



## Authorizations and Permits for Protected Species (APPS)

**File Number: 22629 -- Report #3**

### Applicant/Holder

**Affiliation:** Sea Research Foundation, Inc. dba Mystic Aquarium

**City,State,Zip:** Mystic, CT 06355

### Report & Project Information

**Report Number:** 3 (Annual Report)

**Report Period:** 09/01/2021 to 08/31/2022

**Report Status:** **Submitted**

**File Number:** 22629

**Project Title:** Health-related Research on beluga whales conducted at Mystic Aquarium to contribute knowledge and inform management and recovery of wild beluga populations...[see attached application for full title]

**Project Status:** New

**Previous Federal or State Permit/Authorization:** Scientific Research/Enhancement Permit #42-1908 (Expired 1/31/2014)

**Permit/Authorization Requested:** • MMPA Research/Enhancement permit - Issued

**Where will activities occur?** US Locations including offshore waters

**Research Timeframe:** **Start:** 08/27/2020 **End:** 08/31/2025

**Sampling Season/Project Duration:** Import is proposed to occur in January 2020. This permit is for continuous marine mammal health related research conducted on a daily basis at Mystic Aquarium. Research will occur continuously; there is no specific season or duration of the research. To gain the maximum knowledge that can be applied for beluga conservation, we are requesting the 5-year maximum for the permit. Training for research activities is already part of the Mystic Aquarium husbandry protocol and will occur on a daily basis during regular scheduled training sessions.

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## Location/Take Information

### Location

**Research Area:** Captivity

**Location Description:** Authorized annual research takes at Mystic Aquarium (or Georgia Aquarium) for the five beluga whales identified in Appendix 1, Table. See the details column for more information.

### Take Information

\* **Line Number:** 1  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Sample, blood  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Studies 1,2,5. See Appendix 1, Table 2 of permit for details.

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\* **Line Number:** 2  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**

**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Sample, exhaled air  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Studies 2,3,5. See Appendix 1, Table 2 of permit for details.

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\* **Line Number:** 3  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Other  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 2. Other = Sample, saliva. See Appendix 1, Table 2 of permit for details.

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\* **Line Number:** 4  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect**

**Actual Indirect Mortality:**

**Take Action:** Captive animals (research, enhancement, public display)

**Observe/Collect Method:** Captive

**Procedure:** Sample, fecal

**Transport:** N/A

**Begin Date:** 09/01/2021

**End Date:** 08/31/2022

**Details:** Study 2. See Appendix 1, Table 2 of permit for details.

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\* **Line Number:** 5

**Species:** Whale, beluga

**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock

**Production/Origin:** Captive

**Lifestage:** Adult/ Juvenile

**Sex:** Male and Female

**Expected Take:** 5

**Actual Take:** 0

**Indirect Mortality:**

**Actual Indirect Mortality:**

**Take Action:** Captive animals (research, enhancement, public display)

**Observe/Collect Method:** Captive

**Procedure:** Other

**Transport:** N/A

**Begin Date:** 09/01/2021

**End Date:** 08/31/2022

**Details:** Study 2. Other = Sample, skin. Skin scrapes for development, validation, and measurement of gene expression (Study 2): 4x per week x 50 weeks = 200 samples/year (200 takes/whale/year).

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\* **Line Number:** 6

**Species:** Whale, beluga

**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock

**Production/Origin:** Captive

**Lifestage:** Adult/ Juvenile

**Sex:** Male and Female

**Expected Take:** 5

**Actual Take:** 0

**Indirect Mortality:**

**Actual Indirect Mortality:**

**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Other  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 6. Other = Sample, swab. Skin swabs for microbiome: 2x per week x 50 weeks = 100 samples/whale/year (100 takes/whale/year).

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\* **Line Number:** 7  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Sample, blowhole swab  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 6. Blowhole swabs for microbiome: 2x per week x 50 weeks = 100 samples/whale/year (100 takes/whale/year).

