



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

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 a Scientific Research Permit [File No. 22629]: Recommendation for Issuance

I recommend the National Marine Fisheries Service (NMFS) issue 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 was requested by Mystic Aquarium, 55 Coogan Boulevard, Mystic, Connecticut, 06355 (Responsible Party: Stephen M. Coan, Ph.D.).

Summary of Requested Activities

Species: Mystic Aquarium requests importation and research on captive-born beluga whales (*Delphinapterus leucas*). One animal has both parents likely from the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock¹. Four animals have one parent likely from the depleted Sakhalin Bay-Nikolaya Bay-Amur River stock and one parent from the Barents or White Sea² (i.e., these four whales are mixed-stock progeny).

Location: Mystic Aquarium proposes to import the whales from Marineland of Canada, Inc. (Ontario, Canada) to Mystic Aquarium (Mystic, Connecticut). Mystic proposed that the whales

¹Mystic Aquarium stated in permit application File No. 22629 (hereafter “permit application”) that at least one parent of each of these individuals was captured from the wild from the Sea of Okhotsk stock “that was subsequently designated as depleted under MMPA” (i.e., the Sakhalin Bay-Nikolaya Bay-Amur River stock), and structured their research permit application to address requirements for research on depleted marine mammals. However, in response to public comments, Mystic stated: “...the records on the parents do not fix their origin specifically enough to a stock within the Sea of Okhotsk to locate their particular stock of origin. Therefore, it is unknown whether the source stock of the parents was among those later designated as depleted.” See the response to Marine Mammal Commission Comment 1(a) below regarding the depleted status for additional information.

²Mystic Aquarium stated in the permit application that the male named Andre was collected from the Barents Sea and based on genetic analysis, is the definitive sire for three of the whales; and, the likely sire to a fourth whale (based on reproductive behavioral observations). According to Ceta-Base (<https://www.cetabase.org/captive/cetacean/marineland-canada/>), Andre was captured in the Barents Sea (~1998) and held at Utrish [Dolphinarium] Ltd. before being exported to Marineland in October 1999. However, there is information suggesting that live-captures had ceased in the Barents Sea prior to his captivity and that he may have been collected from the White Sea (NAMMCO 2018; Ceta-Base 2010; See also Exhibit 3 associated with Permit No. 1078-1796 noting other beluga whales captured from the White Sea during this time).



could be later transported from Mystic Aquarium to Georgia Aquarium (Atlanta, Georgia) if deemed in the best interest of an individual beluga whale or the captive U.S. beluga whale population for social, health, or welfare reasons³.

Objectives: The objectives of the proposed 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 proposed:

- **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;
- **Study 7:** Behavioral and reproduction studies; and
- **Study 8:** Testing of prototype telemetry and imaging devices before deployment on wild beluga whales.

Methods: Mystic Aquarium proposes 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);
- **Study 7:** Document behavioral observations (video); collect blood, breath, and vaginal swabs; conduct ultrasound of reproductive organs; and allow natural breeding⁴; and
- **Study 8:** Deploy suction-cup attached telemetry devices.

³Mystic Aquarium further clarified circumstances under which they might deem it necessary to move the whales to Georgia Aquarium in their responses to public comments (see *Mystic Responses – Issuance Criteria*; Comment 1, pp. 1-3; and *Mystic Responses – Final Questions*; response to Question 2, p. 1). See also Attachment 1, response to Public Comment 3(c).

⁴Mystic Aquarium stated in the permit application (Study 7) that while beluga whale reproduction is not the purpose of the proposed research, breeding is a natural behavior that would be allowed to occur. The permit application includes a statement that artificial insemination would not be used and contraception would not be used unless medically necessary for the health and well-being of an individual beluga whale. In the event of a pregnancy, Mystic proposed to opportunistically sample the pregnant females and up to two calves for the research.

Mystic Aquarium proposes to display the beluga whales to the public incidental to the research.

Take Numbers: Mystic Aquarium requested to import five beluga whales identified in Table 1 of the permit application take tables. Proposed research sampling takes were allocated in Table 2 of the permit application take tables.

Duration: Mystic Aquarium requested a 5-year permit.

Summary of Permit Decision

Permit No. 22629 authorizes Mystic Aquarium to import five beluga whales from Marineland to Mystic Aquarium for purposes of scientific research. The permit is for a five-year term, and authorizes all activities requested by Mystic Aquarium with the exception of the proposed breeding and research on pregnant females and their progeny, for reasons described in the response to Marine Mammal Commission (MMC) Comment 2(b) below. 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 whales⁵, for approval by the Office Director prior to importation. The permit would still authorize behavioral observations, biological sampling, and ultrasound for reproductive monitoring; these activities would be authorized as part of normal husbandry to allow Mystic to monitor the reproductive status of the animals whether they are managed using contraception or physical separation (see Appendix 1, Table 1 of the permit). For example, since beluga whales breed seasonally, monitoring reproductive status may be necessary to strategically administer contraception or physically separate the animals at the onset of the reproductive season, as well as to ensure the methods are effective.

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, including any transport to the Georgia Aquarium, and disposition of the whales at the termination of research. While Mystic has outlined circumstances under which they might deem it necessary to move whales to Georgia Aquarium⁶, any request to move any of the imported whales from Mystic to Georgia Aquarium (or to any other facility) would be considered on a case-by-case basis. Factors NMFS would consider in its decision would include the rationale for the move, consideration of alternatives, consultation with APHIS, and impacts to the proposed research to ensure consistency with the MMPA. Also consistent with other research permits authorizing captive maintenance, in addition to the MMPA Section 104 (16 U.S.C. 1374) authority for scientific research, the permit includes authorization under MMPA Section 112(c) (16 U.S.C. 1382) for captive maintenance (see Appendix 1, Table 1 of the permit). At the cessation of research, these authorities may be used for continued maintenance, as deemed appropriate by the Office Director.⁷

⁵Any contraceptive plan must be developed in consultation with the licensed attending veterinarian(s) and other specialists experienced in beluga whale reproductive husbandry.

⁶See footnote 3.

⁷See also response to MMC Comment 2(b) and Attachment 1, response to Public Comment 10.

Consistent with NMFS' regulations⁸, public display is authorized incidental to the research. This incidental public display must not interfere with the research and must occur as part of an educational program describing the status of the species and its endangered and depleted stocks. The animals may not be used in public interactive programs or be trained for performance. Public demonstrations in which the whales perform trained husbandry, medical, research-related, and natural behaviors are authorized.

Chronology of Processing

March 4, 2019	Permit application formally submitted
April – September 2019	Additional information requested to ensure the permit application was complete; final, complete permit application submitted
September 30, 2019	Permit application distributed to reviewers and interested parties
October 1, 2019	<i>Federal Register</i> notice of receipt published; 60-day public comment period began
October 3 and 8, 2019	Requests for public hearing received
November 1, 2019	<i>Federal Register</i> notice of public hearing published
November 18, 2019	Public hearing held in Silver Spring, Maryland
December 2, 2019	Public comment period ended
December 2, 2019	Marine Mammal Commission recommendation letter received
December 6, 2019	U.S. Department of Agriculture recommendation letter received
January – May 2020	Comments on permit application sent to applicant; responses received

Summary of External Comments and Responses

NMFS published a notice in the *Federal Register* (84 FR 52072, October 1, 2019) announcing receipt of the permit application, making it available for public review for 60 days. On November 19, NMFS held a public hearing (84 FR 58694, November 1, 2019). Public comments and responses are summarized in Attachment 1. The permit application was also provided to the Marine Mammal Commission and the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, and their comments are summarized below.

Mystic Aquarium's responses to comments, where incorporated in this memorandum and Attachment 1, have been summarized. Mystic's responses in their entirety consist of the following documents titled:

- *Mystic Responses – Acoustic Study* (February 25, 2020 and March 20, 2020)
- *Mystic Responses – Objectives, Justification, and Methods* (March 11, 2020)
- *Mystic Responses – Take Numbers and Additional Questions* (March 16, 2020)
- *Mystic Responses – Issuance Criteria* (March 26, 2020)
- *Mystic Responses – Final Questions* (May 28, 2020)

⁸50 CFR §216.41(c)(1)(vi). See Issuance Criterion 2 below and Attachment 1, responses to Public Comment 2 (a-c).

These responses and supporting documents provided with the responses are available on the following web site: <https://www.fisheries.noaa.gov/action/permit-application-import-5-beluga-whales-scientific-research-file-no-22629-mystic-aquarium>.

The Marine Mammal Commission (MMC): The MMPA stipulates that NMFS may not issue a scientific research permit without first seeking review of the permit application by the MMC and its Committee of Scientific Advisors. In a letter dated December 2, 2019, the MMC provided the following comments and recommendations summarized below. The MMC’s letter, which includes additional rationale, is available on their website (<https://www.mmc.gov/wp-content/uploads/19-12-02-Harrison-Mystic-Aquarium-22629.pdf>).

MMC Comment 1 - Regarding the Depleted Status of the Captive Whales:

- **MMC Comment 1(a):** The MMC recommended that NMFS adopt a policy clarifying that a marine mammal with either parent from a depleted stock also be considered part of that depleted stock. The MMC stated that this would further the policies and rationale underlying the prohibition on importing depleted marine mammals for purposes of public display⁹. The MMC believes that the best interpretation of the MMPA is to treat any marine mammal as depleted if either of its parents is from a depleted stock as it would undermine the intent of the MMPA if depleted marine mammals could be removed from the wild in other countries and be bred with animals from non-depleted stocks to supply public display animals to the United States.
 - **NMFS Response 1(a):** For reasons discussed below, NMFS considers one of the beluga whales to be a member of the depleted population, because both parents are likely from the depleted stock. Four of the whales have mixed-stock parentage (i.e., one parent likely from the depleted stock and the other from a stock that has not been designated as depleted). For purposes of this permit application, NMFS has treated all five whales as depleted. NMFS has not formally established the MMPA status of the mixed-stock progeny but we plan to develop a policy in the future.

Mystic Aquarium stated in the permit application¹⁰ that at least one parent of each of these individuals was captured from the wild from the Sea of Okhotsk stock that was subsequently designated as depleted under the MMPA (i.e., the Sakhalin Bay-Nikolaya Bay-Amur River stock), and structured their permit application to address requirements for research on depleted marine mammals. This permit application was presented to the public for comment, as required by the MMPA.

⁹MMPA Section 101(a)(3)(B); 16 U.S.C. 1371: Except for scientific research purposes, photography for educational or commercial purposes, or enhancing the survival or recovery of a species or stock as provided for in paragraph (1) of this subsection, or as provided for under paragraph (5) of this subsection, during the moratorium no permit may be issued for the taking of any marine mammal which has been designated by the Secretary as depleted, and no importation may be made of any such mammal.

¹⁰Mystic stated: “We are intently aware that at least one parent of each of these individuals was captured from the wild over a decade or more ago from the Sea of Okhotsk stock that was subsequently designated 3 years ago as Depleted under MMPA.”

However, in response to public comments¹¹, Mystic stated: “...the records on the parents do not fix their origin specifically enough to a stock within the Sea of Okhotsk to locate their particular stock of origin. Therefore, it is unknown whether the source stock of the parents was among those later designated as depleted.” While Mystic’s subsequent responses to comments appear to contradict their initial position as to the parents’ origins, NMFS has, for purposes of this permit application, treated the whales proposed for import as depleted.

