



## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

**RTID 0648-XB248**

#### **Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Geophysical Surveys Related to Oil and Gas Activities in the Gulf of Mexico**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Notice of issuance of Letters of Authorization.

**SUMMARY:** In accordance with the Marine Mammal Protection Act (MMPA), as amended, its implementing regulations, and NMFS' MMPA Regulations for Taking Marine Mammals Incidental to Geophysical Surveys Related to Oil and Gas Activities in the Gulf of Mexico, notification is hereby given that two Letters of Authorization (LOA) have been issued to bp Exploration & Production Inc. (bp) for the take of marine mammals incidental to geophysical survey activity in the Gulf of Mexico.

**DATES:** The LOAs are effective from July 13, 2021, through April 19, 2026.

**ADDRESSES:** The LOAs, LOA requests, and supporting documentation are available online at: [www.fisheries.noaa.gov/action/incidental-take-authorization-oil-and-gas-industry-geophysical-survey-activity-gulf-mexico](http://www.fisheries.noaa.gov/action/incidental-take-authorization-oil-and-gas-industry-geophysical-survey-activity-gulf-mexico). In case of problems accessing these documents, please call the contact listed below (see **FOR FURTHER INFORMATION CONTACT**).

**FOR FURTHER INFORMATION CONTACT:** Ben Laws, Office of Protected Resources, NMFS, (301) 427-8401.

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined “negligible impact” in 50 CFR 216.103 as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

Except with respect to certain activities not pertinent here, the MMPA defines “harassment” as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

On January 19, 2021, we issued a final rule with regulations to govern the unintentional taking of marine mammals incidental to geophysical survey activities conducted by oil and gas industry operators, and those persons authorized to conduct activities on their behalf (collectively “industry operators”), in Federal waters of the U.S. Gulf of Mexico (GOM) over the course of 5 years (86 FR 5322; January 19, 2021). The

rule was based on our findings that the total taking from the specified activities over the 5-year period will have a negligible impact on the affected species or stock(s) of marine mammals and will not have an unmitigable adverse impact on the availability of those species or stocks for subsistence uses. The rule became effective on April 19, 2021.

Our regulations at 50 CFR 217.180 *et seq.* allow for the issuance of LOAs to industry operators for the incidental take of marine mammals during geophysical survey activities and prescribe the permissible methods of taking and other means of effecting the least practicable adverse impact on marine mammal species or stocks and their habitat (often referred to as mitigation), as well as requirements pertaining to the monitoring and reporting of such taking. Under 50 CFR 217.186(e), issuance of an LOA shall be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under these regulations and a determination that the amount of take authorized under the LOA is of no more than small numbers.

### **Summary of Request and Analysis**

Bp plans to conduct vertical seismic profile (VSP) geophysical surveys within existing bp prospects and/or fields, including the Mad Dog, Na Kika, Thunder Horse, and Atlantis prospects located in the Green Canyon (Mad Dog and Atlantis), Mississippi Canyon (Na Kika and Thunder Horse), and Atwater Valley (Atlantis) areas of the central GOM (see Figure 1 in bp's applications). Bp submitted one LOA request related to Distributed Acoustic Sensing (DAS) VSP surveys at these areas and a separate LOA request related to zero offset VSP surveys at the same areas. The survey activity could occur at any time during the effective period of the LOAs, and surveys could occur at any of the prospect areas.

Bp anticipates a total of 10 DAS VSP surveys over the period of LOA effectiveness, with each survey expected to require 10 days (total of 100 days over the period of effectiveness). Bp anticipates that no more than two surveys would occur in any

one year. However, due to the potential for unforeseen circumstances that would require a longer duration to accomplish the survey objectives, bp may conduct up to 25 DAS VSP survey days in any one year.

Bp anticipates a total of 10 zero offset VSP surveys over the period of LOA effectiveness, with each survey expected to require 2 days (total of 20 days over the period of effectiveness). Bp anticipates that no more than two surveys would occur in any one year. However, due to the potential for unforeseen circumstances that would require a longer duration to accomplish the survey objectives, bp may conduct up to 7 zero offset VSP survey days in any one year.