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\* **Line Number:** 8  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5

**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Sample, anal swab  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 6. Anal swabs for microbiome: 2x per week x 50 weeks = 100 samples/whale/year (100 takes/whale/year).

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\* **Line Number:** 9  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Other  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 6. Other = Oral swab. Oral swabs for microbiome: 2x per week x 50 weeks = 100 samples/whale/year (100 takes/whale/year).

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\* **Line Number:** 10  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Female

**Expected Take:** 4  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Other  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 6. Other = vaginal swab. Vaginal swabs for microbiome: 2x per week x 50 weeks = 100 samples/female whale/year (100 takes/whale/year).

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\* **Line Number:** 11  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Photogrammetry  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 4. Photogrammetry: 30 photographs/month x 12 months/year = 360 takes/whale/year.

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\* **Line Number:** 12  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive

**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Measure  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 4. Morphometric measurements: 1 set of measurements/month x 12 months = 12 takes/whale/year.

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\* **Line Number:** 13  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Weigh  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 4. Weights: 4 weights per year = 4 takes/whale/year.

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\* **Line Number:** 14  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive



**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Instrument, suction-cup  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 8. Testing suction-cups for animal borne imaging (ABI) systems and tags: 3 sessions per week x 50 weeks = 150 takes/ whale/year.

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\* **Line Number:** 15  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male and Female  
**Expected Take:** 5  
**Actual Take:** 0  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Auditory brainstem response test  
**Transport:** N/A  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Study 3. Hearing and physiological response to anthropogenic sound. See Appendix 1, Table 2 of the permit for details.

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## Location

**Research Area:** Captivity

**Location Description:** Importation (from Marineland of Canada to Mystic Aquarium) and captive maintenance of five beluga whales for over the duration of the permit. See Appendix 1, Table 1 of the permit for details.

## Take Information

\* **Line Number:** 1 **Version:** A  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Female  
**Expected Take:** 1  
**Actual Take:** 1  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Captive, maintain; Import; Transport  
**Transport:** 1;2  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Jetta/NOA0010684. Captive-born at Marineland 7/17/14; Offspring of dam Skyla (wild capture, Sea of Okhotsk, Russia); potential sires: Andre (wild capture, Barents or White Sea, Russia), Kodiak, Orion, or Tuktoyaktuk (wild capture, Sea of Okhotsk, Russia).

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\* **Line Number:** 2 **Version:** A  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Male  
**Expected Take:** 1  
**Actual Take:** 0  
**Indirect Mortality:**

**Actual Indirect Mortality:**

**Take Action:** Captive animals (research, enhancement, public display)

**Observe/Collect Method:** Captive

**Procedure:** Captive, maintain; Import; Transport

**Transport:** 1;2

**Begin Date:** 09/01/2021

**End Date:** 08/31/2022

**Details:** Havok/NOA0010685. Captive-born at Marineland 8/10/15; Offspring of dam Secord (wild capture, Sea of Okhotsk, Russia); potential sires: Tuktoyaktuk or Orion (wild capture, Sea of Okhotsk, Russia).

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\* **Line Number:** 3

**Species:** Whale, beluga

**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock

**Production/Origin:** Captive

**Lifestage:** Adult/ Juvenile

**Sex:** Female

**Expected Take:** 1

**Actual Take:** 1

**Indirect Mortality:**

**Actual Indirect Mortality:**

**Take Action:** Captive animals (research, enhancement, public display)

**Observe/Collect Method:** Captive

**Procedure:** Captive, maintain; Import; Transport

**Transport:** 1;2

**Begin Date:** 09/01/2021

**End Date:** 08/31/2022

**Details:** Havana/NOA0010675. Captive-born at Marineland 7/23/15; Offspring of dam Kelowna (wild capture, Sea of Okhotsk, Russia); sire Andre (wild capture, Barents or White Sea, Russia).

