



# MARINE MAMMAL COMMISSION

27 February 2023

Ms. Jolie Harrison, Chief  
Permits and Conservation Division  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's (NMFS) 7 February 2023 notice (88 Fed. Reg. 8146)<sup>1</sup> and the letter of authorization (LOA) application submitted by the U.S. Air Force (the Air Force) seeking issuance of regulations under section 101(a)(5)(A) of the Marine Mammal Protection Act. The taking would be incidental to conducting testing and training activities at the Eglin Gulf Test and Training Range (EGTTR) in the Gulf of Mexico from 2023–2030. Similar activities have been conducted under previous rulemakings and incident harassment authorizations since 2006.

## Background

The Air Force proposes to conduct various testing and training activities at EGTTR off Florida. Aircraft would deploy inert and live gunnery rounds, rockets, missiles, bombs, and mine charges (ranging from a 0.1-lb gunnery round to a 945-lb bomb) at numerous types of targets. Munitions would detonate in the air, at the water's surface, or approximately 3 m below the water's surface. The Air Force would conduct its live-fire testing and training activities in its existing live fire area (LIA) in water depths of 30–145 m. The Air Force also proposes to include a new LIA in water depths of 35–95 m southeast of the existing LIA (see Figure 2 in the *Federal Register* notice). Mitigation measures would include nighttime and sea state restrictions, live-fire and vessel restrictions, visual monitoring<sup>2</sup> to implement clearance, delay and shut-down procedures, ramp-up procedures, and vessel strike avoidance procedures.

## Behavior takes for single detonations

Similar to other incidental take authorizations, NMFS indicated in the preamble to the proposed rule that marine mammal responses to single detonations are expected to more typically be

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<sup>1</sup> The Commission noted a few typos and minor errors in Tables 25, 36, and 37 of the preamble to the proposed rule and Tables 1 and 2 in the proposed rule. NMFS indicated that the tables would be revised accordingly in the preamble to and the final rule.

<sup>2</sup> Using aerial, vessel-based, and/or video monitoring.

startle responses than a disruption of natural behavioral patterns such that those patterns are abandoned or significantly altered (88 Fed. Reg. 8170). As such, NMFS further noted that the potential for behavioral response from a single detonation was quantitatively accounted for by using the TTS threshold (88 Fed. Reg. 8170). That approach contradicts the Air Force's intent. The Air Force verified that it did estimate behavior takes for single detonations<sup>3</sup> rather than subsuming them under the TTS takes in its application and the behavior takes ultimately were included in Tables 32, 34, and 35 of the preamble. NMFS clarified that the inconsistencies would be revised in the preamble to the final rule. Since the Commission continues to believe that behavior takes should be authorized for activities involving single detonations, it recommends that NMFS authorize the Level B harassment behavior takes of marine mammals, in addition to TTS takes, for mission-day categories J and K in the final rule or any LOA issued thereunder and ensure that the preamble to the final rule is clear regarding the fact that behavior takes were authorized for single-detonation missions.

### **Mitigation and monitoring measures**

*Live-fire restrictions*—To minimize impacts on Rice's whales, use of live-fire munitions would be prohibited between the 100- and 400-m isobaths in the existing and new LIAs<sup>4</sup> and seaward of the setbacks from the 100-m isobath (Table 5 of the proposed rule) in the existing and new LIAs (sections 218.64(b)(3) and 218.64(b)(1) of the proposed rule, respectively). NMFS also would (1) prohibit vessel transit at night in the Rice's whale core distribution area (CDA) and within the 100- to 400-m isobath zone outside the CDA and (2) require the Air Force to avoid transit in both of those areas during the daytime, with the proviso that if transit is unavoidable, vessels must not exceed 10 knots (section 218.64 (a)(3)(i)(E) of the proposed rule). It is unclear why NMFS did not prohibit the use of live-fire munitions based on the landward extent of the CDA instead of the 100-m isobath for consistency with the vessel restrictions and because only a small portion of the CDA is outside the 100- to 400-m isobath zone but within the existing or new LIAs. Given NMFS's intent to minimize impacts on Rice's whales by prohibiting use of live-fire munitions in the 100- to 400-m isobath zone and the practicability of restricting vessel use in the CDA, the Commission recommends that in section 218.64(b) of the final rule NMFS prohibit use of live-fire munitions in the existing and new LIAs both within the CDA and seaward of the setbacks (Table 5) from shallowest depths of the CDA.

