Expert report, November 2021

ASSESSMENT OF THE SITUATION OF THE CETACEANS,

HELD AT MARINELAND OF CANADA, NIAGARA FALLS, ONTARIO.

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one voice
pour une éthique animale et planétaire

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EXECUTIVE SUMMARY

There are three species of cetaceans held at MarineLand; one orca (killer whale, *Orcinus orca*), approximately 40 beluga (*Delphinapterus leucas*) and five bottlenose dolphins (*Tursiops truncatus*).

All these animals are held within three small tank systems; the Waldorf Stadium, Friendship Cove and Arctic Cove, none of which meet the basic needs of the animals and all of which violate the Ontario Regulation 444/19 in various ways.

The Waldorf Stadium tank system is particularly small for the number of animals kept there.

The Friendship Cove tank system is particularly dirty and is divided between two species (i.e., the area available to each species is less than it first appears).

The Arctic Cove tank system is particularly shallow (less than a beluga body length).

The cetaceans are all exposed to extreme welfare issues. All show stereotypic behaviour (i.e., abnormal and/or repetitive behaviours).

A high number of the animals exhibit wounds, many of which are likely to be the result of self-harming behaviours and/or aggression and/or harm from the tanks.

The orca has teeth which are in extremely poor condition as a direct result of being kept in a concrete tank. She has an open wound on her tail which has been open for at least 9 years.

Despite orca being one of the most social species on the planet, the orca at MarineLand has been kept in solitary confinement for 10 years.

At least two of the beluga are subjected to carrying people on their faces.

The bottlenose dolphins are held in the same tank system as belugas. The water temperature in this tank system is inappropriate for one (or both) species and in violation of Regulation 444/19, Article 19(1).

All five bottlenose dolphins exhibit dorsal fins that tilt to the animals' left, as a direct result of their protracted abnormal stereotypic counterclockwise swimming in a tiny circular tank.

The number of and scope of the violations of Ontario's Animal Welfare Regulation 444/19 are extensive. An independent assessment by a species-specific expert panel would facilitate identifying the issues and the potential mitigation options.

It is recommended that these cetaceans be moved as soon as possible into a genuine seaside sanctuary. Although there is currently no completed sanctuary for cetaceans in Canada, one in Nova Scotia is being constructed and is expected to be able to take occupants in early 2023. In the meantime bringing the conditions at MarineLand into alignment with Ontario Regulation 444/19 would allow for an improvement of welfare status for these animals.

OVERVIEW

The following in an assessment of the situation for the cetaceans held at MarineLand of Canada Inc. (hereafter referred to as MarineLand).

1. I have visited MarineLand, situated on Portage Road, Niagara Falls, Ontario, Canada in July 2015, May 2017 and August 2018. I have since viewed numerous videos and photographs supplied to me.

2. I am aware that MarineLand holds a range of terrestrial and marine animals. They keep three species of cetaceans (whales, dolphins, porpoises) captive; orca (also known as killer whales, *Orcinus orca*), beluga (*Delphinapterus leucas*) and bottlenose dolphins (*Tursiops truncatus*) in three tank systems ('Friendship Cove', 'Arctic Cove' and 'Waldorf Stadium' each comprised of three tanks, Appendix 1).

3. Whilst at MarineLand I opportunistically photographed (Canon D5 MkIII camera with an 80-200 lens) and videoed (same camera and also a GoPro miniature, wide angle HD video camera) the cetaceans during these visits. I was only permitted access into the public areas during public viewing times. I have also reviewed extensive video and photographs available online and supplied to me by concerned citizens and by the NGO One Voice.

4. I am qualified to make the following statements due to *inter alia*, the following:

a) I have been researching cetaceans since 1992, and continue to do so, to the present day. I have conducted field research on a range of cetacean species including orca, beluga and bottlenose dolphins.

b) Specifically during this time, I gained a PhD through studying the New Zealand population of wild orca. I have field experience with this species, not only in New Zealand, but also in Antarctica, Argentina, Australia, the Pacific West Coast of North America (both USA and Canada), Kamchatka (Russia) and Papua New Guinea.

c) My research on wild orca focuses on a number of different aspects. This is *inter alia* the foraging ecology and social interactions of these top predators. I have published a number of scientific papers looking at different foraging methods and behaviour. To gather much of this data I spend a considerable amount of time on and in the water with wild orca and regularly observe the teeth of said animals. I am often within a body length of the orca whilst they are hunting and feeding.

