).

³² Rosel (2014).

³³ Mead (1977).

³⁴ Steiner (2007).

In the South Atlantic, Bryde's whales have been observed in both coastal and oceanic waters along the entire coast of Brazil.³⁵ Indeed, a recent study found that Bryde's whales are common along the southeastern coast of Brazil, and that scarcity of records offshore is more related to the research effort in the oceanic region than the absence of the whales.³⁶ This has been the case for records of Bryde's whales off Hawaii, where they are rarely seen although they are believed to number 350-500.³⁷ The lack of historical sightings, despite many years of previous shipboard and aerial surveys off Hawaii, may be due to misidentification, the elusive nature of the Bryde's whale, and/or poor sea conditions prevalent in deep, offshore windward waters of the Hawaiian Islands.³⁸

Intermediate to and directly contiguous to those whales observed in the North and South Atlantic are numerous sightings in the Caribbean Sea and GoM.³⁹ In the Caribbean, Bryde's whales are found off Bonaire,⁴⁰ Curacao,⁴¹ Grenada,⁴² Cuba,⁴³ Saba, St. Eustatius, St. Maarten, and the Saba Bank.⁴⁴ Sightings of Bryde's whales have also been recorded in the Greater Antilles off the Dominican Republic,⁴⁵ Puerto Rico and the Virgin Islands.⁴⁶ A live stranding record also exists on St. Croix in 1991.⁴⁷

Two Bryde's whales were reported off St. Vincent and the Grenadines.⁴⁸ These observations are consistent with reports of Bryde's whales taken during an intensive period of modern Norwegian whaling in the Grenadines between 1924 and 1926.⁴⁹

Within the Caribbean, Bryde's whales are likely most commonly observed and closely studied off the coast of Venezuela, where they were successfully radio-tagged in the 1970s.⁵⁰ These observations have revealed that the whales are most abundant from late spring to December, which suggests that they may be migratory. Sightings off Venezuela are also

³⁵ Figueiredo & Simao (2014); Figueiredo & Tardin (2014).

³⁶ de Moura and Siciliano (2012).

³⁷ Smultea *et al.* (2010).

³⁸ Smultea *et al.* (2010).

³⁹ Steiner (2007).

⁴⁰ Laiste (2001).

⁴¹ Mignucci-Giannoni (1989).

⁴² Mead (1977); Mignucci-Giannoni (1989).

⁴³ Mead (1977); Mignucci-Giannoni (1989).

⁴⁴ Debrot (2013).

⁴⁵ Bonnelly de Calventi (1986).

⁴⁶ Erdman (1970).

⁴⁷ Mignucci-Giannoni (1989).

⁴⁸ ECCN (2000).

⁴⁹ Ferguson (1929) ; UNEP (2001).

⁵⁰ Steiner (2007); Mignucci-Giannoni (1989); Watkins *et al.* (1979).

reported by Bolaños and Boher (1998) and Notarbartolo di Sciara (1979), and several groups of mothers and calves were sighted off Los Roques, Venezuela.⁵¹ Jiménez *et al.* (1997) documented the only known stranding of a Bryde's whale in the Gulf of Venezuela near the mouth of the Maracaico Lake.⁵² Sightings of Bryde's whales through land-based observations carried out in Arraial do Cabo peninsula (Rio de Janeiro State) and in adjacent coastal waters show that this whale is particularly common in the area in summer and spring.⁵³

2. GoM

In the GoM, Bryde's whales are most commonly observed and studied feeding in the biologically rich waters of the DeSoto Canyon. Contrary to the NRDC Petition, however, Bryde's whales have not been observed exclusively in the DeSoto Canyon. Bryde's whales have also been observed in waters off Texas and Louisiana.⁵⁴ It is likely that the GoM represents at least a portion of the range of a larger, more dispersed population of Bryde's whale.⁵⁵

At least five Bryde's whale strandings have been reported in the GoM from Louisiana, east to Panacea, Florida, and as far south on the Florida panhandle as Tampa.⁵⁶ While Bryde's whales are likely to have stranded in other areas of the GoM as well, stranding records in the GoM are limited to the U.S. Coast.

Similarly, survey data for Bryde's whales in the GoM is so limited as to make it impossible to determine population trends.⁵⁷ Lack of survey effort and reliance on surveys designed for other species can severely limit our ability to estimate the abundance and range of even commonly observed species. For a relatively uncommon and elusive species like the Bryde's whale, however, limited survey data can entirely undermine our ability to assess abundance and range and virtually eliminate any credible effort to identify population trends.

The first systematic vessel surveys to assess marine mammal distribution and abundance in the GoM began in 1990⁵⁸ and have only been conducted in a subset of U.S. waters.⁵⁹ As such, even if every square kilometer of the U.S. Exclusive Economic Zone ("EEZ") in the GoM was surveyed for Bryde's whales (which would be unlikely), 65% of the GoM would remain completely unsurveyed.⁶⁰ While it seems self-evident to state as much, the scientific literature is rich with examples of marine species that were considered rare or extirpated until an effort was

⁵¹ ECCN (2000).

⁵² UNEP (2001).

⁵³ (Carneiro, 2005; Goncalves, 2006).

⁵⁴ Davis and Fargion (1986) www.data.boem.gov/PI/PDFImages/ESPIS/3/3297.pdf (accessed 5/19/15).

⁵⁵ Jefferson and Schiro (1997).

⁵⁶ Mead (1977); Mullin (1991); Stock Assessment Report (2012).

⁵⁷ Stock Assessment Report (2012).

⁵⁸ Jefferson and Schiro (1990).

⁵⁹ Stock Assessment Report (2012).

⁶⁰ Rosel & Wilcox (2014).

made to look for them. Indeed, some of the 29 cetacean species that are now known to occur regularly were once considered rare (such as Risso's dolphin [*Grampus griseus*]), or else they had never been sighted alive (e.g., melon-headed whale [*Peponocephala electra*]) until these GoM surveys began to take place in deep, oceanic waters of the northern GoM in 1990.⁶¹

In addition to being limited to a subset of U.S. waters, these visual surveys were conducted only during spring and summer, and only on vessels utilizing transects designed to survey bluefin tuna (*Thunnus thynnus*) and ichthyoplankton.⁶² The only cetacean-specific surveying equipment on the vessel (the Odyssey) is an acoustic system equipped with software (RainbowClick) designed to track sperm whales.⁶³ Bryde's whales were not tracked acoustically and only counted when opportunistically spotted from viewing platforms. These limitations are potentially significant. The 1991 to 1994 spring surveys for bluefin tuna and ichthyoplankton consisted of transect surveys of the northern GoM from the 200-m isobath to the seaward extent of the EEZ.⁶⁴ During the GulfCet II field studies (1996-1997), however, few Bryde's whales were seen in water depths beyond the 100-m (328-foot) isobath in the DeSoto Canyon along the shelf break.⁶⁵

Significantly, the same Southeast Area Monitoring and Assessment Program (SEAMAP) that conducts the spring bluefin tuna and ichthyoplankton survey in deep water (200m to 2000m), where Bryde's whales are less frequently observed, also conducts a fall survey along the continental shelf and in waters less than 200m deep where Bryde's whales are more commonly observed.⁶⁶ SEAMAP's fall surveys also target spawning fish such as Spanish mackerel (*Scomberomorus maculatus*) that are considered key prey species for Bryde's whales.⁶⁷ These fall surveys may provide an important opportunity to utilize a design that may be more appropriate for surveying Bryde's whales. At a minimum, the yet-unutilized fall survey effort would provide an opportunity to diversify Bryde's whale survey data both temporally and spatially.

The limits of the currently available survey data are unfortunately reflected in the variability of Bryde's whale population estimates. From the time the spring bluefin tuna and ichthyoplankton surveys were first used to estimate abundance, the survey-derived estimates have been so variable as to not only prevent the identification of any trend but to call into question the rationality of the underlying survey design. For example, in 1991, NMFS estimated

⁶¹ Jefferson and Schiro (1990).

⁶² Stock Assessment Report (2009)

⁶³ Wise (2014).

⁶⁴ Hansen *et al.* (1995) The oceanic zone is defined as waters 200 m and as deep as 2000 m.

⁶⁵ Mullen *et al.* (1994); Davis *et al.* (2003).

⁶⁶ <http://fl.biology.usgs.gov/coastaleco/NEGOM-Ichthyoplankton-Rept/methods/methods.html> (accessed 5/19/15).

⁶⁷ <http://www.sefsc.noaa.gov/labs/mississippi/surveys/plankton.htm> (accessed 5/19/15).

that 218 Bryde's whales were present in the GoM.⁶⁸ In 1992, 1993, and 1994, NMFS estimated that there were no Bryde's whales in the GoM at all.⁶⁹

The 2003 and 2005 Stock Assessment Reports estimated there were 40 whales in the GoM.⁷⁰ Both estimates were based on the same survey data. After new survey data became available from the spring 2004 survey effort, the 2008, 2009, and 2011 Stock Assessments lowered their best estimate of Bryde's whale abundance in the GoM to 15.⁷¹ The latest Stock Assessment Report was based on a 2009 survey that occurred during the summer over oceanic waters from the 200 m isobath to the seaward extent of the U.S. EEZ.⁷² Estimated Bryde's whale abundance increased once again to 33.⁷³

There are only two conclusions that can be reached in examining the variability of these population estimates: (1) that the survey data is inaccurate and unreliable; or (2) that Bryde's whale populations in the GoM vary based on migration – presumably in search of prey opportunities. These population changes cannot be attributed to mortality and reproduction in an isolated population. Bryde's whales have 12-month gestation periods, only give birth to a single calf at a time, and are believed to have a maximum productivity rate of 0.04.⁷⁴

Either the Bryde's whale population estimates or the presumed population dynamics are wrong (or maybe both). If the discrepancy lies with the population estimates, then there is good reason to suspect that abundance is being underestimated - perhaps substantially.

The population estimates are extrapolations of confirmed Bryde's whale observations visible to surveyors on ships. Those extrapolations attempted to make allowances for whales being harder to detect if they were passed at some distance abeam *versus* being directly in the path of the ship, *but not for them being present but undetectable* – a particular problem for a species that, as discussed above, can often spend 20 minutes underwater and a few, relatively subtle, moments at the ocean surface. That estimate also made no allowance for whales potentially deliberately evading the ship before being sighted by the observers.⁷⁵ And indeed, Bryde's whales have been observed fleeing actual or apparent predators.⁷⁶ Nor does the estimate account for the difficulty in confirming whale sightings to be Bryde's whales because of their morphological similarity to other species and the haphazard surfacing patterns that can often prevent a confirmatory observation.

⁶⁸ Stock Assessment Report (1998).

⁶⁹ Stock Assessment Report (1998).

⁷⁰ Stock Assessment Report (2003); Stock Assessment Report (2005).

⁷¹ Stock Assessment Report (2008); Stock Assessment Report (2009).

⁷² Stock Assessment Report (2012).

⁷³ Stock Assessment Report (2012).

⁷⁴ Stock Assessment Report (2012).

⁷⁵ Mullin, K.D. & G.L. Fulling (2004) Abundance of cetaceans in the oceanic northern Gulf of Mexico. *Marine Mammal Science* 20: 787-807.

⁷⁶ Allen, *et al.* (2011); Ford & Reeves (2008).

In addition to evidence that survey efforts may have undercounted Bryde's whales and further evidence that interpretation of the scant survey data may compound the potential underestimations, recent passive acoustic surveys being conducted in the DeSoto Canyon are more likely to show an underwater abundance of Bryde's whales that far exceeds what surveys have managed to observe on the surface. Importantly, unlike all prior visual surveys, these acoustic surveys specifically target Bryde's whales.⁷⁷ Given the potential elusive nature of Bryde's whales near observer vessels, these acoustic samples may play a critical role in obtaining more accurate abundance estimates and a better understanding of the geographical extent of Bryde's whales in the GoM.

Recent acoustic studies seemed to confirm the discord between the relatively high level of acoustic activity attributed to Bryde's whales and the relatively low level of visual observations. Sirovic *et al.* (2014) detected a total of 680 Bryde's whale calls over 53 days of passive recordings from DeSoto Canyon. Another call type that was possibly a Bryde's whale was recorded 93 times during five days in late June, which was concurrent with the peak of the other calls.⁷⁸

During the 110-day recording period from late spring to early fall 2010, Rice *et al.*, (2014) heard Bryde's whale calls during as much as 69% of the total recording hours. Altogether, the four receiver sites recorded between 3,495 and 9,212 Bryde's whale calls. Another 460 calls were recorded during a separate three-day period.⁷⁹ These are an order of magnitude greater than calls recorded by Sirovic (2014).

To estimate the call rate per whale, Rice *et al.*, (2014), applied it to a "recently documented minimum estimate of 40 animals" and derived a rate of 22 calls/day per animal and 8.2 sounds per hour. In the Gulf of California, where Bryde's whales are considered relatively abundant, a similar passive acoustic study calculated that an increase in average call rates that never exceeded 4.8 suggested an increase in abundance.⁸⁰

These acoustic methods may play a critical role in obtaining more accurate abundance estimates and a better understanding of the geographical extent of Bryde's whales in the GoM.⁸¹ Bryde's whales produce distinct low frequency calls that can be used for long-term acoustic monitoring of whale presence.⁸² Despite the abundance of acoustic signals that were heard during these acoustic surveys, whales remained rare during visual survey efforts, all of which supports the likelihood that the population in the GoM is larger than estimated by NMFS.

⁷⁷ Rice *et al.* (2014); Sirovic *et al.* (2014).

⁷⁸ Sirovic *et al.* (2012).

⁷⁹ Rice *et al.* (2014).

⁸⁰ Kerosky *et al.* (2012).

⁸¹ Rice *et al.* (2014); Sirovic *et al.* (2014); Marques *et al.* (2009).

⁸² Kerosky *et al.* (2012); Rice *et al.*, 2014; Sirovic *et al.* (2014).

More information is needed, however, before passive acoustic monitoring methods can be used for estimating population abundance.⁸³

One additional potential indicator that Bryde's whale abundance in the GoM may be underestimated can be found within the Rosel and Wilcox (2014) genetic survey that underlies the NRDC Petition and which is discussed in greater detail below. That study purports to be based on genetic samples taken from 21 different Bryde's whales in the GoM and two Bryde's whales stranded on the North Atlantic Coast.⁸⁴ Twenty-one genetic samples reflects roughly 64% of the Service's current best estimate of abundance (33), and more than 131% of the minimum population estimate (16). While we recognize that these samples were not all taken in a single year, it would be remarkable to suggest that biologists have been able to extract genetic samples from 64% of Bryde's whales in the GoM - particularly so given the unique difficulties inherent in tracking or even observing Bryde's whales.

Further, Rosel and Wilcox (2014) started with 23 genetic samples from Bryde's whales in the GoM and eliminated two after testing revealed that two individual whales were sampled twice. Given the longevity of Bryde's whales, one would assume that far more samples would have been duplicates. Reasonably assuming that the researchers sampling the whales were not able to use visual observation to screen which whales to try to sample, and that samples were taken whenever they encountered a Bryde's whale that could be sampled, there is only a 0.57% chance that 23 random samples from a population of 33 whales would result in only two duplicates.⁸⁵

Even accounting for the fact that the samples were taken in multiple years, the most logical interpretation of these data is not that biologists had the most remarkable success sampling one of the most difficult whales to observe. It is much more logical to interpret this incredibly high proportion of Bryde's whale genetic samples and statistically unrealistic low level of duplication to suggest that the best population estimate of 33 may significantly underestimate Bryde's whales in the GoM, and/or that 33 whales represents the best estimate of Bryde's whales currently in the GoM but part of a larger Bryde's whale population migrating inside and outside of the U.S. EEZ of the GoM.⁸⁶ Indeed, from a statistical standpoint, a population of between 79-125 whales presents the greatest likelihood of being randomly sampled 23 times with only two duplicates.⁸⁷ The best available information, therefore, may suggest that Bryde's whales are substantially more abundant than previously estimated.

⁸³ Marques *et al.* (2009).

⁸⁴ Rosel and Wilcox (2014).