In addition to Mystic’s own characterization of the parents in the permit application made available for public comment, NMFS considers the parents captured in the Sea of Okhotsk to be from the depleted stock for the following reasons. CITES records indicate that beluga whales were exported from Russia to Canada from 1999 to 2008¹², and Marineland acknowledged that the first of these imported whales were intended to establish a breeding program at Marineland (The Leader-Post 1999). Available information suggests that for the captive-born whales proposed for import, all but one¹³ of their parents were collected from the Sea of Okhotsk between 2000 and 2008¹⁴. Live-captures in Russia from 2000 onward occurred solely in areas of the northwestern Sea of Okhotsk, comprising the Sakhalin Bay and Amur River region; all live-captures for allocated quotas for this area were conducted in the southern part of Sakhalin Bay (Bettridge et al. 2016; Fisher and Reeves 2005; Shpak and Glazov 2014).

Beluga whales occur in two well-separated regions of the Sea of Okhotsk (Lowry et al. 2017). In the northeastern region, they summer along the coast and in estuaries of Shelikhov Bay and winter along the ice edge of the Bay and northwestern Kamchatka. In the western Sea of Okhotsk, beluga whales occur in the northern Sakhalin Bay and Amur River region as well as several smaller bays along the Shantar coast. While it is true that multiple stocks reside in the Sea of Okhotsk (IWC 2013; NAMMCO 2018; O’Corry-Crowe et al. 2018), there are no past or present beluga whale live-capture operations in the northeastern Sea of Okhotsk (NAMMCO 2018).

Furthermore, given the seasonal site fidelity of beluga whales in the Sakhalin-Amur region, capture operations tended to occur at familiar sites in these areas where conditions are favorable for captures; the same live-capture sites were used year after year (Reeves et al. 2011). Additionally, beluga whales found in the Sakhalin-Amur region were historically targeted for commercial and subsistence hunts, despite quotas being allocated for the entire Sea of Okhotsk (Bettridge et al. 2016). From 2000 through 2012, 300 beluga whales were captured live from the Sakhalin Bay-Amur River stock (Shpak and Glazov 2013). Every year that

¹¹See *Mystic Responses – Issuance Criteria*; response to Comment 4(a), pp. 12-14.

¹²See Attachment 1, Public Comment 12.

¹³See footnote 2.

¹⁴According to Ceta-Base (<https://www.cetabase.org/captive/cetacean/marineland-canada/>).

live captures were conducted, the beluga whales were removed from one demographic unit of that stock (Shpak and Glazov 2014). Thus, it is highly likely that the parents of the subject beluga whales captured in the Sea of Okhotsk originated from the depleted Sakhalin Bay-Nikolaya Bay-Amur River Stock of beluga whales.

Based on this information, NMFS considers the parents captured in the Sea of Okhotsk to be from the depleted stock, and the fact that they were captured from the wild before the population was designated as depleted does not deny these whales “depleted” status under the MMPA. This is consistent with the holding of the Court of Appeals for the District of Columbia in *In re Polar Bear ESA Listing and Section 4(D) Rule Litigation- MDL No. 1993*, 720 F. 3d 354 (D.C. Cir. 2013), in which hunting organizations challenged the U.S. Fish and Wildlife Service’s decision that polar bear (*Ursus maritimus*) trophies could not be imported under the MMPA following the depleted designation upon listing under the Endangered Species Act (ESA), even if the bears were killed (i.e., “taken”) before the depleted designation became effective. Further, the preamble to final rule for designating the Sakhalin Bay-Nikolaya Bay-Amur River Stock of beluga whales as depleted (81 FR 74711, October 27, 2016) explained that the depletion designation “applies to all biological members of the stock, regardless of whether those individuals are in the wild or in captivity” and that progeny of this depleted stock also share the depletion designation. This is consistent with the ESA, where all members of a species or DPS, whether wild, captive, and/or progeny, have the same endangered or threatened status as all others belonging to that species or DPS. See 80 FR 7380 (February 10, 2015) regarding the captive Southern Resident killer whale (*Orcinus orca*), Lolita; and 80 FR 34499 (June 16, 2015) regarding captive chimpanzees (*Pan troglodytes*).

- **MMC Comment 1(b):** The MMC commented that it is unclear if the applicant has done an exhaustive search of potentially available, non-depleted beluga whales that might be suitable subjects for the proposed research and that NMFS should assess this as part of its application of the requirements for using depleted marine mammals for research.
 - **NMFS Response 1(b):** In Mystic Aquarium’s response to comments¹⁵, they described their efforts to obtain beluga whales including partnering with other U.S. aquariums maintaining beluga whales and stated that while some collaboration exists, it is not to the extent needed to achieve the objectives of their research. Mystic Aquarium’s collaborations with other U.S. aquariums that maintain beluga whales include requesting biological samples (e.g., blood, breath, saliva), which will continue in order to supplement the research on the five whales to be imported. Mystic stated that these samples are often from a small number of whales and limited in frequency of sampling due to personnel and time constraints given other animal care and training priorities at other facilities. Mystic further stated that it is not feasible to carry out a long-term seasonal sample collection study at other U.S. aquariums due to logistical and financial constraints of travel

¹⁵See *Mystic Responses – Issuance Criteria*; responses to Comment 4 (a-e), pp. 12-24.

and sampling protocols, and provided detailed examples of the time it takes to train the specific research behaviors to accomplish the sampling. Mystic stated that Georgia Aquarium is the only facility that agreed to dedicate the necessary resources to carry out the research at its facility. Mystic further stated that the five imported whales are needed to reach an appropriate sample size¹⁶ to meet their objectives for the proposed research and that Marineland has the only population of whales where transport of that number of whales to Mystic is possible. Mystic further stated that having the animals on site at Mystic Aquarium enables their scientists to observe the whales' behavior, prioritize research training, and modify protocols as necessary to maximize efficiency, which will "yield a more solid scientific study...in a more reasonable amount of time." Mystic further stated they would not pursue collecting whales from the wild. NMFS is satisfied that the applicant conducted an adequate search of potentially available, non-depleted beluga whales, and we have considered this in the assessment of the requirements for using depleted marine mammals for research.

MMC Comment 2 - Regarding the Proposed Breeding:

- **MMC Comment 2(a):** In the MMC's comments on the permit application they stated that, based on the applicant's description of mating, pregnancy, birth, and calf rearing as not critically important to the proposed research, it is not clear whether Mystic Aquarium intended to establish a breeding program for the imported whales and recommended NMFS clarify this. The MMC also commented on the permit application that it is assumed none of the adult females will be pregnant when they are to be imported and that this should be stated.
 - **NMFS Response 2(a):** In Mystic Aquarium's response to comments¹⁷, they stated that they would not establish a formalized breeding program and that the whales are not being imported to breed. Mystic stated that ensuring welfare includes allowing animals to exhibit natural behaviors, defined as "behavior that animals have a tendency to exhibit under natural conditions, because these behaviors are pleasurable and promote biological functioning" (Bracke and Hopster 2006). Mystic further responded that they would also not allow animals to breed indiscriminately and that breeding opportunities would only occur following genetic analysis and with input and approval from the Association of Zoos and Aquariums' Marine Mammal Taxon Advisory Group according to accepted population management criteria. NMFS notes that while Mystic stated it was not establishing a formal breeding program, their description of the intent to breed these animals using "accepted population management criteria" was not included in the permit application and does not appear to allow for completely natural breeding within the social group. Mystic also stated, in response to the MMC's comments, that preventing breeding would impact the study design by manipulating hormone levels or disrupting social groups, and NMFS

¹⁶See *Mystic Responses – Objectives, Justification, and Methods*; response to Comment 8(b), pp. 11-12.

¹⁷See *Mystic Responses – Issuance Criteria*; response to Comment 7, pp. 29-30.

acknowledges that Study 7 would be impacted by use of contraception or physical separation. However, Mystic acknowledged in their application that contraception could be used on the imported whales if medically necessary for the health and well-being of an individual whale; and, that physical separation was possible in their facility.

In Mystic Aquarium's response to comments¹⁸, they stated that no pregnant animals will be imported, and the permit is conditioned to prohibit import of pregnant or lactating animals.

- **MMC Comment 2(b):** The MMC suggested that NMFS weigh the importance of the proposed research in addressing pressing conservation issues against the diminishment of the policies underlying the MMPA's prohibition on importing depleted marine mammals for purposes of public display by allowing the whales to be placed on display indefinitely. The MMC commented that allowing the whales to breed is the most troubling aspect of the proposed research and recommended that, if NMFS issues a permit, it include a condition to require Mystic or any other facility where the whales are housed to take steps to preclude breeding. The MMC believes that allowing breeding effectively extends indefinitely the issue of what to do with the animals once the proposed research is completed¹⁹ and adds to the impression that at least a secondary impetus for seeking the permit is to obtain depleted marine mammals for purposes of public display, which cannot be authorized directly.
 - **NMFS Response 2(b):** In Mystic Aquarium's response to comments²⁰, they reiterated that the purpose of the permit is to conduct scientific research, not public display, which is supported by the fact that the Aquarium was founded as a research organization, is the only beluga whale holding institution to hold an APHIS research registration, has conducted beluga whale research and published peer-reviewed research findings for decades, and employs a dedicated team of beluga whale researchers. NMFS believes that the permit is properly characterized as a scientific research permit. However, NMFS has conditioned the permit to preclude breeding. A prohibition on breeding ensures the regulatory

¹⁸See *Mystic Responses – Issuance Criteria*; response to Comment 6(a), p. 29.

¹⁹According to the permit application, Mystic Aquarium would own one imported female and all of her odd-numbered offspring, and the owner of the sire would own all even-numbered offspring. Georgia Aquarium would own three of the imported female beluga whales and would own all of their odd-numbered offspring, and Mystic Aquarium would own all even-numbered offspring. The permit application stated that no more than two calves could be born over the duration of the permit, but the permit application implies that breeding may continue beyond the proposed permit. The permit application stated that at the termination of research (i.e., at the end of the 5-year permit), the beluga whales participating in the project would continue to reside at Mystic Aquarium or Georgia Aquarium. However, if deemed in the best interest of an individual or the U.S. beluga whale population, Mystic proposed to move the imported animals or their offspring to another professionally-accredited public display facility in the United States that has experience and expertise in the care of beluga whales.

²⁰See *Mystic Responses – Issuance Criteria*; response to Comment 6(e), p. 31.

permit issuance criteria for research on depleted marine mammals are met for this particular permit application, discussed below.

NMFS considered the applicant's description of and justification for the reproductive monitoring and natural breeding (Study 7), MMC and public comments on the permit application pertaining to breeding, and permit issuance criteria including an assessment of threats to and priorities for the conservation and recovery of Cook Inlet beluga whales (NMFS 2016) and threats to Sakhalin Bay-Nikolaya Bay-Amur River beluga whales (Bettridge et al. 2016; NAMMCO 2018; Reeves et al. 2011). We weighed the importance of the proposed reproductive monitoring and breeding in addressing pressing conservation issues (e.g., NMFS 2016) and determined that breeding these captive beluga whales is not warranted for the conservation and recovery of endangered and depleted beluga whale populations at this time and, that Study 7 including captive breeding of these whales would not meet the applicable regulatory permit issuance criteria²¹ at this time.

Study 7 (Behavioral and reproduction studies) in Mystic Aquarium's permit application stated that while reproduction was not the purpose of the proposed research, natural breeding would be allowed to occur. Artificial insemination would not be used, and contraception would not be used unless medically necessary for the health and well-being of an individual whale. Mystic proposed to conduct behavioral observations and monitor reproductive organs and hormones before, during and after the breeding season on beluga whales in different reproductive states. Mystic stated in their application that should natural breeding occur, similar data would be collected as feasible during pregnancy, birth, and calf development. Mystic stated that pregnant and lactating females and calves may also be opportunistically sampled for other studies, and that calves would not be included in the masking hearing studies (Study 3), training for photogrammetry photos (Study 4), diving physiology (Study 5), or testing of telemetry and imaging devices (Study 8). Any sampling of calves would be opportunistic and done concurrently with health assessments²².