For DAS VSP surveys, bp anticipates using an airgun array consisting of 32 elements, with a total volume of 5,110 cubic inches (in<sup>3</sup>). For zero offset VSP surveys, bp anticipates using an airgun array consisting of 6-12 elements, with a total volume of 2,400 in<sup>3</sup>. Please see bp's applications for additional detail.

Consistent with the preamble to the final rule, the survey effort proposed by bp in its LOA requests was used to develop LOA-specific take estimates based on the acoustic exposure modeling results described in the preamble (86 FR 5322, 5398; January 19, 2021). In order to generate the appropriate take number for authorization, the following information was considered: (1) survey type; (2) location (by modeling zone<sup>1</sup>); (3) number of days; and (4) season.<sup>2</sup> The acoustic exposure modeling performed in support of the rule provides 24-hour exposure estimates for each species, specific to each modeled survey type in each zone and season.

No VSP surveys were included in the modeled survey types, and use of existing proxies (*i.e.*, 2D, 3D NAZ, 3D WAZ, Coil) is generally conservative for use in evaluation

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<sup>1</sup> For purposes of acoustic exposure modeling, the GOM was divided into seven zones. Zone 1 is not included in the geographic scope of the rule.

<sup>2</sup> For purposes of acoustic exposure modeling, seasons include Winter (December-March) and Summer (April-November).

of VSP survey effort. Summary descriptions of these modeled survey geometries are available in the preamble to the proposed rule (83 FR 29212, 29220; June 22, 2018). 2D was selected as the best available proxy survey type. The DAS VSP would use one or two source vessels. Each source array on the vessel will be separated by at least 40 m with shots being conducted in a “flip flop mode” such that only 1 array shoots at one time. Because the sources are not firing simultaneously, and because the areal coverage of the DAS VSP survey is significantly smaller than is assumed for a 3D NAZ survey, 2D was selected as the most appropriate proxy. Zero offset VSP surveys are significantly different from modeled survey geometries, in that they are conducted from a stationary or near-stationary deployment very close to an active drilling platform. During zero offset VSP surveys, the seismic source array is typically deployed from a drilling rig or from one to two source vessels operating at or near the borehole, with the seismic receivers (*i.e.*, geophones) deployed in the borehole on wireline at specified depth intervals. Use of the 2D proxy for zero offset VSP surveys is expected to be significantly conservative. In addition, all available acoustic exposure modeling results assume use of a 72 element, 8,000 in<sup>3</sup> array. In this case, take numbers authorized through the LOAs are considered conservative (*i.e.*, they likely overestimate take) due to differences in both the airgun arrays and the survey geometries planned by bp, as compared to those modeled for the rule.

As described above, the maximum annual survey effort is 25 days for DAS VSP and 7 days for zero offset VSP. For all survey effort, it is assumed that 75 percent would occur in Zone 5 and 25 percent in Zone 7. Although the location of individual surveys is not known in advance, the described distribution was selected based on the location of the prospect areas (the majority of total prospect area coverage is in Zone 5, with some overlap into Zone 7). The season is not known in advance. Therefore, the take estimates

for each species are based on the season that has the greater value for the species (*i.e.*, winter or summer).

For some species, take estimates based solely on the modeling yielded results that are not realistically likely to occur when considered in light of other relevant information available during the rulemaking process regarding marine mammal occurrence in the GOM. Thus, although the modeling conducted for the rule is a natural starting point for estimating take, our rule acknowledged that other information could be considered (see, *e.g.*, 86 FR 5322, 5442 (January 19, 2021), discussing the need to provide flexibility and make efficient use of previous public and agency review of other information and identifying that additional public review is not necessary unless the model or inputs used differ substantively from those that were previously reviewed by NMFS and the public). For this survey, NMFS has other relevant information reviewed during the rulemaking that indicates use of the acoustic exposure modeling to generate a take estimate for certain marine mammal species produces results inconsistent with what is known regarding their occurrence in the GOM. Accordingly, we have adjusted the calculated take estimates for those species as described below.

