



# MARINE MAMMAL COMMISSION

19 March 2014

Dr. Tammy Adams, Acting 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. 18002  
(Alejandro Acevedo-Gutiérrez, Ph.D.,  
Western Washington University)

Dear Dr. Adams:

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). Dr. Acevedo-Gutiérrez is requesting authorization to conduct research on harbor seals in Washington waters during a five-year period. Similar activities were authorized under permit 1070-1783.

## RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service—

- (1) issue the permit contingent upon inclusion of the proposed mitigation and monitoring measures, (2) follow past agency practice in determining whether an authorization for unintentional mortalities is needed in a situation such as this when the possibility of killing even one animal is so remote, and (3) if it decides to address Dr. Acevedo-Gutiérrez's request that authorization of 12 mortalities be included in the permit, that it authorize a level that reflects the very low probability of any deaths occurring and condition the permit to require a review of research procedures should any deaths occur; and
- if NMFS intends to deviate from past agency practice by including authorization for unintentional mortalities in this permit even though the probability of such a mortality occurring is extremely low, it develop a well-reasoned policy that establishes reasonable thresholds for when authorizations for unintentional mortalities must be included in permits and when authorizations that depend on there being no serious injuries or deaths (e.g., the general authorizations under section 104(c)(3)(C) and incidental harassment authorizations under section 101(a)(5)(D)) can be issued.

## **RATIONALE**

Dr. Acevedo-Gutiérrez proposes to collect scat samples from and conduct aerial surveys of harbor seals year-round in Puget Sound and the San Juan Islands, Washington. The purposes of the proposed research are to (1) quantify the impact individual harbor seals have on various prey species and (2) determine if scat collection activities impact harbor seal abundance. Dr. Acevedo-Gutiérrez would coordinate his activities with the Washington Department of Fish and Wildlife, National Marine Mammal Laboratory (NMML), SeaDoc Society, and Cascadia Research Collective to ensure that he is not duplicating other efforts and to minimize disturbance of individual seals.

Each year, Dr. Acevedo-Gutiérrez and associated researchers could cause up to 57,600 harbor seal disturbances when collecting scat samples. Harbor seals of any age class and either sex could be harassed. Scat samples would be collected at 16 haul-out sites in the Juan de Fuca Strait/San Juan Islands, Eastern Bays, Puget Sound, and Hood Canal (4 sites in each location). Each site would be sampled for up to 3 hours every 10–14 days throughout the year. The researchers would approach the haul-out sites using either a small motorized boat or kayaks. To minimize disturbance to individual seals and possible adverse impacts, researchers would—

1. during the pupping season, conduct the activities as early as possible in the day to maximize the number of daylight hours available for any female/pup pairs that become separated to reunite;
2. attempt to collect scat samples at the (a) beginning of the pupping and molting season when only a few pups have been born and few adults are molting and (b) end of the pupping and molting season when most pups are independent and most adults have molted;
3. refrain from collecting scat samples during the last week of July, when the greatest number of harbor seals are expected to be hauled out;
4. collect scat samples from haul-out sites with no more than 100 seals;
5. attempt to collect scat samples at the beginning of the flood tide, when seals begin to move into the water as the haul-out site becomes submerged, to minimize the number of seals flushed into the water;
6. approach each haul-out site cautiously and at an angle, whenever possible, to minimize startling the seals and to allow them to leave the beach slowly and in small groups; and
7. avoid individual seals that remain on the haul-out site during scat collection.

Prior to collecting scat samples, researchers would record the numbers of seals hauled-out and the presence and location of female-pup pairs. While collecting those samples, a researcher would record changes in numbers of seals hauled out, any behavior indicative of disturbance or injury, and the responses of pups. After scat collection, they would monitor the seals from a distance for at least 15 minutes before departing the area. When back in the laboratory, researchers would identify and enumerate the prey species based on measurements and genetic analyses of various hard parts (i.e., cephalopod beaks and fish otoliths and bones). They also would use genetic analyses to determine the individual seal associated with each sample.

To assess the impact of collecting scat samples on seal abundance, researchers would use remote-controlled aerial drones to document the numbers of seals hauled out at each of the 16 haul-out sites. They could cause up to 12,800 harbor seal disturbances per year during those surveys, which includes harassing seals of any age class or either sex. The aerial surveys would be conducted

twice per month at each of the 16 haul-out sites when seal abundance is expected to be the greatest (i.e., June through September of each year). Each survey would take no more than 20 minutes. The drone is 1.4 kg and would be launched from a vessel at least 500 m to no more than 3 km away from each haul-out site. It would be flown at a minimum altitude of 100 m and would stream live video to the researchers. Researchers would fly the drone away from the haul-out site if seals show any sign of disturbance and would not fly the surveys when marine mammals other than harbor seals are present. They would employ similar monitoring measures for the aerial surveys, including documenting female-pup pair location and behavior and monitoring for at least 15 minutes after the surveys have been conducted. The Commission believes the proposed coordination and mitigation and monitoring measures are prudent and commends Dr. Acevedo-Gutiérrez for including fairly extensive post-activity monitoring in his application.