⁸⁵ To calculate the chance of finding exactly 2 duplicates if the population was 33 whales (N =population, n =sample size, r is number of duplicate pairs), the Associations used the following formula <http://mathforum.org/library/drmath/view/62941.html>.

⁸⁶ As discussed below, the low number of duplicate samples may also reveal flaws in the genetic analysis (i.e., that the genetic testing failed to identify samples from the same animal) .

⁸⁷ The Associations used the following formula:

$$\frac{N! n!}{(N-n+r)! (n-2r)! r! 2^r N^n}$$

C. Taxonomy of Bryde's Whale

The taxonomic status of the Bryde's whale is complex, presently the subject of significant scientific debate at a higher taxonomic level, and historically, exceptionally misunderstood. What we do know about Bryde's whale taxonomy comes from relatively recent discoveries.

Bryde's whales were not identified as a species distinct from sei whales (*B. borealis*) until 1913.⁸⁸ In the ensuing decades, biologists have come to identify two subspecies: *B. e. Brydei* and *B. e. edeni*.⁸⁹ It was not until 2003 that Wada *et al.* (2003) concluded, based on morphological comparisons, that *B. e. Brydei* and *B. e. edeni* were not subspecies of the Bryde's whale, but distinct species (*B. edeni*, and *B. brydei*). Wada *et al.* (2003) also concluded that the Omura's whale, which was also previously considered as within the Bryde's whale "complex" may also constitute a distinct species (*B. omurai*).⁹⁰

Several biologists disputed the methodology used by Wada *et al.* (2003), were critical of the proposed new classifications, and raised their disagreement with the IWC.⁹¹ In 2004, the IWC Scientific Committee found that it was premature to declare one of the whale species identified by Wada *et al.* (2003) (*B. omurai*) a separate species.

Noting the taxonomic uncertainty that remained after Wada *et al.* (2003), Sazaki *et al.* (2006) used genetic comparisons to test the 3-species taxonomic classification first identified in the Wada *et al.* (2003) morphological comparisons. Sazaki *et al.* (2006) sampled each of the three species proposed by Wada *et al.* (2003) by identifying four specimens (1 *B. edeni*, 1 *B. brydei*, and 2 *B. omurai*) using the morphological characteristics identified by Wada *et al.* (2003).

The specimens were taken from GenBank and were extracted from whales in the following locations:

| Identified Specimen | GenBank Accession Number | Tissue Type | Location |
|---------------------|--------------------------|-------------|---|
| <i>B. omurai</i> #1 | AB201256 | Muscle | Sea of Japan off Tsunoshima Island, Japan |
| <i>B. omurai</i> #1 | AB201257 | Muscle | Sea of Japan off Awishima Island, |

⁸⁸ Rosel and Wilcox (2014).

⁸⁹ Rosel and Wilcox (2014).

⁹⁰ Wada (2013).

⁹¹ Sazaki *et al.* (2006)

| Identified Specimen | GenBank Accession Number | Tissue Type | Location |
|---------------------|--------------------------|----------------|---------------------------------|
| | | | Japan |
| <i>B. edeni</i> | AB201258 | Skin | Ariake Sea off Kumamoto, Japan |
| <i>B. brydei</i> | AB201259 | Not identified | North Pacific off Natori, Japan |

Sazaki (2006) largely confirmed the results reported in Wada *et al.* (2003), but further noted that *B. edeni* and *B. brydei* may be in the same genetic complex as the sei whale (*B. borealis*) – the species from which the Bryde’s whale taxon was first identified as distinct in 1913, and the species most commonly misidentified as Bryde’s whales. The relationship of that *B. edeni* and *B. brydei* to *B. borealis* (and not *B. omurai*) has been identified in other genetic studies as well.⁹²

In the Encyclopedia of Marine Mammals, however, Kato & Perrin (2009) examined Wada *et al.* (2003) and Sazaki (2006) and disputed the suggestion that *B. edeni* and *B. brydei* in those studies “should be considered full species” because “. . .the degree of differentiation between the two forms is of a level that could be consistent with subspecific separation.” Kato & Perrin (2009) further noted that taxonomic classification is premature given that studies identifying potential distinctions are doing so based on comparisons in discrete regions (e.g, Sazaki (2006) only examined whales off Japan, Best (1977) compared inshore and offshore whales near South Africa), but that global comparisons have not been undertaken.

Rosel and Wilcox (2014) provides one such global comparison, and analyzed for the first time the genetics of Bryde’s whales in, or near, the Atlantic Ocean. As explained in further detail below, Rosel and Wilcox (2014) compared mitochondrial DNA from 23 whales in the GoM/North Atlantic with the four whales samples taken off Japan in Sazaki (2006). At most, it provides preliminary evidence that whales in the GoM and North Atlantic may be somewhat distinct from whales off Japan.

While emerging research is starting to fill in critical data gaps in the taxonomic status of the Bryde’s whale, the new research is also raising new questions and disputes about the proper taxonomic delineation of the species. The best scientific information remains that only two species are recognized (*B. edeni* and *B. omurai*) along with two *B. edeni* subspecies: the smaller type *B. e. edeni* and the larger type *B. e. brydei*. As noted by one researcher’s recommendation to the Integrated Taxonomic Information System (ITIS), “[t]he species [*Balaenoptera*

⁹² Agnarsson & May-Collado (2008); McGowen & Gatesy (2009).

edeni/brydei/omurai] are under hot and heavy debate,” but that he recommends “that ITIS list *B. edeni*, *brydei* and *omurai* with the caveat that it is likely to change.”⁹³

It is within the current atmosphere of global taxonomic uncertainty that NRDC now proposes that Bryde’s whales in the GoM can be designated as distinct from all other populations, including Bryde’s whales in the Caribbean and Atlantic. Notwithstanding NRDC’s suggestion otherwise, Rosel and Wilcox (2014) far from resolved the taxonomic debate at the species or subspecies level, much less for a single discrete water body.

D. The Petitioned Action is Impermissible under the ESA

The NRDC Petition requests that NMFS designate a DPS composed not of a single species, but rather of a species and two recognized subspecies; under the ESA, this action is not allowed. The petition uses “Bryde’s whales to refer to *B. edeni* and its subspecies,” *B. e. edeni* and *B. e. brydei*.⁹⁴ NRDC has failed to specifically identify the reference taxon that should be used to determine whether the Bryde’s whale population of interest meets the definition of a DPS. Additionally, to the extent that NRDC asks that NMFS list a DPS of a subspecies, the ESA does not allow DPSs to be created from a subspecies.

1. NRDC Has Not Identified a Reference Taxon

In order to designate a DPS, the listing services are required to: (1) identify the reference taxon from which the putative DPS would be established; (2) evaluate the discreteness of the putative DPS from the reference taxon; and, (3) if distinctions between the reference taxon and the putative DPS are observed, assess the significance of the putative DPS to that taxon.⁹⁵ The essential prerequisite to designation of a DPS, therefore, is the identification of a reference population to delineate.

Both the NRDC Petition and the Service’s 90-day finding on that petition, however, fail to identify the reference taxon. NRDC’s petition notes in its species description that it uses the term “Bryde’s whales” to refer to the species *B. edeni* and its two subspecies.⁹⁶ The Service’s 90-day finding similarly conflates the higher taxonomic species with its two recognized subspecies.⁹⁷ Even under the very low “substantial evidence” standard utilized for review of listing petitions at the 90-day stage, NRDC’s failure to clearly identify the reference taxon should have resulted in a denial of its petition.

By simply adopting the NRDC Petition’s conflated reference taxon, NMFS creates a potentially insurmountable analytical hurdle for itself and for stakeholders, like the Associations, wishing to provide input on the distinctiveness of the putative DPS and the significance of those potential distinctions – It is unclear whether distinctiveness and significance should be measured

⁹³ http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=180525

⁹⁴ NRDC Petition at 1.

⁹⁵ 78 Fed. Reg. 47,280 (Aug. 5, 2013).

⁹⁶ NRDC Petition at 1.

⁹⁷ 80 Fed. Reg. at 18,344.

against *B. edeni*, *B.e. brydei*, or *B.e. edeni*. Clear identification of the reference taxon is essential to the Service's ability to reach a legally supportable 12-month finding and stakeholders' ability to provide comment.

As discussed below, if distinctiveness is to be observed at all, it will be on the basis of incredibly small differences between the studied populations. Indeed, the NRDC Petition is almost entirely premised on potential distinctions *at the sub-cellular level*.

As discussed above, the global taxonomic status of Bryde's whales is only in the very early stages of being understood. Far from evincing the requisite scientific understanding necessary to delineate Bryde's whales on a taxonomic level below the subspecies level, the NRDC Petition's conflation of *B. edeni*, *B.e. brydei*, and *B.e. edeni* demonstrates that the petition is premature at best.

Perhaps because the taxonomic status of the Bryde's whale is uncertain, the NRDC Petition seeks a more granular recognition of a DPS of *B. edeni*, *B.e. brydei*, or *B.e. edeni*, or some combination thereof. NRDC may be leaving it to NMFS to identify the specific species, subspecies, or combination of species and subspecies from which to carve out the DPS or perhaps NRDC presumes that thorny detail can be determined when the overall taxonomic status of the Bryde's whale is more settled. DPS, however, cannot be established based on "taxonomic hedges." The entire analysis rests on comparisons between the putative DPS and some other population. No comparison can be made without identifying the "other population."

When NMFS is considering "whether a particular taxon or population is a species for the purposes of the Act," it must "rely on standard taxonomic distinctions and the biological expertise of the Department and the scientific community concerning the relevant taxonomic group."⁹⁸ "When the best available science indicates that the 'standard taxonomic distinctions' are wrong, pursuant to ESA mandate NMFS must apply that best available science."⁹⁹

But, the best available science here does not undermine the standard taxonomic distinction of the Bryde's whale. The NRDC Petition is not requesting that NMFS recognize a new subspecies of Bryde's whales that exist only in the GoM. If it were, the petition would be entirely at odds with the studies on which it was based – none of which conclude that Bryde's whales in the GoM are a subspecies. Indeed, the study authors appropriately qualify their findings as preliminary and in need of further research. Certainly, none of the authors of the studies cited in the NRDC Petition have petitioned to change the taxonomic status of Bryde's whales in the GoM.

At most, the studies provide preliminary evidence of genetic distinction between some whales in the GoM and some whales elsewhere. It is not the case that the best available science demonstrates that Bryde's whales in the GoM are a new subspecies and that the scientific community's failure to recognize them as such is purely a function of a protracted taxonomic reclassification process. The best available science suggests that the current taxonomy of the

⁹⁸ 50 C.F.R. § 424.11(a).

⁹⁹ *Center for Biological Diversity v. Lohn*, 296 F. Supp. 2d 1223, 1238 (2003).

Bryde's whale may include as-yet unrecognized subspecies, different subspecies delineations, and even the need to evaluate the taxonomic status of the Bryde's whale at the species level.

NRDC seemingly recognizes that the preliminary data to which it cites does not support the taxonomic reclassification of Bryde's whales in the GoM into a subspecies, and that is why it requests that NMFS designate Bryde's whales in the GoM as a DPS. The scientific community does not use the taxonomic classification "DPS." The designation is found only in the ESA and the requirements for establishing DPS are found solely within the ESA and its implementing regulations and guidance. And, as discussed below, those regulations and guidance do not permit designation of Bryde's whales in the GoM as a DPS.

2. NRDC Cannot Petition for the Listing of a DPS of a Subspecies

As noted above, the NRDC Petition fails to identify the reference taxon from which they are seeking to designate a DPS. To the extent that NRDC is seeking to designate a DPS from one of the subspecies of Bryde's whales (*B. e. brydei* or *B. e. edeni*), such a designation is not permitted under the ESA.

The ESA applies to distinct taxonomic species, "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature."¹⁰⁰ The statutory language is clear - the ESA applies to species, subspecies or to distinct population segments of species.

Courts have previously found that the U.S. Fish & Wildlife Service cannot list under the ESA a regional DPS of a subspecies. "Listing distinctions below that of subspecies or a DPS of a subspecies are not allowed under the ESA."¹⁰¹ While Congress gave the listing services the ability to list species according to their geographical range, "genetic differences between members of a species that are not so significant as to classify the members as a separate subspecies cannot justify distinctions that contradict Congress' intent behind the phrase 'DPS of a species.'"¹⁰²

This interpretation of this statutory language is supported by the ESA's legislative history. In 1978, Congress amended the ESA and changed the definition of "species" to "exclude taxonomic categories below subspecies [smaller taxa] from the definition as well as distinct populations of invertebrates."¹⁰³ Congress was "aware of the great potential for abuse" of DPS listing authority, and explained that it expected the FWS to list populations sparingly.¹⁰⁴

Designation of a DPS from one or more subspecies of uncertain taxonomic status is neither a sparing nor a permitted use of the Service's DPS listing authority. To the extent NRDC

¹⁰⁰ 16 U.S.C. § 1532(16) (emphasis added).

¹⁰¹ *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154, 1162 (D. Or. 2001).

¹⁰² *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154, 1163 (D. Or. 2001).

¹⁰³ H.R. Conf. Rep. No. 95-1804, at 17 (1978), *reprinted in* 1978 U.S.C.C.A.N. 9485, 14855.

¹⁰⁴ Senate Report No. 96-151, at 712 (1979).

is petitioning to designate Bryde's whales as a DPS of *B. e. brydei* or *B. e. edeni*, which is entirely unclear, NMFS should deny that petition.

E. Bryde's Whales in the GoM Do Not Meet the Elements of a DPS Under the DPS Policy

Setting aside the NRDC Petition's failure to identify a reference taxon and the prospect that NRDC may be impermissibly seeking designation of a DPS of a subspecies, the evidence of the distinctiveness of Bryde's whales in the GoM does not support their designation as a DPS. While a DPS is not scientific classification, the requirements to designate a DPS are still rigorous. As discussed below, the best available information demonstrates that Bryde's whales in the GoM are not markedly discrete and, to the extent any distinction can be observed, they are not significant to the taxon as a whole.

1. DPS Designation Must be Used Sparingly and Only When Stringent Criteria Are Met

As referenced briefly above, the ESA applies to distinct taxonomic species, "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature."¹⁰⁵ The aspects of this definition that relate to DPS were intensely scrutinized during congressional debate for fear that, through recognition of DPS, the ESA could be manipulated to disaggregate a species to such an extent that even healthy and abundant species could be found to be endangered.

The 1978 addition of the phrase "DPS" was, in fact, designed to constrain language in the ESA of 1973 which extended the statute to "any other group of fish or wildlife of the same species or smaller taxa in common special arrangement that interbreed when mature." Still, the U.S. General Accounting Office ("GAO") at the time warned that use of a DPS could lead to unnecessary subdivision that did little more than lead to the listing of segments of healthy and abundant species.¹⁰⁶ In response to such concerns, Congress carefully included within the Conference Report on the ESA Reauthorization recognition that it "is aware of the great potential for abuse of this authority," and an admonition that the listing agencies use its DPS authority "sparingly and only when then biological evidence indicates that such action is warranted."¹⁰⁷

In the ensuing decades, the listing agencies have generally respected the high bar that Congress demanded be used to designate a DPS. In 1991, NMFS established a policy outlining criteria for designating Pacific salmon by DPS.¹⁰⁸ Under the policy, DPS status was restricted to "evolutionarily significant units" ("ESU") that are substantially reproductively isolated and which represent an important component of the evolutionary legacy of the species.¹⁰⁹ In 1996, NMFS and FWS established a new, more encompassing DPS policy that, like the ESU policy

¹⁰⁵ 16 U.S.C. § 1532(16).

¹⁰⁶ See U.S. General Accounting Office, *Endangered Species: A Controversial Issue Needing Resolution* (1979).

¹⁰⁷ S. Rep. No. 95-151, at 7 (1979), reprinted in *ESA Legislative History*, *supra* note 144, at 1397.

¹⁰⁸ 56 Fed. Reg. 58612 (Nov. 20, 1991).