The permit application cited recovery actions related to reproduction listed in the Recovery Plan for the Cook Inlet Beluga Whale (NMFS 2016)²³ as a justification

²¹Permit issuance criteria at 50 CFR §216.41(b)(5)(iii) include that for research on endangered or depleted stocks, the research must contribute to fulfilling objectives in a species recovery or conservation plan; contribute significantly to understanding basic biology or ecology of the species or stock, or to identifying, evaluating, or resolving conservation problems; or, contribute significantly to fulfilling a critically important research need.

²²If pregnancies occurred, research samples on up to two calves may have been collected opportunistically in conjunction with handling calves for health assessments. Calves less than two months old would not have been handled expressly for the purposes of the research.

²³The recovery actions cited in the permit application for Study 7 included: Recovery Action 5: Determine annual mortality and reproductive rates of Cook Inlet belugas; Recovery Action 15: Analyze the existing collection of Cook Inlet beluga teeth to determine if age at first reproduction for female Cook Inlet belugas can be determined, and assess if there has been a significant change in this parameter over time; and Recovery Action 16: Review

for Study 7 including breeding and stated that the proposed study “can contribute basic information on beluga reproduction under controlled conditions with potential to gather data and basic biological information and increase our knowledge on reproduction in general and potentially ‘reproductive rates’, ‘age at first reproduction’, ‘calving rates and intervals’ in parallel with known diet types and caloric intake.” The 2016 recovery plan actions Mystic cited related to reproduction of Cook Inlet beluga whales include methods to obtain data directly on the wild population and analysis of existing Cook Inlet beluga whale samples and data (NMFS 2016), rather than use of captive specimens. For example, to determine reproductive rates (Recovery Action 5), the recovery plan recommends directed studies on Cook Inlet beluga whales such as photo-identification for mark recapture analysis, biological sampling (e.g., blubber biopsy) for determining reproductive status, and aerial surveys for determining population distribution, abundance, and calving rates. With regard to hormone analysis, Mystic Aquarium proposes to analyze reproductive hormones of the captive whales in breath and blood, which may not be directly relevant to current field studies on the wild Cook Inlet population, which are utilizing blubber biopsies. To determine age at first reproduction, the recovery plan (Recovery Action 15) recommends examining existing Cook Inlet beluga whale teeth to more accurately define age at first reproduction for this specific population in the wild. Age at first reproduction has been extrapolated from existing data on other beluga whale populations (e.g., Brodie 1971; Sergeant 1973; Suydam 2009) and captive beluga whales (e.g., Robeck et al. 2005), and is now being addressed via analysis of Cook Inlet beluga whale teeth (Vos et al. 2019) in combination with other studies on the population (Shelden et al. 2019a). Mystic also cited Recovery Action 16, which recommends reviewing existing data specific to Cook Inlet beluga calving rates and intervals in the wild to determine if these parameters are correlated with their prey abundance. Recent advances in technology are allowing researchers to now estimate annual Cook Inlet beluga calf production using non-invasive unmanned aircraft systems to study free-ranging whales (Wade et al. 2019). NMFS agrees, as Mystic stated, that their proposed reproductive research may potentially provide basic biological information on reproductive parameters and calf development in general that could be relevant to these actions. However, NMFS does not believe Study 7 will contribute significantly to identifying, evaluating, or resolving conservation problems or contribute to fulfilling the above actions in any way that would affect the conservation and recovery of the endangered Cook Inlet beluga DPS. The proposed reproductive research on the captive whales including breeding is not warranted to address these recovery actions at this time.

In addition, the applicant has not demonstrated that Study 7 including breeding would contribute significantly to understanding basic biology or ecology of the species or stock at this time. There are already a number of existing publications on wild and captive beluga whale reproductive behavior and calf behavioral

available data which may provide information about calving rate (population-wide) or calving interval (individual belugas), and assess whether either of these parameters is correlated with prey abundance (NMFS 2016).

development (e.g., Hill 2009; Hill et al. 2016; Hill et al. 2013; Hill et al. 2018; Hill et al. 2015; Hill and Nollens 2019; Krasnova et al. 2009; Krasnova et al. 2006; Lilley et al. 2020; Mazikowski et al. 2018; Noren et al. 2018; Noren and Suydam 2016; Robeck et al. 2005; Russell et al. 1997) as well as existing publications on beluga whale reproductive biology and physiology (e.g., Goertz et al. 2019; Kelley et al. 2015; O'Brien et al. 2008; Richard et al. 2017; Robeck et al. 2005; Robeck et al. 2018; Sheldon et al. 2019a; Sheldon et al. 2019b; Steinman et al. 2012; Vos et al. 2019). The addition of limited data from potentially up to two pregnant females and their calves would not significantly contribute to information on beluga whale reproduction and behavior.

Further, NMFS has not identified a threat to the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock that would be significantly addressed by the proposed reproductive monitoring and breeding (Bettridge et al. 2016; Reeves et al. 2011)²⁴ and has not identified the proposed Study 7 as a critically important research need for the species or the endangered or depleted populations. While NMFS has determined that conducting the remaining proposed studies (Studies 1-6 and 8) do meet the regulatory issuance criteria for research on depleted marine mammals²⁵, breeding and production of calves is not necessary for the conduct of those studies.

NMFS' assessment is that the reproductive study including captive breeding of these beluga whales from the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock proposed in Study 7 does not currently meet the applicable regulatory permit issuance criteria as discussed above. At some point in the future, NMFS may see a need for a managed captive breeding program to support the recovery of endangered and depleted beluga whale populations; however, that need is not present at this time.

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. Given we have determined Study 7 including breeding is not warranted at this time, the permit requires that Mystic Aquarium provide a plan to prevent breeding, which could include safe contraception or physical separation. This would allow Mystic Aquarium's veterinarians and beluga whale experts to assess the safest methods of husbandry management for the individual whales as well as for the entire social group. The permit authorizes behavioral observations, biological sampling, and ultrasound (proposed in Study 7) as part of normal husbandry in Table 1 of the permit to

²⁴Threats to the Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock include subsistence harvest and live-capture for zoos and aquariums as well as entanglement in fishing gear, vessel strike, climate change, and pollution.

²⁵See Issuance Criterion 10 below.

allow Mystic to monitor the reproductive status of the whales whether they are managed using contraception or physical separation.

Contraceptive use in cetaceans is relatively safe, effective, widely obtainable, easy to administer, and has been used extensively over the last two decades to synchronize estrus and prevent pregnancy in female cetaceans (Robeck et al. 2018). For seasonally breeding species, such as beluga whales, contraception can be achieved through limited intervention at the onset of, or during, the reproductive season; strategic administration can minimize adverse effects associated with contraceptive use (Calle 2005). Less is known of male contraceptives, but GnRH (gonadotropin releasing hormone) agonists have been used to manage fertility and aggression in males (Robeck et al. 2018). As mentioned previously, Mystic acknowledged it may be necessary to use contraception on any one of the imported whales. Mystic did not identify breeding as necessary to Studies 1-6 and 8 and acknowledged that breeding may not occur at all; the success of these studies is not dependent on breeding. To the extent Mystic believes that contraception may affect the other studies, physical separation could be used.

Physical separation (e.g., isolating males and females into discrete social groupings) is an alternative to use of contraceptives. Public display facilities typically mimic this social dynamic by maintaining associations and appropriate groupings of age and sex classes in managed care, which is thought to reduce stress and behavioral stereotypy, and promote optimal social development and welfare (Brando et al. 2018; Hill and Nollens 2019; Waples and Gales 2002). In the wild, outside of the breeding season beluga whales typically live in large social groups that often appear to be organized by age and sex. Adult, sexually mature males are frequently grouped with other males; and related adult females, juvenile males and females, and calves may be found in larger groups (Colbeck et al. 2013; Heide-Jørgensen and Lockyer 2001; Loseto et al. 2006; Smith et al. 1994). Also, because captive beluga whales are seasonal breeders, with periods of peak fertility typically between February and May (Glabicky et al. 2010; O'Brien et al. 2008; Richard et al. 2017; Robeck et al. 2018; Steinman et al. 2012) separating males from females during these seasonal reproductive windows, rather than year-round, may aid in preventing breeding without significant disruption to social groups. As described in the permit application, Mystic has the capability to separate animals into different holding pools.

Last, MMPA sections 101(a)(3)(B) and 102(b)(3) prohibit the importation of a marine mammal designated as depleted under a public display permit, but allows importation of such animals for research purposes. The MMC's concern that the authorization of breeding effectively extends indefinitely the issue about the post-research fates of the depleted whales and whether they, or their proposed progeny, will become 'de facto' public display animals was also raised by public commenters²⁶. As previously mentioned, consistent with other research permits

²⁶See Attachment 1, Public Comment 10.

authorizing captive maintenance, the permit is conditioned to require approval by the Office Director for any subsequent disposition 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. In addition to the MMPA Section 104 authority for scientific research, the permit includes authorization under MMPA Section 112(c) for captive maintenance. At the cessation of research, such authorities may be used for continued maintenance, as deemed appropriate by the Office Director.

MMC Comment 3 - Recommendations on Research Sampling:

- **MMC Comment 3(a):** The MMC recommended that NMFS require Mystic to provide 1) a detailed sampling schedule for all samples to be collected, and 2) the maximum number of samples, as well as volume of blood, that could be collected per day from an individual beluga whale, before any permit is issued.
 - **NMFS Response 3(a):** Because the whales are trained to allow sampling without restraint, the sampling is dependent on their voluntary participation. Depending on the sample type, there may be cases where more than one sample can be taken during a single session (e.g., breath or saliva because of the ease of collecting them with other samples). However, combining sampling wholly depends on voluntary participation and samples are often taken separately (see next response). It is not appropriate to provide a “detailed sampling schedule” because of the need to allow flexibility in sampling based on the behavior of the animals to ensure the research is conducted in a humane²⁷ manner. The applicant provided the number of samples required for each study and the maximum number of samples and blood volume that may be collected per day. The whales may exit the sampling session at any time to ensure the sampling does not negatively impact them.
- **MMC Comment 3(b):** The MMC recommended further that NMFS require Mystic to provide a take table that 1) specifies each of the research studies on separate rows and includes all relevant samples to be taken and procedures to be conducted for each study, 2) stipulates the numbers of days per year a study would be conducted in the ‘takes per animal’ column, and 3) describes in the ‘details’ column the number of times a sample could be taken or a procedure could be conducted on a whale in a given day, when applicable. The MMC recommended NMFS include that take table in the permit, if issued.
 - **NMFS Response 3(b):** NMFS will not require a take table with combined sampling for each study on separate rows for this permit. Mystic Aquarium generally conducts a given sampling procedure during an independent training session rather than having a suite of all samples taken at the same time (e.g., for Study 2, not all of the samples - breath, saliva, fecal, and skin scraping - may be

²⁷Humane means “that method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved” (as defined in MMPA Section 3[4]; 16 U.S.C. 1362).

taken at the same time). This is to avoid overwhelming the whales and to allow flexibility in sampling based on the behavior of the animals. Also, some studies have different frequencies for different sample types (e.g., for Study 4, weights are quarterly and morphometrics and photos are weekly), making it infeasible to accurately indicate the number of takes per animal for each procedure on one row.

The applicant clarified the number of days per year a procedure would be conducted, and this is included in the permit take table 'takes per animal' column, with the number of samples included in the 'details' column.

