



MARINE MAMMAL COMMISSION

30 July 2018

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

Re: Permit Application No. 21585
(Oregon State University)

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the above-referenced permit application with regard to the goals, policies, and requirements of the Marine Mammal Protection Act (the MMPA). Oregon State University (OSU) is seeking to renew its permit to conduct research on cetaceans worldwide during a five-year period—permit 14856 authorized similar activities.

OSU proposes to conduct research year-round on numerous species of cetaceans, primarily large whales, worldwide. The purpose of the research is to investigate distribution, movement patterns, and foraging ecology of whales. Researchers would harass, observe/track, photograph/videotape, record acoustically, collect prey information, sample, and/or instrument numerous cetaceans of both sexes and various age classes (see the take tables and application for specifics). OSU would use various measures to minimize impacts on cetaceans and also would be required to abide by the National Marine Fisheries Service's (NMFS) standard permit conditions. OSU's Institutional Animal Care and Use Committee reviewed and approved the proposed research protocols¹.

Deep-penetrating tags

Deep-penetrating, implantable tags—OSU proposed to deploy deep-penetrating, implantable tags on various mysticete species², including Bryde's whales³. The Commission has had concerns regarding the use of those tags for many years. The tags as currently designed would penetrate the muscle layer more deeply in smaller animals⁴ and are likely to cause more damage than when used in larger

¹ The Commission notes that the protocols do not appear to include the maximum penetration depth of the various tags or the length of the penetrating tip with the anchors. It is possible that earlier versions of the protocols included such information.

² And sperm whales.

³ But not those from the Gulf of Mexico stock.

⁴ Including either smaller species or younger animals.

animals (see its [22 December 2017 letter](#) and [18 June 2012 letter](#)). Accordingly, the Commission recommended in its 2017 letter that NMFS prohibit Dr. Mate from using the current size of deep-penetrating, implantable tags on Bryde's whales in the Gulf of Mexico and reassess the use of such tags on Bryde's whales in general. NMFS prohibited Dr. Mate from using the tags on Bryde's whales in the Gulf of Mexico but has yet to prohibit their use on Bryde's whales in general.

The Commission's rationale for recommending that NMFS prohibit the use of the current deep-penetrating, implantable tags remains unchanged from what was articulated in its 2017 letter. As such, the rationale will not be reiterated herein. The Commission does note though that OSU's application indicated that the minimum penetration depth needed to successfully deploy the tag is 14 cm⁵, which is much less than the penetration depth of 20.4 cm for the smallest implantable tag the researchers propose to use. Justification regarding why the anchor petals must be implanted at least 11.4 cm, well beyond the blubber-muscle interface, has not been provided. In addition, OSU's application indicated that the shorter tags⁶ 'may' be used on Bryde's whales, which would not preclude the researchers from using the longer tags⁷ on Bryde's whales. The Commission continues to believe that invasive tags should not be longer than necessary to fulfill their intended purpose, which in this instance involves anchoring just below the blubber-muscle interface. As such, the Commission recommends that NMFS prohibit OSU from using the deep-penetrating, implantable tags on Bryde's whales—this would not prohibit the researchers from using other external dart tags or implantable tags that do not penetrate deeper than necessary (i.e., a few centimeters below the blubber-muscle interface).

Deep-penetrating, partially implantable tags—OSU also proposed to use deep-penetrating, partially implantable tags that have a maximum penetration of 20 cm with a slightly larger diameter⁸ than the deep-penetrating, implantable tags. As such, the Commission recommends that NMFS prohibit OSU from using the deep-penetrating, partially implantable tags on Bryde's whales as well.

The Commission has additional concerns regarding the partially implantable tags. OSU indicated in its permit application that the anticipated life expectancy of the tag will not nearly approach the longevity of the implantable tag because of the increased energy demands of GPS acquisition and increased hydrodynamic drag on the non-implanted portion. Specifically, OSU reported that the attachment duration for those tags ranged from 0.7 to 34.8 days⁹. OSU indicated that the tag has a large, buoyant, external component that is subject to significant hydrodynamic drag¹⁰. Thus, the retention time is much reduced from the fully implantable tags as reported in OSU's application. While the retention time of the partially implantable tags is almost double that of

⁵ Based on blubber depths ranging from 2.6–9.3 cm in Bryde's whales (Konishi et al. 2009) and the 11.4 cm of anchor petals.

⁶ Penetration depth of 20.4 cm.

⁷ Penetration depth of 29.5 cm.

⁸ The partially implantable tag has a diameter of 2.6 cm, while the fully implantable tag has a diameter of 2.1 cm.

⁹ With a mean of 18.2 days, standard deviation of 10.0 days, and median of 17.9 days.

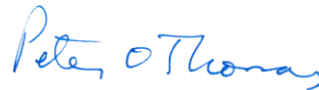
¹⁰ Significant hydrodynamic drag likely would cause additional damage to the underlying tissue from stress on the implanted barbs and petals.

other dart tag variants¹¹, those other tags penetrate only a third as deep as the partially implantable tags.

As noted in the Commission's 2017 letter, Walker et al. (2011) recommended that the possible long-term consequences of tagging should be weighed against tagging program goals. In addition, OSU is proposing to deploy both deep-penetrating implantable and partially implantable tags on a subset of adult animals. The Commission is not convinced that is necessary or that the use of the partially implantable tags in general is in the best interest of the animal. As such, the Commission recommends that NMFS inquire whether OSU can use other available, less invasive tags (i.e., CATS tags with dart attachments) that provide the same type of information as OSU's deep-penetrating, partially implantable tag and, if so, condition the permit to require that either those alternative tags be used or tags with penetration depths comparable to those of the shallower penetrating tags be used instead of the deep-penetrating, partially implantable tags OSU has proposed to use. Implementing this permit condition would be consistent with the humane taking requirement under 104(b)(2)(B) of the MMPA.

The Commission believes that the proposed activities are consistent with the purposes and policies of the MMPA. Kindly contact me if you have any questions concerning the Commission's recommendations.

Sincerely,



Peter O. Thomas, Ph.D.
Executive Director

References

- Andrews, R. D., R. Baird, D. Webster, S. Wilton, and T. Lindstrom. 2014. The Whale Lander and SpicyTalk: A solution for recording high-resolution behavior from cetaceans for days to weeks with recoverable, archival transmitting tag. 5th International Bio-Logging Science Symposium, Strasbourg, France.
- Konishi, K., T. Tamura, M. Goto, T. Bando, T. Kishiro, H. Yoshida, and H. Kato. 2009. Trend of blubber thickness in common minke, sei and Bryde's whales in the western North Pacific during JARPEN and JARPEN II periods. Paper SC/J09/JR20. Submitted to the JARPEN II Review meeting called by the International Whaling Commission. 4 pages.

¹¹ CATS tags can provide data comparable to what is obtained from the partially implantable tags. CATS tags have been retained on blue whales for 1.9 to 20 days with a mean retention time of 10 days—some of those tags stopped transmitting before they fell off, so the retention times are minimums (Calambokidis, pers. comm.). CATS tags have been attached with three or four 7-cm long darts rather than a single 20-cm long dart, as used for the partially implantable tag. The Whale Lander tag (Andrews et al. 2014) and Sound and Motion Recording Telemetry (SMRT) tag (Baird, pers. comm.) also provide similar data but are retained for a week or two in odontocetes.

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Walker, K.A., A.W. Trites, M. Haulena, and D.M. Weary. 2011. A review of the effects of different marking and tagging techniques on marine mammals. *Wildlife Research* 39(1):15–30.
<https://doi.org/10.1071/WR10177>.