NATIONAL MARINE FISHERIES SERVICE
ENDANGERED SPECIES ACT SECTION 7
BIOLOGICAL OPINION

Title:	Letter of Concurrence on the Issuance of Permit No. 21026 to Dorian Houser for Auditory Evoked Potential Testing on Cetaceans
Consultation Conducted By:	Endangered Species Act Interagency Cooperation Division, Office of Protected Resources, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce
Action Agency:	Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service
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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

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

Refer to NMFS No: FPR-2017-9188

March 28, 2017

RE: Endangered Species Act Section 7(a)(2) Concurrence Letter for Issuance of Permit No. 21026 to Dorian Houser for Auditory Evoked Potential Testing on Cetaceans

Dear Ms. Harrison:

On February 1, 2017, the National Marine Fisheries Service (NMFS), Office of Protected Resources, Endangered Species Act Interagency Cooperation Division received your request for a written concurrence that the issuance of Permit No. 21026 to Dorian Houser, Ph.D., National Marine Mammal Foundation, 22400 Shelter Island Drive #200, San Diego, California 92106, pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 et seq.) and the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 et seq.) to authorize auditory evoked potential testing on stranded cetaceans is not likely to adversely affect species listed or proposed to be listed as threatened or endangered under the ESA. This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at (50 CFR §402), and agency guidance for preparation of letters of concurrence.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with agency guidelines issued under section 515 of the Treasury and General Government Appropriations Act of 2001 (Data Quality Act; 44 U.S.C. 3504(d)(1) and 3516). The concurrence letter will be available through NMFS' consultation tracking system FPR-2017-9188. A complete record of this consultation is on file at the NMFS' Office of Protected Resources, ESA Interagency Cooperation Division.

Below we describe the timeline of our informal consultation with the Permits and Conservation Division (hereafter the Permits Division), the proposed action, the ESA-listed and proposed to be listed species that may be affected by the proposed action including the Permit Division's determinations, and the minimization measures included in the proposed action to avoid adverse effects to these species. We then consider the effects of the proposed action and in doing so, provide our own analysis and conclusion concerning the likelihood that the proposed action is not likely to adversely affect species listed or proposed to be listed as threatened or endangered under the ESA.

Consultation History

- On February 3, 2017, the Permits Division sent us a memorandum requesting concurrence on their determination that the proposed issuance of Permit No. 21026 may affect, but was not likely to adversely affect species listed or proposed to be listed under

the ESA. At that time we discussed with the Permits Division the possibility of Dr. Houser conducting his work under research permit No. 18786-01, which already authorizes auditory evoked potential testing and they agreed to discuss this possibility with Dr. Houser.

- On February 6, 2017, the Permits Division detailed Dr. Houser's justification for not wanting to conduct his research under Permit No. 18786-01. Based on this, we informed the Permits Division that we would move forward with informal consultation, which was initiated on this day.

Proposed Action and Action Area

The proposed action for this consultation is the issuance of a scientific research permit (Permit No. 21026) to Dr. Houser to authorize take of cetaceans in the form of auditory evoked potential testing on stranded cetaceans within the United States (U.S.), including on beaches, in waters, in temporary pools, or in rehabilitation facilities in order to obtain hearing range and sensitivity information. This is a renewal of his previous permit (Permit No. 16599), which authorized the same general research activities except of the use of needle electrodes, which will be discussed in more detail below. We have identified no interrelated or interdependent activities that would result from this action. The proposed issue date for the permit is March 31, 2017, and the permit would expire in five years on March 31, 2022. The take that would be authorized can be seen below in Table 1. Given that the methods for auditory evoked potential testing of mysticetes have not yet been fully developed and likely require needle electrodes, in this permit Dr. Houser is only requesting take of small mysticetes. This includes all age classes of minke and non-ESA listed gray whales and calves of all other ESA-listed mysticetes that have been deemed necessary for euthanasia or rehabilitation by the attending veterinarians. Thus, no takes of larger, juvenile or adult ESA-listed mysticetes would be authorized.

Table 1: Annual takes of stranded cetaceans that would be authorized under Permit No. 21026.