*Visual monitoring limitations*—In previous Commission letters regarding the Air Force's activities at EGTRR and at the U.S. Navy's (the Navy) Pacific Missile Range Facility<sup>5</sup>, the Commission has recommended that NMFS require the Air Force to determine the effectiveness of its mitigation measures and to supplement those measures with the use of passive acoustic monitoring (PAM) devices. In some instances, the mission area<sup>6</sup> would be determined to be clear of marine mammals for at least 30 minutes, and likely longer, before the munitions are detonated. The monitoring vessels and aircraft would move to the periphery of the human safety zone, which the application indicated could be approximately 24 km from the detonation location—after which time, various video

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<sup>3</sup> Although sinking exercises (SINKEXs) were characterized as single detonations in Table 25 (mission-day category J) of the *Federal Register* notice, SINKEXs usually involve multiple detonations (e.g., Table 4 on 83 Fed. Reg. 57083).

<sup>4</sup> Use of live-fire munitions would be allowed to occur only in the existing and new LIAs (section 218.64(b)(3)).

<sup>5</sup> See the Commission's [18 January 2018](#), [16 May 2017](#), and [3 June 2013](#) letters as examples.

<sup>6</sup> With a mitigation zone (twice the Level A permanent threshold shift (PTS) harassment zone) radius of up to approximately 1.4 km for dolphins and a Level A PTS harassment zone of up to approximately 5.7 km for Rice's whales.

cameras<sup>7</sup> may provide visual observations of the target area(s). However, video cameras are not always used, or operational when they are intended to be used. In other instances, the mission aircraft would be conducting monitoring for marine mammals. Those aircraft would conduct monitoring during the approximately 15 minutes it would take to conduct two orbits around the mission area<sup>8</sup> at an altitude of up to 1,828 m<sup>9</sup>. Given those large areas and high altitudes<sup>10</sup>, the Commission does not believe that the Air Force would be able to monitor effectively for marine mammals entering the mortality and injury zones, particularly after the mission area has been cleared and during the timeframe prior to detonation.

The presumption that mitigation can be effective with visual observations alone is unsubstantiated, as post-activity monitoring has not occurred for all missions or all mission types, including nighttime missions. Recently Oedekoven and Thomas (2022) estimated effectiveness of marine mammal observers to be 54 percent for detecting rorquals at 914 m or farther, 31 percent for small cetaceans in pods of more than six, and 14 percent for small cetaceans in pods of six or fewer. The effectiveness of military servicepersons was much lower, ranging from 2 to 13 percent (Oedekoven and Thomas 2022). It is clear that visual monitoring should be supplemented with passive acoustic monitoring—a recommendation that the Commission has provided and discussed with NMFS since 2010.

For the previous 2018 rulemaking, NMFS described multiple limitations regarding the Air Force's use of PAM for real-time mitigation in the *Federal Register* notice. Those limitations included human safety concerns and the inability to make mission go/no-go decisions in a timely manner. Although NMFS did not expound upon the human safety concerns, it did indicate that the Air Force could not commit to using PAM as a mitigation measure until it is confident that its rudimentary PAM study is successfully implemented and until it gains a better understanding of PAM capabilities to develop mission-appropriate procedures for implementing go/no-go decisions in a timely manner (82 Fed. Reg. 61402).

In the 2018 final rule and LOA issued thereunder, NMFS ultimately required the Air Force to conduct a PAM study as an initial step toward understanding acoustic impacts of underwater detonations, if funding was approved, and another PAM study to investigate marine mammal vocalizations before, during, and after live missions in the EGTTR, once funding was approved (50 C.F.R. § 218.65(q)). The first study was conducted in November 2019 and March 2020 (Leidos 2020). Unfortunately, not much can be gleaned from the data provided by Leidos (2020) other than that inert detonations were louder than expected<sup>11</sup> and additional work was needed to address hydrophone sensitivity/clipping and calibration issues. The second study has yet to be conducted. Interestingly, Leidos (2020) noted that during the March 2020 event the Navy used sonobuoys that had GPS receivers, which Leidos indicated would enable accurate source-to-receiver ranges and

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<sup>7</sup> Fixed, stationary video cameras, as well as video cameras attached to other aircraft, unmanned aerial vehicles, and aerostat balloons.

