

File No. 22629 Take Tables for Captive Maintenance and Research

Table 1. Beluga whales to be imported and maintained for scientific research purposes pursuant to MMPA section 104 at Mystic Aquarium, or other approved U.S. facilities (i.e. Georgia Aquarium), and up to 2 progeny (from either Qila or Mira). Animals will be imported from Niagara Falls, Ontario, Canada. Captive maintenance includes husbandry, health assessments/ medical sampling, and treatments as warranted by attending veterinarian, and transport to Georgia Aquarium if warranted. Beluga whales may be displayed to the public incidental to research. Includes humane euthanasia if warranted for medical purposes, and necropsy.								
Species	Stock	Origin	Life Stage	Sex	No. Animals	Takes per Animal	Activities Procedures	Details
Whale, beluga	Offspring of dam Isis (wild capture, Sea of Okhotsk, Russia); sire definitively unknown, but thought to be Andre (wild capture, Barents Sea, Russia)	Captive	Adult; Born 6/6/10	F	1	As warranted	Import; Captive, maintain permanent; Transport	QILA
Whale, beluga	Offspring of dam Sierra (wild capture, Sea of Okhotsk, Russia); sire Andre (wild capture, Barents Sea, Russia)	Captive	Immature; Born 6/11/12	M	1	As warranted	Import; Captive, maintain permanent; Transport	FRANKIE
Whale, beluga	Offspring of dam Kelowna (wild capture, Sea of Okhotsk, Russia); sire Andre (wild capture, Barents Sea, Russia)	Captive	Immature; Born 07/23/15	F	1	As warranted	Import; Captive, maintain permanent; Transport	HAVANA
Whale, beluga	Offspring of dam Aurora (wild capture, Sea of Okhotsk, Russia); sire Kodiak (wild capture, Sea of Okhotsk, Russia)	Captive	Immature; Born 07/20/14	F	1	As warranted	Import; Captive, maintain permanent; Transport	KHARABALI
Whale, beluga	Offspring of dam Oceanna (wild capture, Sea of Okhotsk, Russia); sire Andre, wild capture, Barents Sea, Russia)	Captive	Adult; Born 07/13/09	F	1	As warranted	Import; Captive, maintain permanent; Transport	MIRA

Table 2. Annual research takes at Mystic Aquarium or other authorized facility in the U.S (i.e. Georgia Aquarium). Research would be conducted on five captive-born belugas imported from Marineland of Canada and any progeny that may be born during the duration of the permit.