- **MMC Comment 3(c):** Regarding activities to be conducted on resident beluga whales, the MMC recommended that NMFS include in the permit, if issued, takes of the three beluga whales currently held at Mystic for public display for the relevant studies. The MMC does not believe studies such as blood sampling and hearing-related tests qualify as non-intrusive research that may be conducted on public display animals without a permit²⁸.
 - **NMFS Response 3(c):** In Mystic Aquarium's response to comments²⁹, they stated that the veterinary staff at Mystic Aquarium have determined that the proposed research in the permit application does not pose an undue risk to the health or welfare of the public display animals (see definition of intrusive research in footnote 28). This includes blood sampling (a routine medical procedure) and hearing tests (involving a stimulus directed at animals) in addition to the other procedures proposed. Mystic stated that if there is a clinical or behavioral concern at the time of the research study, the whale would not participate in the study until the concern was resolved. NMFS is satisfied that the applicant's response is consistent with the NMFS regulatory definition of intrusive research and its exception for captive animals, and a permit is not required for the proposed studies on the animals held at Mystic for public display purposes.

²⁸50 CFR §216.3 defines intrusive research as a procedure conducted for bona fide scientific research involving: A break in or cutting of the skin or equivalent, insertion of an instrument or material into an orifice, introduction of a substance or object into the animal's immediate environment that is likely either to be ingested or to contact and directly affect animal tissues (i.e., chemical substances), or a stimulus directed at animals that may involve a risk to health or welfare or that may have an impact on normal function or behavior (i.e., audio broadcasts directed at animals that may affect behavior).

For captive marine mammals held for public display (see 50 CFR §216.44), this definition does not include procedures that 1) are conducted by the professional staff of the holding facility or an attending veterinarian for purposes of animal husbandry, care, maintenance, or treatment, or a routine medical procedure that, in the reasonable judgment of the attending veterinarian, would not constitute a risk to the health or welfare of the captive animal, or 2) involve either the introduction of a substance or object or a stimulus directed at animals that, in the reasonable judgment of the attending veterinarian, would not involve a risk to the health or welfare of the captive animal.

²⁹See *Mystic Responses – Acoustic Study*; response to Comment 11, p. 16 and *Mystic Responses – Objectives, Justification, and Methods*; response to Comment 8(a), p. 10.

- **MMC Comment 3(d):** Regarding the hearing study, the MMC believes that Mystic’s proposed methods are incomplete and do not demonstrate a likelihood of achieving the stated objectives; thus, the MMC stated it could not conclude that the masked hearing threshold and directional hearing tests would be considered bona fide³⁰ scientific research. The MMC was also concerned that hearing recovery was not considered and questioned whether the humaneness criterion would be met. For these reasons, the MMC recommended that NMFS refrain from authorizing Mystic to conduct masked hearing threshold and directional hearing tests. The MMC also provided specific comments and questions, which were forwarded to the applicant for response.
 - **NMFS Response 3(d):** Mystic Aquarium provided additional clarifications on the hearing study and addressed the MMC’s comments to the satisfaction of NMFS. Mystic also provided a NMFS Technical Guidance User Spreadsheet tool to ensure sound exposures do not exceed the temporary threshold shift (TTS) onset thresholds identified in the NMFS Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS 2018). See *Mystic Responses – Acoustic Study, Mystic Responses – Final Questions, and Mystic Acoustic Technical Guidance User Spreadsheet*.

For the masked hearing threshold tests, the permit is conditioned to require that researchers test the animals’ hearing for full recovery to ensure TTS has not occurred. If at any point TTS occurs and full recovery is not observed, researchers must discontinue further exposure until recovery to pre-testing levels is observed.

- **MMC Comment 3(e):** Regarding Institutional Animal Care and Use Committee (IACUC) protocols, the MMC recommended that NMFS advise Mystic that, prior to collecting any samples or conducting any procedures, all research protocols are reviewed and approved by its IACUC and match those activities authorized under the permit, if issued.
 - **NMFS Response 3(e):** The permit includes a condition requiring this.
- **MMC Comment 3(f):** The MMC provided NMFS with specific comments on the permit application (e.g., minor clarifications, questions, and inconsistencies) and recommended that NMFS incorporate clarifications into the permit application, if a permit is issued.

³⁰The term “bona fide research” means scientific research on marine mammals, the results of which — (A) likely would be accepted for publication in a referred scientific journal; (B) are likely to contribute to the basic knowledge of marine mammal biology or ecology; or (C) are likely to identify, evaluate, or resolve conservation problems (MMPA Section 3[22]).

- **NMFS Response 3(f):** Specific comments from the MMC on the permit application were provided to the applicant, which were addressed to NMFS' satisfaction. The permit application has been updated with minor clarifications³¹.

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service

(APHIS): Marine mammals used in captive research must be maintained in research facilities registered with or display facilities licensed by APHIS, and held and transported in compliance with the provisions of the Animal Welfare Act (AWA: 7 U.S.C. 2131 – 2156). APHIS has jurisdiction under the AWA for enforcing the standards and certification requirements for the humane handling, care, treatment, and transportation of mammals.

The permit application was forwarded to APHIS for review and comment specific to compliance of the facility with AWA and APHIS' implementing regulations. In a letter dated December 6, 2019, APHIS commented that Mystic Aquarium and Georgia Aquarium both have the space, experience, and knowledge for handling and caring for the beluga whales, and that transportation arrangements appear to comply with AWA requirements but that more specifics may be required closer to transport time to confirm the experience and knowledge of the attendants. If the attending veterinarian from Mystic Aquarium is not accompanying the animals, then a transport plan must be written and signed off by the attending veterinarian. All medical records must accompany the animals to their new facility. Within these parameters, APHIS stated it has no objections to the importation of the five beluga whales for use in non-intrusive research and incidental exhibition. APHIS further commented that all research protocols must align with any MMPA scientific research permits and be approved by the IACUC used by Mystic Aquarium and Georgia Aquarium, if the animals are in Georgia.

- **NMFS Response:** In Mystic Aquarium's response to comments³², they confirmed that the personnel proposed in the permit application, including the attending veterinarian, would accompany the beluga whales during transport (thus confirming the experience and knowledge of the attendants). The permit is conditioned to require that transport and maintenance of the beluga whales is performed in accordance with AWA regulations and that medical records accompany the animals to the destination facility. As stated above, the permit is conditioned to require that the authorized research is reviewed and approved by the appropriate IACUC in accordance with AWA regulations, and that the IACUC protocols are consistent with the research methods approved by the permit.

Public Comments: During the 60-day public comment period, NMFS received over 9,500 public comments (available at <https://www.regulations.gov/docket?D=NOAA-NMFS-2019-0113>). The agency received substantive and relevant comments arguing both for and against the proposed action. Commenters included non-governmental organizations, a member of the U.S. Senate, a member of the House of Commons of Canada, scientific researchers, zoo and aquarium

³¹The MMC's specific comments on the permit application were addressed in the *Mystic Responses* documents. The revised permit application is available on the following web site: <https://www.fisheries.noaa.gov/action/permit-application-import-5-beluga-whales-scientific-research-file-no-22629-mystic-aquarium>.

³²See *Mystic Responses – Take Numbers and Additional Questions*; response to Comment 4, p. 8.

representatives, and individual members of the public. These comment letters addressed a number of topics, including:

- Incidental public display;
- Permit issuance criteria including whether:
 - The proposed activity by itself or in combination with other activities will likely have a significant adverse impact on the species or stock;
 - Any requested import will likely result in the taking of marine mammals beyond those authorized by the permit.
 - The import and research is humane and does not present any unnecessary risks to the health and welfare of the marine mammals; and
- The status under the MMPA of the whales proposed for import;
- Whether the action qualifies for a Categorical Exclusion under the National Environmental Policy Act;
- The applicability of the research to conservation of wild beluga whale populations including depleted and endangered populations;
- Breeding; and
- The final disposition of the animals and any progeny when research has ended.

The substantive public comments are summarized and addressed in Attachment 1.

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.

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. NMFS determined that the permitted activities will not occur in areas with designated EFH and did not initiate consultation with the NMFS Office of Habitat Conservation. The permitted activities are directed at marine mammals in captivity and do not affect fish habitat.

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 this permit NMFS determined that an EA is 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.

Issuance Criteria

This section includes NMFS' findings for the research Mystic Aquarium proposed in Studies 1-6 and 8 described in the permit application and, where appropriate, their responses to public comments. See response to MMC Comment 2(b) regarding Study 7.

NMFS' decision to issue or deny a permit is based on consideration of:

- All relevant issuance criteria in 50 CFR §216.34;
- All purpose-specific issuance criteria set forth at 50 CFR §216.41;
- All comments received or views solicited on the permit application; and
- Any other information or data deemed relevant by the Office Director.

The relevant issuance criteria at 50 CFR §216.34 specify that for the Office Director to issue a permit, the applicant must demonstrate that:

- **Issuance Criterion 1: The proposed activity is humane³³ and does not present any unnecessary risks to the health and welfare of marine mammals.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement for both the import and the subsequent research activities. Mystic stated that they have over 30 years of experience transporting beluga whales among U.S. facilities. The proposed transport(s) would use the shortest timetable possible and would be done in accordance with APHIS regulations, the International Animal Transport Association Live Animal Regulations (IATA LAR)³⁴, and other professionally recognized standards. Mystic Aquarium acknowledged that transport and integration of beluga whales causes expected, and temporary, physiological stress responses that are expected to return to baseline as whales acclimate to their new environment and conspecifics. Based on monitoring of beluga whales during a transport event, Mystic noted that the temporary physiological stress responses observed indicate that the beluga whales exhibited normal, healthy responses and are generally adaptable to transport, novel environments, and new social groups (Spoon and Romano 2012).

Mystic provided protocols for introduction of the whales to the Mystic Aquarium facility and conspecifics and further referenced their use of operant conditioning, desensitization, positive reinforcement, and small positive approximations to minimize the effects of transport and social integration, and provided literature citations to support the determination that the activities are humane. Use of all the above techniques would be applied to the beluga whales subject to import. In addition, Mystic Aquarium's proposed introduction schedule is flexible and would be adapted based on the observed behaviors of the individual whales, which would be monitored daily. These procedures are identical to past introductions and

³³See definition in footnote 27.

³⁴U.S. Fish and Wildlife regulations at 50 CFR Part 14 require all live animal transports comply with the IATA LAR.

socializations at Mystic Aquarium (Spoon and Romano 2012) and are consistent with industry procedures for wild mammals in captivity (Powell 2010). The beluga whales proposed for import have been managed in varying social groups; have been exposed to stretchers and transport equipment (e.g., Yip and Dold 2018); are weaned; and would be grouped together before import, thus creating a familiar social unit.

In addition, the research activities would be conducted using operant conditioning and voluntary participation where the whales may exit the research sessions at any time. The research sampling proposed is either non-invasive or minimally invasive and samples would be collected under behavioral control with the same or similar protocols used for routine health monitoring. The beluga whales would participate in the research voluntarily and would not be forced, allowing for sample collection to occur without pain or distress to the whales. Mystic has an IACUC, a committee established under the AWA that ensures animal welfare during research sampling, and submitted approved IACUC protocols with their application. As these IACUC approvals expire, Mystic will submit updated protocols to their IACUC for renewal, as required under the AWA. The beluga whales would be monitored daily and any abnormal behavior or health concern would be evaluated and treated, if necessary, without delay. Research behaviors would be halted as needed under veterinary or curator discretion for animal welfare.

The applicant has demonstrated that the methods proposed for transport, introduction of the whales to the new facility and conspecifics, and research procedures would involve the least possible degree of pain and suffering practicable to the mammals involved. Further, the applicant has also demonstrated that the import is necessary to conduct the research and that the proposed research cannot be accomplished using a stock that is not designated as depleted (see response to MMC Comment 1(b) above; see also Issuance Criterion 10 below).

