



Memorandum For: F/PR – Donna S. Wieting
Director, Office of Protected Resources

From: F/PR1 – Jolie Harrison
Chief, Permits and Conservation Division

Subject: Report on the Application for an Amendment to Scientific Research Permit No. 22629 and Request for Approval of a Breeding Prevention Plan: Recommendation for Issuance and Approval

I recommend the National Marine Fisheries Service (NMFS) issue a **minor amendment** to Permit No. 22629 for research activities on marine mammals, pursuant to the Marine Mammal Protection Act of 1972 as amended (MMPA; 16 U.S.C. 1361 *et seq.*), and the regulations governing the taking and importing of marine mammals (50 CFR Part 216).

The permit amendment request was submitted by the Permit Holder, Mystic Aquarium, 55 Coogan Boulevard, Mystic, Connecticut 06355 (Responsible Party: Stephen M. Coan, Ph.D.).

I also recommend the Office Director approves **Mystic Aquarium’s breeding prevention plan** (hereafter the ‘plan’) submitted on December 1, 2020, in accordance with Condition III.B.6.e of Permit No. 22629.

Summary of Activities

Species and stocks: Mystic Aquarium is permitted to import and conduct research on captive-born beluga whales (*Delphinapterus leucas*). Of the permitted animals, one has both parents likely from the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock. Four animals have one parent likely from the depleted Sakhalin Bay-Nikolaya Bay-Amur River stock and one parent from the Barents or White Sea (i.e., these four whales are mixed-stock progeny)¹.

Mystic Aquarium requests permission to substitute three of the permitted beluga whales identified in Appendix 1, Table 1 of Permit No. 22629. Table 1 of Appendix 1 of the minor amendment describes the parentage and stock lineage of the three new beluga whales. Mystic stated that that the information on the exact location of Russian origin of the parents “is not available and it is not possible to complete genetic testing prior to transport. We understand this will mean they are considered Depleted Status.” For the purposes of the permit, as amended, NMFS considers all three substitute whales as depleted.

¹See Recommendation Memorandum for issuance of Permit No. 22629 for information on the consideration of the status of the whales descended from whales originating in Russia, which applies to the substitute whales for this amendment.

Location: Mystic Aquarium is permitted to import the whales from Marineland of Canada, Inc. (Ontario, Canada) to Mystic Aquarium (Mystic, Connecticut). If approved by the Office Director, the whales may be later transported from Mystic Aquarium to Georgia Aquarium (Atlanta, Georgia)². **The permitted locations would not change.**

Objectives: The objectives of the permitted research, as described in the permit application, are to contribute knowledge and inform management and recovery of beluga whale populations in the wild including the endangered Cook Inlet beluga whale distinct population segment (DPS) and the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock. To achieve these objectives, the following studies are authorized:

- Study 1: Neuroimmunological response to environmental and anthropogenic stressors;
- Study 2: Development of novel non-invasive techniques to assess health in free-ranging, stranded and endangered beluga whales;
- Study 3: Hearing and physiological response to anthropogenic sound;
- Study 4: Photogrammetry body condition studies;
- Study 5: Diving physiology;
- Study 6: Microbiome; and
- Study 8: Testing of prototype telemetry and imaging devices before deployment on wild beluga whales.

The objectives of the research would not change.

The objectives of the minor amendment are to:

- **Substitute three of the whales permitted for import and research due to health issues as described in the amendment request, and**
- **Clarify reproductive monitoring procedures and implementation of the approved breeding prevention plan.**

Methods: Mystic Aquarium is permitted to import the whales using air and ground transport and to conduct the following research procedures (corresponding to the study objectives proposed above) primarily using trained behaviors and voluntary participation of the whales:

- Study 1: Collect blood samples;
- Study 2: Collect blood, breath, feces, saliva, and skin samples;
- Study 3: Measure auditory evoked potential (baseline audiograms and masked hearing studies) and collect breath samples;
- Study 4: Take morphometric measurements, weights, and photos;
- Study 5: Collect blood and breath samples;
- Study 6: Collect swab samples (breath, skin, oral, anal, and vaginal); and
- Study 8: Deploy suction-cup attached telemetry devices.