Line	Species	Listing Unit/Stock	Life Stage	Sex	No. Animals	Takes Per Animal	Procedure	Details
1	Whale, beluga	Captive born offspring of parents from Russian stock (Sea of Okhotsk or Barents Sea)	Adult and Juvenile	Male and Female	5	152	Sample, blood	<p>Routine Blood Samples: 2x month x 12 months/per yr = 24 samples/whale/year for use in characterization of the nervous and immune systems, reagent and assay development (Study 1); to help validate measurements from other tissue matrices (Study 2, Study 5); for in vitro diving studies (Study 5); and for reproductive hormones (Study 7)</p> <p>Blood samples for diurnal variation assessment (Study1): 4 time points per day x 4 days/per year (one in each season) = 16 samples/whale/year</p> <p>Blood samples before and after transport (Study 1): 4 time points (1 baseline, 1 upon arrival, 2 post-transport - under behavioral control)= 4 samples/whale/transport</p> <p>Blood samples for OWEs associated with being lifted out of the water via a hydraulic lift for weights or veterinary examination (Study 1): 5 time points x 4 OWE (one in each season) = 20 samples/whale/year</p> <p>Blood samples for novel training exercises and/or novel social interactions (Study1): 2 samples (1 before and after training session) x 12 sessions (6 control and 6 experimental) x 3 novel training exercises = 72 samples/whale/year</p> <p>Blood samples for diving physiology (Study 5): 2 dive activities (1 stationary dive, 1 active dive) x 2 durations x 2 blood samples (1 before and after the dive) x 2 repetitions = 16 samples/whale/year</p>
2	Whale, beluga	Captive born offspring of parents from Russian stock (Sea of Okhotsk or Barents Sea)	Adult and Juvenile	Male and Female	5	735	Sample, exhaled air	<p>Breath Samples for gene expression, immune components, hormone measurements (Study 2) and reproductive hormones (Study 7): 2x per week x 50 weeks/yr x 3 plates per session = 300 samples/whale/year</p> <p>Breath samples for diurnal variation assessment (Study 2): 4 time points per day x 4 days/per year (one in each season) = 16 samples/whale/year</p> <p>Breath samples before, during and after transport (Study 2): 13 time points (1 baseline, 2, 4, 6, 8, 10 hr during transport, 1 upon arrival, 1, 2, 3, 6, 12, 24 hr post transport = 13 samples/whale/year</p> <p>Breath samples for out of water events associated with being lifted out of the water via a hydraulic lift for weights or veterinary examination (Study 2): 9 time points x 4 OWE (one in each season) = 36 samples/whale/year</p> <p>Breath samples for novel training exercises (Study 2): 2 samples (1 before and after training session) x 12 sessions (6 control and 6 experimental) x 3 novel training exercises = 72 samples /whale/year</p> <p>Breath samples for transition to collect blow on wild whales (Study 2): 6 samples x 6 replicates = 36 plus 6x2 methods= 12 samples for 48 sample/whale/year</p> <p>Breath samples for diving physiology (Study 5) : 2 dive activities (1 stationary dive, 1 active dive) x 2 durations x 3 breath samples x 2 repetitions = 24 breath samples /whale/year</p> <p>Breath samples for hearing and physiological response to anthropogenic sound (Study 3): Baseline = 5 sessions year (1 breath sample before and after) = 10 breath samples/whale/year. Breath samples for masked hearing sessions (Study 3): 3 experiments/ 3 sessions per day x 6 days per week x 2 weeks = 108 takes/year x 2 breath samples (1 before and after) = 216 breath samples/whale/year</p>

Line	Species	Listing Unit/Stock	Life Stage	Sex	No. Animals	Takes Per Animal	Procedure	Details
3	Whale, beluga	Captive born offspring of parents from Russian stock (Sea of Okhotsk or Barents Sea)	Adult and Juvenile	Male and Female	5	428	Sample, saliva	<p>Other = Saliva Samples for development, validation, and measurement of hormones (Studies 2 and 7): 2x per week x 50 weeks/yr x 3 plates per session = 300 samples/whale/year</p> <p>Saliva samples for diurnal variation assessment (Study 2): 4 time points per day x 4 days/per year (one in each season) = 16 samples/whale/year</p> <p>Saliva samples before and after transport (Study 2): 8 time points (1 baseline, 1 upon arrival, 1, 2, 3, 6, 12, 24 hr post transport = 8 samples/whale/ transport</p> <p>Saliva samples for out of water events associated with weights or veterinary examinations: 8 time points x 4 OWE (one in each season) (Study 2) = 32 samples/whale/year</p> <p>Saliva samples for novel training exercises and/or social interactions (Study 2): 2 samples (1 before and after training session) x 12 sessions (6 control and 6 experimental) x 3 novel training exercises = 72 samples/whale/ year</p>
4	Whale, beluga		Adult and Juvenile	Male and Female	5	126	Sample, feces	<p>Fecal samples for development, validation, and measurement of hormones (Studies 2 and 7): 2x per week x 50 weeks = 100 samples/year</p> <p>Fecal samples before and after transport (Study 2): 6 time points (1 baseline, 6, 12, 24, 48, 72 hr post transport = 6 samples/whale/ transport</p> <p>Fecal samples for out of water events associated with weights or veterinary examinations: 5 time points x 4 OWE (one in each season) = 20 samples/whale/ year</p>
5	Whale, beluga		Adult and Juvenile	Male and Female	5	200	Sample, skin	<p>Skin scrapes for development, validation, and measurement of gene expression (Study 2): 4x per week x 50 weeks = 200 samples/year</p>
6	Whale, beluga		Adult and Juvenile	Male and Female	5	100	Sample, swab	<p>Skin swabs for microbiome (Study 6): 2x per week x 50 weeks = 100 samples/whale/year</p>
7	Whale, beluga		Adult and Juvenile	Male and Female	5	100	Sample, swab	<p>Blowhole swabs for microbiome (Study 6): 2x per week x 50 weeks = 100 samples/whale/year</p>
8	Whale, beluga		Adult and Juvenile	Male and Female	5	100	Sample, swab	<p>Anal swabs for microbiome (Study 6): 2x per week x 50 weeks = 100 samples/whale/year</p>
9	Whale, beluga		Adult and Juvenile	Male and Female	5	100	Sample, swab	<p>Oral swabs for microbiome (Study 6): 2x per week x 50 weeks = 100 samples/whale/year</p>
10	Whale, beluga		Adult and Juvenile	Male and Female	4	100	Sample, swab	<p>Vaginal swabs for microbiome (Study 6) and reproduction (Study 7): 2x per week x 50 weeks = 100 samples/female whale/year</p>
11	Whale, beluga		Adult and Juvenile	Male and Female	5	52	Ultrasound	<p>Ultrasound for Reproductive Monitoring (Study 7): 4x/month x 12 months/year = 48 takes/whale/year</p> <p>Should a female beluga become pregnant, monitoring via ultrasound will occur once weekly throughout gestation; pregnant beluga non-intrusive ultrasound sampling (Study 7) will not exceed 52 takes per year per whale.</p>