d) My research uses a number of methodologies, one of which is standard for field-work with wild cetaceans, termed photo-identification (photo ID). It is based on the fact that each and every cetacean, including orca, beluga and bottlenose dolphins, has unique features that allow for identification of the individual. In the case of orca the black/white/grey pigmentation patterns are unique and these do not change dramatically during the lifetime of an individual. For example, the 'eye patch' (the white on the side of the head) remains unchanged from birth to death (see (Visser and Mäkeläinen 2000) for details). Photo ID allows individuals to be tracked over time and from location to location.

e) Furthermore, I have visited 46 facilities (some of them multiple times over a number of years) holding cetaceans in captivity, in 21 countries and observed 15 different species, comprised of over 730 individual cetaceans.

f) Within that framework, I have spent time observing captive orca at all of the facilities that currently have orca on public display (i.e., (listed alphabetically, by country); Argentina (Mundo Marino), Canada (MarineLand), China (Shanghai Haichangi Ocean Park); France (Marineland Antibes), Japan (Kamogawa SeaWorld, Port of Nagoya Public Aquarium), Russia (Moskvarium), Spain (Loro Parque), United States of America (Miami Seaquarium, SeaWorld Orlando, SeaWorld San Antonio, SeaWorld San Diego). I have also visited Vancouver Aquarium (Canada) when they held orca, the facility Dolfinarium Harderwijk (in the Netherlands), when they previously held a lone orca and visited the notorious 'Whale Jail' at Srednyaya Bay, (near Vladivostok, Russia), when they previously held 10 orca and 87 beluga captive.

g) I have observed beluga in 15 facilities, in 7 countries, comprised of over 90 individuals

h) I have observed bottlenose dolphins in 38 facilities, in 18 countries, comprised of at least 357 individuals.

i) Additionally, I worked with "Keiko" (of Free Willy fame), during the process of releasing him back into the wild, in Iceland. This included feeding, husbandry and in-water as well as open-ocean training sessions.

j) I have documented the behaviour, teeth and body conditions of cetaceans at all of these facilities and co-authored a scientific peer-reviewed paper on the issue of tooth damage in captive orca and on the issue of chronic stress in captive orca.

k) I have been involved in (at various capacities) numerous rescues of cetaceans. I hold New Zealand Government recognized qualifications to conduct these rescues. These rescues have included disentanglements and strandings but post rescue I have also conducted a number of necropsies (animal autopsies) and completed 1st Year Veterinary medicine at Massey University (New Zealand) which assisted with my understanding of body condition and assessment of necropsies.

5. With this information to establish my credibility as an expert in the field of cetaceans, both in the wild and in captivity, I will elaborate on the situation of the cetaceans at MarineLand. This is with the acknowledgement that I have viewed these animals, but that I have also drawn on the

***Figure 1**. Kiska's dorsal fin, showing loss of structural integrity with a partial collapse to her left. The dark patch in the water near her blowhole is a reflection from her pectoral fin. Photo © Ingrid N. Visser (taken 26 June 2015).*

numerous videos and photographs, available online as well as having been supplied recent videos and photographs taken in October 2021. As such this assessment is not a medical evaluation, but rather an opinion and evaluation that is based on extensive experience.

ORCA

6. Kiska is the only orca held at MarineLand and is kept in a tank system known as 'Friendship Cove' (Appendix 1). Therefore, no mistake can be made with regards to identifying her whilst on location. Within videos and photographs from online and other sources, Kiska can be positively identified as an individual based on the method of photo-ID described above. She has a number of small black 'freckles' on her lower jaws which are visible and these are unique to her. Her eye patches have variation in their anterior edge which are clearly visible and these differ between the left and right side and are unique to her.

7. To further identify Kiska, her dorsal fin has a number of small notches of unknown origin, located along the trailing (posterior) edge. These are unique to her. Additionally, her dorsal fin shows some loss of structural integrity (i.e., it is no longer completely upright) and that is visible from most angles.

8. Additionally, Kiska's teeth are very badly damaged and most are worn to the gums (see details below). Although this is not unique to Kiska, such extensive damage does assist even the casual observer with narrowing down the potential images and video found online and from there assisting in identification of her.

9. Furthermore, the facility MarineLand Canada has features of the tank that holds Kiska that are unlike any other facility in the world (i.e., a 'drainage grill' around the edges of the tank, a sloping red/brown brick edge (compared to the more typical glass front), accessibility to near the tank edge by the public) all of which allow for positive identification of the site.