- **Issuance Criterion 2: The proposed activity is consistent with all restrictions set forth at §216.35 (general permit restrictions) and §216.41 (purpose-specific restrictions).**
 - The general restrictions in §216.35 are included as conditions in the permit and are related to such things as importation requirements, duration of the permit, roles and responsibilities of personnel, and possession or transfer of the permit. Regarding §216.35(c), the humane determination for import (i.e., transport) is discussed above. Regarding §216.35(d), the animals proposed for import were not taken from the wild and thus, the restriction pertaining to taking is not applicable. The permit is conditioned to prohibit import of pregnant or lactating marine mammals. None of the whales proposed for import are unweaned or less than eight months old³⁵. Regarding §216.35(g) pertaining to qualifications, this is a condition of the permit and is addressed in Issuance Criteria 5 and 6 below.

³⁵See Appendix 1, Table 1 of the permit.

The purpose-specific restrictions in §216.41(c) are also included as conditions in the permit. With regard to §216.41(c)(1)(vi), NMFS may allow public display of marine mammals held under a permit for scientific research if such activities: (A) Are necessary to address scientific research objectives and have been specifically authorized by the Office Director under the scientific research permit; and (B) Are conducted incidental to and do not in any way interfere with the permitted scientific research; and (C) Are conducted in a manner consistent with provisions applicable to public display, unless exceptions are specifically authorized by the Office Director. NMFS has determined that these criteria have been met for this permit application. Regarding the requirement in (A), consistent with the MMC's comments and NMFS' longstanding interpretation, we have determined that, in cases where the research areas viewable to the public also provide the best option for the care and maintenance of the animals, this is adequate to satisfy this criterion. Thus, the use of the public display space at Mystic Aquarium (or Georgia Aquarium) is necessary to address the research objectives. We have issued numerous scientific research permits allowing incidental public display in similar circumstances, including for depleted marine mammals³⁶. The incidental public display is specifically authorized by the Office Director. Regarding the requirement in (B), NMFS interprets incidental public display as an activity ancillary to permitted scientific research or enhancement that does not interfere with meeting the stated objectives. The permit is conditioned as such. Regarding requirement (C), Mystic Aquarium meets the three criteria under the MMPA for public display³⁷.

- **Issuance Criterion 3: The proposed activity, if it involves endangered or threatened marine mammals, will be conducted consistent with the purposes and policies of Section 2 of the ESA.**
 - Not applicable.
- **Issuance Criterion 4: The proposed activity by itself or in combination with other activities, will not likely have a significant adverse impact on the species or stock.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this criterion. This permit application is for five captive-born whales for purposes of scientific research. Because the whales were captive-born and cannot be released to the wild under the permit, any effects on wild populations of beluga whales would be indirect, such as those potentially associated with international trade in this species, but will not likely have a significant adverse impact on the species or stock. The purpose of

³⁶E.g., Permit Nos. 22095, 21251, 19590, and 18902 (none of which authorize enhancement under the MMPA). See also Attachment 1, responses to Public Comment 2(a-c). See response to MMC Comment 2(b) regarding Study 7.

³⁷MMPA Section 104(c)(2)(A): These requirements include: (i) offering a program for education or conservation based on professionally recognized standards of the public display community; (ii) being registered or holding a license issued under the AWA; and (iii) maintaining facilities open to the public on a regularly scheduled basis and that access to is not limited or restricted other than by charging of an admission fee.

scientific research as authorized by the MMPA is to benefit the conservation and management of wild species and stocks of marine mammals.

In 2013, NMFS denied an application from the Georgia Aquarium to import 18 wild-caught beluga whales from Russia for purposes of public display. In that case, NMFS cited concerns with the effects of ongoing commercial captures on the population from which those beluga whales had been taken. NMFS' permit denial was upheld in *Georgia Aquarium, Inc. v. Pritzker*, 135 F. Supp. 3d 1280 (N.D. Ga. 2015). Some public commenters have cited that decision as a reason Mystic's permit application must be denied. In fact, the Georgia Aquarium permit application can be distinguished from Mystic's permit application in several ways. The Georgia Aquarium permit application involved a proposed import of 18 wild-captured beluga whales. Because the whales were removed from the wild population as part of an ongoing commercial capture operation, NMFS examined the proposed importation in combination with other past, present, and foreseeable future actions affecting the stock, including ongoing live captures from that stock.

In the case of Mystic's proposal to import captive-born whales for purposes of research, the analysis is somewhat different. No beluga whales are being captured from the wild for import and the purpose of the permitted research is to benefit the conservation and management of wild stocks of this species. As commenters noted³⁸, demand from nations other than the United States for beluga whales from the Russian stock may continue; however, NMFS' jurisdiction over those actions is limited. The MMPA regulates U.S. importing practices, reflecting "a congressional decision that denial of import privileges is an effective method of protecting marine mammals in other parts of the world." *Georgia Aquarium*, 135 F. Supp. 3d at 1328, citing *Animal Welfare Institute v. Kreps*, 561 F. 2d 1002 (D.C. Cir.1977).

As already noted, depleted marine mammals cannot be imported for public display purposes but can be imported for scientific research or enhancement purposes. In order to uphold the MMPA's purposes and policies, including the prohibition on importing depleted marine mammals for public display purposes, NMFS will carefully scrutinize each application for a permit to import whales from or descended from this depleted stock, and will exercise its discretion to impose conditions on such permits as necessary.

In addition, NMFS prepared an EA for the proposed action, which analyzed the impacts of the proposed action including potential indirect impacts to wild populations. Based on the analysis in the EA, NMFS determined that permit issuance will not have significant impacts on the quality of the human environment, documented in a FONSI.

³⁸See Attachment 1, Public Comment 6.

- **Issuance Criterion 5: The applicant’s expertise, facilities, and resources are adequate to accomplish successfully the objectives and activities stated in the application.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement. In determining whether an applicant is compliant with this regulatory criterion, NMFS collectively evaluates a permit applicant’s expertise, existing infrastructure, facilities, and resources including their history of securing funding and successfully carrying out research. NMFS considers the totality of the circumstances when evaluating whether these criteria have been met, and has never interpreted the term “resources” to include exclusively “financial resources.” In addition to funding, resources may include other assets such as materials (e.g., equipment), staffing, and collaborative partnerships that can be drawn on to support the proposed research activities. Regarding financial resources, NMFS does not require permit applicants to provide definitive documentation of funding or financial resources prior to permit issuance. In many cases, permit applicants have not secured all necessary funding at the time of submitting a permit application or prior to permit issuance. For example, funding agencies may not award grants unless a permit has been issued, and funding cycles may not align with the timing of the permit process. Also, it is not uncommon for researchers to apply for multiple grants over the duration of a 5-year permit. NMFS is not qualified to engage in speculation about Mystic’s future economic health as an organization and has based its findings on the information in the record, which includes those items that collectively demonstrate Mystic Aquarium’s expertise, facilities, and resources are adequate to successfully meet their permit objectives, summarized below.

Regarding expertise, Mystic Aquarium provided the qualifications of personnel (Principal Investigator and Co-investigators) and veterinarians who would oversee and/or conduct the transport, husbandry, and research activities, demonstrating the qualifications are commensurate with their duties and responsibilities. This included documentation for the person who would oversee husbandry care at Georgia Aquarium, if required, to be included as a Co-investigator³⁹.

Regarding facilities, Mystic Aquarium provided a description of their facilities and Georgia Aquarium’s facilities for holding the beluga whales, and copies of Mystic’s APHIS research registration and exhibitor’s license and Georgia Aquarium’s exhibitor’s license, demonstrating they have the facilities and necessary authorizations to maintain the beluga whales in accordance with the AWA. Mystic also provided approved IACUC protocols as required under the AWA. As IACUC approvals expire, Mystic will submit updated protocols to their IACUC for renewal. Furthermore, APHIS confirmed that Mystic Aquarium and Georgia Aquarium both have the space, experience, and knowledge for handling and caring for beluga whales, in compliance with the requirements of the AWA. Mystic also provided information

³⁹See Attachment 1, response to Public Comment 3(b).

on the facility (University of Connecticut) that houses the laboratory equipment used to analyze the research samples.

Regarding resources, Mystic provided documentation of financial and other resources to satisfy this criterion. Mystic Aquarium submitted a co-signed Memorandum of Understanding (MOU)⁴⁰ with Georgia Aquarium to provide support of the research, and stated that Georgia Aquarium will provide financial support through a lease agreement whereby Georgia Aquarium would own three of the whales. Mystic stated that Georgia Aquarium agreed to dedicate the necessary resources to carry out the research at its facility in the event it is deemed necessary to move any of the imported whales there. Mystic submitted a comprehensive history of past awarded research grants, including from the Office of Naval Research, National Science Foundation, and NOAA, as well as state governments and various universities. As mentioned above, Mystic documented their ongoing partnership with the University of Connecticut, which houses Mystic's laboratory space and equipment used for sample analyses. Mystic stated they have well-established collaborations with scientists-in residence (external scientists affiliated with Mystic Aquarium); acoustic experts; and U.S. beluga whale biologists, Native Alaskans, and Russian scientists who work in the field studying beluga whales. Mystic also provided an extensive research publication history, which further demonstrates the adequacy of their resources to successfully carry out and publish scientific research results.

- **Issuance Criterion 6: 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.**

NMFS is satisfied that the applicant has demonstrated compliance with this requirement. See response to Issuance Criterion 5 above. In addition, regarding transport and animal care, Mystic provided detailed transport plans and documentation of protocols for husbandry care and feeding of the beluga whales, veterinary care, and maintenance (e.g., cleaning) of the facilities.

- **Issuance Criterion 7: Any requested import will not likely result in the taking of marine mammals or marine mammal parts beyond those authorized by the permit.**
 - To demonstrate compliance with this criterion in past permit applications, NMFS has required confirmation or assurance from the permit applicant that the foreign shipping facility will not replace the animals imported into the United States with additional animals of the same species. In a past import of beluga whales from Marineland, Marineland provided an assurance that it would not replace the beluga whales imported to the United States; NMFS later received information indicating that they did, in fact, obtain additional beluga whales from Russia. In this case, Marineland has provided a similar assurance. Given the recent change in Canadian law that may

⁴⁰On May 28, 2020, Mystic Aquarium provided an updated MOU signed by Brian Davis, Ph.D., President & CEO of Georgia Aquarium.

limit Marineland's ability to import new beluga whales to replace those to be imported by Mystic, NMFS accepts their assurance in this situation, and is satisfied that the applicant has demonstrated compliance with this requirement. See also Issuance Criterion 4 above.

Mystic Aquarium must also demonstrate that the proposed activity satisfies the purpose-specific permit issuance criteria set forth in 50 CFR §216.41, including:

- **Issuance Criterion 8: The proposed activity furthers a bona fide⁴¹ scientific purpose.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement. Mystic Aquarium has a demonstrated history of conducting beluga whale research both in the field and with captive animals at their facility and publishing their findings in peer-reviewed journals. The sample sizes and methodologies for the proposed research are adequate to achieve the objectives, and the research is likely to be accepted for publication. The proposed research is likely to contribute to basic knowledge of marine mammal biology including physiological responses to environmental and anthropogenic stressors, health, hearing, and diving physiology. Mystic Aquarium has provided information on how the proposed studies can be applied to beluga whale populations in the wild to help identify or evaluate conservation problems including for the endangered Cook Inlet beluga whale DPS and the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock, as discussed in Issuance Criterion 10 below. Mystic Aquarium provided documentation to confirm professional relationships with U.S. and Russian beluga whale researchers and reiterated their commitment to share research results with these researchers. Mystic also stated they would disseminate the data in the form of presentations at workshops and conferences and in scientific publications.