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12	Whale, beluga	Captive born offspring of parents from Russian stock (Sea of Okhotsk or Barents Sea)	Adult and Juvenile	Male and Female	5	520	Photogrammetry	Photogrammetry (Study 4) 30 photographs/month x 12 months/year = 360 takes/whale/year Up to 2 pregnant females: 10 photographs/week x 52 weeks/year = 520 takes/whale/year
13	Whale, beluga		Adult and Juvenile	Male and Female	5	52	Measure	Morphometric measurements (Study 4): 1 set of measurements/month x 12 months = 12 takes/whale/year; 2 pregnant females: 1 set of measurements per week x 52 weeks/year = 52 sets of measurements/ whale/year
14	Whale, beluga		Adult and Juvenile	Male and Female	5	4	Weigh	4 weights per year = 4 takes/whale/year (Study 4)
15	Whale, beluga		Adult and Juvenile	Male and Female	5	300	Observation, behavior	Behavioral Observations for Reproductive Monitoring (Study 7): 6 Observational sessions per week x 50 weeks= 300 takes/whale/year
16	Whale, beluga		Adult and Juvenile	Male and Female	5	300	Photograph/Video	Behavioral Observations for Reproductive Monitoring (Study 7): 6 video sessions per week x 50 weeks = 300 takes/whale/year
17	Whale, beluga		Adult and Juvenile	Male and Female	5	150	Instrument, suction- cup tag	Testing Suction-Cups for Animal Borne Imaging (ABI) systems (Study 8): 3 sessions per week x 50 weeks= 150 takes/ whale/year
18	Whale, beluga		Adult and Juvenile	Male and Female	5	113	Auditory brainstem response test	Hearing and Physiological Response to Anthropogenic Sound (Study 3): Baseline hearing sessions: 5 sessions/whale/year Masked hearing sessions: 3 experiments, 3 sessions per day, 6 days per week, 2 weeks, totals = 108 takes/whale/year.
19	Whale, beluga	Captive born offspring from Mira or Qila	Calf and Juvenile	Male and Female	2	24	Sample, blood	Blood samples to be collected for research opportunistically when the calves are handled for health assessment purposes, no sooner than at 2 months of age. In the first year, maximum of 2x month x 10 months/per yr = 20 samples/whale/ year for use in characterization of the nervous and immune systems, reagent and assay development (Study 1); to help validate measurements from other tissue matrices (Study 2, Study 5); and for in vitro diving studies (Study 5) Beginning at age 2: Maximum of 2x month x 12 months/per yr = 24 samples/whale/ year for use in characterization of the nervous and immune systems, reagent and assay development (Study 1); to help validate measurements from other tissue matrices (Study 2, Study 5); and for in vitro diving studies (Study 5). No additional takes for blood will occur from calves specifically for Study 5; however, a portion of blood collected from calves related to Study1 may be utilized for in vitro diving physiology research (Study 5).
20	Whale, beluga		Calf and Juvenile	Male and Female	2	50	Sample, exhaled air	Breath Sample to be collected for research opportunistically when calves are handled for health assessment: 1x per week x 50 weeks/yr x 1 plates per session = 50 samples/whale/year (Study 2)
21	Whale, beluga		Calf and Juvenile	Male and Female	2	50	Sample, saliva	Saliva sample to be collected for research opportunistically when calves are handled for health assessment beginning at 2 months of age. In the first year.1x per week x 40 weeks/yr x 1 swab per session = 40 samples/whale/year. Beginning at age 2: 1x per week x 50 weeks/yr x 1 swab per session = 50 samples/whale/year (Study 2)
22	Whale, beluga		Calf and Juvenile	Male and Female	2	100	Sample, feces	Fecal samples to be collected for research opportunistically as the calves defecate- free capture from water with no handling of the calf. Fecal samples: 2x per week x 50 weeks = 100 samples/whale/year (Study 2)
23	Whale, beluga					2	50	Sample, skin