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\* **Line Number:** 4

**Species:** Whale, beluga

**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock

**Production/Origin:** Captive

**Lifestage:** Adult/ Juvenile

**Sex:** Female

**Expected Take:** 1  
**Actual Take:** 1  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Captive, maintain; Import; Transport  
**Transport:** 1;2  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Kharabali/NOA0010671. Captive-born at Marineland 07/20/14; Offspring of dam Aurora (wild capture, Sea of Okhotsk, Russia); sire Kodiak (wild capture, Sea of Okhotsk, Russia).

\* **Line Number:** 5 **Version:** A  
**Species:** Whale, beluga  
**Listing Unit/Stock:** Sakhalin Bay-Nikolaya Bay-Amur River Stock  
**Production/Origin:** Captive  
**Lifestage:** Adult/ Juvenile  
**Sex:** Female  
**Expected Take:** 1  
**Actual Take:** 1  
**Indirect Mortality:**  
**Actual Indirect Mortality:**  
**Take Action:** Captive animals (research, enhancement, public display)  
**Observe/Collect Method:** Captive  
**Procedure:** Captive, maintain; Import; Transport  
**Transport:** 1;2  
**Begin Date:** 09/01/2021  
**End Date:** 08/31/2022  
**Details:** Sahara/NOA0010683. Captive-born at Marineland 07/23/14; Offspring of dam Acadia (wild capture, Sea of Okhotsk, Russia); potential sires: Andre (wild capture, Barents or White Sea, Russia), Kodiak or Orion (wild capture, Sea of Okhotsk, Russia).

## Transport Information

1. **Mode(s) of Transportation:** Transport #1 (Importation from Marineland of Canada to Mystic Aquarium). See attached Final Application.
- Transportation Company:** See attached Final Application.
- Maximum amount of time between capture and arrival:** See attached Final Application.
- Container Description:** See attached Final Application.
- Special Care:** See attached Final Application.
- Accompanying Personnel Qualifications:** See attached Final Application.
- Facility Title:** Mystic Aquarium
- Facility Affiliation/Organization:**
- Address:** 55 Coogan Blvd  
Mystic, CT 06355 UNITED STATES
- Phone Number:** (860)572-5955 ext.
- Containment Method:** See attached Final Application.
- Final Disposition:** See attached Final Application.
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2. **Mode(s) of Transportation:** Transport #2 (Potential transport from Mystic Aquarium to Georgia Aquarium). See attached Final Application.
- Transportation Company:** See attached Final Application.
- Maximum amount of time between capture and arrival:** See attached Final Application.
- Container Description:** See attached Final Application.
- Special Care:** See attached Final Application.
- Accompanying Personnel Qualifications:** See attached Final Application.
- Facility Title:** Georgia Aquarium
- Facility Affiliation/Organization:**
- Address:** 225 Bakers Street NW  
Atlanta, GA UNITED STATES

**Phone Number:**

**Containment Method:** See attached Final Application.

**Final Disposition:** See attached Final Application.

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## **Report Comments and Analysis**

### **1. What progress did you make toward meeting your objectives this year?**

**For example:**

- **Summarize which permitted activities you did and did not do.**
- **Did you meet your sample sizes? Explain.**
- **Did you conduct repeated surveys in the same location? Elaborate.**
- **How many individuals did you intentionally take multiple times and by what methods?**
- **Were you able to have samples analyzed, did your tags successfully transmit data, etc.?**
- **Did you identify any new threats to the conservation or recovery of a species or DPS?**
- **Were you able to make progress in analyzing and/or publishing your data?**
- **List citations for any new reports, publications, and presentations. We may request electronic copies.**

LOCATION 1 Research sampling has been on hold since August 6, 2021 per NOAA's directive.