Dr. Acevedo-Gutiérrez recognized in his application that short-term female-pup separation may occur, and proposed several mitigation measures to increase the likelihood that pairs would leave the haul-out site together and/or locate each other in the water should they be separated. He also did not expect complications to arise that would lead to short-term stress or long-term effects (including abandonment of the site) given the proposed mitigation measures, the proposed frequency of the activities, and the fact that many of the seals already are exposed to high levels of vessel traffic (Huber et al. 2001, Johnson and Acevedo-Gutiérrez 2007, Patterson and Acevedo-Gutiérrez 2008, Acevedo-Gutiérrez and Cendejas-Zarelli 2011) without any apparent adverse population-level effects (Jeffries et al. 2003). Furthermore, based on his experience conducting similar research activities in this area in the past, Dr. Acevedo-Gutiérrez indicated that individuals that flush into the water are likely to return to the haul-out site after researchers leave the area and that no injury, mortality, or long-term female-pup separation is expected (Johnson and Acevedo-Gutiérrez 2007<sup>1</sup>, Patterson and Acevedo-Gutiérrez 2008). He also did not expect any adverse effects from (1) scat collection based on observations under his previous research permit 1070-1783<sup>2</sup> and (2) the use of drones to monitor seals based on similar studies on Steller sea lions and sperm whales<sup>3</sup> and his observations of harbor seals under his current permit (16221), in which harbor seals either ignored the drone or merely looked at it (Olson 2013). In addition, Olson (2013) determined that foot traffic caused little to no disturbance to harbor seals in Puget Sound and the San Juan Islands<sup>4</sup>.

As reflected in his application, Dr. Acevedo-Gutiérrez did not believe that the proposed activities would cause any serious injuries or result in the death of any seals. However, in correspondence with the applicant, the National Marine Fisheries Service (NMFS) raised the prospect that female/pup pairs could become separated during the proposed research and that the death of the abandoned pup could result. NMFS cautioned that, should any unauthorized mortality or serious injury occur, it would constitute a violation of the permit and the MMPA. In response,

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<sup>1</sup> Seals that were disturbed by vessels in the Washington region returned to pre-disturbance levels at 1 minute to more than 90 minutes after the disturbance.

<sup>2</sup> The same frequency of scat collection occurred under his previous research permit, as is proposed under permit 18002. Under permit 1070-1783, Dr. Acevedo-Gutiérrez also was authorized to collect scat during spring and summer and implemented the same mitigation and monitoring measures, as are proposed under permit 18002.

<sup>3</sup> Similar findings have been made for ice seals during NMML surveys using aerial drones.

<sup>4</sup> Harbor seals did not flush (0 percent disturbance) at five sites that were determined to have low (1), medium (2), and high (2) exposure to anthropogenic disturbance. At the sixth site (a low exposure site), only 10.5 percent of the observed harbor seal disturbances were attributed to foot traffic—boat traffic was the primary cause of disturbance at low, medium, and high exposure sites.

Dr. Acevedo-Gutiérrez sought authorization for 12 unintentional mortalities (10 from scat collection and 2 from drone surveys) for the requested five-year permit. That number apparently was derived from information in the Steller sea lion programmatic environmental impact statement<sup>5</sup> (PEIS).

The Commission recognizes that there is always some possibility that animals could die as a result of research activities, particularly those that have the potential to separate dependent pups from their mothers. However, in this instance the Commission believes that that possibility is very remote. Although no data are available to estimate the risk of harbor seal mortality from scat collection or aerial surveys, live-capture activities that are more invasive than those proposed by Dr. Acevedo-Gutiérrez have not caused females and pups to remain separated and have resulted in low mortality rates (approximately 0.008<sup>6</sup>; Huber pers. comm.). The Commission also questions whether Steller sea lions provide a good proxy for assessing the possible impacts on harbor seals. The life history and behavior of the two species differ in important respects. For instance, harbor seals do not stampede when they flush from a haul-out site (as can occur for Steller sea lions) and are able to swim shortly after birth. Harbor seal pups are nursed for only three to five weeks. During that time, the pup can accompany the female when she goes to sea to forage<sup>7</sup>. In addition, females and pups move into the water at least twice per day with the changing tides. Steller sea lions exhibit none of those attributes or behaviors.