- **Issuance Criterion 9: 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.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement. The proposed activities include transport of five captive-born beluga whales from one marine mammal facility to another and research in a controlled captive setting. The captive research activities on these animals will not affect any other component of the marine ecosystem of which the affected stock is a part. Mystic Aquarium intends for the five beluga whales to remain in captivity for the duration of their lives; the whales cannot be released to the wild under the proposed permit. In addition, NMFS prepared an EA for this action and determined that permit issuance will not have significant impacts on the quality of the human environment, documented in a FONSI.

⁴¹See definition in footnote 30.

- **Issuance Criterion 10: For stocks designated as depleted:**
 - **The proposed research cannot be accomplished using a stock that is not designated as depleted.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement. See the response to MMC Comment 1(b) above and responses below.
 - **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.**
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement. See Issuance Criteria 4 and 7.
 - **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.
 - NMFS is satisfied that the applicant has demonstrated compliance with this requirement for Studies 1-6 and 8, as discussed below.

Studies 1 (Neuroimmunology), 2 (Development of non-invasive techniques to assess health), 4 (Photogrammetry), 5 (Diving physiology), and 8 (Testing telemetry and imaging devices) will contribute to fulfilling Recovery Action 45⁴² of the Recovery Plan for the Cook Inlet Beluga Whale (NMFS 2016) by developing and validating sample analyses and non-intrusive monitoring techniques that can be applied to ongoing or future studies on free-ranging or stranded Cook Inlet beluga whales (e.g., health-related analyses of feces and skin; validating photogrammetry to monitor body condition, and attachment of devices using suction-cups). Studies 1, 2, and 6 (Microbiome) will contribute to fulfilling recovery actions related to health and disease investigations (Recovery Actions 25 and 26⁴³) by providing comparative data to help determine whether Cook

⁴²Recovery Action 45: Refine research techniques, evaluate alternatives, and implement research methods which minimize harassment, harm, and general adverse impacts on Cook Inlet belugas.

⁴³Recovery Action 25: Using currently available information, compare data on diseases from Cook Inlet belugas

Inlet beluga whales are experiencing an abnormally high incidence of disease, and providing collaboration contributing to the analysis of disease monitoring.

Study 3 (Hearing and physiological response to anthropogenic sound) will address two primary threats of high concern to Cook Inlet beluga whales – anthropogenic sound and cumulative impacts. This study contributes to fulfilling Recovery Action 30⁴⁴ by quantifying the effects of masking in beluga whale hearing from noise sources in Cook Inlet (e.g., pile driving, shipping) and assessing the physiologic responses of beluga whales to anthropogenic noise, thereby providing information to assess the acoustic impacts from each type of noise source on Cook Inlet beluga whales. There are seven recovery actions specifically addressing anthropogenic noise and cumulative impacts from noise, and given the high concern of these threats to Cook Inlet beluga whales, the hearing study will likely contribute significantly to identifying or evaluating conservation problems and fulfilling a critically important research need for this endangered DPS.

The use of beluga whales from the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock is necessary to provide information specific to this stock (e.g., phenotypic variation in susceptibility to disease specific to this stock), and given the Sakhalin Bay-Nikolaya Bay-Amur River and Cook Inlet beluga whale populations have some common threats, the proposed Studies 1-6 and 8 can similarly be used to identify or evaluate conservation problems (e.g., threats) for the depleted Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock (Bettridge et al. 2016; Reeves et al. 2011).

Recommendation

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 this memorandum, 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

with other beluga populations to determine if there are abnormal levels or atypical types of disease agents present in Cook Inlet affecting Cook Inlet belugas. Recovery Action 26: Determine types and sources of disease agents identified to be of concern specifically to Cook Inlet belugas and assess management actions targeted at mitigating the disease agents.

⁴⁴Recovery Action 30: Describe the acoustic characteristics of different anthropogenic noise sources in Cook Inlet and rate the potential acoustic impacts from each type of noise source on Cook Inlet belugas.

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 with the proposed terms and conditions.

Attachment

Attachment 1: File No. 22629 Public Comments and Responses

Below is a summary of substantive public comments received during the public comment period regarding Mystic Aquarium's permit application, File No. 22629, and NMFS' responses.

All public comments received in their entirety may be found here:
<https://www.regulations.gov/docket?D=NOAA-NMFS-2019-0113>.

Mystic Aquarium's responses, where incorporated in this attachment, have been summarized. The responses to comments in their entirety consist of the following documents titled:

- *Mystic Responses – Acoustic Study* (February 25, 2020 and March 20, 2020)
- *Mystic Responses – Objectives, Justification, and Methods* (March 11, 2020)
- *Mystic Responses – Take Numbers and Additional Questions* (March 16, 2020)
- *Mystic Responses – Issuance Criteria* (March 26, 2020)
- *Mystic Responses – Final Questions* (May 28, 2020)

These responses and supporting documents provided with the responses are available on the following web site: <https://www.fisheries.noaa.gov/action/permit-application-import-5-beluga-whales-scientific-research-file-no-22629-mystic-aquarium>.

Public Comment 1: The depleted designation under the MMPA applies to the whales proposed for importation. Commenters stated:

- **Public Comment 1(a):** A depleted designation applies to all members of a stock or population stock including progeny and animals in captivity. A depleted designation also applies retroactively to any captive individuals that originated from the geographic location of the stock and were later designated as depleted, and their progeny.
 - **NMFS Response 1(a):** See response to Marine Mammal Commission (MMC) Comment 1(a).
- **Public Comment 1(b):** All of the animals proposed for importation are covered by the depleted designation for the Sakhalin Bay-Nikolaya Bay-Amur River Stock, including the whales of mixed-stock parentage (i.e., hybrids).
 - **NMFS Response 1(b):** See response to MMC Comment 1(a).

Public Comment 2: The MMPA prohibits public display of marine mammals of a depleted stock incidental to a scientific research permit and the public display proposed by Mystic Aquarium is not incidental. Commenters stated:

- **Public Comment 2(a):** The MMPA prohibits the importation of depleted marine mammals for public display purposes. Issuance of the permit would circumvent this statutory prohibition.

- **NMFS Response 2(a):** The MMPA prohibits import of marine mammals from depleted stocks for public display but allows import of such animals for scientific research purposes. The proposed import is for scientific research purposes.
- **Public Comment 2(b):** The MMPA does not allow public display incidental to a scientific research permit for depleted marine mammals. Congress provided an explicit allowance for public display incidental to enhancement permits for depleted marine mammals, but did not provide a similar provision for scientific research permits.
 - **NMFS Response 2(b):** NMFS disagrees, to the extent that the comment is implying that the language in MMPA Section 104(c)(4)(B) related to enhancement permits means that NMFS’ regulations for scientific research permits under 104(c)(3), which allow for public display incidental to research without regard to whether the research animals are depleted or not, are invalid. NMFS has granted a number of permits, all of which were subject to notice and comment, authorizing incidental public display of depleted animals held under research permits. See Issuance Criterion 2 above.
- **Public Comment 2(c):** “Incidental” is defined under NMFS’ regulations at 50 CFR §229.2 as “a non-intentional or accidental act that results from, but is not the purpose of, carrying out an otherwise lawful action,” and this definition applies to 50 CFR §216.41. The proposed public display is not incidental because the marine mammals would be on display intentionally and in an on-going manner. If it is incidental, NMFS’ regulation requires the public display to be “necessary to address scientific research objectives,” which it is not in this case.
 - **NMFS Response 2(c):** See Issuance Criterion 2 above. The definition in 50 CFR §229.2 is not applicable to 50 CFR §216.41 (see 50 CFR §229.1 regarding purpose and scope of Part 229).

Public Comment 3: Georgia Aquarium should be a co-applicant and information is lacking regarding their role under the permit and circumstances for moving whales there. Commenters stated:

- **Public Comment 3(a):** Georgia Aquarium should be a co-applicant on the permit application.
 - **NMFS Response 3(a):** Pursuant to NMFS’ regulations and published permit application instructions⁴⁵, there can be only one Applicant (or Responsible Party) and one Principal Investigator on a permit; there can be multiple Co-investigators on a permit.

⁴⁵50 CFR §216.33(a) and pp. 22-23 of NMFS’ scientific research permit application instructions available here: <https://www.fisheries.noaa.gov/permit/scientific-research-and-enhancement-permits-marine-mammals>.

- **Public Comment 3(b):** Documentation from the person who would be responsible for the beluga whales at Georgia Aquarium is lacking.
 - **NMFS Response 3(b):** In Mystic Aquarium’s response to comments⁴⁶, they provided documentation for the person who would oversee husbandry care of the beluga whales at Georgia Aquarium to be included as a Co-investigator. Mystic Aquarium would send their permitted researchers to carry out and oversee the research while they train Georgia Aquarium staff to conduct the research. NMFS could authorize those staff as Co-investigators on the permit once qualified. NMFS is satisfied that the applicant has submitted the appropriate documentation for Georgia Aquarium.

- **Public Comment 3(c):** The permit application stated that Mystic Aquarium proposes that if deemed in the best interest of an individual beluga whale or the captive U.S. beluga whale population for social, health, or welfare reasons, any of the five beluga whales, or their progeny, may be moved to Georgia Aquarium in Atlanta, Georgia. It is not clear under what specific circumstances Mystic Aquarium might deem it necessary to transport beluga whales to Georgia Aquarium.
 - **NMFS Response 3(c):** In Mystic Aquarium’s response⁴⁷, they stated: “There is no intention to move whales to Georgia Aquarium. Instead, the permit application describes the contingency for cases of emergency threatening the health or well-being of a whale or whales and only then would they be moved.” Mystic further stated: “Our statement refers primarily to adverse developments among imported whales either in behavioral conflicts or health problems that cannot be resolved on-site at Mystic. Secondly, the contingency provides also for the standard practice of moving whales to assure optimal social groupings, which may be required by cases of emergency threatening the health or well-being of the whales at Georgia Aquarium. For social animals such as belugas, health and welfare depend, in part, on maintaining optimal social groupings, which may necessitate moving whales from Mystic to Georgia (or the other way around).” Mystic provided examples of situations warranting emergency transport including: “An individual or subset of animals experiencing harmful stress or other risks within the social group, where behavioral means have not successfully addressed the problem.” And, “A health issue in any of the three whales currently at Mystic Aquarium or in the whales identified to travel to Mystic Aquarium that requires a type of animal separation that is not possible in the beluga habitat at Mystic Aquarium.”

NMFS requested additional clarification regarding the standard practice of assuring optimal social groupings and whether that would only be considered for moving the whales proposed for import to Georgia Aquarium if it were deemed

⁴⁶See *Mystic Responses – Issuance Criteria*; response to Comment 1(a), p. 1.

⁴⁷See *Mystic Responses – Issuance Criteria*; response to Comment 1(b), pp. 1-3.

an emergency for health and welfare purposes, and requested Mystic provide an example. Mystic responded⁴⁸ that: “With regards to circumstances to necessitate the movement of a whale, this would be a legitimate need, supported by a finding of an attending veterinarian consistent with the Animal Welfare Act concerning social, health, or other welfare reasons. For example, at Mystic Aquarium, if an imported beluga that was selected for compatibility in the Mystic social group proves to be incompatible and our options for keeping it separated do not satisfy the attending veterinarian, this could require a move to Georgia Aquarium. Another example would be that, at Georgia, if the currently pregnant female were to die following birth but before calf weaning, the attending veterinarian may deem it necessary for Mystic to transfer a female with calf-rearing experience to Georgia to serve as a surrogate for that animal’s welfare.”

NMFS has conditioned the permit 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. This condition is consistent with other research permits authorizing captive maintenance⁴⁹. While Mystic has outlined circumstances under which they might deem it necessary to move whales to Georgia Aquarium, any request to move any of the imported whales from Mystic to Georgia Aquarium (or to any other facility) would be considered on a case-by-case basis. Factors NMFS would consider in its decision would include the rationale for the move, consideration of alternatives, consultation with APHIS, and impacts to the proposed research to ensure consistency with the MMPA.