<sup>8</sup> With a monitoring radius of up to 9.3 km.

<sup>9</sup> The aircraft then would ascend to its operational altitude of up to 6,096 m.

<sup>10</sup> NMFS acknowledged in the preamble to the proposed rule that, even with the variety of platforms potentially available to supply video feeds, the entirety of the mitigation and monitoring zones may not be visible for the entire duration of the mission. The Commission notes that monitoring capabilities would be further diminished in Beaufort sea states up to 4, particularly for video monitoring of targets that may be located 3.7 km from the cameras.

<sup>11</sup> And were subsequently included in the current rulemaking.

provide recordings of the entire detonation impulse without clipping. Those or similar sonobuoys<sup>12</sup> likely could be used to fulfill the second study's objectives as well.

NMFS made only one reference to the Air Force's PAM study in the preamble to the proposed rule. As part of adaptive management, NMFS indicated that it could use results from the study to inform modifications to the mitigation, monitoring, or reporting measures in the issued LOA (88 Fed. Reg. 8188). Similarly, the Air Force did not mention the results of the PAM study or future directions of the study, if any, in its application. The Air Force merely indicated that it was coordinating with NMFS on the preliminary findings. Since more than two years have passed since the first study was conducted, it is incumbent on NMFS to determine future directions, if needed, for continuation of that first study and actual implementation of PAM for detecting and localizing marine mammals in the vicinity of live-fire testing and training activities (i.e., targets) for the second study. Fulfilling the monitoring requirements under section 101(a)(5) of the MMPA and the 2018 final rule should have been made a priority and must be made a priority for this next final rule. The Commission recommends that NMFS require the Air Force to prioritize (1) completing both aspects of its PAM study and (2) further investigate ways to supplement its mitigation measures<sup>13</sup> with the use of real-time PAM devices (i.e., sonobuoys or hydrophones) in section 218.65 of any final rule issued, similar to the previous final rule.

*SINKEXs*—Although SINKEXs have been conducted by the Navy for quite some time, this will be the first Air Force rulemaking that will include authorization to conduct them. As part of standard mitigation measures for SINKEXs, including those that could occur in the Gulf of Mexico, the Navy is required by NMFS (1) to have at least two platforms (aerial and vessel) conducting visual monitoring of a 4.6-km mitigation zone from 90 minutes before the first firing, (2) to conduct both visual monitoring from a vessel and passive acoustic monitoring of the mitigation zone during the exercise, (3) to observe for marine mammals in the vicinity of where detonations occurred for 2 hr after sinking the vessel or until sunset (whichever comes first), and (4) that if additional platforms are supporting the activity (e.g., providing range clearance), those assets must assist in visual observation of the area where detonations occurred (e.g., 50 C.F.R. § 218.84(a)(11)). NMFS did not include any such requirements in the Air Force's proposed rule. Since NMFS has considered the SINKEX-specific mitigation measures to be practicable, the measures are routinely implemented by the Navy, and the intent of mitigation measures is to ensure that the Air Force is effecting the least practicable adverse impact on the affected species and stocks, the Commission recommends that NMFS include the additional aforementioned mitigation measures for SINKEXs in section 218.64 of any final rule issued to the Air Force.

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<sup>12</sup> Multiple omnidirectional sonobuoys could be used, or Directional Frequency Analysis and Recording (DIFAR) sonobuoys if Rice's whales are of concern at a specific target location. Sonobuoys and hydrophones are commercially available and available from Department of Defense partners. The devices are routinely used by the Navy and civilian, academic, and agency-based (i.e., Southeast Fisheries Science Center) researchers to detect, classify, and locate marine mammals. The Air Force should consult them in order to initiate the second study.

<sup>13</sup> Delaying various activities if vocalizing animals are localized within the relevant mortality or injury zones.

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Please contact me if you have questions regarding the Commission's comments and recommendations.

Sincerely,



Peter O. Thomas, Ph.D.,  
Executive Director

## References

- Leidos. 2020. Final report: Passive acoustic monitoring measurement study, Eglin Air Force Base, Florida. Leidos, Shalimar, Florida. 50 pages.
- Oedekoven, C., and L. Thomas. 2022. Effectiveness of Navy lookout teams in detecting cetaceans. Report number CREEM-24289-1, University of St Andrews, St Andrews, Scotland. 41 pages.