The Commission cannot fault Dr. Acevedo-Gutiérrez for amending his application to request authorizations for mortalities associated with the proposed activities as insurance against possible violation of the MMPA and possible suspension of his research activities. However, the Commission questions whether there is a need for such authorizations when the likelihood of such events happening is so small<sup>8</sup>. Furthermore, the number of unintentional mortalities being requested in this case (12) is inappropriately large.

Of greater concern to the Commission is whether the handling of this application signals a policy shift by NMFS under which all researchers are going to be advised to request authorizations for mortalities under their permits whenever there is even the slightest chance that a marine mammal may die. The Commission believes that such a rigorous standard is not necessary and may lead to misperceptions that non-invasive research poses greater risks to marine mammals than is in fact the case. Moreover, advising those conducting non-invasive research to request authorizations for unintentional mortalities may have unintended consequences, such as triggering a review of research activities by an Institutional Animal Care and Use Committee when it may not otherwise be required. The Commission appreciates that there is always a remote possibility that a marine

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<sup>5</sup> In correspondence with the applicant, NMFS cautioned that NMML scientists have predicted mortality probabilities for similar research methods (disturbance on land during ground-based surveys, including during scat collection) to be non-zero for other pinniped species (PEIS; NMFS 2007). In the PEIS, no mortalities were observed for Steller sea lions that were disturbed during ground or aerial surveys (including during the breeding season (see numerous tables in section 4.8 of the PEIS)), which is similar to Dr. Acevedo-Gutiérrez's experience with harbor seals. Further, the PEIS included a mortality rate of 0.0001 for sea lions that enter the water—a mortality rate more than three times greater than the rates proposed by Dr. Acevedo-Gutiérrez.

<sup>6</sup> Other researchers have estimated that the harbor seal mortality rate would be less than 0.01 of the individuals captured during research activities (Jeffries et al. 1993, Harvey unpubl. data).

<sup>7</sup> Steller sea lion pups usually nurse for at least a year and females do not leave the rookery to forage for a week or two post-parturition. Further, pups do not leave the rookery until they are a few months old.

<sup>8</sup> The Commission notes that including a maximum of only two mortalities would equate to a mortality rate of 0.0000057 or a 1 in 175,000+ chance that mortalities would occur.

mammal could die as a result of even the most benign research activities. However, the Commission hopes this does not drive NMFS to advise applicants to seek such authorizations or to include such authorizations in permits when such a possibility is so extremely small<sup>9</sup>.

In light of the foregoing concerns, the Commission recommends that NMFS (1) issue the permit contingent upon inclusion of the proposed mitigation and monitoring measures, (2) follow past agency practice in determining whether an authorization for unintentional mortalities is needed in a situation such as this when the possibility of killing even one animal is so remote, and (3) if it decides to address Dr. Acevedo-Gutiérrez's request that authorization of 12 mortalities be included in the permit, that it authorize a level that reflects the very low probability of any deaths occurring and condition the permit to require a review of research procedures should any deaths occur. In addition, the Commission recommends that, if NMFS intends to deviate from past agency practice by including authorization for unintentional mortalities in this permit even though the probability of such a mortality occurring is extremely low, it develop a well-reasoned policy that establishes reasonable thresholds for when authorizations for unintentional mortalities must be included in permits and when authorizations that depend on there being no serious injuries or deaths (e.g., the general authorizations under section 104(c)(3)(C) and incidental harassment authorizations under section 101(a)(5)(D)) can be issued.

The Commission believes that the activities for which it has recommended approval are consistent with the purposes and policies of the MMPA, including the *bona fide* research requirement.

The Commission appreciates the opportunity to comment on this permit application. Kindly contact me if you have any questions concerning the Commission's recommendations.

Sincerely,



Rebecca J. Lent, Ph.D.  
Executive Director

cc: Donna Wieting, Director of the Office of Protected Resources

## References

Acevedo-Gutiérrez, A., and S. Cendejas-Zarelli. 2011. Nocturnal haul-out patterns of harbor seals (*Phoca vitulina*) related to airborne noise levels in Bellingham, Washington, USA. *Aquatic Mammals* 37:167-174.

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<sup>9</sup> This also could be problematic for authorizations that can be issued only if no serious injuries to deaths would occur, such as the general authorizations under section 104(c)(3)(C) and incidental harassment authorizations under section 101(a)(5)(D) of the MMPA.

- Huber, H.R., S.J. Jeffries, R.F. Brown, R.L. DeLong, and G. Vanblaricom, G. 2001. Correcting aerial survey counts of harbor seals (*Phoca vitulina richardsi*) in Washington and Oregon. *Marine Mammal Science* 17:276–293.
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