Species	Life stage	Number of Animals per species	Takes Per Animal	Take Action	Procedures	Details
Cetacean, unidentified baleen	All	15	6	Handle/ Release	Acoustic, passive recording; Auditory brainstem response test; Observation, monitoring; photograph/video; Ultrasound	Auditory testing on 15 individuals each of any species of non-listed or ESA-listed mysticete that strands in the U.S. Any age class of small mysticete species (e.g., gray and minke whales) may be tested. Only calves of large mysticete species will be tested.
Cetacean, unidentified toothed	All	15	6	Handle/ Release	Acoustic, passive recording; Auditory brainstem response test; Observation, monitoring; photograph/video; Ultrasound	Auditory testing on 15 individuals each of any species of non-listed or ESA-listed odontocetes that strands in the U.S.

Under the ESA take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." Harm is further defined by regulation

(50 CFR §222.102) as “an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering.” While the U.S. Fish and Wildlife Service further defines harass by regulation (50 CFR §17.3), until NMFS promulgates a regulatory definition, we rely on NMFS’ interim guidance, which defines harass as an act that “creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering” (NMFSPD 02-110-19).

Under the MMPA take is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal" (16 U.S.C. 1361 et seq.) and further defined by regulation (50 CFR §216.3) as “to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following:

- the collection of dead animals, or parts thereof
- the restraint or detention of a marine mammal, no matter how temporary
- tagging a marine mammal
- the negligent or intentional operation of an aircraft or vessel
- the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal
- feeding or attempting to feed a marine mammal in the wild”

Two levels of harassment are further defined under the MMPA as, any act of pursuit, torment, or annoyance which:

- has the potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment); or,
- 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 but which does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B Harassment).

NMFS interim ESA harass definition does not specifically equate to MMPA Level A or Level B harassment, but shares some similarities with both in the use of the terms "injury/injure" and a focus on a disruption of behavior patterns. Since the proposed permit would authorize take under both the ESA and MMPA, our ESA analysis may result in different outcomes compared to those reached by the Permits Division in their MMPA analysis. Given that the MMPA takes a more conservative approach in considering any act that has the *potential* to disrupt behavioral patterns harassment, and under the ESA such acts must *significantly* disrupt normal behavioral patterns, the take as specified in Table 1 may constitute take under the MMPA, but not necessarily the ESA depending on the likely effects of the activity, in this case auditory evoked potential testing.

Auditory evoked potential testing is a technique that has been used to measure hearing thresholds and other aspects of hearing in humans, including babies, and other mammals for decades. Under Permit No. 21026, Dr. Houser would be authorized to conduct auditory evoked potential testing on cetaceans that have stranded or are undergoing rehabilitation at a facility at the discretion of the attending veterinarian and stranding network members overseeing care. Given that the

animals Dr. Houser would test would either be stranded or in rehabilitation facilities, no wild capture would occur and thus minimal handling and restraint is expected. Furthermore, in many cases testing would occur at the same time as other veterinary procedures in order to minimize total handling time. Odontocetes on land may be required to have their rostrum lifted slightly off the ground and propped up (usually with a rolled-up towel), but no other manipulation would be required. Odontocetes in water would require some degree of stabilization, generally by personnel supporting the position of the animal (Figure 1). For mysticetes, no handling besides the placement of the recording sensors and sound projectors (see below) would be required. The specific methods for auditory evoked potential testing would follow those outlined in Finneran (2009). In general, acoustic stimuli adapted to each species would be presented and the evoked response would be recorded. The acoustic stimuli, the method of presentation to animals, and the method of recording of the evoked response are further described below.

Acoustic stimuli would consist of clicks, tones, or tone pips, range in frequency from 10 to 200 kilohertz (kHz) for odontocetes and from five to 60 kHz for mysticetes, and typically have source levels between 60 to 150 dB peak equivalent sound pressure level (peSPL), although source levels of up to 165 dB peSPL (near the maximum stimulus level capable by the testing system) could be used. In the event there are no prior data on a species hearing range and sensitivity, source levels of approximately 110 dB peSPL would first be used, as this level is sufficient to produce a recordable evoked response, but insufficient to result in harmful physiological effects. The duration of each sound signal would vary from approximately 0.005 to 100 milliseconds, and over the course of testing, researchers would present a variety of different acoustic stimuli depending on the species and response, resulting in a test duration of 10 to 30 minutes. For odontocetes, the acoustic stimuli would be presented through a suction-cup with an embedded transducer placed on the lower jaw (Figure 1), and for mysticetes, the stimuli would be presented either through a suction cup transducer placed on the external auditory meatus (ear canal) or through a sound projector approximately 1 meter in front of the animal. All equipment would be calibrated before testing according to the procedures of Finneran and Houser (2006) to ensure proper functioning within the above specified parameters.