¹⁰⁹ *Id.* at 58518.

and consistent with congressional intent, maintained a high bar to designate a DPS.¹¹⁰ For a population segment to be considered a DPS under the 1996 policy, the segment must meet two criteria: (1) it must be discrete; and (2) it must be significant.¹¹¹ Discreteness requires conspicuous separation from the remainder of the species, but separation alone is not enough to be a DPS.¹¹² Even if the species is markedly discrete, the listing services, at Congress's direction, instruct that the discrete segment be significant in some unique biological manner or that the segment provide some significant role in the species as a whole.¹¹³ "When a species exists across a wide range of ecological settings, . . . the fact that it persists in one particular location . . . says little about whether the population in that location is important to the species as a whole."¹¹⁴

The "significance" element of the DPS Policy is critical to the evaluation of population segments for DPS status. Indeed, the listing services have found several populations to be discrete but declined to extend DPS status because the discrete segment was not significant.¹¹⁵

These two qualifying criteria—discreteness and significance—are only the first hurdle for the listing of a DPS.¹¹⁶ The "second step" of the DPS listing analysis requires determination of whether the population meets the ESA's criteria for listing - an inquiry the listing services should only make once the population has "passed the tests" for discreteness and significance.¹¹⁷ Unless the population considered qualifies as endangered or threatened under the ESA, "the fact that the population meets the other two elements is immaterial[.]"¹¹⁸

The DPS Policy provides a high hurdle – appropriately so. In developing the DPS Policy, FWS acknowledged that Congress instructed the Service to "use its authority with respect to designating DPSs 'sparingly' and only in instances 'when the biological evidence indicates that such action is warranted.'"¹¹⁹ Unlike ESA listing decisions wherein a listing agency is acting to avoid extinction of a species and therefore employs a precautionary approach, DPS designation involves the structuring of a species' population. If listing services employed for DPS analysis all the favorable evidentiary inferences that may be appropriate for a listing

¹¹⁰ 61 Fed. Reg. 4722 (Feb. 7, 1996).

¹¹¹ *Id.* at 4725. If the species is both discrete and significant, it is considered a DPS, but that DPS is not then protected under the ESA unless and until the listing agency determines that the DPS is either threatened or endangered under the ESA.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Center for Biological Diversity v. Jewell*, No. CV-12-02296-PHX-DGC, 2014 WL 5703029, at *6 (D. Ariz. Nov. 5, 2014).

¹¹⁵ See, e.g., 67 Fed. Reg. 44133 (Jul. 1, 2002); 68 Fed. Reg. 11574 (Mar. 11, 2003); 68 Fed. Reg. 34628 (Jun 10, 2003); 77 Fed. Reg. 25792 (May 1, 2012).

¹¹⁶ *Humane Society of the U.S. v. Jewell*, No. 13-186 (BAH), 2014 WL 7237702, at *31 (D.D.C. Dec. 19, 2014).

¹¹⁷ *Humane Society of the U.S. v. Jewell*, No. 13-186 (BAH), 2014 WL 7237702, at *31 (D.D.C. Dec. 19, 2014).

¹¹⁸ *Humane Society of the U.S. v. Jewell*, No. 13-186 (BAH), 2014 WL 7237702, at *31 (D.D.C. Dec. 19, 2014).

¹¹⁹ *Safari Club Int'l v. Jewell*, 960 F. Supp. 2d 17, 29 (D.D.C. 2013).

decision, it would lead to a widespread deconstruction of taxonomic units, an enormous drain on agency resources, and little or no conservation benefit to the species.

2. The Bryde's Whales in the GoM are Not a Discrete Population

According to the DPS Policy, a population segment of a species may be considered discrete if it is markedly separate from other population segments of the same taxon or it is delimited by international governmental boundaries with different conservation levels and measures.¹²⁰ As explained below, Bryde's whales in the GoM do not meet either element. While the GoM segment may have some modest biological or behavioral variations from other population segments, such variations (where they can be demonstrated at all) do not qualify as marked distinctions. Similarly, Bryde's whales in the GoM are not subject to differences in conservation status or measures between and among the GoM nations, all of which prohibit the gravest threat to the Bryde's whale, and all of which have in place numerous other protective measures. These criteria are discussed further below.

i. Stocks Are Not DPS

The NRDC Petition posits that "the classification of Gulf of Mexico Bryde's whales as a stock supports the finding that the population is a distinct population segment under the ESA."¹²¹ In fact, the Stock Assessment Report cited in the petition suggests the opposite is true. As conspicuously stated in that report:

The Gulf of Mexico population is provisionally being considered a separate stock for management purposes, although there is currently no information to differentiate this stock from the Atlantic Ocean stock(s). Additional morphological, genetic, and/or behavioral data are needed to provide further information on stock delineation.¹²²

Notwithstanding the clarification within the stock assessment report they cited, NRDC apparently continues to greatly misunderstand the meaning and importance of NMFS's stock classification. As explained by NMFS in its closely analogous determination that sperm whales in the GoM were not a DPS:

However, a stock under the MMPA is not equivalent to a DPS under the ESA. Under the MMPA, a 'population stock' or 'stock' is 'a group of marine mammals of the same species or smaller taxa in a common spatial arrangement that interbreed when mature' (16 U.S.C. 1362(11)). The term 'stock' is interpreted consistent with Congressional findings and policy: '...the primary objective of

¹²⁰ 61 Fed. Reg. at 4725.

¹²¹ NRDC Petition at 7.

¹²² Stock Assessment (2012).

their management [of stocks] should be to maintain the health and stability of marine ecosystem. Whenever consistent with this primary objective, it should be the goal to obtain an optimum sustainable population keeping in mind the carrying capacity of the habitat.’ 16. U.S.C. 1361(5). The guidelines for preparing stock assessment reports under the MMPA include guidelines for identifying stocks, and they note that ideally, a stock would be a management unit that identifies a demographically isolated biological population (NMFS, 2005). Demographic isolation means that the population dynamics of the affected group are more a consequence of births and deaths within the group (internal dynamics) rather than immigration or emigration (external dynamics) (NMFS, 2005, <http://www.nmfs.noaa.gov/pr/pdfs/sars/gamms2005.pdf>). A major goal of identifying stocks under the guidelines is to avoid potential for localized depletion where marine mammals are subject to human-caused mortality and serious injury.

As described above, our joint USFWS-NMFS DPS policy contains different criteria for identifying a populations as a DPS. The ESA’s purpose of providing for the conservation of species and the ecosystems upon which they depend, along with the Congressional direction to use the provision sparingly, guided the development of the DPS policy. The DPS policy requires that a population be both discrete from other populations and significant to the taxon to which it belongs. While in most circumstances we evaluate some or all of the same evidence in determining whether a population of marine mammals should be considered a stock under the MMPA or a DPS for purposes of the ESA, demographic independence alone does not suffice to establish a DPS. Therefore, the fact the GOM population is considered a stock under the MMPA does not qualify the population as a DPS under the ESA.

The 2006 NMFS Workshop on Conservation Units of Managed Fish, Threatened or Endangered Species, and Marine Mammals provided even more clarity on the key distinctions between stocks under the MMPA and DPS under the ESA that the NRDC Petition entirely overlooked:

Conservation units under the ESA should be substantially reproductively isolated from one another to be listed under this act. On the other hand, objectives of the MMPA include keeping populations or stocks of animals above their Optimum Sustainable Populations OSP levels. The Magnuson-Stevens Act (MSA) allows for management units that may contain multiple species as members of a complex, but the concept of demographically independent stocks within a species is commonly used to

determine the status of fishery resources. Thus, a demographic independence is an appropriate basis for identifying conservation units (distinguishing among populations or stocks) for the MSA and MMPA.’

‘A low amount of exchange among groups for breeding may be sufficient to prevent development of important genetic differences; however, these groups may remain demographically independent from one another. Therefore, it is generally expected that conservation units identified on the basis of reproductive isolation would be larger than those identified on the basis of demographic independence. Thus, discrete groups under the DPS policy would generally be larger than discrete groups identified for management under the MSA or MMPA. Furthermore, marine mammal biology includes internal fertilization, live birth, parental care, and maintenance of family groups; these features act as barriers to mixing among groups and help produce fine-scale population structure.’

Accordingly, the provisional classification of Bryde’s whales in the GoM as a stock under the MMPA is not evidence the Bryde’s whales in the GoM are a DPS under the ESA. Indeed, the Stock Assessment Report specifically stated that there is no evidence of distinction from whales observed in contiguous waters. If the provisional classification evinces anything at all, it is that Bryde’s whales are being protected in the GoM irrespective of DPS designation or listing under the ESA.

ii. *Gulf of Mexico Bryde’s Whales are Not Markedly Separated from Other Populations*

While “marked separation” does not require absolute isolation of a population segment, it does require some analysis of its discreteness. In analogous DPS analyses, the listing agencies looked first at geography and topography to evaluate separation. FWS found the Sonoran Desert Population of the bald eagle to be discrete, in part, because it was surrounded by unsuitable habitat that extended far beyond the typical range of the species.¹²³ Similarly, FWS found a population of grey squirrel to be discrete because it was separated from other populations by the Columbia River, which the squirrels could not cross,¹²⁴ and found a freshwater fish to be discrete from populations disconnected by rapids and waterfalls.¹²⁵ There is no such separation here.

The GoM is connected to the North Atlantic Ocean, via the Straits of Florida, and to the Caribbean Sea, via the Yucatan Channel. Bryde’s whales are physically capable of swimming through either of these connecting waterways. Thus, any suggestion that the Bryde’s whales in the GoM are separated from others of their species requires evidence that the whales in that area

¹²³ 77 Fed. Reg. at 22804.

¹²⁴ 68 Fed. Reg. at 34635.

¹²⁵ 68 Fed. Reg. at 11577.

do not mix with those elsewhere, despite being capable of doing so. Most likely, that would require evidence that the whales in the GoM are different from those outside.

But, there is no evidence of any differences between whales in the GoM and whales in the Caribbean or Atlantic. In fact, the only study identifying genetic traits of Bryde's whales in the GoM found that samples taken in the GoM were nearly identical to samples taken from the North Atlantic.¹²⁶

Notwithstanding the forgoing, the NRDC Petition surmises that Bryde's whales in the GoM are genetically distinct and exhibit a markedly distinct body length and markedly distinct vocalizations. Such a view contrasts with the best available scientific information.

a. Genetic distinction has not yet been established

The NRDC Petition seeks to establish the marked genetic distinctiveness of Bryde's whales in the GoM almost exclusively by citation to Rosel and Wilcox (2014). As explained above, the Rosel and Wilcox (2014) study was based on only three new DNA samples from the GoM and two new samples from the Northwest Atlantic. The origin of the remaining 21 purported GoM samples on which Rosel and Wilcox (2014) relied was not identified in the study.

It is possible that the samples were taken from GenBank, on which Rosel and Wilcox (2014) relied for samples to populate the mtDNA control regions for their study. Given the confusion about the morphological characteristics of Bryde's whales, any technique used to compare the molecular differences between and among species is an important tool for taxonomic research. Reliance on GenBank for DNA samples of whales, however, is problematic given the likelihood of misidentification and the evolving, often contradictory, nomenclature used to identify species and samples suspected to be within the Bryde's whale complex (*B. brydei*, *B.e. brydei*, *B. edeni*, *B.e. edeni*, *B. omurai*, *B. borealis*). Rosel and Wilcox (2014) noted that the study relied on potentially mislabeled voucher specimens and reported that a number of the samples that were used to differentiate between the sampled populations were named *B. edeni*, but are believed to represent *B. brydei*.

Table S1a in the study's supplement lists the individual genetic sequences used to compare GoM Bryde's whales with other species in the complex. Those in red type in the table are believed to be misidentified in GenBank based on the phylogenetic analysis. Misidentification of specimens has been a problem for many years with even the simplest of organisms.¹²⁷ One paper stated that, "GenBank is riddled with errors, which are often dismissed by many authors using their data for their own research."¹²⁸

Rosel and Wilcox (2014) also faced the same problem with sei whales saying that, "[g]iven the [molecular] difficulties in distinguishing sei whales from Bryde's whales, sei whale

¹²⁶ Rosel and Wilcox (2014).

¹²⁷ Bridge *et al.* (2003); Sole-Cava and Worheide (2007).

¹²⁸ Sole-Cava and Worheide (2007).

records should be re-examined as well.” This is because the preliminary mitochondrial DNA analyses in Rosel and Wilcox (2014) indicate that *B. e. brydei* is more closely related to sei whales than to *B. e. edeni*.¹²⁹

Notwithstanding the questionable provenance of the majority of DNA samples on which they relied, Rosel and Wilcox (2014) were able to identify differences in mtDNA patterns between the samples from the GoM/North Atlantic and those reference samples characterizing genetic profiles for *B. e. brydei*, *B. e. edeni*, and *B. omurai*. Notably, these reference points from which all distinctions with whales in the GoM/North Atlantic were measured were based on a single whale representing *B. e. brydei*, a single whale for *B. e. edeni*, and two whales for *B. omurai*.¹³⁰ Perhaps more importantly, all four of these whale samples were taken from the waters around Japan. Far from providing precise reference points for the named species from which to measure all genetic deviations, the samples in Sazaki (2006) represent the mtDNA patterns of four whales near Japan that were assigned the *B. brydei*, *B. edeni*, and *B. omurai* based on the disputed morphological analysis proposed by Wada *et al.* (2003).

Even if these mtDNA patterns show statistically significant differentiation between oceans, as NMFS appropriately found with respect to the sperm whale:

mtDNA does not alone describe population structure. Because mtDNA is materially inherited, differences in mtDNA haplotypes between populations do not necessarily mean that the populations are substantially reproductively isolated from each other because they do not provide any information on males.¹³¹

Differences in mtDNA may indicate discreteness in species in which male and female movement patterns are the same,¹³² but these patterns are not known for the Bryde’s whale. Almost no tagging data exists for Bryde’s whales and its migratory patterns (or lack thereof) are disputed.¹³³

Even if mtDNA patterns showed Bryde’s whales in the GoM to be distinct from some other population, there is no evidence of the requisite “marked distinction.” Moreover, Rosel and Wilcox (2014) does not answer the essential question “distinct from what?” Stripped of the questionable samples from GenBank, Rosel and Wilcox (2014) is a study of five whales in the GoM/North Atlantic and four whales off Japan. The study remains valuable as it provides the first credible genetic evaluation of Bryde’s whales outside of the Indian or Pacific Oceans, but it is a preliminary study only, as recognized in the authors’ appropriate caveat that further research is needed.

¹²⁹ Dizon *et al.* (1997).

¹³⁰ Rosel and Wilcox (2014); Sazaki (2006).

¹³¹ 78 Fed. Reg. at 68,035.

¹³² 78 Fed. Reg. at 68,035.

¹³³ Kato & Perrin (2009) identify a north-south migratory pattern; Steiner (2007) suggests Bryde’s whales “do not exhibit the normal migration patterns of baleen whales;” Best (1977) identifies resident populations.

b. To the Extent Genetic Differences Exist, They Do Not Delineate a GoM Population

The NRDC Petition makes the claim that new genetic information would allow NMFS biologists “to differentiate this population from other Atlantic Bryde’s whales...”¹³⁴ The petition further maintains that the recent study by Rosel and Wilcox (2014) shows that GoM Bryde’s whales are genetically distinct and demographically independent from other whales in the Bryde’s whale complex.

What the NRDC Petition fails to mention, however, is that the analysis on which they are basing this alleged differentiation compared DNA from 4 whales located around Japan and used them to identify clades in the western North Pacific, Solomon Islands, East China Sea, Southwest Japan, Indo-Pacific, Singapore and Indian Ocean. It should be noted that none of these study locations is in the GoM, the Caribbean Sea, or any part the Atlantic Ocean.¹³⁵ In fact, of the populations described in Sazaki (2006), the closest to the GoM is a suspected *B. brydei* population in the Eastern Indian Ocean.