- **Public Comment 3(d):** Mystic Aquarium describes its partnership with Georgia Aquarium as a financial necessity and that Georgia Aquarium would own three of the whales; however, there is no documentation of the lease agreement between the two facilities.
 - **NMFS Response 3(d):** See Issuance Criteria 5 and 6 above. In Mystic Aquarium’s response to comments⁵⁰, they stated that the Memorandum of Understanding (MOU)⁵¹ between the organizations addresses the partnership between Sea Research Foundation, Inc. (Mystic Aquarium) and Georgia Aquarium and that both organizations are financially viable. Mystic provided documentation in the permit application regarding the expertise, facilities, and

⁴⁸See *Mystic Responses – Final Questions*, Question 2, p. 1.

⁴⁹NMFS has included this condition in captive research permits for decades. Under MMPA Section 104(c)(2)(E) of the MMPA, holders of marine mammals taken or imported for public display must only provide a 15-day notification prior to transporting, transferring, or other disposition (e.g., export). There is no similar statutory provision for subsequently transporting marine mammals that were taken or imported for scientific research.

⁵⁰See *Mystic Responses – Issuance Criteria*; response to Comment 1(c), p. 3.

⁵¹See footnote 40.

resources necessary to carry out the research. NMFS is satisfied with the documentation provided by the applicant in the permit application to demonstrate that resources are adequate.

- **Public Comment 3(e):** A commenter mentioned a quote from Georgia Aquarium: “A fivesome is likely the largest this beluga crew will grow at Georgia Aquarium. It’s a number that seems to be quite comfortable.” It is unclear how this would impact the request for additional whales to potentially be moved there.
 - **NMFS Response 3(e):** In Mystic Aquarium’s response to comments⁵², they stated that Georgia Aquarium’s capacity for beluga whales is determined by management decisions based on the health and well-being of the whales, which is overseen by experts in animal care and regulated under the AWA. NMFS is satisfied with this response and acknowledges APHIS’ authority under the AWA for enforcing the standards and certification requirements for the humane handling, care, treatment, and transportation of mammals.

Public Comment 4: Issuance of the permit would violate the MMPA because the applicant has not demonstrated “that the proposed importation would not disadvantage the population of belugas from the White Sea (erroneously referred to as the Barents Sea in the application).”

- **NMFS Response 4:** Under MMPA Sections 101(a)(1), 102(b) (16 U.S.C. 1372), and 104, the Secretary may issue permits for the taking and importation of marine mammals for purposes of scientific research, provided certain findings are made. The regulatory criteria for Section 104 scientific research permits are found in 50 CFR §216.34 and §216.41, and are discussed in detail in the section on issuance criteria.

Public Comment 5: Regarding general issuance criteria (humane determination and unnecessary risks to health and welfare), the following public comments were submitted:

- **Public Comment 5(a):** Transport and integration into new surroundings with unfamiliar conspecifics is stressful and represents significant risks to cetacean health and welfare. The proposed transport (i.e., import) is not humane and presents unnecessary risks to the health and welfare of the animals when other options are available (e.g., conducting the research at other facilities).
 - **NMFS Response 5(a):** See Issuance Criterion 1 above⁵³.
- **Public Comment 5(b):** Commenters expressed concern regarding stress from disruption of social groups including the potential removal of young beluga whales from their mothers and stated that calves should only be separated from mothers to address

⁵²See *Mystic Responses – Issuance Criteria*; response to Comment 1(d), p. 3.

⁵³See also *Mystic Responses – Issuance Criteria*; response to Comment 2(a), pp. 4-7.

animal welfare concerns. It is unclear how researchers would measure the impacts of such stress on research results.

- **NMFS Response 5(b):** The permit does not authorize breeding of the imported beluga whales. Therefore, the concern regarding stress from mother/calf separation is not relevant at this time.
- **Public Comment 5(c):** The young age of the whales proposed for import puts them at risk from mating before sexual maturity, compromising their health and welfare.
 - **NMFS Response 5(c):** Given that the permit would prohibit breeding, welfare concerns related to breeding are not relevant at this time. Mystic Aquarium must provide a plan to prevent breeding, which may include contraception or physical separation. Sexual maturity in female beluga whales is estimated at 6–7 years for both free-ranging and captive populations, while sexual maturity in males is estimated at 8–9 years (Robeck et al. 2018). Mystic pointed out that first conception for captive and wild beluga whales occur at similar ages, and that animals cannot breed until they are sexually mature (Robeck et al. 2005; Suydam 2009). The sexually immature female whales proposed for import are five and six years old, respectively, and the male is eight years old. Mystic stated that if any adverse interactions between whales are observed, management changes could be made to the social groups, as necessary. Mystic also stated that there are no plans to move the whales, but it is essential and responsible to have a contingency plan to ensure animal welfare should there be circumstances that necessitate a move. 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, including any transport to the Georgia Aquarium.

Public Comment 6: Regarding general and research-specific issuance criteria (significant impact on species or stock and taking beyond permit): 50 CFR §216.34(a)(4) requires that the applicant demonstrate that “The proposed activity by itself or in combination with other activities, will not likely have a significant adverse impact on the species or stock.” 50 CFR §216.34(a)(7) requires that the applicant demonstrate that “Any requested importation or exportation will not likely result in the taking of marine mammals or marine mammal parts beyond those authorized by the permit.” Commenters stated that any trade in beluga whales will increase the demand for beluga whales around the world, with the greatest risk of takes in the Russian Far East to meet the anticipated demand in China; and thus, these criteria have not been met.

- **NMFS Response 6:** See Issuance Criteria 4 and 7 above. Also, NMFS prepared an Environmental Assessment (EA) for the proposed action, which analyzed the indirect impacts of the proposed action including potential impacts to wild populations. Based on the analysis in the EA, NMFS determined that permit issuance will not have significant impacts on the quality of the human environment, which includes wild stocks of beluga

whales, and prepared a Finding of No Significant Impact (FONSI) documenting this decision.

Public Comment 7: Regarding research-specific issuance criteria (justification for using a depleted species): Commenters stated that the permit application fails to meet the issuance criterion found in §216.41(b)(5)(i) (i.e., the applicant must demonstrate that the proposed research cannot be accomplished using a stock not designated as depleted). The following comments were received:

- **Public Comment 7(a):** The applicant can accomplish the objectives with the existing beluga whales in the United States (approximately 30 whales). While the applicant deems these five beluga whales to be an “ideal cohort” because they are captive born and trained or trainable, those same qualities apply to beluga whales in the United States (including at Georgia Aquarium). Samples could be acquired from other facilities to meet the desired sample size and this seems to be a feasible alternative to importing whales; samples have been received from other facilities in the past.
 - **NMFS Response 7(a):** See response to MMC Comment 1(b) and Issuance Criterion 10 above.
- **Public Comment 7(b):** Much of the research requires only biological samples for analysis, as opposed to living whales. The argument that sample integrity might be compromised by shipping samples from Marineland holds true for samples shipped from any location including Georgia Aquarium; the applicant could develop state-of-the-art shipping protocols, which would benefit field researchers needing to ship samples collected from free-ranging cetaceans.
 - **NMFS Response 7(b):** In Mystic Aquarium’s response to comments⁵⁴, they stated that the Principal Investigator has developed state-of-the-art protocols for shipping samples (Romano 1993; Romano et al. 1993; Romano et al. 1994; Romano et al. 2002). However, they noted several extraneous factors (e.g., weather and transport carrier delays; lost packages; customs delays for international shipments) that have, in the past, compromised shipped samples, rendering them useless for research studies, and provided specific examples where this has occurred. Additionally, seasonal closures at Marineland limit the opportunity for research sampling during the winter months. Finally, processing prior to shipment for certain biological samples (e.g., breath and saliva) requires trained laboratory personnel, equipment, and a dedicated workspace, which may not be found in other institutions. Regarding shipping samples from Georgia Aquarium, the applicant has stated that in that event, resources would be allocated to ensure samples are collected, stored, and shipped appropriately. NMFS is satisfied with the applicant’s response.

⁵⁴See *Mystic Responses – Issuance Criteria*; response to Comment 4(c), pp. 21-22.

- **Public Comment 7(c):** Training animals at other facilities is feasible, especially at Marineland, where most of the beluga whales are not included in performances and a larger sample size is available.
 - **NMFS Response 7(c):** In Mystic Aquarium’s response to comments⁵⁵, they provided a detailed list of time required to train the research behaviors, ranging from a couple of months to more than a year, and explained why it is not feasible to conduct the research at Marineland (and other facilities) including that husbandry and animal care teams of other facilities, including Marineland, prioritize their own needs to access animals first, before collecting samples for other institutions. Previous attempts to collaborate with other institutions were not successful given their other priorities. As indicated above, Marineland is closed during winter months limiting research sampling and some samples require specific handling and processing to ensure that subsequent assays can be conducted. Delays in shipping can compromise or destroy samples before they can be analyzed which are more likely to occur during international shipments (e.g., from Marineland to Mystic). Georgia Aquarium is the only facility that has committed to dedicate the time, money, and effort to the proposed research projects, as applicable. Mystic stated that samples will continue to be requested from other U.S. facilities maintaining beluga whales, but that such samples would not be of the same scope that can be achieved at Mystic with consistent collection and processing. See also responses 7(a) and (b) above. NMFS is satisfied with the applicant’s response.

- **Public Comment 7(d):** The applicant argues that it is necessary to import the whales because it is infeasible to conduct the research at other U.S. facilities but states that if the beluga whales need to be moved to Georgia Aquarium, the identical research would continue without exception. These assertions are irreconcilable.
 - **NMFS Response 7(d):** See response to Public Comment 3(c). The applicant affirmed that the goal is for the imported beluga whales to reside at Mystic Aquarium for the duration of the proposed research permit and beyond. Georgia Aquarium is the only facility that agreed to dedicate the necessary resources to carry out the research at its facility and has committed by agreement with Mystic to reallocate resources, if necessary.

Public Comment 8: The action does not qualify for a Categorical Exclusion (CE) under the National Environmental Policy Act (NEPA) and an Environmental Impact Statement should be prepared.

- **NMFS Response 8:** NMFS published a *Federal Register* notice (84 FR 52072, October 1, 2019), which opened a 60-day public comment period on the submitted permit application. The notice included a summary of the activities proposed by Mystic Aquarium and NMFS’ initial determination that a CE was appropriate under NEPA. NMFS also held a public hearing during the public comment period. At the close of the

⁵⁵See *Mystic Responses – Issuance Criteria*; response to Comment 4(d), pp. 22-23.

comment period, we reviewed the public comments and conducted further environmental review. We determined that while scientific research permits generally fall within NOAA's CE categories, we believe that an EA is appropriate in this case to allow us to more fully evaluate the 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 FONSI documenting this decision.

Public Comment 9: Breeding should not be authorized (and additional comments regarding breeding).

- **NMFS' Response to the Request for Breeding:** See response to MMC Comment 2(b). The permit does not authorize breeding and 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. Given that progeny from the imported beluga whales are prohibited under this permit, the concerns raised by public commenters regarding breeding and the disposition of progeny once research is completed are not relevant at this time. However, below we briefly summarize comments and responses pertaining to breeding.
- **Public Comment 9(a):** Breeding the whales is perceived as a way to circumvent the MMPA's prohibition on importing depleted marine mammals for public display purposes.
 - **NMFS Response 9(a):** See response to MMC Comment 2(b).
- **Public Comment 9(b):** It was not clear which male would be the sire if breeding were to occur, and if Mystic Aquarium anticipates breeding between any of the four females proposed for import with the male whale currently residing at Mystic named Juno, there are concerns about breeding because the individuals may be closely related.
 - **NMFS Response 9(b):** In Mystic Aquarium's response to comments⁵⁶, they responded that if breeding occurred, Juno would be the likely sire and that since submission of the permit application, they have determined that Juno is not the offspring of any of the female beluga whales to be imported and there are no significant concerns about inbreeding.
- **Public Comment 9(c):** NMFS should demonstrate comity toward, and comparable standards to, Canadian law and include in the permit conditions a prohibition on allowing these whales to reproduce. It is anticipated that Canada's Minister of Fisheries and Oceans will reject an application to export the animals to Mystic Aquarium if breeding, public display, and transfer of the whales to other facilities once research is complete will occur.