Rice's whales (formerly known as GOM Bryde's whales)<sup>3</sup> are generally found within a small area in the northeastern GOM in waters between 100-400 meters (m) depth along the continental shelf break (Rosel *et al.*, 2016). Whaling records suggest that Rice's whales historically had a broader distribution within similar habitat parameters throughout the GOM (Reeves *et al.*, 2011; Rosel and Wilcox, 2014), and a NOAA survey reported observation of a Rice's whale in the western GOM in 2017 (NMFS, 2018). Habitat-based density modeling identified similar habitat (*i.e.*, approximately 100-400 m water depths along the continental shelf break) as being potential Rice's whale habitat

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<sup>3</sup> The final rule refers to the GOM Bryde's whale (*Balaenoptera edeni*). These whales were subsequently described as a new species, Rice's whale (*Balaenoptera ricei*) (Rosel *et al.*, 2021).

(Roberts *et al.*, 2016), although a “core habitat area” defined in the northeastern GOM (outside the scope of the rule) contained approximately 92 percent of the predicted abundance of Rice’s whales. See discussion provided at, *e.g.*, 83 FR 29212, 29228, 29280 (June 22, 2018); 86 FR 5322, 5418 (January 19, 2021).

Although it is possible that Rice’s whales may occur outside of their core habitat, NMFS expects that any such occurrence would be limited to the narrow band of suitable habitat described above (*i.e.*, 100-400 m). Bp’s planned activity will occur in water depths of approximately 1,200-2,300 m in the central GOM. NMFS does not expect there to be the reasonable potential for take of Rice’s whale in association with this survey and, accordingly, does not authorize take of Rice’s whale through this LOA.

Killer whales are the most rarely encountered species in the GOM, typically in deep waters of the central GOM (Roberts *et al.*, 2015; Maze-Foley and Mullin, 2006). The approach used in the acoustic exposure modeling, in which seven modeling zones were defined over the U.S. GOM, necessarily averages fine-scale information about marine mammal distribution over the large area of each modeling zone. NMFS has determined that the approach results in unrealistic projections regarding the likelihood of encountering killer whales.

As discussed in the final rule, the density models produced by Roberts *et al.* (2016) provide the best available scientific information regarding predicted density patterns of cetaceans in the U.S. GOM. The predictions represent the output of models derived from multi-year observations and associated environmental parameters that incorporate corrections for detection bias. However, in the case of killer whales, the model is informed by few data, as indicated by the coefficient of variation associated with the abundance predicted by the model (0.41, the second-highest of any GOM species model; Roberts *et al.*, 2016). The model’s authors noted the expected non-uniform distribution of this rarely-encountered species (as discussed above) and

expressed that, due to the limited data available to inform the model, it “should be viewed cautiously” (Roberts *et al.*, 2015).

NOAA surveys in the GOM from 1992-2009 reported only 16 sightings of killer whales, with an additional three encounters during more recent survey effort from 2017-18 (Waring *et al.*, 2013; [www.boem.gov/gommapps](http://www.boem.gov/gommapps)). Two other species were also observed on fewer than 20 occasions during the 1992-2009 NOAA surveys (Fraser’s dolphin and false killer whale<sup>4</sup>). However, observational data collected by protected species observers (PSOs) on industry geophysical survey vessels from 2002-2015 distinguish the killer whale in terms of rarity. During this period, killer whales were encountered on only 10 occasions, whereas the next most rarely encountered species (Fraser’s dolphin) was recorded on 69 occasions (Barkaszi and Kelly, 2019). The false killer whale and pygmy killer whale were the next most rarely encountered species, with 110 records each. The killer whale was the species with the lowest detection frequency during each period over which PSO data were synthesized (2002-2008 and 2009-2015). This information qualitatively informed our rulemaking process, as discussed at 86 FR 5322, 5334 (January 19, 2021), and similarly informs our analysis here.

The rarity of encounter during seismic surveys is not likely to be the product of high bias on the probability of detection. Unlike certain cryptic species with high detection bias, such as *Kogia* spp. or beaked whales, or deep-diving species with high availability bias, such as beaked whales or sperm whales, killer whales are typically available for detection when present and are easily observed. Roberts *et al.* (2015) stated that availability is not a major factor affecting detectability of killer whales from shipboard surveys, as they are not a particularly long-diving species. Baird *et al.* (2005) reported that mean dive durations for 41 fish-eating killer whales for dives greater than or

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<sup>4</sup> However, note that these species have been observed over a greater range of water depths in the GOM than have killer whales.



equal to 1 minute in duration was 2.3-2.4 minutes, and Hooker *et al.* (2012) reported that killer whales spent 78 percent of their time at depths between 0-10 m. Similarly, Kvadsheim *et al.* (2012) reported data from a study of four killer whales, noting that the whales performed 20 times as many dives 1-30 m in depth than to deeper waters, with an average depth during those most common dives of approximately 3 m.