Prior to Rosel and Wilcox (2014), throughout the entire Atlantic Ocean and its attendant seas and gulfs, there existed only two genetic analyses:

1. A single genetic sample taken during a dive survey off Madeira that, according to GenBank, sequenced to the Bryde’s whale as first described by Olsen in 1913¹³⁶ - prior to recognition of the two subspecies, *B. e. brydei* and *B.e. edeni*.
2. A study of inshore and offshore populations around the horn of Africa using the genetic reference points proposed in Sazaki (2006) and two other samples identified in GenBank as from near South Africa and Singapore.¹³⁷

While Pendry (2010) identified relationships between the inshore population and both *B. e. brydei* and *B. e. edeni* in the Pacific Ocean (as described by Sazaki (2006)), comparisons with Atlantic populations were not made because “[m]olecular comparisons between coastal and offshore populations elsewhere, e.g. the Gulf of California, Brazilian coast, Venezuela and Oman . . . are not yet available.”¹³⁸ Pendry (2010) further disclaimed that “[b]ecause only one sample from the offshore population was available, further collection of genetic material is required to support the finding of this study and to further comparison with other *B. brydei* populations worldwide.”

It is both appropriate and relevant that Pendry (2010) declined to draw conclusions from the single offshore whale sample. In contrast, Sazaki (2006) purported to establish the precise

¹³⁴ NRDC Petition at 2.

¹³⁵ Sazaki (2006).

¹³⁶ Alves (2010).

¹³⁷ Pendry GS (2010) The biology of South African Bryde’s whales. A Thesis Submitted for the Degree of PhD at the University of St. Andrews (<http://hdl.handle.net/10023/921>).

¹³⁸ Penry GS (2010) at 142.

genetic reference points for *B. brydei* and *B. edeni* based on a single DNA sample each. For their part, Rosel and Wilcox (2014) similarly based their genetic comparisons on the single samples in Sazaki (2006), but also held out Pendry (2010) as affirmatively identifying the single offshore sample as “within a well-supported *B. e. brydei* clade . . .”

The most proximate genetic comparison that was not based on sequencing through the questionable GenBank database is therefore the inshore population off South Africa. This population has been identified as a resident population since at least 1977.¹³⁹ Even assuming the South African resident inshore population provides a relevant comparison to the samples taken by Rosel and Wilcox (2014) in the GoM/North Atlantic, it does not support the notion advanced in Rosel and Wilcox (2014) and in the NRDC petition, that whales from the GoM are genetically distinct from whales closest to this population in the western Atlantic and Caribbean Sea. At most, it establishes that the genetic characteristics of whales in the GoM/North Atlantic described by Rosel and Wilcox (2014) do not extend all the way to the South African coast.

What we do know about the genetic characteristics of whales in the Atlantic comes from Rosel and Wilcox (2014). Two of the five samples obtained for the study (40%) were from the North Atlantic. In fact, these two strandings from South Carolina (1992) and North Carolina (2003) were found to be nearly identical to the other whales sampled from the GoM, which suggests that they are connected to an Atlantic population.¹⁴⁰ This can be explained by positing that either: (1) the whales died in the Northern GoM (where they are supposedly restricted), entrained in the Florida Current to the Gulf Stream, and floated (with no predation) for more than a 1,000 miles before coming ashore along the mid-Atlantic coast; or, (2) they were part of an Atlantic population that is not distinct from the GoM population.

While both explanations are possible, the latter explanation is infinitely more reasonable. As such, the best scientific evidence available, which is admittedly lacking in quantity, demonstrates that whales in the GoM are genetically indistinct from whales in the Atlantic Ocean and that the only other genetic sample presently framing the extent of this population does so somewhere near the coast of South Africa. Clearly, Bryde’s whales in the GoM are not discrete – markedly or otherwise.

c. Observed Bryde’s Whale Size Differences May Not Exist
And, Even If They Do, Such Differences Do Not Amount
to Marked Distinction

The NRDC Petition suggests that Bryde’s whales in the GoM have a unique size that makes them distinct from other populations.¹⁴¹ Notably, NRDC did not compare Bryde’s whales in the GoM to other populations but to the two subspecies (*B.e. brydei* and *B.e. edeni*) that the scientific community has struggled to characterize both genetically and morphologically.

¹³⁹ Best (1977).

¹⁴⁰ NOAA reports online that genetic testing was conducted on the whales and makes the claim that they were distinct from whales in Caribbean and Pacific, yet no data were provided and more recent studies do not cite this testing (<http://www.noaanews.noaa.gov/stories/s2094.htm>).

¹⁴¹ NRDC Petition at 6.

NRDC’s suggestion that the size of whales in the GoM is “intermediate” to the two subspecies is simply another way of saying that the size range of whales in the GoM overlaps with the broad length ranges attributed to *B.e. brydei* and *B.e. edeni*.

| Species Identifier | Length Range | Source |
|--|--|-----------------------------|
| GoM Whales | 11.2 m – 12.65 m | Rosel and Wilcox (2014) |
| “Bryde’s whales” | Males: 11.9 m – 14.6 m Females: 12.2 m – 15.6 m | Encyclopedia of Life (2011) |
| “Bryde’s whales” | Males: 12.2 m – 15.2 m Females: “slightly larger” | American Cetacean Society |
| “Bryde’s whales” | Males: 12 m – 13 m Females: 13 m – 14 m | Animaldiversity.org |
| 2 suspected <i>B. brydei</i> off Mareira | 11 m – 13 m | Alves (2013) |
| <i>B. brydei</i> | Males: 11.2 m average Females: 11.7 m average | Rice (1998) |
| <i>B. brydei</i> | Highly variable | Kato & Perrin (2008) |
| <i>B. omurai</i> | 9 m – 11.2 m | Rice (1998) |
| <i>B. e. edeni</i> | Up to 11.5 m | NRDC Petition |

The overall length of whales – particularly elusive Bryde’s whales - are expressed in ranges because of the difficulty of estimating length in the water, the relatively few strandings, and because the size of whales, like all other species, vary. It has also been suggested that because Bryde’s whales are able to exploit their prey year-round rather than having to migrate long distances, this could infer certain benefits on some populations over others.¹⁴²

Further, the length estimate for the GoM whales is based on measurements of only five whales.¹⁴³ Four whales were between 11.2 m and 11.6 m, and the fifth whale was 12.65 m.¹⁴⁴

¹⁴² Best (2001).

¹⁴³ Rosel and Wilcox (2014)

¹⁴⁴ Rosel and Wilcox (2014)

There is no information available on the physical maturity of the whales.¹⁴⁵ And, as NMFS correctly noted in the analogous sperm whale finding, size data needs to be normalized to account for age in order to demonstrate size differences.¹⁴⁶

Even if the five whales in Rosel and Wilcox (2014) are representative of the size of the whales in the GoM, this is evidence that the length of Bryde's whales inside the GoM and the length of Bryde's whales elsewhere are essentially the same. Thus, the best scientific available information on Bryde's whale length suggests that Bryde's whales in the GoM are not distinct.

d. Vocalization Differences Are Not Marked Distinctions

The NRDC Petition suggests that a single study observing what was believed to be a marginally unique call for Bryde whales – the Be9 call.¹⁴⁷ This call was posited to be from a Bryde's whale based on the observed presence in the recording area, but it cannot be conclusively attributed to a Bryde's whale.¹⁴⁸ Nonetheless, the Be9 call is the same “down-sweep” call identified with Bryde's whales throughout their global range.¹⁴⁹ While Be9 has a seemingly different frequency and duration than found in other acoustic observations, it is very similar to the Be7 call observed in the Gulf of California.¹⁵⁰

Notably, however, the Be9 call is nearly identical to the Be8b call observed in Bryde's whales off Brazil.¹⁵¹ Indeed, the striking similarity of the Be9 and Be8b calls in frequency, duration, and in the number of calls suggests that the GoM populations and the Brazilian populations are related – it is certainly not evidence of distinction.

Even if Bryde's whales in the GoM were demonstrated to emit a unique call, local call variations are normal for whales.¹⁵² Local dialects are frequently observed in all types of whales (Bryde's whales included), and, as NMFS noted in its sperm whale finding, are not evidence of distinction.¹⁵³ Contrary to the NRDC Petition's conclusion, the best available vocalization data suggests that Bryde's whales in the GoM are not separated from contiguous populations at least as far south as the South Atlantic off Brazil.

¹⁴⁵ Rosel and Wilcox (2014)

¹⁴⁶ 78 Fed. Reg. at 68,035.

¹⁴⁷ Sirovic (2014).

¹⁴⁸ Sirovic (2014).

¹⁴⁹ Rice (2014).

¹⁵⁰ Figueiredo (2014).

¹⁵¹ Figueiredo (2014).

¹⁵² 78 Fed. Reg. at 68,034.

¹⁵³ 78 Fed. Reg. at 68,034.

e. Summary of Separation

Bryde's whales in the GoM are not separated – markedly or otherwise – from other Bryde's whales. The GoM is amply connected to both the Atlantic Ocean and the Caribbean Sea. The only reliable genetic data for Bryde's whales in these areas demonstrate that the whales in the GoM are nearly identical to those in the Atlantic Ocean. The closest samples arguably showing genetic distinction are from the inshore waters of South Africa. The observed length of Bryde's whales within the GoM is likewise indistinguishable from the length of Bryde's whales elsewhere. And while modest differences were preliminarily observed in Bryde's whales in the GoM and Bryde's whales elsewhere, localized dialects are the norm for cetaceans, and not evidence of distinction or separation. In fact, the similarity between calls observed in the GoM and off Brazil suggests a relationship between the populations. The best scientific evidence available is that Bryde's whales in the GoM are not separated from Bryde's whales elsewhere – markedly or at all.

iii. *There are No Meaningful Differences in Conservation Status
In or Conservation Measures Among GoM Nations*

As discussed above, Bryde's whales in the GoM are not markedly separated from the Atlantic or other populations. As such, Bryde's whales in the GoM can only be “discrete” if there are differences in “control of exploitation, management of habitat, conservation status, or regulatory mechanisms” among GoM nations or in international waters of the GoM “that are significant in light of section 4(a)(1)(D) of the Act.”¹⁵⁴ There are no such differences. Bryde's whales are able to move freely throughout the GoM and benefit from meaningful conservation measures and protections regardless of the jurisdiction in which they are present.

a. There Are No Differences in Bryde's Whale Conservation
Status Throughout the GoM

The DPS Policy does not define the term “conservation status,” but that phrase has been subsequently interpreted by the listing agencies (and upheld in court) to mean “the number of individuals left in the population.”¹⁵⁵ Therefore, for there to be a difference in the conservation status of Bryde's whales in the GoM, there would need to be some evidence that Bryde's whale abundance in the GoM differs by jurisdiction. As explained above, Bryde's whales in the GoM have only been surveyed in portions of the U.S. EEZ between the 200 m isobaths to the seaward extent of the EEZ.

Even though Bryde's whales might be considered abundant in some places, sightings there are somewhat rare and inconsistent. And, there are times when the whales are simply not found in the usual places or they occur in places where they have never been sighted before, such as the Azores.¹⁵⁶

¹⁵⁴ 61 Fed. Reg. at 4725.

¹⁵⁵ *National Ass'n of Home Builders v. Norton*, 340 F.3d 835, 843 (9th Cir. 2003).

¹⁵⁶ Steiner *et al.* (2008).

While the majority of Bryde's whale observations are in the biologically fertile DeSoto Canyon, there is no evidence that Bryde's whale populations are limited to the DeSoto Canyon. Nor does the DeSoto Canyon provide the only upwelling or prolific feeding ground – such locations are likely found throughout the GoM, including in the 65% of the GoM that has never been surveyed. Therefore, there is no evidence of differences in Bryde's whale conservation status within the GoM.

b. There Are No Significant Differences in Regulatory Protections Among the GoM States

Discreteness can also be demonstrated by significant differences in regulatory protections between or among the states that delimit the supposed population. While differences in sovereign states' regulations will almost always exist as a consequence of those countries' different regulatory and legislative processes, forms of government, and separations of power, the DPS policy requires that those differences be significant.¹⁵⁷ In this case, that significance cannot be demonstrated. To the contrary, Cuba, Mexico, and the U.S. take similar approaches to the protections that matter most for the Bryde's whale.

Most importantly, the U.S., Mexico, and Cuba all prohibit the hunting and harvesting of Bryde's whales in accordance with the IWC ban. This prohibition is significant because commercial whaling was unquestionably the largest threat faced by the Bryde's whale.

Additionally, the U.S., Mexico, and Cuba are all members of the Convention on International Trade and Endangered Species (CITES), discussed further *infra*, and none of these nations have exercised their right to enter a reservation as to Bryde's whales.¹⁵⁸ As such, no Bryde's whale present in GoM is subject to international trade by any of these nations. Further still, in addition to protecting Bryde's whale collectively through international agreement,¹⁵⁹ each GoM state protects Bryde's whale under their own domestic law.

For instance, Mexico's strongest environmental laws are those protecting marine mammals and sea turtles.¹⁶⁰ Mexico has a comprehensive, federally-managed marine mammal

¹⁵⁷ In the "Three-State Murrelet DPS," FWS noted differences between the ESA and Canada's Species at Risk Act, but found that those differences were not significant because they both provided protections to the species. FWS, Status Review, *quoted in* Petition to Delist California/Oregon/Washington Distinct Population Segment of Marbled Murrelet (*Brachyramphus marmoratus*), 5 (May 2008), *available at* <http://www.fws.gov/pacific/ecoservices/pdf/murrelet/MM%20Delisting%20Petition%205-28-08.pdf>.

¹⁵⁸ See <http://www.cites.org/eng/disc/parties/alphabet.php>; <http://www.cites.org/eng/app/reserve.php>.

¹⁵⁹ These include, *inter alia*, the Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region, to which all three nations have acceded. Additionally, the U.S. and Cuba have both ratified the Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean Region ("SPAW") (Nov. 17, 2000) (Mexico has signed, but not yet ratified SPAW). See UNEP Caribbean Environment Programme, *at* <http://www.cep.unep.org/cartagena-convention>. Mexico and Cuba, but not the U.S., are parties to the Convention on Biological Diversity. See <http://www.cbd.int/convention/parties/list/>.

¹⁶⁰ See generally Environmental Law Institute & Centro Mexicano de Derecho Ambiental, *Gulf Of Mexico Habitat Conservation & Restoration: Comparing The Mexican & United States Legal & Institutional Frameworks* (July

protection and marine habitat conservation program (including authority, which it has exercised, to designate marine protected areas).¹⁶¹ Like the U.S., Mexican authorities regulate the offshore oil and gas industry, including imposing restrictions on activities that impact marine mammals, and have a comprehensive oil spill prevention and response program.¹⁶²

At the trilateral level, in 2009, Mexico, the U.S., and Canada negotiated and enacted a Memorandum of Understanding (“MOU”) on Cooperation for Wilderness Conservation. Even prior to this MOU, NMFS and its counterparts in Mexico’s Ministry of the Environment and Natural Resources and National Commission of Aquaculture and Fisheries (“CONAPESCA”) have long worked together under the United States-Mexico Fisheries Cooperation Program. “NMFS and CONAPESCA organize meetings for relevant agencies to discuss issues related to conservation, management, marine mammals and endangered species, information sharing and cooperative research, and other matters.”¹⁶³

No similar agreements exist with Cuba, but NMFS does collaborate with Cuba on marine mammal protection issues in the GoM.¹⁶⁴ Cuba also partners with environmental non-governmental organizations (“ENGOS”) to develop marine protected areas.¹⁶⁵ Most importantly, Cuba provides strong and well-recognized protections to marine mammals, the marine environment, and endangered species.

Cuba has demonstrated a serious commitment to the environment since the 1990s. In 1995, Cuba’s National Assembly created the Ministry of Science, Technology and the Environment (CITMA). In 1997, the National Assembly adopted Law 81, a statutory framework for protecting the environment bottom trawling on its entire continental shelf. It has also vowed to protect 25 percent of their coastal waters as marine parks or reserves, and is on track to accomplish that objective.

According to one environmental leader, Cuba has built up an impressive array of environmental policies, some based on U.S. and Spanish law.¹⁶⁶

2011), (available at http://www.gulfmex.org/wp-content/uploads/2011/04/HCRT_comparing_mex_us_legal_frameworks.pdf).

¹⁶¹ *Id.* at 35-36.