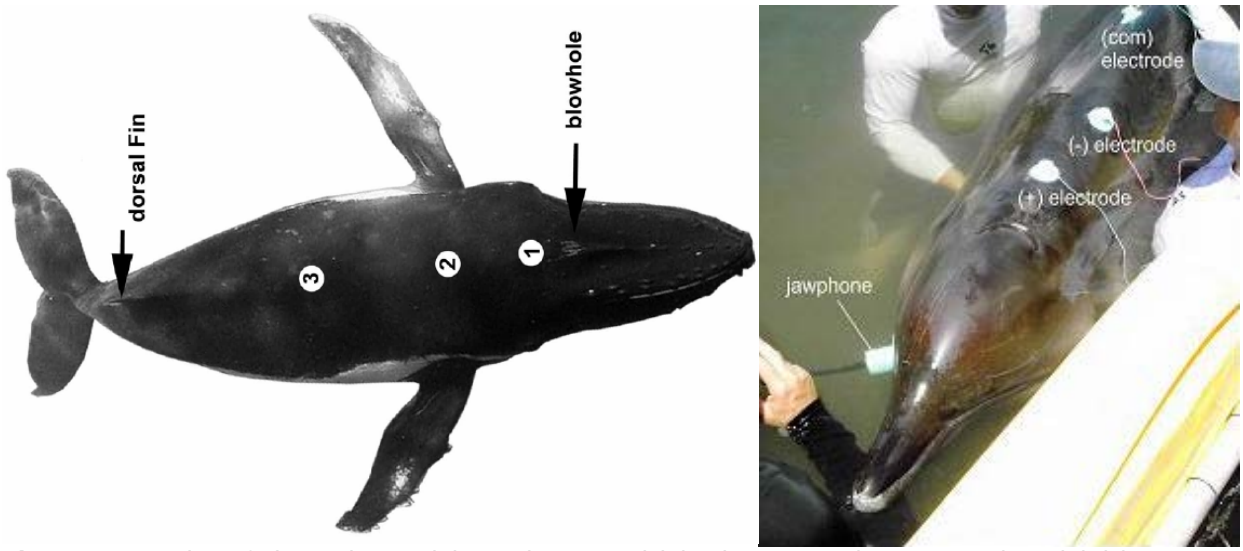

Figure 1: Location of electrodes on (A) mysticetes and (B) odontocetes (NMFS 2017). In (A) (1) represents the positive electrode, (2) the negative electrode, and (3) the common electrode.

Evoked potential responses (i.e., electrical signal) would be recorded primarily through three suction-cups electrodes (positive, negative, and common electrode, Figure 1), but for some species sterile, single-use needle electrodes would be used if suction-cup recordings are not achievable. Needle electrodes are expected to be required for larger odontocetes (e.g., sperm whales) and mysticetes given that in mysticetes the brain is proportionally smaller relative to their overall body size, the auditory nerve is not as robust, and there is a large distance between the skin surface and the brain that will contribute to the attenuation of the neural signal. If needle electrodes are necessary, the insertion point would be treated with three alternating scrubs of betadine and alcohol prior to needle insertion to prevent infection. The needle length would be adapted as to not penetrate below the blubber layer, as measured prior to needle insertion by ultrasound. Needles would have a gauge between 27 and 16 and range in length from 0.5 to 14.0 inches depending on the blubber layer of the animal.

In all (pre-handling, testing, removal of equipment, etc.) the duration of the procedure for any given animal would be two hours or less depending on the specific circumstances (rehabilitation versus stranding, species, number of acoustic stimuli presented, etc.). Once testing is complete, the suction cups and/or needles would be removed by hand, and if needle electrodes where used, bacitracin (topical antibiotic, 500 units/gram) would be applied to the insertion sites. While stranded animals would likely only be tested once, animals at rehabilitation facilities may be tested up to two times per day, a maximum of three times per year, resulting in a total of six takes per animal (Table 1).

The above processes and equipment have been adopted by the Navy Marine Mammal Program for use in the clinical assessment of hearing in Navy dolphins, have been requested by NMFS for inclusion in dolphin health assessments, and are regularly used to assess the hearing of rehabilitating odontocetes prior to release determinations. To date, over 200 bottlenose dolphins (*Tursiops truncatus*) have had their hearing tested by Dr. Houser with the above techniques with no adverse effects. A number of other species have also been tested, including a beaked whale

(*Mesoplodon europaeus*) (Finneran et al. 2009) and pilot whales (*Globicephala macrorhynchus*) (Schlundt et al. 2011).