LOCATION 2: Progress was made with training focused behaviors. These behaviors will facilitate the voluntary collection of future research samples when research is allowed to resume. All whales made progress with this training as summarized below:

Sahara NOA0010683

- **Blood Collection – Layout duration up to 1 minute**
- **Breath – Multiple exhales in a row and allows for collection onto a plate**
- **Saliva – Allows trainer to collect sample**
- **Microbiome – Has not started fecal collection training as training staff works to strengthen ventral layout, has not started open blow hole sample collection until “breath” behavior is more solid**
- **Layouts/Stationing for tape measurements – Allows for one girth at pectoral flippers, training team to continue to works towards other measurements**
- **Layouts/stationing for suction cup electrodes/hearing tests – Working to solidify**

layouts before suction cup desensitization

- Layouts/stationing for dive studies – Working to solidify layouts and extended target training
- Photogrammetry Swim-bys (under camera) – Working to solidify layouts before asking whales to move in layout position for photos

Kharabali NOA0010671

- Blood Collection – Layout duration up to 1 minute and 30 seconds
- Breath – Multiple exhales in a row and allows for collection onto a plate
- Saliva – Allows research team to collect sample
- Microbiome – Early stages of fecal collection have been started by training team, has not started open blow hole sample collection until “breath” behavior is more solid
- Layouts/Stationing for tape measurements – In training to allow the girth tape to wrap around her for measurements
- Layouts/stationing for suction cup electrodes/hearing tests – Working to solidify layouts before suction cup desensitization
- Layouts/stationing for dive studies – Working to solidify layouts and extended target training
- Photogrammetry Swim-bys (under camera) – Working to solidify layouts before asking whales to move in layout position for photos

Jetta NOA0010684

- Blood Collection – In training
- Breath – Multiple exhales in a row and allows for collection onto a plate
- Saliva – Allows training team to collect sample
- Microbiome – Has not started to learn this behavior as training team solidifies other layouts
- Layouts/Stationing for tape measurements – Has not started learning this behavior as training team solidifies layouts
- Layouts/stationing for suction cup electrodes/hearing tests – Working to solidify layouts before suction cup desensitization
- Layouts/stationing for dive studies – Working to solidify layouts and extended target training
- Photogrammetry Swim-bys (under camera) – Working to solidify layouts before asking whales to move in layout position for photos

Breeding Prevention Plan (All Whales):

- On 4/15/2022 NOAA issued temporary approval to revise the December 2020 breeding prevention plan to include the use of an oral contraceptive for female Sahara which would mitigate disruption from gender separation and provide improved animal health and management of the group.
- 4/20/2022 Mystic Aquarium requested authorization to use oral contraceptives in all female whales covered in the permit (Kharabali, Sahara and Jetta) in situations where they are not voluntarily cooperating with ultrasound monitoring.
- 5/18/2022 Mystic Aquarium submitted comprehensive revised breeding prevention plan to allow both physical separation and contraception to be utilized as tools to ensure prevention of breeding
- 5/24/2022 NOAA issued temporary approval to use oral contraceptives for female

Kharabali.

- 10/28/2022 NOAA approved the use of oral contraceptives for the three females for the duration of the permit. Note: this final approval was issued after the end of the period covered by this annual report.
- A Beluga Health Committee was established per conditions of the permit and reports to the Institutional Animal Care and Use Committee. This committee reviews annually the breeding prevention plan for the female beluga whales authorized by the permit. The plan will be adjusted as needed based on the recommendations of the committee. The committee met to discuss the breeding prevention plan on 12/9/2021 and 8/23/2022. Training for the veterinarians was conducted in December 2021 and January/February 2022.