¹⁶² *Id.* at 26-29.

¹⁶³ *Id.* at 19.

¹⁶⁴ NMFS, International Marine Mammal Action Plan 2012-2016, at 40 (May 2012), available at <http://www.nmfs.noaa.gov/ia/reports/immap.pdf>.

¹⁶⁵ See, e.g., EDF, The National System of Marine Protected Areas in Cuba, available at http://www.edf.org/sites/default/files/3692_mpasCubaIngles.pdf.

¹⁶⁶ Center for Democracy in the Americas, *As Cuba plans to drill in the Gulf of Mexico, U.S. policy poses needless risks to our national interest*, 20-21 (2011), available at http://www.democracyinamericas.org/pdfs/Cuba_Drilling_and_US_Policy.pdf.

In accordance with its duties under Specifically Protected Areas and Wildlife (SPAW), Cuba has adopted implementing legislation to protect endangered species generally, and marine mammals, in particular.¹⁶⁷ In fact, in 2011, the Ministry of Science, Technology, and Environment strengthened Cuba's endangered species regulations.¹⁶⁸ Cuban Law 81 also provides for a thorough environmental planning and review process similar to NEPA.¹⁶⁹

Finally, though far from least, Cuba is an active partner with ENGOs, such as EDF,¹⁷⁰ and a participant in multilateral groups addressing issues relating to protection of the marine environment and marine species. For instance, Cuba is a member of the Tri-National Initiative on Marine Sciences and Conservation in the Gulf of Mexico and Western Caribbean, an organization comprised primarily of scientists from the U.S., Mexico, and Cuba. The Tri-National Initiative's objective is to foster "ongoing joint scientific research and to develop a regional plan of action designed to preserve and protect our surrounding and shared waters and marine habitats."¹⁷¹ At its 2010 annual meeting in which NOAA was a participant, one of the initiatives adopted was to provide Cuban and Mexican researchers needed "methods and protocols for marine mammal research and monitoring."¹⁷² Cuba has earned praise from environmentalists for its environmental efforts.¹⁷³

In summary, while the GoM states' regulatory policies are necessarily varied, they are not significantly different. Each country prohibits the gravest threat to the Bryde's whale, each is a member of CITES, and each takes steps under their own domestic law and through bilateral agreements to protect marine mammals like the Bryde's whale.

3. The GoM Stock is Not Significant to the Taxon as a Whole

Because Congress admonished that the DPS designation be used "sparingly," even where a population could be considered distinct, it cannot be treated as a DPS unless the discrete population is important to the taxon as a whole.¹⁷⁴ This "significance" consideration is important

¹⁶⁷ See Cuban Law No. 81, Law of the Environment Arts. 85, 87(f), 116 (July 11, 1997); see also Law 33 § 5 (Feb. 12, 1981); Caribbean Environment Programme, 2008 Action Plan for the Conservation of Marine Mammals in the Wider Caribbean Region, available at <http://www.cep.unep.org/about-cep/spaw/>. Article 51 of Cuba's Decree Law 164, "Regulation of Fishing" (May 28, 1996), also provides penalties for taken of threatened and endangered marine animals.

¹⁶⁸ Resolution No. 160/2011, "Rules for the protection and control of the Species of especial signification for the Biological Diversity in the country" 723 Gaceta Oficial No. 26 (Aug. 4, 2011).

¹⁶⁹ Law 81, Chapt. IV.

¹⁷⁰ See EDF, Bridging the Gulf: Finding Common Ground on Environmental and Safety Preparedness for Offshore Oil and Gas in Cuba (2012), available at http://www.edf.org/sites/default/files/EDF-Bridging_the_Gulf-2012.pdf.

¹⁷¹ <http://www.trinationalinitiative.org/en/about>.

¹⁷² "Trinational Initiative Leads to New Plan of Action" (Sept. 30, 2010), available at <http://mote.org/index.php?src=news&refno=411&category=Newsroom>.

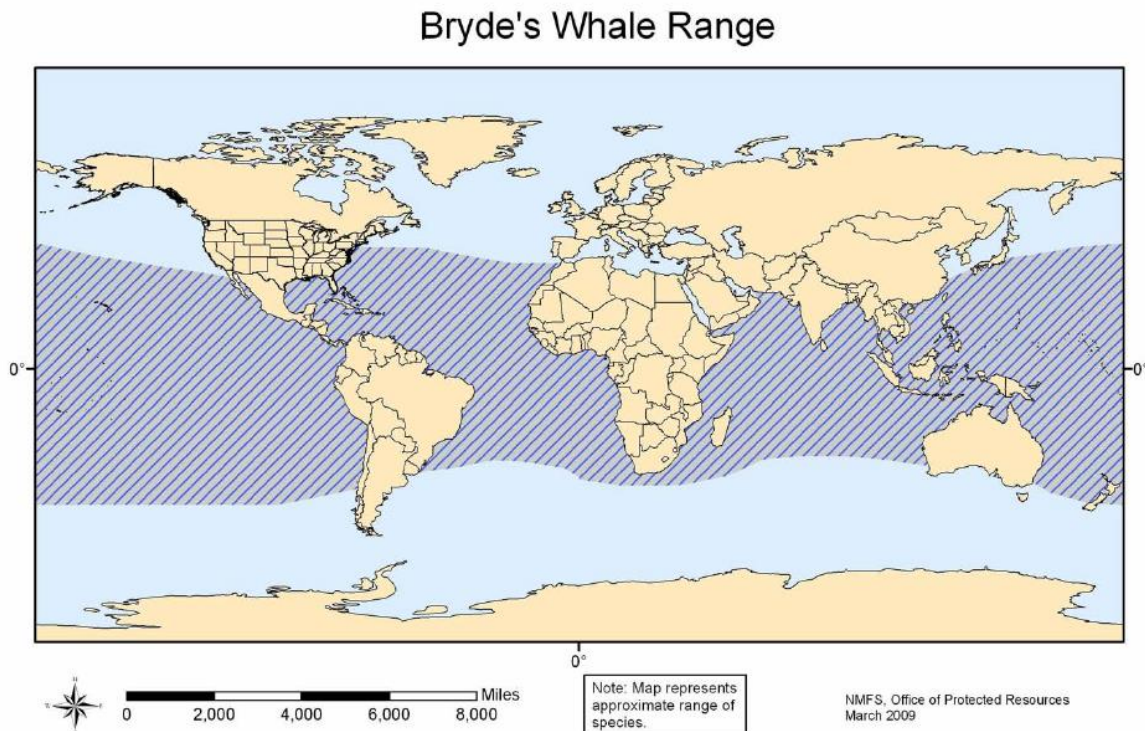
¹⁷³ Rachel Cernansky, "Why Cuba's Sustainability is Not an Accident," at <http://www.treehugger.com/environmental-policy/why-cuba-sustainability-not-accident.html>.

¹⁷⁴ 61 Fed. Reg. 4725.

as listing agencies applying the DPS policy have found several species to be distinct, but did not classify them as DPS because they were not important to the taxon as a whole.¹⁷⁵ While, as discussed above, the Associations believe there to be insufficient evidence that Bryde’s whales in the GoM are distinct, there is even less evidence that the minor distinctions attributed to whales in the GoM, to the extent they exist at all, are in any way significant. Each of the DPS Policy’s indicia of “significance” is discussed in detail below.

i. *The GoM is Not a Unique or Unusual Setting for Bryde's Whales*

Under the DPS Policy, a population segment may be considered to have a “significant distinction” if the population persists in “an ecological setting that is unusual or unique for the taxon.” But there is nothing unusual or unique about the ecology of the GoM. Bryde’s whales are highly adaptable and widely distributed animals. As NMFS’s distribution map makes apparent, Bryde’s whales are present in every ocean, and the majority of every gulf and accessible deep-water sea between 40° N and 40° S, including the GoM.



Bryde's whales are present in the GoM for the same reason they are in tropical and semi-tropical waters around the globe – the GoM provides the water temperature, water depth, and prey species that Bryde's whales prefer.

¹⁷⁵ See e.g., 67 Fed. Reg. 44133 (Jul. 1, 2002); 68 Fed. Reg. 11574 (Mar. 11, 2003); 68 Fed. Reg. 34628 (Jun 10, 2003); 77 Fed. Reg. 25792 (May 1, 2012).

In order for a unique ecology to be of significance to the taxon as a whole, the DPS Policy and subsequent listing agency decisions interpreting it require an evaluation of: (1) whether the species is adapted to the unique ecology in a way that is significant to the taxon as a whole; (2) whether other populations of the species could persist in the ecological setting.¹⁷⁶

NRDC offers, as evidence of adaptation, that Bryde's whales in the GoM make calls that are potentially unique to the GoM population. These calls have a low-frequency downsweep that differs markedly in frequency and repetitive structures from the calls of other populations, and may include a "long moan" involving a sharp rise and gradual downsweep, sometimes followed by tonal calls.¹⁷⁷ NRDC suggests that "[t]hese divergences from the vocal behavior of other whales . . . suggest the presence, in the Gulf population, of a unique acoustic culture."¹⁷⁸ Additionally, NRDC mentions that Bryde's whales in the GoM have measured body lengths that appear to fall between the smaller *edeni* and larger *brydei* expected lengths, and suggests that the GoM population may be "intermediate" to the two subspecies.¹⁷⁹ As discussed above, there is no reason to conclude that the different calls observed for the GoM population are accurately understood to represent an adaptation. Further, as whale lengths in the GoM are no different than elsewhere, the size of Bryde's whales in the GoM does not reflect unique adaptations.

Even if such differences existed (which they do not), and even if they were properly considered "adaptations" (which they are not), they would still not be significant to the taxon as a whole because "the particular variations . . . do not make the population more ecologically or biologically important than any other individual population."¹⁸⁰ As listing agencies have found in other DPS determinations, the DPS Policy sets a high hurdle.

For instance, FWS found that the Sonoran Desert population of the bald eagle did not exist in a unique ecological setting despite the fact that bald eagles typically chose habitat near water and despite evidence of adaptation in: (1) bird size; (2) nest location; (3) egg structure; (4) migratory patterns; (5) breeding times; and (6) food sources.¹⁸¹ FWS reasoned that the existence of variations alone (which are inherent in all widespread species) do not make any population more ecologically or biologically important than any other.¹⁸²

Variations in GoM whales, to the extent they exist at all, are far smaller and less numerous than those found to be insignificant in the Sonoran Desert bald eagle – likely because the GoM is highly ecologically similar to the Atlantic and all other Bryde's whale habitat. The GoM is not a distinguishable ecological setting for the Bryde's whale in any way and certainly not in a significant way. Bryde's whales in the GoM have not adapted to the GoM in any significant way, nor would such adaptations (to the extent they exist at all) make them the only

¹⁷⁶ 77 Fed. Reg. at 25806.

¹⁷⁷ NRDC Petition at 9.

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

¹⁸⁰ 77 Fed. Reg. at 25808.

¹⁸¹ *Id.* at 25806-25808.

¹⁸² *Id.* at 25808.

population suited for the GoM. Therefore, the GoM is not an unusual or unique ecological setting for the Bryde's whale.

ii. *Loss of GoM Stock Would Not Result in a Significant Gap in the Range of the Taxon*

Under the DPS Policy, a population segment may be considered to have a “significant distinction” if loss of the discrete segment would result in a significant gap in the range of the taxon. Again, “significance” is measured relative to the taxon as a whole. In consideration of such, listing services examine: (1) the size of the population segment relative to the taxon as a whole; (2) the size of the population segment's range relative to the range of the taxon as a whole; (3) the likelihood that other populations would immigrate and repopulate the extirpated range; (4) distinctive traits or genetic variations of the population segment; and (5) the role of the population segment's range relative to the taxon as a whole.¹⁸³ As “distinctiveness” (or the lack thereof) is discussed numerous times throughout these comments, we only discuss elements 1, 2, 3, and 5 below.

Significance of Abundance and Range Size of GoM Bryde's Whales¹⁸⁴: The size and population levels of Bryde's whales in the GoM are not significant to the species as a whole. NMFS estimates that there are 33 whales in the northern GoM¹⁸⁵ and around 90,000 to 100,000 worldwide.¹⁸⁶ At the low end, the GoM Bryde's whales constitute as little as 0.025% $((25/100,000)*100)$ of the global population. At the high end, they constitute as much as 0.044% $((40/90,000)*100)$. Consistent with listing agency analyses for the Sonoran Desert population of the bald Eagle and the Lower Kootenai River population of the burbot, such a miniscule percentage of global population could not be considered significant to the taxon as a whole.¹⁸⁷

Assuming for argument's sake that the estimated abundance of Bryde's whales in the northern GoM do limit their range to the whole GoM, that population's range would be 2.434 million cubic kilometers.¹⁸⁸ The total volume of the world's oceans and seas that the Bryde's whale inhabits—excluding the Arctic and Southern Oceans and the Baltic and Mediterranean Seas, which it does not inhabit—is 1,239.88 million cubic kilometers.¹⁸⁹ Based upon these figures, Bryde's whale “range” in the GoM would constitute roughly 0.196% $((2,434,000/1,239,880,000)*100)$ of total global range. Such a small percentage of range is far below the significance thresholds that were used by listing agencies for the Washington

¹⁸³ *Id.* at 25809.

¹⁸⁴ As noted above, the abundance of Bryde's whales is far from certain.

¹⁸⁵ <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/brydeswhale.htm>

¹⁸⁶ *Id.*

¹⁸⁷ 77 Fed. Reg. at 25809; 68 Fed. Reg. at 11579.

¹⁸⁸ <http://www.epa.gov/gmpo/about/facts.html>

¹⁸⁹ http://ngdc.noaa.gov/mgg/global/etopo1_ocean_volumes.html

population of the grey squirrel, the Sonoran Desert population of the bald eagle, and the Lower Kootenai River population of the burbot.¹⁹⁰

Likelihood of Immigration and Repopulation: If the GoM population of Bryde's whales were hypothetically extirpated, it is likely that the GoM would be repopulated through immigration through the Straits of Florida or the Yucatan Channel, provided that the ecosystem supporting the whales remained productive. Bryde's whales are opportunistic feeders, follow mid-trophic prey, and are known to suddenly populate or abandon areas based on prey availability. If such an elimination and re-colonization of the entire GoM did occur (which it will not), the new GoM population (presumably from the Atlantic Ocean or Caribbean) would likely be genetically indistinct from the current population in the GoM.¹⁹¹

An analogous situation arose with the Eastern North Pacific Southern Resident stock of killer whales,¹⁹² which is a resident population that shares its range with a "distinct" migratory population.¹⁹³ NMFS held that immigration by the migratory population provided sufficient likelihood of repopulation that the "significant gap" element was not met.¹⁹⁴ Even where the listing agency had strong evidence that the extirpated range would not be repopulated, they determined that the loss of that portion of range is not meaningful unless it can be shown to have a significant role for the taxon as a whole.¹⁹⁵ As explained in the following subsection, the GoM does not play a significant role for the worldwide Bryde's whale population.

Significance of Role of the GoM to the Bryde's Whale: The GoM does not constitute a significant portion of Bryde's whale range, nor does it contain a significant population of Bryde's whales. As the GoM is accessible to, and likely being accessed by, contiguous Bryde's whale populations, GoM whales do not have any genetic or evolutionary distinction from any contiguous populations.

Still, despite the absence of such factors, a specific population can be significant to the taxon as a whole if extirpation there caused other populations to be isolated from each other.¹⁹⁶ That is not the case in the GoM, however. The GoM rests on the periphery of the Atlantic and, being semi-enclosed, provides no linkage or bridge between two or more different Bryde's whale populations. Nor does the GoM provide exclusive feeding or breeding grounds for the taxon.¹⁹⁷ The GoM is a small, peripheral, and largely indistinguishable part of the Bryde's whale's worldwide range. Consistent with the DPS policy, listing services have found such populations

¹⁹⁰ 68 Fed. Reg. at 34637; 77 Fed. Reg. at 25809; 68 Fed. Reg. at 11579.

¹⁹¹ See Rosel & Wilcox (2014).

¹⁹² See 67 Fed. Reg. 44133.