The research methods would not change.

The proposed changes amend Appendix 1, Table 1, to:

- **Substitute three of the whales to be imported for scientific research, and**

²See Recommendation Memorandum for issuance of Permit No. 22629 and Permit No. 22629 Condition III.B.6.j.

- **Amend the protocols for reproductive monitoring and preventing breeding to include those described in the approved breeding prevention plan.**

Take Numbers: Mystic Aquarium is permitted to import five beluga whales identified in Appendix 1, Table 1 of the permit. Research sampling takes are allocated in Appendix 1, Table 2 of the permit. **The number of animals to be imported and number of research takes would not change.**

Duration: The permit expires August 31, 2020. **The duration of the permit would not change.**

Chronology of Processing

August 27, 2020	Permit No. 22629 issued
September 25, 2020	Mystic submitted letter seeking clarification on the plan
November 13, 2020	NMFS responded to Mystic’s September 25 letter
November 20, 2020	Mystic submitted amendment request to substitute whales
November 24, 2020	Mystic submitted the plan
November 25, 2020	NMFS requested additional information
December 1, 2020	Mystic submitted revised amendment request and plan

Applicable Federal Permits and Consultations

MMPA Permit: Permits for scientific research on marine mammals are issued under Section 104 of the MMPA and NMFS’s implementing regulations at 50 CFR Part 216. These permits exempt bona fide scientific research activities on marine mammals from the MMPA’s importation and take prohibitions.

Minor amendment: The proposed amendment qualifies as a minor amendment consistent with 50 CFR § 216.39. There are no changes to the species, numbers of animals taken or imported, location, or duration of the permit. The changes in the manner of take relate to reproductive monitoring and breeding prevention in Table 1 of Appendix 1. As described in the submitted plan, this includes conducting ultrasound using a hydraulic lift in the medical pool if necessary, increasing the frequency of ultrasound, and specific protocols on when whales would be physically separated. NMFS is authorizing additional biological samples for reproductive monitoring including but not limited to urine.

These changes and clarifications will not increase the risks of adverse impacts to the animals above that already permitted. Use of the hydraulic lift system will allow personnel to sample whales under safe, controlled conditions for any whales not yet trained to allow sampling under behavioral control and is consistent with permitted methods for weighing animals and conducting physical exams. As described in the plan, moving the whales to the medical pool is performed under behavioral control and the false bottom floor is then raised in 45-60 seconds for brief (e.g., 5 minutes or less) shallow or out-of-water restraint, after which the false bottom floor is lowered and the beluga is once again free-swimming. Positive reinforcement training will be used for gating and riding the hydraulic lift, and this and ultrasound and other sampling will be

overseen by trained personnel and veterinarians at all times. In the rare event a whale has an adverse reaction to any of the procedures to implement the plan, mitigation described in the plan will be implemented.

Review and approval of the breeding prevention plan: We solicited and considered comments from the Marine Mammal Commission, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service, the U.S. Fish and Wildlife Service, and the U.S. Navy's Marine Mammal Program in its review of the plan and incorporated recommendations as determined appropriate. We believe the plan will be safe and effective with the following conditions and other terms included in the approval letter:

1. Prior to importation, the female beluga whales authorized by the permit must be examined to confirm they are not pregnant.³
2. Once at Mystic Aquarium, reproductive monitoring must immediately be initiated on the female beluga whales authorized by the permit that are age 6 and older.⁴ This monitoring must be conducted via ultrasound and, if determined appropriate by the attending veterinarian, via other sampling⁵. The timing and frequency of ultrasounds and other sampling must be conducted to account for the possibility of multiple reproductive cycles⁶ over the entirety of each breeding season (typically January through June⁷). Once ovarian cycling is confirmed complete via ultrasound, the females authorized by the permit can rejoin a social group containing any reproductive male no sooner than three days after ovulation or resorption.
3. Physical separation of any male imported under the permit from any reproductively viable female at Mystic⁸ must begin at age 8⁹ or, if testicular ultrasound or other sampling will be performed, when he is first determined to be sexually mature, whichever is earlier.