Health Summary:

Havana NOA0010675

- Received gastric medications to support gastrointestinal health.
- Exhibited neurological clinical signs, the cause of which could not be characterized (see below). The animal received antibiotics, antifungal medication, glucocorticoids during treatment.
- Exhibited corneal edema and received topical ophthalmic medication.
- Died on 2/11/2022. The incident report was submitted to NOAA on 2/25/2022. Based on the final necropsy, the primary cause of death was storage disease of the brain, spinal cord, and liver. Storage disease is a rare generally genetic, irreversible, and incurable condition that prevents the cells from ridding themselves of unwanted material (byproducts of normal metabolism), resulting in gradual build-up of unwanted material. Storage diseases causes progressive deterioration of the cell and thus organ disfunction, leading to death. Diagnosis required microscopic examination of the brain and spinal cord tissue, which is only possible post-mortem.

Sahara NOA0010683

- Received medications to support gastrointestinal health
- Was sedated to permit weighing
- Topical treatments were administered to address minor skin wounds
- Regu-mate was given as a contraceptive medication to prevent breeding
- Immune support was provided
- At the time of this report Sahara is off all medications except Regu-mate, and is eating, acting, and behaving normally.

Kharabali NOA0010671

- Received medications to support gastrointestinal health.
- Topical treatments were administered to address minor skin wounds.
- Received antibiotics and antifungal/yeast medications for systemic inflammation
- Regu-mate was given as a contraceptive medication to prevent breeding
- At the time of this report Kharabali is off all medications except Regu-mate, and eating, acting, and behaving normally.



Jetta NOA0010684

- Was in critical care from the beginning of this reporting period through 08/12/22.
- o Treatments included
  - ? Medications to support gastrointestinal health
  - ? Antibiotics and antifungal medications
  - ? Nutritional & immune support
  - ? Glucocorticoids
- At the time of this report, Jetta is off all medications, eating, acting, and behaving normally.

## **2. Describe the following observations during your activities:**

- **The physical condition of the animals you encountered and conducted procedures or activities on.**
- **How the animals reacted to specific procedures or activities. Include normal and abnormal responses of target and non-target animals.**
- **Where possible, provide quantitative data and estimate the proportion of animals (%) that had those physical conditions or reactions.**

LOCATION 1 Research sampling has been on hold since August 6, 2021 per NOAA's directive.

LOCATION 2: Response during husbandry and health assessments:

Jetta NOA0010684, Kharabali NOA0010671, and Sahara NOA0010683 had normal responses to husbandry and health assessments e.g., clinical blood collection, routine ultrasounds, blow collections, routine weights, and gastric samples 100% of the time.

Havana NOA0010675 had 100% normal response to husbandry and health assessments from September 1, 2021 to November 8, 2021. In fall 2021 animal's behavior changed and she became less engaged with trainers, and began refusing food. She was moved to off-exhibit holding area for focused veterinary care. During this time, she was handled several times throughout the day for supportive care. She received hydrations and medications via gastric tube. Following these short hydrations, she behaved normally after handling. Following some veterinary procedures, such as ultrasound diagnostics, she was given support from staff to swim for a few minutes after the procedures and then she resumed normal activity. See discussion in Question 4 regarding Havana's death from storage disease.

Response during gender separation: Target animals had variable responses during gender separation due to breeding prevention. In general, animals altered their food intake during this time of separation. The staff did extra sessions through the evening and were generally able to successfully administer 100% of diet. Sahara's diet was variable during times of gender separation. Mystic sought, and received from NMFS,

temporary and permanent authority to administer contraceptives as an alternative to gender separation.

Havana NOA0010675

- 100% normal response from September 1, 2021 until November 8, 2021 when she was moved to off-exhibit holding pool; male was not present.

Jetta NOA0010684

- 100% normal response at Arctic Coast from September 1, 2021 - October 1, 2021 when she was moved to off-exhibit holding pool; male was not present.
- Did not reintroduce to male during acclimation beginning August 6, 2022.

Kharabali NOA0010671

- 80% normal response: At times after separation from male she would be less engaged with trainers.

Sahara NOA0010683

- 80% normal response: At times after separation from male she would have more swim offs and be less engaged with trainer. Diet was variable.