In summary, killer whales are the most rarely encountered species in the GOM and typically occur only in particularly deep water. While this information is reflected through the density model informing the acoustic exposure modeling results, there is relatively high uncertainty associated with the model for this species, and the acoustic exposure modeling applies mean distribution data over areas where the species is in fact less likely to occur. NMFS' determination in reflection of the data discussed above, which informed the final rule, is that use of the generic acoustic exposure modeling results for killer whales will generally result in estimated take numbers that are inconsistent with the assumptions made in the rule regarding expected killer whale take (86 FR 5322, 5403; January 19, 2021).

In past authorizations, NMFS has often addressed situations involving the low likelihood of encountering a rare species such as killer whales in the GOM through authorization of take of a single group of average size (*i.e.*, representing a single potential encounter). See 83 FR 63268, December 7, 2018. See also 86 FR 29090, May 28, 2021; 85 FR 55645, September 9, 2020. For the reasons expressed above, NMFS determined that a single encounter of killer whales is more likely than the model-generated estimates and has authorized take associated with a single killer whale group encounter (*i.e.*, up to seven animals).

Based on the results of our analysis, NMFS has determined that the level of taking expected for these surveys and authorized through the LOA is consistent with the

findings made for the total taking allowable under the regulations. See Tables 1 and 2 in this notice and Table 9 of the rule (86 FR 5322; January 19, 2021).

### **Small Numbers Determinations**

Under the GOM rule, NMFS may not authorize incidental take of marine mammals in an LOA if it will exceed “small numbers.” In short, when an acceptable estimate of the individual marine mammals taken is available, if the estimated number of individual animals taken is up to, but not greater than, one-third of the best available abundance estimate, NMFS will determine that the numbers of marine mammals taken of a species or stock are small. For more information please see NMFS’ discussion of the MMPA’s small numbers requirement provided in the final rule (86 FR 5322, 5438; January 19, 2021).

The take numbers for authorization are determined as described above. Subsequently, the total incidents of harassment for each species may be multiplied by scalar ratios to produce a derived product that better reflects the number of individuals likely to be taken within a survey (as compared to the total number of instances of take), accounting for the likelihood that some individual marine mammals may be taken on more than one day (see 86 FR 5322, 5404; January 19, 2021). The output of this scaling, where appropriate, is incorporated into an adjusted total take estimate that is the basis for NMFS’ small numbers determinations, as depicted in Table 1 for Bp’s DAS VSP surveys (maximum 25 days annually) and in Table 2 for zero offset VSP surveys (maximum 7 days annually).

This product is used by NMFS in making the necessary small numbers determinations, through comparison with the best available abundance estimates (see discussion at 86 FR 5322, 5391; January 19, 2021). For this comparison, NMFS’ approach is to use the maximum theoretical population, determined through review of current stock abundance reports (SAR; [www.fisheries.noaa.gov/national/marine-](http://www.fisheries.noaa.gov/national/marine-)

*mammal-protection/marine-mammal-stock-assessments*) and model-predicted abundance information (<https://seamap.env.duke.edu/models/Duke/GOM/>). For the latter, for taxa where a density surface model could be produced, we use the maximum mean seasonal (*i.e.*, 3-month) abundance prediction for purposes of comparison as a precautionary smoothing of month-to-month fluctuations and in consideration of a corresponding lack of data in the literature regarding seasonal distribution of marine mammals in the GOM. Information supporting the small numbers determinations is provided in Tables 1 and 2.