10. With regards Kiska's dorsal fin, it should be noted that;

a) Loss of structural integrity of the dorsal fin (to the point of total collapse) is an inherent issue with all adult male orca in captivity (i.e., 100%) showing near or total dorsal fin collapse, whereby the fin is completely folded over to one side), whilst in the wild these large (up to 1.8 m high) appendages have only been reported as collapsed in less than 1% of wild orca (and those individuals are typically found to be ill or have suffered some sort of trauma).

b) Loss of structural integrity also occurs in a great number of captive female orca including Kiska (Figures 1 & 2). Kiska's dorsal fin leans to her left, illustrative of her highly stereotypic (abnormal, repetitive behaviour) counterclockwise swimming pattern. Sobel et al. (1994) reported similar issues for bottlenose dolphins in captivity.

***Figure 2**. Kiska's dorsal fin continues to show the partial collapse to her left 2,297 days (6 years, 3 months, 13 days) after the photograph taken above in Figure 1, indicating that this is a chronic issue for this orca. Photo © One Voice (taken 09 October 2021).*

c) The collapsed (or collapsing) dorsal fins found in captive orca are highly visible consequences of captivity and as such are an oft questioned aspect by the public. Unfortunately, the captivity industry chooses to be duplicitous in their dealings about the structural integrity of an orca's dorsal fin. As such, it is often disputed by the captivity industry as not an indicator of health (i.e., collapsed or collapsing fins do not indicate ill-health). However, despite these claims, the structural integrity of the dorsal fins of orca is viewed as such by field biologists who regularly observe wild, healthy orca. That is, to field biologists, should the structural integrity of an orca's dorsal fin fail, this is an indicator that some part of the animal's health has been compromised (be it an injury, a temporary illness or the onset of chronic disease). Durban et al. (2009) report on 13 wild orca who showed "peanut-head" (see separate paragraph pertaining to that topic) combined with compromised dorsal fin structural integrity and they found that three (23%) of those individuals subsequently died.

d) I have published about the structural integrity of dorsal fins on wild orca, including abnormalities such as partial and complete collapse (Visser, 1998).

e) In my professional opinion the partial loss of structural integrity of Kiska's dorsal fin, is a symptom of captivity and indicates that at some time Kiska's health was ailing and/or the lack of recovery of her dorsal fin to an upright stature suggests there may be chronic (persisting for a long time or constantly recurring) issues for her, including stress and/or stereotypic behaviour (pattern swimming in a counterclockwise direction).

11. It should be noted that no orca in captivity has ever reached the age milestone of 'average age' compared to those in the wild (Ventre and Jett 2015). The primary cause of such early onset of death in captivity is failed health[1] (although injuries do account for some deaths). It is well known that veterinarians heavily medicate cetaceans in captivity[2] and it is unclear what Kiska is being administered.

12. Regarding Kiska's teeth, it is abundantly evident, even to the casual observer, that they are severely damaged. To put this into perspective:

a) Pristine orca teeth (orca typically have between 40-56 teeth, depending on the individual and the population), are conical homodont (all the same type and similar in shape) with a rounded tip and interlock (Figure 3). Some are slightly curved to the posterior of the mouth. The maximum length is approximately 13cm (5 in) and the larger teeth are approximately 2.5 cm (1 in) in diameter. The crown is approximately 1/3 of the entire length of the tooth and is covered in enamel (Graham and Dow 1990).

b) In comparison, Kiska has few remaining undamaged teeth, with most being worn to the gums (Figures 4-7) and most on her mandibles also having holes drilled into them which are left open and exposed (Figures 4-6 & 7).

Figure 3. *Typical, pristine, homodont (the same type and similar in shape) teeth, found on a wild orca. The larger teeth have approximately 4 cm protruding from the gum (i.e., the visible part of the tooth). Photo © Ingrid N. Visser (taken 23 November 2004).*

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1 *Necropsy reports from SeaWorld orca*
https://www.scribd.com/collections/3531412/Necropsy-autopsy-Reports-of-Deceased-SeaWorld- Captive-Killer-Whales-Orcinus-orca

2 *https://www.thedodo.com/seaworld-orca-drugs-medications-1035364310.html*
https://www.thedodo.com/seaworld-gave-nursing-orca-val-493887337.html

***Figure 4**. Kiska's right-side teeth (below, with close-up same image, right), showing the extreme wear and man-made holes drilled into her teeth. Photo © Ingrid Visser (taken 26 June 2015).*