¹⁹³ *Id.* at 44135.

¹⁹⁴ *Id.* at 44137.

¹⁹⁵ 77 Fed. Reg. at 25809; 68 Fed. Reg. at 34637; 68 Fed. Reg. at 11578.

¹⁹⁶ 61 Fed. Reg. at 4724; *see also* 62 Fed. Reg. 10730 (Mar. 10, 1997).

¹⁹⁷ See 77 Fed. Reg. 25809.

do not play significant roles for their overall taxon¹⁹⁸ and NMFS should make a similar finding here as well. A hypothetical loss of Bryde's whales in the GoM would not significantly reduce Bryde's whale population, range, physical, genetic, or behavioral diversity; or the health, abundance, or diversity of contiguous populations. Indeed, it is highly likely that the GoM would be repopulated by migratory populations that are suspected to visit the GoM. As such, loss of the GoM population would not lead to a significant gap in the range of the Bryde's whale taxon.

In summary, the Bryde's whale population in the GoM is not a population whose loss would result in a significant gap in the range of the taxon; in fact, the GoM population is more comparable to a peripheral population that "survive more frequently than do populations in the core of their historical range when species undergo dramatic reductions in their range."¹⁹⁹ Individuals in peripheral populations, as recognized by the courts, "may develop specific traits valuable to the species as a whole,"²⁰⁰ which would then make them potentially significant to the taxon. However, as discussed above, there is no evidence that Bryde's whales in the GoM have developed any specific traits that are particularly valuable to the species as a whole—any differences that may exist have not been shown to be adaptations.

iii. *The GoM Population is Not the Only Surviving Natural Occurrence of the Bryde's Whale*

Under the DPS Policy, a population can be shown to be significant to the taxon as a whole if there is evidence that the population represents the only surviving natural occurrence of the taxon that may be more abundant elsewhere as an introduced population outside its historic range. NRDC presented no evidence on this element, presumably because Bryde's whales have never been introduced anywhere.

Naturally occurring populations of the species inhabit every ocean, and nearly every gulf and accessible deep water sea between 40° N and 40° S. The global population is relatively abundant and occupies the entire historic range of the species.

iv. *GOM Stock Does Not Differ Markedly from Other Populations*

The final grounds for deeming a distinct segment to be "significant," among those suggested in the DPS Policy, is that it "differs markedly from other populations of the species in its genetic characteristics." Importantly, this requirement presents an even higher hurdle than the "marked separation" standard in the DPS Policy's "discreteness" analysis because here, the genetic differences not only have to be "markedly different," but those marked differences have

¹⁹⁸ For example, in response to the petition to list the Washington population of the Western grey squirrel as a DPS, FWS found that even if all grey squirrel were extirpated from the entire state of Washington, such a gap would not be significant because they could not show that the Washington population had any biological or ecological significance to the overall taxon. 68 Fed. Reg. at 34637.

¹⁹⁹ *Center for Biological Diversity v. Jewell*, No. CV-12-02296-PHX-DGC, 2014 WL 5703029, at *12 (D. Ariz. Nov. 5, 2014).

²⁰⁰ *Center for Biological Diversity v. Jewell*, No. CV-12-02296-PHX-DGC, 2014 WL 5703029, at *12 (D. Ariz. Nov. 5, 2014).

to be significant to the taxon as a whole.²⁰¹

The best available scientific data on the genetic distinction of the GoM stock is that they may be divergent from their nearest tested neighbors in South Africa, but are identical to Bryde's whales sampled in the Atlantic Ocean. Until genetic comparisons have been made to Caribbean and western Atlantic Bryde's whales, no clear distinction can be made as to whether there is a separation of the populations.

Even if the modest differences in the relative frequencies of mtDNA haplotypes were considered "markedly different," those differences could not be considered significant to the taxon as a whole. In the DPS analysis for the Lower Kootenai River burbot, as in the present case, the sampled populations showed some differences in haplotype frequency; however, the listing agency found that such differences did "not indicate that genetic differentiation of this population segment is significant to the remainder of the population."²⁰² Instead, the Service concluded that "the genetic difference that is presented in the studies is nothing more than what would be expected from such a wide-ranging species."²⁰³

As such, NMFS cannot find GoM Bryde's whales' modest differences in the relative frequencies of mtDNA haplotypes found in South Africa and the Indian and Pacific Oceans to be significant to the taxon as a whole.

D. Even if Bryde's Whales in the GoM Are a DPS, the Best Available Information Indicates They Are Not Endangered

The NRDC Petition is strategically constructed to make a globally abundant and well-protected species appear to be at risk of extinction by arbitrarily dividing the species into segments small enough to make the case for listing. Section C of these comments explains in detail that the petition's conclusions regarding distinctiveness and significance are based on little more than a selective reading on limited, inconclusive, and premature studies. The best information available suggests that Bryde's whales in the GoM are part of a larger population that is healthy, abundant, protected, and widely dispersed. NRDC's misinterpretation of the discreteness of the DPS in the GoM is likely the strongest evidence of its related misapprehension about the risk of extinction. Because the Associations discussed the DPS analysis at length, however, we do not repeat those critiques here.

This section responds to the NRDC Petition's conclusion that Bryde's whales in the GoM are endangered.²⁰⁴ Under the ESA, an endangered species is "any species in danger of extinction throughout all or a significant portion of its range."²⁰⁵ A "threatened" species is "any species

²⁰¹ 77 Fed. Reg. at 25809.

²⁰² 68 Fed. Reg. at 11578.

²⁰³ *Id.* at 11578.

²⁰⁴ NRDC Petition at 10.

²⁰⁵ 16 U.S.C. § 1532(6).

which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”²⁰⁶ Bryde’s whales in the GoM do not meet either definition.

The ESA mandates that NMFS evaluate the Bryde’s whale’s risk of extinction in light of five listing factors:

1. the present or threatened destruction, modification, or curtailment of its habitat or range;
2. overutilization for commercial, recreational, scientific, or educational purposes;
3. disease or predation;
4. the inadequacy of existing regulatory mechanisms; and,
5. other natural or manmade factors affecting its continued existence.²⁰⁷

The NRDC Petition suggests that Bryde’s whales in the GoM are “endangered by at least three of the five listing factors; present modification of its habitat, the inadequacy of existing regulatory mechanisms, and other natural or manmade factors.”²⁰⁸ We discuss each of these factors below.

For context, however, it is important to note that whales, including Bryde’s whales, have been living in close proximity to the offshore oil and gas industry for decades,²⁰⁹ and there is no evidence that Bryde’s whale populations in the GoM are declining and no evidence that they are being harmed.

Anthropogenic losses of Bryde’s whales are exceptionally low in the GoM and, with the exception of observed mortalities off New Zealand where a Bryde’s whale population resides in the small and heavily trafficked Hauraki Gulf, anthropogenic losses are low through their worldwide range. In 2001, the Marine Mammal Commission conducted a comprehensive review of whale strandings and collision reports dating back to the 1800s.²¹⁰ That report revealed that, throughout history, there have only been three reports of Bryde’s whales being killed by ship strikes: (1) a mortality from 1950 in the Red Sea; (2) a mortality off Australia in 1992; and (3) a mortality in the Caribbean in 2000.²¹¹ Since that report was published, NMFS provided one additional report of a fatal ship strike near Tampa, Florida.²¹²

While the Associations recognize that undercounting of Bryde’s whale mortalities may occur and that it can be a problem in some localized Pacific populations, stranding reports along the U.S. Atlantic coast and GoM similarly suggest that human activities are not harming Bryde’s

²⁰⁶ 16 U.S.C. § 1532(20).

²⁰⁷ 16 U.S.C. §§ 1533(a)(1)(A)-(E); 50 C.F.R. §§ 424.11(c)(1)-(5).

²⁰⁸ NRDC Petition at 10.

²⁰⁹ Sperm Whale Seismic Study Synthesis Report (“SWSS Report”) 2008 at 271.

²¹⁰ See Laist (2001).

²¹¹ Laist (2001) at 48, 69.

²¹² 2012 Stock Assessment.

whales. There are eight confirmed reports of Bryde's whale strandings along the U.S. coast of the GoM between 1975 and 1996, none of which show evidence of a ship strike or anthropogenic harm.²¹³ And, along the U.S. Atlantic Coast, where there were also eight confirmed Bryde's whale strandings (6 between 1975 and 1996,²¹⁴ and two additional reported in North and South Carolina²¹⁵), none of the whales exhibited signs of ship strikes or other anthropogenic harm.²¹⁶

Nonetheless, even if every Bryde's whale stranded on the U.S. coasts of the Atlantic or GoM since 1975 were attributed to human activity, the mortality rate would only be 0.4 per year. Again, stranding records may undercount mortality, but stranding records provide the best evidence available on potential anthropogenic loss in U.S. waters. Attributing each known stranding to an anthropogenic cause despite evidence to the contrary may well be overly-conservative.

1. Present Modification of Habitat

The NRDC Petition suggests that a wide variety of current and potential habitat-modifying activities and occurrences place Bryde's whales in the GoM in danger of extinction. The petition's conclusions, however, are belied by the best available information.

i. Ship strikes

The NRDC Petition concludes that ship strikes are "one of the most troubling threats . . ." to Bryde's whales in the GoM.²¹⁷ NRDC's analytical basis for this conclusion is that ship strikes may be harming *right whales* in the *North Atlantic* for which vessel speed restrictions have been put in place to mitigate, and because there are no speed restrictions in the GoM, Bryde's whales in the GoM must be in danger of extinction due to ship strikes.²¹⁸ Plainly, this is not an example of the application of best available information, or, for that matter, sound reasoning.

As a threshold matter, there are vessel speed restrictions and detailed protocols for avoiding marine mammals in the GoM.²¹⁹ And, importantly, they measures seem to be effective.

The NRDC Petition identified only a single instance of a Bryde's whale being killed from a ship strike.²²⁰ In a further attempt to find a threat where none exists, the NRDC Petition misconstrues Laist (2001) to suggest that "Bryde's whales have suffered an alarming and likely unsustainable rate of ship strikes with eight whales struck in the Gulf of Mexico from 1975 to

²¹³ Laist (2001) at 44.

²¹⁴ Laist (2001) at 44.

²¹⁵ Rosel (2014).

²¹⁶ Laist (2001) at 44, Rosel (2014).

²¹⁷ NRDC Petition at 11.

²¹⁸ NRDC Petition at 11.

²¹⁹ See 2012-Joint-G01 NTL.

²²⁰ NRDC Petition at 11.

1996.”²²¹ The opposite is true. Laist (2001) reported that, of the 31 dead whale strandings in the GoM from 1975 to 1996, “[o]nly one stranding was identified as a possible ship strike – a sperm whale. . .”²²² Similarly, in its evaluation of six Bryde’s whale strandings on the Atlantic Coast between 1975 and 1996, Laist (2001) found that “[n]one of the six Bryde’s whales . . . revealed signs of a ship collision.”²²³

Finally, NRDC suggests that Bryde’s whales will be placed in danger of extinction from ship strikes after construction of third lane of the Panama Canal is completed and causes ship traffic to increase “*through the canal*.”²²⁴ But, the NRDC Petition elsewhere concludes that Bryde’s whales do not move from their narrow range in the Northern GoM, much less through the Panama Canal. Nor does the petition suggest that the expansion of the Panama Canal would increase traffic in the GoM. It is equally likely that increased capacity in the Panama Canal would decrease shipping traffic in areas like the GoM.

In sum, the NRDC Petition provides no evidence that ship strikes are placing Bryde’s whales in the GoM in danger of extinction. To the contrary, the best information available plainly shows that ship collisions with Bryde’s whales through U.S. waters are rare. Additional research is necessary to determine whether absence of this threat is a function of the Bryde’s whale’s evasiveness or the amount of time it spends deeply submerged. Nonetheless, there is little basis to conclude that ship strikes are adversely impacting Bryde’s whale populations globally and even less basis to consider ship strikes a threat in the heavily regulated and monitored DeSoto Canyon.

ii. *Present & Potential Presence of Oil and Dispersant*

The NRDC Petition further asserts that the Deepwater Horizon incident and the prospect of a similar disaster in the future place Bryde’s whales in the GoM in danger of extinction. As noted, by NMFS, exposures to petroleum compounds and dispersants may have negative impacts on marine mammals, but those impacts are highly dependent on a number of factors, such as frequency and duration of exposure, the type and mixtures of the chemical/compounds, the route of exposure, and the species known avoidance of oily water.²²⁵

The NRDC Petition seeks to establish a risk to Bryde’s whales in the DeSoto Canyon (which was not inundated with oil from the Deepwater Horizon spill) through reference to adverse effects reported in dolphins in Barataria Bay (which was reportedly inundated with oil).²²⁶ Given the stark differences in the species, habitat, and apparent exposure levels, it is unclear why the impacts reported in the dolphins provide an appropriate basis to extrapolate risks to Bryde’s whales.

²²¹ Laist (2001).

²²² Laist (2001) at 44.

²²³ Laist (2001) at 41.

²²⁴ NRDC Petition at 11 (emphasis added).

²²⁵ 2012 Stock Assessment at 116.

²²⁶ NRDC Petition at 12.

The NRDC Petition also cites to a single sample taken by Wise (2012) from a Bryde's whale following the spill which showed elevated levels of chromium (Cr) and Nickel (Ni). The elevated levels, however, were measured from a suspected "baseline" of sperm whale samples from outside the GoM. Cr and Ni sampling has not been conducted on Bryde's whales in the GoM or anywhere else before or after the Deepwater Horizon incident. Nor is there any data that the observed Cr and Ni levels in the single Bryde's whale that was sampled was unsafe or could adversely impact the whale.

Further, while we understand that Wise (2012) focused on Cr and Ni because of their toxicity and persistence in tissue, these are elements that are both naturally occurring and widespread. The prevalent use of these elements and their natural presence in water, soil, and naturally occurring oil seeps prohibits any conclusion that the elevated level observed in a single Bryde's whale could be attributed to oil released from Deepwater Horizon. Given Bryde's whales' propensity for avoidance, their unlikely presence in direct proximity to the Deepwater Horizon platform and response area and the absence of any known or suspected Bryde's whale mortalities, the best information available suggests that Bryde's whales in the GoM were not put in danger of extinction by the Deepwater Horizon incident or the response thereto.

The NRDC's related conclusion that Bryde's whales in the GoM are placed at risk of extinction due to the increased likelihood of a potential future incident on the scale of Deepwater Horizon has no basis. The petition cites only to the GoM's estimated hydrocarbon yield. Yet, increased production levels do not equate to increased spill risks, particularly where, as here, large-scale spills are incredibly rare and, by no measure, considered likely. The best available information with respect to future risks of another catastrophic spill is that the level of new safeguards and protections that are in place to minimize the potential for such a disaster have increased dramatically.

The Associations believe that the Service's response to similarly speculative risk conclusion in a petition to list the Caribbean electric ray provides an appropriate and relevant response here as well:

The petition mentions the BP Deepwater Horizon (DWH) oil spill that occurred in April 2010. The petition claims that following the DWH oil spill disaster, the threat of habitat modification and degradation is now more acute for Gulf of Mexico marine life, including the Caribbean electric ray. The petition concludes that 'the current oil spill situation, combined with the already-strained ecosystems in the Gulf of Mexico and coastal areas within the Ray's range, is a recipe for extinction, particularly given its current lack of ESA protection.' The petition further states that drilling for oil and gas subjects marine species, including the Caribbean electric ray, to elevated risks. Finally, the petition references the IUCN's statement that pollution and oil exploration may also adversely affect the habitat of the Caribbean electric ray, although

no specific information is available (Carvalho *et al.*, 2007), as supporting evidence of habitat degradation.