³50 CFR §216.35(d) and Permit Condition III.B.6.d.

⁴Sexual maturity in free-ranging and captive female beluga whales is estimated at 6–7 years (Robeck et al. 2005; Robeck et al. 2018).

⁵In addition to ultrasound, which is effective for monitoring reproductive status in both males (Richard et al. 2017) and females (Steinman et al. 2012), to implement the plan the attending veterinarian may utilize sampling described in Study 7 and as authorized in Appendix 1, Table 1 (see footnote 1) of the permit, as amended. Urinary endocrine monitoring has also been included in Appendix 1, Table 1 as an indicator of beluga whale reproductive cycles (Steinman et al. 2012).

⁶Female beluga whales may spontaneously ovulate and have been observed to have an inter-estrous interval of approximately 34 days during the breeding season (Steinman et al. 2012).

⁷As defined by Robeck et al. 2005.

⁸Including those held for public display purposes that are not subject to the permit.

⁹Sexual maturity in free-ranging and captive male beluga whales is estimated at 8–9 years (Robeck et al. 2005; Robeck et al. 2018).

Magnuson-Stevens Fishery Conservation and Management Act (MSA) Consultation: Section 305(b)(2) of the MSA requires NMFS to complete an Essential Fish Habitat (EFH) consultation for any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by the agency that may adversely affect EFH. Consultation is required for renewals, reviews or substantial revisions of actions.

For the original permit, the Permits and Conservation Division determined that the permitted activities will not occur in areas with designated EFH and did not initiate consultation with any of the NMFS Offices of Habitat Conservation. The proposed activities are directed at marine mammals in captivity and do not affect fish habitat. Issuance of the minor amendment and approval of the plan does not change the manner in which the permitted import and taking of marine mammals may affect any EFH, thus, consultation is not required for this minor amendment.

National Environmental Policy Act (NEPA) Documentation

Scientific research permits are, in general, categorically excluded from the requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (NOAA Administrative Order [NAO] 216-6A). However, for the original permit NMFS determined that an EA was appropriate to more fully evaluate the potential effects of NMFS' decision. Based on the analysis in the EA, NMFS determined that permit issuance will not have significant impacts on the quality of the human environment, and prepared a Finding of No Significant Impact (FONSI) documenting this decision.

NMFS determined that issuance of this minor amendment and approval of the plan is adequately assessed in the EA and that no further NEPA review is required. There are no changes to the alternatives or to the affected environment and impacts to resources. No new significant circumstances or information relevant to environmental concerns associated with the minor amendment were identified during the environmental review. There are no changes to the number of animals authorized to be imported and taken, no changes to the permitted locations, no new species for which import or take is being authorized, and monitoring and mitigation requirements remain the same.

Findings and Recommendation

As required by the MMPA and NMFS regulations, the information provided by the applicant demonstrates that for the original permit application¹⁰ and proposed minor amendment:

- The proposed activity is humane and does not present any unnecessary risks to the health and welfare of the marine mammals.
- The proposed activity is consistent with all restrictions set forth at §216.35 (general permit restrictions) and §216.41 (purpose-specific restrictions).

¹⁰Excluding Study 7 and as described in the Recommendation Memorandum for the original permit application File No. 22629.