Minimization measures

The permit contains the following terms and conditions, which help ensure there are no adverse effects to cetaceans:

1) Researchers must immediately stop permitted activities and the Permit Holder must contact the Chief, NMFS Permits Division for written permission to resume
    a. If serious injury or mortality of protected species occurs.
    b. If authorized take is exceeded in any of the following ways:
        i. More animals are taken than allowed in the take table.
        ii. Animals are taken in a manner not authorized by this permit.
        iii. Protected species other than those authorized by this permit are taken.
2) Researchers may attempt testing on an animal two times a day.
3) Researchers must use sterile needle electrodes for auditory testing. If the needle electrode becomes contaminated and is no longer sterile prior to use, a new sterile needle electrode must be used. If a new, sterile needle electrode is not available, the contaminated needle electrode must be completely cleaned and disinfected following the Institutional Animal Care and Use Committee-approved protocol described in the application.
4) The NMFS Regional Stranding Coordinator must pre-approve auditory testing of stranded, entrapped, entangled, and rehabilitating marine mammals.
5) The Stranding Agreement holder or designee and the attending veterinarian must approve and oversee the auditory testing onsite. The Stranding Agreement holder, their designee, and the attending veterinarian have the right to direct and suspend the testing at all times.
6) The attending veterinarian must determine that an animal is stable for testing and, where feasible, that females are not pregnant.
7) The NMFS National Stranding Network Coordinator must approve auditory testing on pregnant females (where the pregnancy is known/has been confirmed by the attending veterinarian), on mother/calf pairs, and on lone calves less than six months old.
8) Auditory testing on entangled animals may only occur after successful disentanglement and approval as required in 5) above.
9) Auditory testing must not delay or interfere with treatment, transport, or release of stranded animals. No animal is to be maintained on the beach or in any stranding situation longer than necessary.
10) Auditory testing must be conducted in a humane manner (i.e., that which involves the least possible degree of pain and suffering) and in a manner that minimizes restraint time and handling stress.
11) For large whales requiring the use of inserted electrodes, insertion depth must be less than the blubber thickness to be determined first by ultrasound.
12) Researchers must immediately discontinue the activities if an animal is suffering, showing adverse reactions, or is at risk of injury during the auditory testing or handling.
13) Auditory testing may only be conducted if each animal tested is marked by the Stranding Agreement holder prior to release in accordance with NMFS Policies and Best Practices for Marine Mammal Stranding Response, Rehabilitation, and Release (hereinafter "NMFS Policies and Best Practices for Marine Mammal Strandings") found at:

http://www.nmfs.noaa.gov/pr/pdfs/health/eis_appendixc.pdf. This includes photo-identification, freeze branding, dorsal fin tags or other identification methods determined in consultation with NMFS.

14) The euthanasia of a stranded animal must not be delayed for purposes of auditory testing for a time period beyond that determined to be humane by the attending veterinarian. If euthanasia is delayed for testing, the animal must be under sedation, analgesia, or anesthesia administered under the direction of the attending veterinarian and authority of the Stranding Agreement holder or designee.
15) Marine mammals undergoing rehabilitation that are used in research studies authorized by this permit must be maintained in facilities that are current Stranding Agreement holders or designees or MMPA Section 109(h) responders, in accordance with applicable regulations (50 CFR 216.27), and the NMFS Policies and Best Practices for Marine Mammal Strandings.
16) Auditory testing must not interfere with the rehabilitation of the stranded animals. Testing should be done concurrently with other medical or husbandry procedures to limit human contact.
17) Research activities must be approved by, coordinated with, and monitored by the attending veterinarian of that facility.
18) Animals undergoing research must be closely monitored to determine if research activities are having an adverse effect on the individuals. The attending veterinarian must be available for emergencies, illnesses, and for treating any health problems associated with the authorized procedures.

Affected ESA-listed Species

The species that may be affected by the proposed action are listed below in Table 2, along with links to the Federal Register (FR) notices for their ESA-listings and Recovery Plans, and the Permits Division determination regarding the effects of the proposed action to each species.

Table 2: Endangered Species Act listed species that may be affected by the proposed action. E – Endangered, T – Threatened, NLAA – Not likely to adversely affect.