We acknowledge that coastal habitats in the United States are being impacted by urbanization and oil and gas exploration may adversely affect the marine environment. The DWH oil spill was an unprecedented disaster, likely impacting the marine ecosystem in ways that may not be fully known for decades. However, the petition fails to provide any information on the specific effects to Caribbean electric rays beyond broad statements on the impacts of coastal development and oil and gas exploration. Thus, these threats do not constitute substantial information that listing may be warranted.²²⁷

iii. Other Toxic Chemicals

The NRDC Petition alleges also that Bryde's whales in the GoM are in danger of extinction because various persistent organic pollutants (POPs) may enter the GoM through air deposition and certain (unexplained) effluents and increase to such levels that, when combined with decades of bioaccumulation, may be toxic to Bryde's whales.²²⁸ To support this notion, the petition states that the Gulf of Maine, which has no Bryde's whales, contains "contaminant loads" that "exceed levels known to cause immunosuppression and other dysfunction in other marine mammal species."²²⁹ Importantly, baleen whales were not among the "other marine mammal species" in which adverse impacts were observed.²³⁰ Baleen whales generally exhibited lower concentrations of POPs than other cetaceans.²³¹

It is not altogether clear why NRDC understood this information to represent a risk of extinction to Bryde's whales in the GoM, but it certainly does not reflect such a risk. If anything, this information suggests that Bryde's whales are better equipped than other marine mammals to endure a hypothetical and dramatic increase in POPs in the GoM.

iv. Acoustic Impacts

The NRDC Petition also alleges that Bryde's whales in the GoM are in danger of extinction because of various acoustic impacts.²³² Again, the best scientific data available suggests otherwise.

²²⁷ 76 Fed. Reg. 15947 (Mar. 22, 2011).

²²⁸ NRDC Petition at 14.

²²⁹ NRDC Petition at 14.

²³⁰ Elfes (2010).

²³¹ NRDC Petition at 14.

²³² NRDC Petition at 14.

NRDC provides no direct evidence that acoustic impacts harm Bryde's whales. Instead, the NRDC petition cites studies describing anthropogenic noise sources and studies hypothesizing impacts on other marine mammals. Indeed, the most generous reading of the studies underpinning the NRDC Petition is that some level of some types of anthropogenic noise may adversely impact some marine mammals to some minor degree, if at all. There is no information to suggest that Bryde's whales, which do not use echolocation, are presently harmed, or would be harmed in the future, by anthropogenic noise in the GoM. Generalized assertions of peril such as this can be disregarded even under the low analytical bar required for 90-Day findings.²³³

Even if adverse impacts from anthropogenic sound could be credibly shown for Bryde's whales, the NRDC Petition failed to show that Bryde's whales in the GoM are exposed to that marine sound. The NRDC Petition suggests that these acoustic threats include shipping noise, sonar, seismic surveying, and various sounds relative to oil and gas platform construction, use, and demolition.²³⁴

Ship noise likely occurs throughout the GoM and every other marine environment inhabited by Bryde's whales, but arguably less so in the DeSoto Canyon because a large percentage of GoM vessel traffic are fishing boats that are prohibited in the DeSoto Canyon. Oil and gas exploration likewise does not occur in the DeSoto Canyon. The Navy conducts only very limited sonar use in the GoM.²³⁵ Where seismic surveys are conducted (again, not in the DeSoto Canyon), they are conducted pursuant to strict regulatory requirements which include, but are not limited to observers, start-up clearances, ramp-up procedures, and shut down requirements to reduce or eliminate harm to marine mammals.²³⁶ Regardless, even if future seismic survey activities were conducted in the DeSoto Canyon, there is no evidence that anthropogenic sound from these surveys could negatively impact populations of Bryde's whales.

The best scientific information available therefore shows that Bryde's whales are not threatened with extinction by anthropogenic sound and that they are protected from potential sources of marine sound throughout the GoM, and particularly in the DeSoto Canyon where their densest populations are believed to occur. The NRDC Petition's generalized speculations provide no evidence to the contrary.

v. *Ocean Acidification*

The NRDC Petition alleges that Bryde's whales are at risk of extinction due to ocean acidification.²³⁷ "Ocean acidification" refers to the decrease in the pH of the oceans caused by

²³³ See 76 Fed. Reg. 15947 (Mar. 22, 2011).

²³⁴ NRDC Petition at 14.

²³⁵ Atlantic Fleet Training and Testing EIS (2013).

²³⁶ 2012 Stock Assessment at 116 (citing JOINT NTL 2012-G02).

²³⁷ NRDC Petition at 14.

the uptake by seawater of CO₂ from the atmosphere.²³⁸ More precisely, once dissolved in seawater, CO₂ reacts with water to form the bicarbonate ion, HCO₃⁻ (a weak base) and to yield the H⁺ ion (proton).²³⁹ Seawater (to a considerable depth that varies with local conditions) is naturally supersaturated with a related stronger base, the carbonate ion (CO₃²⁻) that acts like an antacid to neutralize some of the protons, forming more bicarbonate ions. The net reaction is: CO₂ + H₂O + CO₃²⁻ → 2HCO₃⁻.²⁴⁰ As not all of the protons from the initial CO₂ absorption reaction are so neutralized, the local proton concentration increases and the local ocean pH slightly declines as a result. The magnitude of these chemical changes depends on local conditions, varying with depth, distance from shore, temperature, local seawater chemistry, atmospheric composition of CO₂ and other factors such as seawater mixing patterns. The timing or severity of ocean acidification in the GoM are largely unknown, but generally, ocean acidification impacts are frequently projected to be more proximate and sizable closer to the poles.

NRDC's basis for concluding that ocean acidification places Bryde's whales in the GoM in danger of extinction is that ocean acidification may kill off the lower trophic crustaceans, copepods, and krill on which Bryde's whales feed.²⁴¹ First and foremost, there is no credible basis to conclude that ocean acidification will cause a catastrophic die-off of lower trophic level species, such as phytoplankton and zooplankton that form calcareous protective shells. Scientists have voiced concerns that these species may be affected, but even the studies which the NRDC Petition cites note that our understanding of the potential impact of ocean acidification on these species is in its infancy.²⁴²

Moreover, as opposed to other species of baleen whales, Bryde's whales primarily target mid-trophic fish like mackerel, sardines, anchovies, and herring.²⁴³ While Bryde's whales can, and do, opportunistically feed on lower trophic crustaceans, copepods, and krill, these species likely constitute a relatively small percentage of the Bryde's whale's diet.²⁴⁴ To suggest that hypothetical die-offs of lower trophic fish may cascade throughout the food chain is speculative, and, at any rate, would suggest that *all* species are presently at risk of extinction. To the extent that the NRDC Petition is suggesting that Bryde's whales in the GoM will be a part of a global collapse of oceanic species, that suggestion is at odds with the best available science. The best evidence available suggests that ocean acidification is not a threat to Bryde's whales in the GoM now or in the foreseeable future.

²³⁸ Memorandum from Denise Keehner, Director, Office of Wetlands, Oceans, Watersheds, USEPA to Water Division Directors, Regions 1-10, entitled, "Integrated Reporting and Listing Decisions Related to Ocean Acidification." Nov. 15, 2010 ("2010 EPA Memo").

²³⁹ A small fraction of the dissolved CO₂, about 0.12 percent on a molar basis in seawater, reacts with water to form carbonic acid, H₂CO₃. In equilibrium calculations, convention is to consider non-ionized CO₂ the sum of dissolved CO₂ and non-dissociated H₂CO₃, the reaction of which with water forms HCO₃⁻ as noted.

²⁴⁰ <http://theotherco2problem.wordpress.com/what-happens-chemically/> (accessed 5/20/15).

²⁴¹ NRDC Petition at 14.

²⁴² Guinotte (2008).

²⁴³ Tershy (1993).

²⁴⁴ Tershy (1993).

vi. Entanglement in Fishing Gear

The NRDC Petition concludes that fishing gear is adversely modifying Bryde's whale habitat in the GoM and that the risk of entanglement in that gear places Bryde's whales in the GoM in danger of extinction. But, gear entanglement of Bryde's whales has never been shown to be a source of mortality in the GoM or anywhere else in their worldwide population.

A single Bryde's whale was killed in the Hawaii-based longline fishery between 1994 and 2005.²⁴⁵ In the GoM, there have been no reports of Bryde's whale entanglement between 1998 and 2010.²⁴⁶ In fact, there have never been reports of Bryde's whale entanglement in the GoM.

Nor is there any reasonable prospect that gear entanglement risks will suddenly materialize in the GoM. The DeSoto Canyon (the only place in the GoM where NRDC believe Bryde's whales exist), is closed to long-line fishing.²⁴⁷ Long-line fishing boats are not even allowed to be present in, or traverse, the DeSoto Canyon. And, as discussed in more detail below, fishing effort in the GoM is declining generally. Accordingly, the best information available strongly suggests that Bryde's whales in the GoM were never threatened with extinction due to gear entanglement and that there is no reasonable prospect that this threat will suddenly emerge now or in the foreseeable future.

vii. Overfishing of Prey

Bryde's whales are opportunistic feeders with a wide range of prey species, including plankton, crustaceans, and small schooling fish such as anchovies, sardines, and mackerel.²⁴⁸ The NRDC Petition alleges that the decline in aggregate commercial fisheries catch between 1984 and 2010 indicates a collapse in fish stock productivity, which "may suggest other impacts on the Bryde's whale, including reduction in prey due to bycatch, that are not known."²⁴⁹ This claim makes improper generalizations about ecosystem interactions, misrepresents the cause of the reduced catches, and grossly mischaracterizes the status of GoM fisheries.

From the outset, it is impossible to generalize the potential effects of changes in forage fish abundance on other ecosystem components such as whales and other predators. In fact, one of the most robust scientific analyses of forage fishery and ecosystem considerations concluded that a range of top predator responses to forage fish abundance has been observed from changes in the sizes of female North Sea grey seals after birth that were correlated with the abundance of sand eel to a constant level of energy delivered to common guillemot chicks that was independent of forage fish total availability over time. It noted that ecosystem interactions are

²⁴⁵ <https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-412.PDF>

²⁴⁶ Stock Assessment Report (2012).

²⁴⁷ 50 C.F.R. §635.21.

²⁴⁸ See, e.g., NOAA Fisheries, *Bryde's Whale (Balaenoptera edeni)* (2014) <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/brydeswhale.htm>.

²⁴⁹ NRDC Petition at 22.

unique and complex and that “single-stock [forage fish] collapses may not always be detrimental for predators in the long term.”²⁵⁰

Moreover, the decrease in fishery catches since the mid-1980s stems not from declining biomass, but more effective laws that have in fact *increased* stock sizes. Congress first enacted the Magnuson-Stevens Fishery Management and Conservation Act,²⁵¹ which drives fisheries management in federal waters, in 1976. Subsequent reauthorizations, along with major advancements in scientific understanding and increased enforcement capabilities, have greatly strengthened its protections. Notably, the Act requires that every federally-managed stock is restricted to a science-based annual catch limit in order to prevent overfishing and imposes accountability measures if that limit is exceeded.²⁵² Additionally, if a stock is overfished, the Act requires development and implementation of a plan to rebuild the population to sustainable levels, generally within 10 years.²⁵³ All stock assessments include natural mortality estimates, meaning that the availability of a stock as prey is explicitly considered in setting catch limits.

Among all federal fisheries of the GoM, only greater amberjack, gray triggerfish, and hogfish are experiencing overfishing.²⁵⁴ None of these stocks are components of the Bryde’s whale diet.

The pelagic fish that are, in fact, consumed by the whale have increased in biomass since 1984. Total biomass of GoM king mackerel increased sharply between 1985 and 2008, although it has since declined slightly.²⁵⁵

²⁵⁰ Myron Peck *et al.*, *Forage Fish Interactions: A Symposium on “Creating the Tools for Ecosystem-Based Management of Marine Resources,”* 71 ICES Journal of Marine Science (2014).

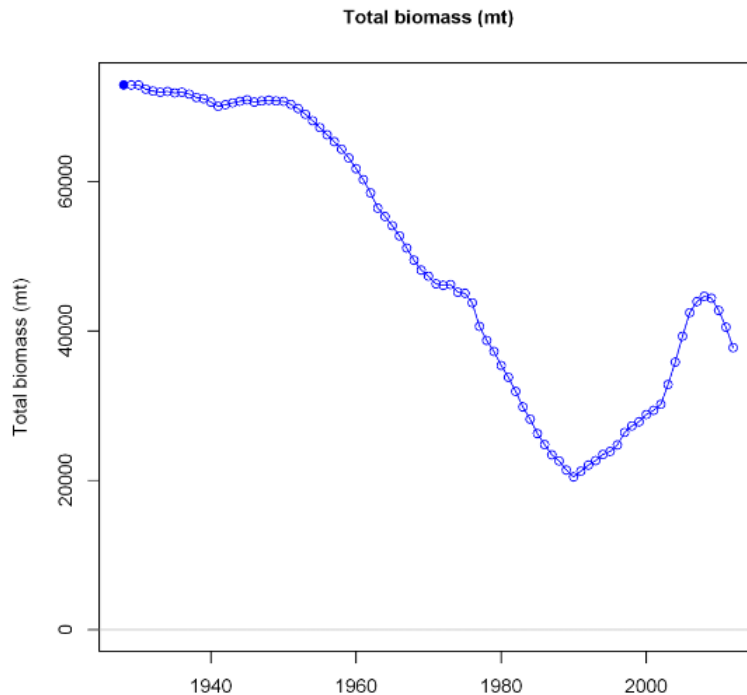
²⁵¹ 16 U.S.C. §§ 1801-1884.

²⁵² 16 U.S.C. § 1853(a)(15).

²⁵³ 16 U.S.C. § 1854(e)(3)-(4).

²⁵⁴ NOAA Fisheries, *Status of Stocks 2014* (Apr. 15, 2015), available at http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/archive/2014/2014_status_of_stocks_final_web.pdf.

²⁵⁵ Note that biomass estimates in recent years are more uncertain in stock assessments. Southeast Data, Assessment, and Review, *SEDAR 38 Stock Assessment Report, Gulf of Mexico King Mackerel* (Sept. 2014) at 95.



Spanish mackerel, an important prey species for Bryde’s whales, has continuously increased in abundance since the late 1980s.²⁵⁶ Nor has fishing activity reduced crustacean stocks to unsustainable levels. The major shrimp fisheries in the GoM target penaeids (brown, pink, and white shrimp), and are carefully managed. Even though they are not subject to annual catch limits because of their very short lifecycles, they are each monitored annually and have not been overfished for more than 40 years.²⁵⁷ Their abundance is more closely linked to annual environmental conditions than to other factors, and therefore the population is naturally variable even in the absence of any fishing.²⁵⁸ Plankton (krill) abundance is similarly dependent on annual environmental conditions, and there are no commercial or recreational plankton fisheries in the GoM.

Due to generally increasing populations of the schooling fish species on which Bryde’s whales are known to prey (e.g. Spanish mackerel, king mackerel, herring,), the absence of overfishing or overfished status for any of the Bryde’s whale’s prey stocks, and strict legal requirements limiting fishery catches to sustainable science-based levels, overfishing and prey reductions are not factors that could contribute to an endangered listing.

²⁵⁶ Southeast Data, Assessment, and Review, *SEDAR 28 Stock Assessment Report, Gulf of Mexico Spanish Mackerel* (Apr. 2013) at 19.

²⁵⁷ Gulf of Mexico Fishery Management Council, *Amendment 15 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico, U.S. Waters Public Hearing Draft* (Aug. 2014) at 32.

²⁵⁸ NOAA Fishwatch, *Brown Shrimp* (2014), http://www.fishwatch.gov/seafood_profiles/species/shrimp/species_pages/brown_shrimp.htm.