**Table 1. Take Analysis, DAS VSP LOA**

Species	Annual authorized take	Scaled annual take <sup>1</sup>	Abundance <sup>2</sup>	Percent abundance
Sperm whale	709	299.9	2,207	13.6
<i>Kogia</i> spp.	274 <sup>3</sup>	72.0	4,373	2.1
Beaked whales	4,001	404.1	3,768	10.7
Rough-toothed dolphin	478	137.2	4,853	2.8
Bottlenose dolphin	2,432	698.0	176,108	0.4
Clymene dolphin	1,603	460.1	11,895	3.9
Atlantic spotted dolphin	920	264.0	74,785	0.4
Pantropical spotted dolphin	8,251	2,368.0	102,361	2.3
Spinner dolphin	1,770	508.0	25,114	2.0
Striped dolphin	649	186.3	5,229	3.6
Fraser's dolphin	188	54.0	1,665	3.2
Risso's dolphin	457	134.8	3,764	3.6
Melon-headed whale	1,037	305.9	7,003	4.4
Pygmy killer whale	230	67.9	2,126	3.2
False killer whale	344	101.5	3,204	3.2
Killer whale	7	n/a	267	2.6
Short-finned pilot whale	273	80.5	1,981	4.1

<sup>1</sup>Scalar ratios were applied to “Annual Authorized Take” values as described at 86 FR 5322, 5404 (January 19, 2021) to derive scaled take numbers shown here.

<sup>2</sup>Best abundance estimate. For most taxa, the best abundance estimate for purposes of comparison with take estimates is considered here to be the model-predicted abundance (Roberts *et al.*, 2016). For those taxa where a density surface model predicting abundance by month was produced, the maximum mean seasonal abundance was used. For those taxa where abundance is not predicted by month, only mean annual abundance is available. For the killer whale, the larger estimated SAR abundance estimate is used.

<sup>3</sup>Includes 6 annual takes by Level A harassment and 268 annual takes by Level B harassment. Scalar ratio is applied to takes by Level B harassment only; small numbers determination made on basis of scaled annual Level B harassment take plus annual Level A harassment take.

**Table 2. Take Analysis, Zero Offset VSP LOA**

Species	Annual authorized take <sup>1</sup>	Abundance <sup>2</sup>	Percent abundance
Sperm whale	198	2,207	9.0

<i>Kogia</i> spp.	79 <sup>3</sup>	4,373	1.8
Beaked whales	1,120	3,768	29.7
Rough-toothed dolphin	134	4,853	2.8
Bottlenose dolphin	681	176,108	0.4
Clymene dolphin	449	11,895	3.8
Atlantic spotted dolphin	258	74,785	0.3
Pantropical spotted dolphin	2,310	102,361	2.3
Spinner dolphin	496	25,114	2.0
Striped dolphin	182	5,229	3.5
Fraser's dolphin	53	1,665	3.2
Risso's dolphin	128	3,764	3.4
Melon-headed whale	290	7,003	4.1
Pygmy killer whale	64	2,126	3.0
False killer whale	96	3,204	3.0
Killer whale	7	267	2.6
Short-finned pilot whale	77	1,981	3.9

<sup>1</sup>Scalar ratios were not applied in this case due to brief annual survey duration.

<sup>2</sup>Best abundance estimate. For most taxa, the best abundance estimate for purposes of comparison with take estimates is considered here to be the model-predicted abundance (Roberts *et al.*, 2016). For those taxa where a density surface model predicting abundance by month was produced, the maximum mean seasonal abundance was used. For those taxa where abundance is not predicted by month, only mean annual abundance is available. For the killer whale, the larger estimated SAR abundance estimate is used.

<sup>3</sup>Includes 2 annual takes by Level A harassment and 77 annual takes by Level B harassment.

Based on the analysis contained herein of bp's proposed survey activity described in its LOA applications and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will be taken relative to the affected species or stock sizes (*i.e.*, less than one-third of the best available abundance estimate) and therefore the taking is of no more than small numbers.

### **Authorization**

NMFS has determined that the level of taking for these LOA requests is consistent with the findings made for the total taking allowable under the incidental take regulations and that the amount of take authorized under the LOAs is of no more than small numbers. Accordingly, we have issued two LOAs to bp authorizing the take of marine mammals incidental to its geophysical survey activity, as described above.

Dated: July 14, 2021.

Catherine Marzin,  
Acting Director, Office of Protected Resources,  
National Marine Fisheries Service.