Species	ESA Status	Critical Habitat	Recovery Plan	Permits Division Determination
Blue Whale (*Balaenoptera musculus)*	E – 35 FR 18319	-- --	07/1998	NLAA
Fin Whale (*Balaenoptera physalus)*	E – 35 FR 18319	-- --	75 FR 47538	NLAA
Humpback Whale (*Megaptera novaeangliae*) – Central America DPS	E – 81 FR 62259	-- --	55 FR 29646	NLAA
Humpback Whale (*Megaptera novaeangliae*) – Western North Pacific DPS	E – 81 FR 62259	-- --	55 FR 29646	NLAA
Humpback Whale (*Megaptera novaeangliae*) – Mexico DPS	T – 81 FR 62259	-- --	55 FR 29646	NLAA
North Atlantic Right Whale (*Eubalaena glacialis*)	E – 73 FR 12024	59 FR 28805 and 81 FR 4837	70 FR 32293	NLAA
North Pacific Right Whale (*Eubalaena japonica*)	E – 73 FR 12024	59 FR 28805	70 FR 32293	NLAA
Sei Whale (*Balaenoptera borealis*)	E – 35 FR 18319	-- --	76 FR 43985	NLAA
Bowhead Whale (*Balaena mysticetes*)	E – 35 FR 18319	-- --	-- --	NLAA
Sperm Whale (*Physeter macrocephalus*)	E – 35 FR 18319	-- --	75 FR 81584	NLAA
Gray Whale (*Eschrichtius robustus*) Western North Pacific	E – 35 FR 18319	-- --	-- --	NLAA

Species	ESA Status	Critical Habitat	Recovery Plan	Permits Division Determination
Killer Whale (*Orcinus orca*) – Southern Resident DPS	E – 70 FR 69903	71 FR 69054	73 FR 4176	NLAA
False Killer Whale (*Pseudorca crassidens*) – Main Hawaiian Islands Insular DPS	E – 77 FR 70915	-- --	-- --	NLAA
Beluga Whale (*Delphinapterus leucas*) – Cook Inlet DPS	E – 73 FR 62919	76 FR 20179	82 FR 1325	NLAA
Gulf of California Harbor Porpoise/Vaquita (*Phocoena sinus*)	E – 50 FR 1056	-- --	-- --	NLAA
Gulf of Mexico Bryde's whale (*Balaenoptera edeni*)	E – 81 FR 88639 (Proposed)	-- --	-- --	NLAA

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the ESA-listed species or designated critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR §402.02). The applicable standard to find that a proposed action is not likely to adversely affect ESA-listed species or designated critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take (as defined by the ESA) occurs. Discountable effects are those extremely unlikely to occur.

The possible effects of the auditory evoked potential testing that would be authorized under Permit No. 21026 include the effects of handling, suction-cup attachment and/or needle insertion, and acoustic stimuli playback and evoked potential recording. These effects have previously been evaluated during informal consultation on two previous research permits for Dr. Houser (Permit No. 16599 [2012-2017]; Permit No. 1095-1837 [2007-2012]), one on which he was a co-Investigator (Permit No. 931-1597 [2001-2006]) and at least four other permits to other researchers (NMFS 2006a; NMFS 2006b; NMFS 2012a; NMFS 2012b). All of these consultations determined the issuance of the research permits to authorize auditory evoked potential testing was not likely to adversely affect ESA-listed species. We relied on these previous consultations, the latest scientific literature, and information from the Permits Division and the applicant to conduct our analysis on the effects of the auditory evoked potential testing that would be authorized under Permit No. 21026.

In general, the procedures that would be authorized for small to medium sized ESA-listed odontocetes are non-invasive and thus are likely to have minimal, if any, impact. For large ESA-listed odontocetes and calves of ESA-listed mysticetes that would be euthanatized or rehabilitated, minimally invasive procedures involving small needles would be used, increasing the chances for adverse effects. However, we have determined all effects from auditory evoked potential testing by Dr. Houser to either be discountable based on their likelihood of occurrence, or insignificant based on the magnitude and nature of the expected response. We detail our effects analysis below but here note that our conclusion is in large part based on the contexts in which Dr. Houser would conduct testing: either during a stranding event or in a rehabilitation facility. In both contexts, animals face much greater threats (e.g., death, serious injury) that outweigh any minor impacts that may result from Dr. Houser's research, and highly trained

veterinarians or stranding response coordinators would be onsite to monitor and attend to animals' health.