2. Existing Regulatory Mechanisms

The Bryde's whale is currently protected by a large suite of laws and regulations. Although the Petition alleges that each law by itself is inadequate to protect the species, the laws cannot be viewed in isolation. Rather, the applicable body of law, taken as a whole, addresses and effectively minimizes each of the risks claimed in the Petition. Furthermore, an ESA listing would not provide additional protection from these risks.²⁵⁹ The discussion below includes a nonexclusive list of authorities that provide protection to the Bryde's whale.

i. Ship strike mortality

Bryde's whales, like all marine mammals, are protected under the Marine Mammal Protection Act (MMPA).²⁶⁰ The MMPA confers NMFS with regulatory authority to limit marine mammal takings to levels that will not be of detriment to the species.²⁶¹ It further imposes a moratorium on all taking and importing of marine mammal species and their products, subject to exceptions for certain activities pursuant to NMFS review and determination.²⁶²

NMFS has used its MMPA authority to protect whale populations when it has deemed it necessary to do so, including to prevent ship strike mortality. In the North Atlantic, for example, NMFS has used this authority to limit vessel speeds in order to prevent North Atlantic right whale strikes.²⁶³ The Ports and Waterways Safety Act (PWSA)²⁶⁴ provides additional authority for regulating against ship strikes, and has similarly been used to protect the North Atlantic right whale. The PWSA requires mandatory ship reporting systems, which are considered a critical aid in preventing strikes, as they allow direct communication about sightings to ship operators in high risk areas and assist in gathering data on where strikes are likely to occur.²⁶⁵ In addition to this type of requirement, narrowed traffic separation lanes, recommended routes, and transit closures could also potentially be promulgated under either the PWSA or the MMPA to increase protection for the Bryde's whale.

There are also specific vessel strike avoidance measures in the GoM, including those identified in 2012-Joint-G01 NTL:

1. Vessel operators and crews should maintain a vigilant watch for marine mammals and sea turtles and slow down or stop their vessel to avoid striking protected species.

²⁵⁹ Seismic surveys, oil and gas production, and fishing activities currently take place (albeit with heavy restrictions) within the permitting area, despite the presence of endangered or threatened sperm whales, sea turtles, and fish.

²⁶⁰ 16 U.S.C. §§ 1361-1423h.

²⁶¹ 16 U.S.C. § 1373.

²⁶² 16 U.S.C. § 1371.

²⁶³ 73 Fed. Reg. 60173 (Oct. 10, 2008).

²⁶⁴ 33 U.S.C. §§ 1221-1236.

²⁶⁵ 66 Fed. Reg. 58066 (Dec. 20, 2001).

2. When whales are sighted, maintain a distance of 100 yards (91 meters) or greater from the whale. If the whale is believed to be a North Atlantic right whale, you should maintain a minimum distance of 500 yards (457 meters) from the animal (50 CFR 2224.103).
3. When sea turtles or small cetaceans are sighted, attempt to maintain a distance of 50 yards (45 meters) or greater whenever possible.
4. When cetaceans are sighted while a vessel is underway, attempt to remain parallel to the animal 's course. Avoid excessive speed or abrupt changes in direction until the cetacean has left the area.
5. Reduce vessel speed to 10 knots or less when mother/calf pairs, pods, or large assemblages of cetaceans are observed near an underway vessel when safety permits. A single cetacean at the surface may indicate the presence of submerged animals in the vicinity of the vessel; therefore, precautionary measures should always be exercised.
6. Whales may surface in unpredictable locations or approach slowly moving vessels. When you sight animals in the vessel 's path or in close proximity to a moving vessel, reduce speed and shift the engine to neutral. Do not engage the engines until the animals are clear of the area.

If mortality from ship strikes is found to be a serious threat to the Bryde's whale, the MMPA and PWSA likely provide NMFS and other regulatory agencies ample, adequate authority to implement regulations mitigating that threat. Furthermore, they are the most appropriate mechanisms for doing so, as these processes involve the relevant stakeholders and scientific experts. An ESA listing would not provide additional protection.

ii. *Presence of oil from Deepwater Horizon/risk from future oil spills*

Offshore oil and gas activities are regulated by a comprehensive set of laws, which both act to prevent oil spills and mitigate their effects if such spills do occur. Although these laws have not prevented all catastrophic spills from occurring throughout their histories, regulations have been substantially strengthened since 2010.

The primary law related to all aspects of offshore energy production is the Outer Continental Shelf Lands Act (OCSLA), as amended by the Energy Policy Act of 2005.²⁶⁶ The Oil Pollution Act of 1990²⁶⁷ further addresses impacts from oil spills, as do a host of other environmental laws. After the *Deepwater Horizon* spill, the Obama Administration launched an aggressive review and reform of U.S. offshore energy regulation. As a first step, it organized a commission tasked with making recommendations to improve the safety of offshore production,

²⁶⁶ 43 U.S.C. §§ 1331-1356a.

²⁶⁷ 33 U.S.C. §§ 2701-2762.

including improving oil spill response.²⁶⁸ The commission's review highlighted many areas for improvement in the administration of the OCSLA. After the commission issued its report, a fundamental restructure of the management agencies led to creation of the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE). The agencies then issued joint regulations, which strengthened oil spill provisions and oversight.²⁶⁹

Since the initial response to the *Deepwater Horizon* incident, BOEM continues to refine its management and increase safety provisions under existing legal authorities. Examples of these improvements include: 1) instituted an investigations and review unit to expose agency and licensee loopholes; 2) implemented a recusal policy for employees; 3) strengthened its adherence to National Environmental Policy Act obligations by conducting a review of the use of categorical exclusions; and 4) renewed its commitment to public input and scientific analysis, among other actions.²⁷⁰ The BSEE, for its part, has: 1) issued stricter drilling safety rules; 2) increased its inspection and engineering workforces; and 3) required that all operators demonstrate that they possess the equipment and ability to contain a subsea blowout, among other actions. Both agencies have also increased their commitment to development of emerging technologies to increase environmental and human safety.

These efforts simply represent the most thorough and effective possible regulation of offshore oil and gas production. The improvements in both law and best practices for preventing and containing oil spills provide the best practical protection for the Bryde's whale and adequately protects the entire ecosystem. An ESA listing for the Bryde's whale will not provide any additional protection beyond this effort.

iii. Acoustic impacts

As with oil and gas production activities, several legal and regulatory measures currently protect Bryde's whales from the effects of seismic surveys used for oil and gas exploration.

BOEM is in the process of drafting a Programmatic Environmental Impact Statement (PEIS) for geological and geophysical activities in the Gulf of Mexico, originally scheduled for completion later this year. The PEIS development process, mandated by the National Environmental Policy Act (NEPA),²⁷¹ will require the agency to take a "hard look" at the environmental impacts of seismic survey activities before deciding whether to permit such activities.²⁷² Moreover, the environmental review process set forth by NEPA operates with heavy public input. Despite the Petition's statement that there has been no public review for seismic activity in the Gulf, BOEM held seven meetings so far, for the PEIS scoping phase alone, in

²⁶⁸ National Comm'n on the Deepwater Horizon Oil Spill and Offshore Drilling, *Report to the President* (Jan. 2011).

²⁶⁹ 76 Fed. Reg. 64431 (Oct. 18, 2011).

²⁷⁰ Bureau of Ocean Energy Management, *Regulatory Reform* (2015), <http://www.boem.gov/Regulatory-Reform/>.

²⁷¹ 42 U.S.C. §§ 4321-4370h.

²⁷² See *Motor Vehicle Manufacturer's Ass'n v. State Farm Ins.* (463 U.S. 29 (1983)).

communities around the Gulf of Mexico. It also accepted and considered written comments on the scope of the PEIS, and will do so again on the draft and final versions as mandated by NEPA and the Administrative Procedure Act.²⁷³

Similarly, Petitioner's claim that NMFS has not issued any incidental take authorizations (ITAs) under the MMPA is misleading. NMFS is collaborating with BOEM on its PEIS and, once complete, will use it as a basis for environmental review for such authorizations.²⁷⁴ It is reasonably certain that NMFS will make ITA determinations for individual projects permitted under the PEIS, once it is complete, since NMFS has done so for seismic activities in other regions.²⁷⁵

The OCSLA also restricts the unfettered use of seismic surveys in the Gulf. By law, BOEM may only permit such a geological and geophysical survey if it is not "unduly harmful to aquatic life."²⁷⁶ Furthermore, as noted in the NRDC Petition, seismic surveys are already prohibited in DeSoto Canyon²⁷⁷—where the Bryde's whale is located. While BOEM may permit some seismic activity in areas near to the whale's observed habitat, it may only do so after a rigorous public and scientific review process. BOEM's implementing regulations are even more restrictive, stating that once a permit is issued, the licensee must not cause harm or damage to aquatic life.²⁷⁸ It is therefore highly unlikely that BOEM will issue seismic survey permits that will inflict undue harm upon the whales and, even if such a permit were to be issued, an ESA listing would not provide a greater level of protection or scrutiny during the environmental review process.

iv. Fishing gear entanglement, overfishing, and prey reduction

The Magnuson Stevens Act (MSA) requires federal fisheries catches to remain within annual catch limits such that overfishing does not occur.²⁷⁹ This law has been hugely successful in rebuilding overfished populations and limiting future threats from depletion.²⁸⁰ In the Gulf of Mexico, only four stocks are overfished or experiencing overfishing, and prey components of the Bryde's whale diet have actually been increasing or consistently healthy since the mid-1980s, as described above.

²⁷³ 5 U.S.C. § 553(c).

²⁷⁴ See 78 Fed. Reg. 27427 (May 10, 2013).

²⁷⁵ See, e.g., NOAA Fisheries, *Oil & Gas: Incidental Take Authorizations* (2015), www.nmfs.noaa.gov/pr/permits/incidental/oilgas.htm (providing a complete list of Incidental Take Authorizations related to oil and gas).

²⁷⁶ 43 U.S.C. § 1340(a)(1).

²⁷⁷ *NRDC v. Jewell*, No. 10-cv-01882 (E.D. La. June 18, 2013).

²⁷⁸ 30 C.F.R. § 580.20(b).

²⁷⁹ 16 U.S.C. § 1853(a)(15).

²⁸⁰ See, e.g., Eric Schwaab, *Taking Stock: The Magnuson-Stevens Act Revisited: The Magnuson Act Thirty-Five Years Later*, 17(1) *Roger Williams U. L. Rev.* 14 (2012).

The NRDC Petition states that the MSA and its regulations are “so general that they have proved to have little impact on the consideration of ecological factors by Fishery Management Councils when setting catch limits,” but provides no substantiation of that claim.²⁸¹ Indeed, the opposite is true. United States fishery management laws are among the strictest and most comprehensive in the world, and they mandate ecosystem considerations throughout the management process. Nationwide, fisheries scientists and managers are devoting considerable resources to ecosystem-based management practices. The MSA explicitly requires Councils to consider ecosystem interactions when specifying a fishery’s optimum yield.²⁸² However, it is a matter of scientific consensus that best management practices for ecosystem interactions are highly localized—and Magnuson therefore directs the development of regionally appropriate ecosystem approaches. In some regions, this means the adoption of formal ecosystem plans. In others, such as the Gulf of Mexico, biological reference points within single-stock assessments are used to account for ecosystem interactions including predation rates and removals. Congress recognized this when it stated in the 2006 MSA reauthorization that “[a] number of the Fishery Management Councils have demonstrated significant progress in integrating ecosystem considerations in fisheries management using the existing authorities provided under this Act.”²⁸³

The Atlantic Tunas Convention Act,²⁸⁴ which authorizes the NMFS to promulgate regulations to carry out recommendations of the International Commission for the Conservation of Atlantic Tunas, is another source of law that restricts fishing activities within the Gulf of Mexico. Under this authority, NMFS implemented a closed area in DeSoto Canyon designed to reduce discards of undersized swordfish, billfish, sharks, and other species. Pelagic longline fisheries have been barred from the area for over a decade,²⁸⁵ and are therefore not contributing to gear entanglement in the whale’s observed habitat. While it is possible that derelict gear predating this restriction still occurs in the area, fishery regulations have adequately protected the whale from future interactions to the entire extent possible. Although a recently-approved Fishery Management Plan amendment would allow transiting of the area, fishing gear must be stowed according to strict regulations and there is thus no risk of fishing activity returning to the DeSoto Canyon.²⁸⁶

v. International law

Although the NRDC Petition does not allege that hunting or intentional capture of the whale contributes to its relatively small population size, it is important to note that international law entirely obviates that threat now and in the future. The International Whaling Commission, which is tasked with whale conservation and whaling regulation under the International

²⁸¹ NRDC Petition at 25.

²⁸² 16 U.S.C. § 1802(33)(A).

²⁸³ Section 2 109-479(11)

²⁸⁴ 16 U.S.C. §§ 971-971k.

²⁸⁵ 50 C.F.R. § 635.21(2)(c)(iv).

²⁸⁶ NOAA Fisheries, *Final Amendment 7 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan* (Aug. 2014).

Convention for the Regulation of Whaling,²⁸⁷ has maintained a moratorium on commercial whaling since 1986.²⁸⁸ Even if such whaling were to occur, CITES has listed the Bryde's whale under Appendix I throughout its range.²⁸⁹ This listing means that the species is considered threatened with extinction and has the effect of prohibiting international trade in its specimens and parts.²⁹⁰ Taken together, these laws effectively eliminate any threat from direct harvest.

3. Small Population Size

The NRDC Petition suggests that Bryde's whales in the GoM are threatened with extinction by virtue of their small population size.²⁹¹ As discussed throughout these comments, the best available data suggest that Bryde's whales in the GoM are not distinct from contiguous populations or that current abundance estimates in the GoM may be biased exceptionally low. Assuming, however, that Bryde's whales in the GoM represent a small discrete population, small population size alone does place the whales in danger of extinction.

Small population size does not provide evidence of a threat, particularly in species such as Bryde's whales, for which the best available information suggests they exist at relatively constant population rates as a species and are well-adapted to handle threats and adverse impacts.²⁹² As the FWS has noted, "[r]arity in and of itself does not automatically lead to listing."²⁹³

The NRDC Petition attempts to overcome this reality by citing Pervis (2000) as suggesting that small population size is a reliable indicator of extinction risk.²⁹⁴ But, Pervis (2000) examined risks to entire species, not populations, and further did *not* conclude that small population size presents a risk of extinction. Rather low population *density*, can indicate an extinction risk. Significantly, the NRDC Petition's characterization that all Bryde's whales in the GoM are within a small portion of the DeSoto Canyon suggests that Bryde's whale population density is not low.

Nor are other factors identified in Pervis (2000) reflected in Bryde's whales. They are low- and mid-trophic feeders, capable of adapting to numerous feed sources and environments. Their near-exclusive presence in warm water, in fact, has been hypothesized to reflect that their ample feeding opportunities do not require Bryde's whales to endure colder water. While

²⁸⁷ Convention for the Regulation of Whaling with Schedule of Whaling Regulations, Dec. 2, 1946, 62 Stat. 1577, TIAS No. 1708, 161 U.N.T.S. 361, codified at 16 U.S.C. § 916-916l.

²⁸⁸ Chairman's Report of the Thirty-Fourth Annual Meeting, 33 Rep. Int'l Whaling Comm'n 20, 21 (1983).

²⁸⁹ Convention on International Trade in Endangered Species of Wild Fauna and Flora, *Appendices* (Feb. 5, 2015), <http://www.cites.org/eng/app/appendices.php>.

²⁹⁰ 50 C.F.R. § 23.13.

²⁹¹ NRDC Petition at 22.

²⁹² http://animaldiversity.org/accounts/Balaenoptera_edeni/ (accessed 5/28/15).

²⁹³ 71 Fed. Reg. at 76,030.

²⁹⁴ NRDC Petition at 22.

Bryde's whales may be most frequently observed in the DeSoto Canyon, that is likely because they are availing themselves of prime feeding opportunities there. If prey abundance in the DeSoto Canyon declined for some reason, Bryde's whales would likely just move and feed elsewhere.

The best available data does not reflect that Bryde's whales in the GoM are at risk of extinction by virtue of their allegedly low population size. To the contrary, the best available scientific data suggest that Bryde's whales are adaptable and resilient.

III. CONCLUSION

The NRDC Petition is impermissible under the ESA and its implementing regulations. Even if it were allowable, the NRDC Petition fails to provide sufficient evidence that Bryde's whales in the GoM constitute a DPS or are at risk of extinction. The best scientific and commercial information available demonstrates that Bryde's whales in the GoM are genetically, morphologically, and physiologically indistinct from contiguous populations and that their populations may far exceed previous estimates.

Based on the best available evidence provided herein, the Associations respectfully urge that NMFS conclude that Bryde's whales in the GoM do not constitute a DPS and do not meet the definition of endangered or threatened species under the ESA.