⁵⁶See *Mystic Responses – Issuance Criteria*; responses to Comment 6(c-d), p. 30.

- **NMFS Response 9(c):** NMFS’ decision on this permit is governed by the MMPA, its implementing regulations, and other applicable U.S. laws. In accordance with 50 CFR §216.35(c), the permit is conditioned to require that the marine mammals are imported in compliance with the MMPA and any applicable foreign law.
- **Public Comment 9(d):** Mystic Aquarium states that beluga calf development has been “rarely studied” but a number of beluga calves have been born in captivity in North America with the assumption that veterinary and husbandry records are available for analysis. Commenters stated: “*New births should not be necessary to study such basic biology well into the sixth decade of holding belugas in captivity.*”
 - **NMFS Response 9(d):** In Mystic Aquarium’s response to comments⁵⁷, they responded that beluga whale calves have rarely been included in the types of studies proposed under the permit application and provided a literature search summary to demonstrate. Mystic acknowledged publications exist on beluga whale calf behavioral development (e.g., Hill et al. 2013; Hill et al. 2018; Noren and Suydam 2016; Robeck et al. 2005; Russell et al. 1997), but indicated that the sample sizes are small for those studies and that veterinary and husbandry records are not a substitute for the biological samples needed to answer questions included in the permit application. NMFS notes that the sample size of calves proposed by Mystic Aquarium (potentially n=2, if breeding were authorized and successful) is small, and that Mystic has stated that breeding is not necessary for the research and that it may not occur at all. See also response to MMC Comment 2(b).

Public Comment 10: Commenters questioned the final disposition of the whales and any progeny born. The permit application stated that at the termination of research, the whales would continue to reside at Mystic Aquarium or Georgia Aquarium, or, if deemed in their best interest, they may be moved to another professionally-accredited facility in the United States. Commenters raised concerns that the whales would become part of the general public display population of captive beluga whales in the United States.

- **NMFS Response 10:** As noted in the response to MMC Comment 2(b), this permit will not authorize breeding; therefore, the disposition of any progeny born is not relevant at this time. Consistent with other research permits authorizing captive maintenance, the permit is conditioned to require approval by the Office Director for any subsequent disposition 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. Also consistent with other research permits authorizing captive maintenance, in addition to the MMPA Section 104 authority for scientific research, the permit includes authorization under MMPA Section 112(c) for captive maintenance. These authorities may be used to allow continued captive maintenance upon cessation of research, as deemed appropriate by the Office Director.

⁵⁷See *Mystic Responses – Issuance Criteria*; response to Comment 6(g), pp. 32-35.

Public Comment 11: Commenters further questioned the value of the proposed research to conservation of depleted and endangered populations.

- **NMFS Response 11:** NMFS is satisfied with the applicant’s responses to the comments below pertaining to applicability of the studies to the depleted and endangered beluga whale populations (see responses to MMC Comment 1 and Issuance Criterion 10), with the exception of applicability to Study 7 (Behavioral and reproduction studies), which is addressed in the response to MMC Comment 2(b).

Commenters stated that:

- **Public Comment 11(a):** The origin of the whales (i.e., all captive-born and with parents from geographically and genetically separated populations) minimizes the value of results related to the genetics or environment of the depleted population as it occurs in the wild. And, given that there is no genetic relationship between the whales to be imported and Cook Inlet beluga whale population, the applicability of certain research results to that endangered population would also require caveats.
 - **Mystic’s Response 11(a):** In Mystic Aquarium’s response to comments⁵⁸, they stated that the genetic differences asserted by the commenter are not as significant, for purposes of the proposed research, as the commenter claims, and provided information to support their statement. They further stated that a lack of genetic connectivity should not preclude applying findings from one population to another population for certain common traits and behaviors such as those proposed for study, especially when the potential for studying Cook Inlet beluga whales in similar ways is limited. However, Mystic also stated that the ability to directly study the immune system genes of these beluga whales may reveal important information to help understand the basis for phenotypic variation in susceptibility to disease specific to for this stock.
- **Public comment 11(b):** The Sakhalin Bay-Nikolaya Bay-Amur River stock and Cook Inlet stock are affected by different threats and claiming all research results will be applicable to all populations is inaccurate.
 - **Mystic’s Response 11(b):** In Mystic Aquarium’s response to comments⁵⁹, they stated that several of the threats to Cook Inlet beluga whales are also potential threats in the Sea of Okhotsk including climate change (Laidre et al. 2015), pollution, run-off (Bettridge et al. 2016; Reeves et al. 2011), and oil and gas development (pollution and noise) (Kachur et al. 2019). Mystic provided examples of how their studies can be applied to multiple beluga whale populations in the wild, such as the

⁵⁸See *Mystic Responses – Issuance Criteria*; response to Comment 5(a-b), pp. 24-26.

⁵⁹See *Mystic Responses – Issuance Criteria*; response to Comment 5(f), p. 28.

neuroendocrine and immune system studies, which will provide information on health implications of common environmental stressors (sound, shipping traffic, pollution, and emerging pathogens) and hearing studies, where the sounds included for investigation are common threats to these populations. Mystic further stated that testing telemetry devices and photogrammetry could be applicable to any beluga whale population.

- **Public comment 11(c):** The statement that research results would be shared for conservation of the depleted beluga whale population requires confirmation that Mystic Aquarium researchers have contacted Russian researchers and Russian authorities in the Far East, for this purpose.
 - **Mystic’s Response 11(c):** In Mystic Aquarium’s response to comments⁶⁰, they confirmed that the Principal Investigator has professional relationships with Russian beluga whale researchers and once research results are available, data will be shared with these researchers and disseminated in the form of presentations at workshops and conferences and in scientific publications. Mystic Aquarium submitted letters of collaboration from Dr. Olga Shpak, Research Associate, and Dr. Sergey Naidenko, Deputy Director, of A.N. Severtsov Institute of Ecology and Evolution of Russia Academy of Sciences to support this.
- **Public Comment 11(d):** The permit application makes reference to management plans and recovery plans for Sakhalin Bay-Nikolaya Bay-Amur River stock; however, NMFS has not developed any such plans and commenters are unaware of any comparable plans in Russia.
 - **NMFS Response 11(d):** The permit application does not refer to management plans and recovery plans for Sakhalin Bay-Nikolaya Bay-Amur River stock; it refers to the Recovery Plan for the Cook Inlet Beluga Whale (NMFS 2016) and the status review of and threats to the Sakhalin Bay-Nikolaya Bay-Amur River beluga whale stock (Bettridge et al. 2016; Reeves et al. 2011).
- **Public Comment 11(e):** Mystic Aquarium does not acknowledge limitations of the applicability of the hearing studies (Study 3) in captive settings to two different wild populations (the Sakhalin Bay-Nikolaya Bay-Amur River stock and Cook Inlet beluga whale DPS). Commenters cited Parsons et al. (2008) and Wright et al. (2009) and stated they find this study to be duplicative with limited value to free-ranging animals.
 - **Mystic’s Response 11(e):** In Mystic Aquarium’s response to comments⁶¹, they cited studies by the Co-investigators (Castellote et al. 2014; Mooney et al. 2008; Mooney et al. 2016; Mooney et al. 2018a; Mooney et al. 2018b) that suggest that

⁶⁰See *Mystic Responses – Issuance Criteria*; response to Comment 5(c), p. 26.

⁶¹See *Mystic Responses – Issuance Criteria*; response to Comment 5(e), p. 27.

beluga whales hear similarly whether within a certain population or when compared between populations, making data comparable between populations. Also see responses above regarding applicability to wild populations. Mystic Aquarium stated that wild beluga whales exposed to different types of noise will experience an increased hearing threshold due to masking in the same manner as the captive animals, and the proposed research will quantify that hearing change. To the extent these questions have been studied in the past, Mystic points out that science depends on reproducible results as part of hypothesis testing and development.

- **NMFS Response 11(e):** As discussed above (see Issuance Criterion 10), anthropogenic noise has been identified as a high threat to Cook Inlet beluga whales and NMFS believes the auditory research fulfills a critically important need. Auditory data in general from beluga whales are limited, and few controlled exposure studies on beluga whales to assess noise impacts, including masking, have been done.

Public Comment 12: The legality of the beluga whale parents is questionable. Commenters allege that the parents of the whales requested for import appear to have been captured in Russia between the late 1990s and 2005, and based on information on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) permits obtained by the commenter, they allege it is likely that the parent whales were captured in violation of the Russian law in effect at that time, which prohibited captures and exports of whales for purposes other than “scientific” or “educational.” These commenters allege that according to CITES records, beluga whales were exported to Canada in 1999, 2000, 2003, 2005, and 2008 and in three instances, CITES records list “commercial” (with the letter “T”), “Q” (for a circus or traveling exhibition), and “hunting trophy” (H), and that these purposes violate Russian law. In the 2008 case, Canada did not report the import to the CITES tribunal.

- **NMFS Response 12:** Beluga whales are listed under Appendix II of CITES, which means that the country of export must make certain findings prior to issuing CITES export permits. These findings include: 1) the impact of the export on the survival of that species; 2) whether the collection of an animal was consistent with domestic laws; and 3) whether the shipment of an animal is done in a way that minimizes the risk of injury, damage to health, or cruel treatment.

The commenters reference the CITES Trade Database as their evidence that the parent whales were taken in violation of the laws of Russia by identifying purpose codes (commercial, circus/travelling exhibition, hunting trophy) that don’t appear to match up with the purposes allowed under Russian law (scientific or educational). Parties to CITES voluntarily submit annual reports to the CITES Trade Database; this self-reported data can either be based on the actual number of specimens traded or on the number for which the permits or certificates were issued, which can differ. In addition, the information regarding the source or purpose of a transaction may be lacking or used in different ways between countries. Therefore, it is not uncommon for CITES records

from the exporting and importing countries to differ (Fisher and Reeves 2005; see also https://trade.cites.org/cites_trade_guidelines/en-CITES_Trade_Database_Guide.pdf).

With regard to the parents of the subject beluga whales requested for import, the Management Authority of the Government of Russia was responsible for issuing the CITES export permits associated with their transport to Marineland. These CITES permits were accepted by the Government of Canada upon import of those whales. The issuance of the CITES permits from Russia and the acceptance of the CITES permits from Canada suggests that the parent beluga whales were not taken in violation of Russian law. Mystic Aquarium stated that the original CITES permits for the parents are not available⁶². Further, Mystic stated that “CITES export permits for the belugas listed in the research permit [application] are in hand”⁶³.

Public Comment 13: Specific comments on permit application: In addition to the comments above, a number of public comments were received specific to the permit application (e.g., specific comments regarding study objectives, sample size, study designs, and methods). See *Mystic Responses – Objectives, Justification, and Methods*.

- NMFS is satisfied with the applicant’s responses regarding Studies 1-6 and 8. Study 7 is addressed in the response to MMC Comment 2(b).

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⁶²See *Mystic Responses – Issuance Criteria*, response to Comment 8, p. 35.

⁶³See *Mystic Responses – Issuance Criteria*; response to Comment 6(f), p. 32.

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