As noted in the description of the proposed action, to the maximum extent possible Dr. Houser would conduct auditory evoked potential testing at the same time as other veterinary procedures. In these cases, the extremely minor adjustments to the handling and restraining that would be required to allow auditory evoked potential testing, such as slightly raising an odontocete's jaw, are very unlikely to cause adverse effects. Thus, in these situations we find adverse effects to be discountable. In cases where Dr. Houser is not able to conduct testing during other veterinary procedures, more handling and restrain would be required. However, given the short duration of this handling (maximum of two hours), the fact that it would be observed, directed, and stopped at any sign of adverse impacts by the stranding response coordinator or veterinarian onsite, and that in context of a stranded or rehabilitation animal such handling would be very minor compared to the handling that would be required to respond to the stranding or for rehabilitation, we find such effects to be extremely minor and insignificant.

Given the non-invasive nature of the suction cups, which would be applied and removed solely by hand, we anticipate minimal response to suction cup attachments. While inflammation and hyperemia could result from the suction cups, such responses would be short term and minimal (NMFS 2016). While the physical contact of the suction cups could elicit a very minor behavioral or stress response, we find this highly unlikely given that individuals would either already be stranded or in a rehabilitation facility where substantial physical contact for other reasons is likely.

Needle electrodes would pierce the skin and thus may cause pain, infection, or even injury. However, given the small gauge of the needles, much smaller than used in biopsy sampling of wild cetaceans that elicit minimal behavioral and physiological responses (Noren and Mocklin 2012), and the sterilization procedures Dr. Houser proposes, infection and injury are extremely unlikely to occur and thus discountable. Some minor pain may be expected, but in his application Dr. Houser notes that in his prior experience with needle electrodes in clinical settings, odontocetes have shown no response upon insertion (NMFS 2017). While needle electrode breakage is possible, we find such breakage to be highly unlikely given that needles will not penetrate the blubber-muscle interface where shearing forces that could lead to breakage occur. In support of this is the fact that in fifteen years of performing this type of testing with marine mammals, Dr. Houser has never observed needle breakage (NMFS 2017). Finally, it is important to note that for mysticetes where testing methods have not yet been fully developed, only those ESA-listed animals deemed necessary for euthanasia or rehabilitation would be subject to needle electrodes. Accordingly, these individuals will either soon die anyway, or will receive extensive medical treatment, alleviating any concerns about infection or injury from the needle electrodes. Based on these factors, we find adverse effects from needle electrodes to be insignificant.

While the play back of an acoustic stimuli could result in both a behavioral and physiological response, the stimuli that would be used by Dr. Houser would be below the thresholds that would be expected to produce a temporary or permanent threshold shift in the target species (NOAA 2016). Thus, we find physiological effects to be discountable. While a behavioral or stress response such as a startle response, small movement, change in respiration, or elevation of stress hormones is possible, such responses are rare (NMFS 2016; NMFS 2017) and would be very short term and minor in the overall context of a stranding or the rehabilitation of an animal.

Thus, we find effects related to behavior and stress that may result from the acoustic stimuli to be insignificant. Finally, we do not anticipate any response to the recording of the evoked potential since this simply involves recording the animal's natural response via already attached instrumentation.

As noted previously, for an action to be considered not likely adversely affect ESA-listed species, any effects, regardless of if they are determined to be discountable, insignificant, or completely beneficial, should not rise to the level of take, as defined by the ESA. Since the MMPA defines take more conservatively, some MMPA Level B takes may not constitute take as defined by the ESA. Based on our analysis above, the effects of auditory evoked potential testing on cetaceans that would be authorized under Permit No. 21026 may constitute take under the MMPA, but they do not rise to the level of take under the ESA. In sum, based on our analysis above, informal consultations on previous research permits involving auditory evoked potential testing, and the lack of documented adverse effects in the literature and annual reports from researchers (Castellote et al. 2014; Mooney et al. 2008; Mooney et al. 2012; NMFS 2015; Szymanski et al. 1998; Yuen et al. 2005), we have determined that the effects of auditory evoked potential testing are not likely to adversely affect ESA-listed species.

Conclusion

Based on this analysis, the NMFS ESA Interagency Cooperation Division concurs with the Permits Division that the proposed action may affect, but is not likely to adversely affect, species listed or proposed to be listed as threatened or endangered under the ESA.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by the Federal agency, or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect an ESA-listed species or designated critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the ESA-listed species or designated critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR §402.16).

Please direct questions regarding this letter to Eric Patterson, NMFS Office of Protected Resources, ESA Interagency Cooperation Division, 301-427-8415, eric.patterson@noaa.gov.

Sincerely,

Donna S. Wieting

Donna S. Wieting
Director, Office of Protected Resources

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