- The proposed activity by itself or in combination with other activities, will not likely have a significant adverse impact on the species or stock.
- The applicant’s expertise, facilities, and resources are adequate to accomplish successfully the objectives and activities stated in the application.
- If a live animal will be held captive or transported, the applicant's qualifications, facilities, and resources are adequate for the proper care and maintenance of the marine mammal.
- Any requested import will not likely result in the taking of marine mammals or marine mammal parts beyond those authorized by the permit.
- The proposed activity furthers a bona fide scientific purpose.
- The proposed research will not likely have significant adverse effects on any other component of the marine ecosystem of which the affected stock is a part.
- For stocks designated as depleted:
 - The proposed research cannot be accomplished using a stock that is not designated as depleted.
 - The proposed research, by itself or in combination with other activities will not likely have a long-term direct or indirect adverse impact on the stock.
 - And, the proposed research will either:
 - Contribute to fulfilling a research need or objective identified in a species recovery or conservation plan, or if there is no conservation or recovery plan in place, a research need or objective identified by the Office Director in stock assessments established under Section 117 of the MMPA (16 U.S.C. 1386); or
 - Contribute significantly to understanding the basic biology or ecology of the species or stock, or to identifying, evaluating, or resolving conservation problems for the species or stock; or
 - Contribute significantly to fulfilling a critically important research need.

The Permits and Conservation Division’s review of the original permit application, amendment request, and other relevant information indicates that the importation and research methods (“manner of taking”) are consistent with the MMPA’s definition of “humane” and do not present any unnecessary risks to the health and welfare of the marine mammals. Furthermore, the applicant has demonstrated that the importation and research is consistent with the purposes of MMPA and applicable regulations.

We believe the plan, with the recommended terms and conditions and as authorized in the minor amendment (Appendix 1, Table 1), will be both safe and effective in preventing breeding, and therefore meets the requirements of Condition III.B.6.e.

In addition to ensuring the applicable regulatory criteria have been met prior to issuance of a permit, Section 104(b)(2)(D) of the MMPA requires that permits specify any terms and conditions that the Secretary deems appropriate. In accordance with 50 CFR §216.36, the Director, Office of Protected Resources, has the authority to specify such conditions. For reasons previously explained in the Recommendation Memorandum for the original permit application, the permit is conditioned to require Mystic Aquarium to submit a plan to provide safe and effective contraception or other means to prevent breeding of the five subject beluga whales, for approval by the Office Director prior to import. Consistent with other research

permits authorizing captive maintenance, the permit is conditioned to require approval by the Office Director for any transfer or transport of the imported whales, which includes transport of any of the imported whales to the Georgia Aquarium and disposition of the whales at the termination of research.

Other terms and conditions deemed appropriate, relate to minimizing potential adverse impacts of specific activities (e.g., transport, biological sampling, hearing studies), monitoring of impacts of research, and reporting to ensure permit compliance. These terms and conditions are consistent with those in other permits NMFS has issued for research on marine mammals in captivity. In addition to the terms and conditions described above, Section 104(b) of the MMPA also requires that the permit specify: 1) the effective date of the permit, 2) the number and kinds (species and stocks) of marine mammals that may be imported and taken, and 3) the location and manner in which they may be imported and taken.

For the reasons presented in this memorandum, I recommend you sign the permit amendment with the proposed terms and conditions and approve the plan with the required terms and conditions.

References

- Richard, J. T., Schmitt, T., Haulena, M., Vezzi, N., Dunn, J. L., Romano, T. A., and Sartini, B. L. 2017. Seasonal variation in testes size and density detected in belugas (*Delphinapterus leucas*) using ultrasonography. *Journal of Mammalogy*, 98(3), 874-884.
- Robeck, T. R., Monfort, S. L., Calle, P. P., Dunn, J. L., Jensen, E., Boehm, J. R., Young, S., and Clark, S. T. 2005. Reproduction, growth and development in captive beluga (*Delphinapterus leucas*). *Zoo Biology*, 24(1), 29-49.
- Robeck, T., O'Brien, J., and Atkinson, S. 2018. Reproduction. In: F.M. Gulland, L. A. Dierauf, and K. L. Whitman (Eds.), *CRC Handbook of Marine Mammal Medicine, 3rd Edition* (pp. 169-207). CRC Press.
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