### **3. Explain your efforts to conduct follow-up monitoring. Report your findings. Photographs are useful to document things like wound healing.**

**We are especially interested in:**

- **Animal responses to new or novel procedures or activities.**
- **Time it takes to resume normal behavior after harassment.**
- **Time it takes to re-populate rookeries or haul outs after harassment.**
- **Condition of animals when resighted or recaptured.**
- **Recovery from sedation and/or handling and post-release behavior.**
- **Healing at site of invasive sampling (e.g., biopsy).**
- **Healing at site of invasive tag deployment (e.g., surgical tag implants requiring sutures, remotely deployed dart/barb, deep-implant, medial ridge, and pygal tags).**
- **Tag retention and tag breakage (i.e., is the tag still attached and what condition is the tag in?).**

LOCATION 1 Research sampling has been on hold since August 6, 2021 per NOAA's directive.

LOCATION 2: Whales have been monitored 24 hours a day throughout this period. Whales have adapted well and generally responded well to new/novel procedure. During time of gender separation for breeding prevention, we saw a breakdown in engagement with training staff.

#### **4. Answer and discuss the following:**

- **Did serious injuries or mortalities occur?**
- **Did you exceed the number of takes authorized in any row of the take table?**
- **Did you take animals in a manner not authorized in the permit?**
- **Did you take a protected species you were not permitted?**

**If so, and you already submitted an incident report, please briefly describe the event here and refer to the incident report.**

**If such an incident occurred and you have not yet reported it, provide:**

- **A full description of the incident (date and location of event; species and circumstances of how the take occurred; photographs; necropsy and histopathology reports, or other information to confirm cause of death or extent of injuries; etc.).**
- **Steps that were or will be taken to reduce the possibility of it happening again.**

LOCATION 1 No injuries or mortality occurred as a result of research sampling which has been on hold since August 6, 2021 per NOAA's directive.

LOCATION 2: Beluga whale Havana died on 2/11/2022. The incident report was submitted to NOAA on 2/25/2022. Based on the final necropsy, the primary cause of death was storage disease of the brain, spinal cord, and liver. Storage disease is a rare generally genetic, irreversible, and incurable condition that prevents the cells from ridding themselves of unwanted material (byproducts of normal metabolism), resulting in gradual build-up of unwanted material. Storage diseases causes progressive deterioration of the cell and thus organ dysfunction, leading to death. Diagnosis required microscopic examination of the brain and spinal cord tissue, which is only possible post-mortem.

#### **5. Describe any other problems encountered during this reporting period and steps taken or proposed to resolve them. Examples include equipment failure, weather delays, safety issues, and unanticipated effects to habitats or other species.**

LOCATION 1 Research sampling has been on hold since August 6, 2021 per NOAA's directive.

LOCATION 2: During times when females were separated from the male to prevent breeding, Kharabali NOA0010671 and Sahara NOA0010683 were less attentive to training staff but generally received full diets. See responses to Questions 1 and 2 above. The issue was resolved following the approved use of oral contraceptives. Behaviors returned to normal once the whales were allowed to integrate again. See Question 1. for the timeline on the applications for contraception use and NOAA's authorizations.

**6. Discuss your efforts to coordinate and collaborate with others:**

- **Which NMFS Regional Office(s) and permit holder(s) did you contact for coordination?**
- **How did you collaborate (e.g., avoiding field work at the same time or working together on the same animals, sharing vessels, sharing data)?**

LOCATION 1 Research sampling has been on hold since August 6, 2021 per NOAA's directive.

LOCATION 2: No coordination/collaborations were necessary during this reporting period.

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**Attachments**

**Application Archive - P22629\_i22413T14Submitted.pdf (Added Nov 30, 2022)**

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**Report Status**

Report Type: Annual

Report Status: Submitted

Start Date of report period: September 1, 2021

End date of report period: August 31, 2022

Date Due: November 30, 2022

Date Received: November 30, 2022

Submitted By: Gayle Sirpenski