Line	Species	Listing Unit/Stock	Life Stage	Sex	No. Animals	Takes Per Animal	Procedure	Details
24	Whale, beluga	Captive born offspring from Mira or Qila	Calf and Juvenile	Male and Female	2	50	Sample, swab	Skin swabs to be collected for research opportunistically when calves are handled for health assessment: 1x per week x 50 weeks = 50 samples/whale/year (Study 6)
25	Whale, beluga		Calf and Juvenile	Male and Female	2	50	Sample, swab	Blowhole swabs to be collected for research opportunistically when calves are handled for health assessment beginning at 2 months of age. In the first year 1X/week X 40 weeks/yr X 1 swab per handling = 40 samples/whale/year . Beginning at age 2: 1x per week x 50 weeks = 50 samples/whale/year (Study 6)
26	Whale, beluga		Calf and Juvenile	Male and Female	2	50	Sample, swab	Anal swabs to be collected for research opportunistically when calves are handled for health assessment beginning at 2 months of age: In the first year 1X/week X 40 weeks/yr X 1 swab per handling = 40 samples/whale/year . Beginning at age 2: 1x per week x 50 weeks = 50 samples/whale/year (Study 6)
27	Whale, beluga		Calf and Juvenile	Male and Female	2	50	Sample, swab	Oral swabs to be collected for research opportunistically when calves are handled for health assessment beginning at two months of age. In the first year 1X/week X 40 weeks/yr X 1 swab per handling = 40 samples/whale/year . Beginning at age 2: 1x per week x 50 weeks = 50 samples/whale/year : (Study 6)
28	Whale, beluga		Calf and Juvenile	Male and Female	Up to 2 (Juvenile Females only)	50	Sample, swab	Vaginal swabs to be collected from female calves for research opportunistically when calves are handled for health assessment, beginning at 2 months of age: In the first year 1X/week X 40 weeks/yr X 1 swab per handling = 40 samples/whale/year . Beginning at age 2: 1x per week x 50 weeks = 50 samples/whale/year (Study 6)
29	Whale, beluga		Calf and Juvenile	Male and Female	2	300	Observation, behavior	6 observational sessions per week x 50 weeks= 300 takes/whale/year) (Study 7)
30	Whale, beluga		Calf and Juvenile	Male and Female	2	300	Photograph/Video	6 video sessions per week x 50 weeks = 300 takes/whale/year (Study 7)
31	Whale, beluga		Calf and Juvenile	Male and Female	2	50	Measure	1 set of measurements/week X 50 weeks = 50 takes per year per calf collected at times of handling for health assessment.(Study 4)
32	Whale, beluga		Calf and Juvenile	Male and Female	2	18	Weigh	Weights will be recorded weekly for the first 2 months of life and then weight frequency will be monthly up to 1 year of age. Thereafter, weights will occur every three months. Total of 18 weights and measurements per year for the first year of life and then 4 weights and measurements each subsequent year . (Study 4)
33	Whale, beluga	Calf and Juvenile	Male and Female	2	6	Auditory brainstem response test	Hearing and Physiological Response to Anthropogenic Sound (Study 3): Baseline hearing sessions will occur beginning at 4 weeks of age and will occur monthly for the first 6 months to study hearing development (1X/month X 6 months = 6 hearing sessions in the first year of life). Beginning at age 2, an annual hearing session will occur to monitor hearing over time (1 session/calf/year) . (Study 3)	