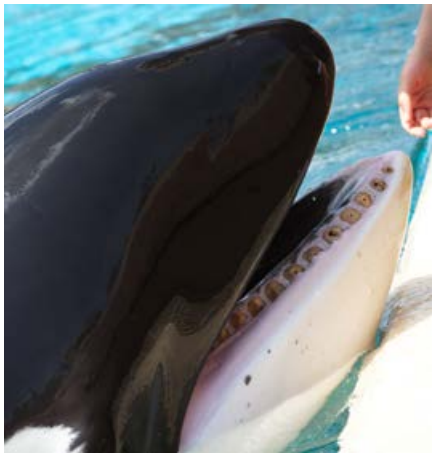

***Figure 5**. Kiska's left side teeth (right, with close-up of same image, below), showing the extreme wear and man-made holes drilled into her teeth. See Figure 7 for maxillae details. Photo © Ingrid Visser (taken 26 June 2015).*

***Figure 6**. The drilled holes in Kiska's teeth being flushed with povidone iodine such as Betadine®, in an attempt to clean these. Note that povidone iodine should not be swallowed, yet it is clearly inside her mouth in sufficient quantity to overflow and it can stain teeth. Photo supplied by One Voice (taken 10 October 2021).*

c) The photograph (Figure 4) which I took in 2015 of Kiska shows that on her right mandible the front seven teeth are worn to the gums. The teeth posterior to these seven are worn to nubs. All these teeth would be classified as having 'extreme wear' (76-100% of the tooth crown/diameter has been worn off) (see Jett et al (2017) for methodology details).

d) In the photograph I took (Figure 5) of Kiska in 2015 it shows that on her left mandible the front eight teeth are worn to the gums. The teeth posterior to these eight are worn to nubs (n = 1) or irregularly worn (n = 2). The front eight teeth would be classified as having 'extreme wear' (76-100% of the tooth crown/diameter has been worn off) and the back two teeth as having 'major wear' (51-75% of the tooth crown/diameter has been worn) (see Jett et al (2017) for methodology details).

e) In the photograph I took (Figure 7) of Kiska in 2015, extremely unusual (even for captivity) tooth wear is documented in her right maxillae (upper jaw). The front six (possibly seven) teeth are worn down to nubs. These worn teeth would be classified as having 'extreme wear'. In orca the upper 'lip' is extremely stiff and inflexible. Therefore, even when concrete biting is conducted, the maxillae teeth are typically protected to some degree. It is unclear, without further investigation, as to how these teeth could be worn to such an extreme extent. It was not possible to document Kiska's left maxillae teeth as the MarineLand staff prevented close inspection or photography.

f) Although some wild orca have been recorded with worn teeth (e.g., see Foote et al. 2009), that type of wear is a direct result of foraging (either the prey type – such as rough-skinned sharks, or the method, such as 'suction' from within the water column). It is not from grinding teeth against a hard surface such as concrete.

g) Kiska's teeth problems have continued, as evidenced by the life-long requirement for them to be flushed at least daily to remove food. In the photographs supplied to me by One Voice, on the 10th of October 2021, her teeth were flushed with an antiseptic povidone is iodine such as Betadine® (Figure 6) which can be seen running down the side of her mandible, however, given the way it has been administered, it is likely that some of it remained in her mouth and/or entered her throat. When used by humans, one of the recommendations for povidone iodine is to avoid swallowing it[3], however, it would not be feasible to prevent this happening for Kiska as it flows into the back of her mouth during this process. Additionally, the use of povidone iodine can stain teeth[4], which may help explain why the remains of her teeth are so yellow in colour compared to other orca teeth (both captive and wild).

3 *https://www.drugs.com/mtm/betadine-antiseptic-oral-rinse.html*
4 *https://tinyurl.com/tm7hefra*

h) Tooth wear, of the type exhibited on Kiska, is exclusive to those orca held in captivity. Despite the captivity industries claims that such tooth wear comes from contact with their food, all orca in captivity are fed single fish/squid etc or hand-full's of fish/squid etc as the trainer 'tosses' it directly into the animals mouth (see Figure 8), therefore only swallowing (not handling) is required and contact with the teeth is typically avoided. Although occasionally a single fish may be thrown into the water for retrieval by the orca, this is not a primary method of feeding captive orca and would not result in the extensive tooth wear commonly observed and also documented on Kiska.

i) Captive orca repeatedly chew on the hard surfaces that abound in their barren environments, including, but not limited to, steel gates, concrete tank edges and grates.

j) In the case of Kiska, her self-mutilation through tooth wear, has resulted in nearly all her lower teeth being worn away. It is unclear from online images and video how quickly Kiska wore down her teeth, but it is apparent that they have reached a point where at least 11 teeth have been drilled, in what is essentially a modified pulpotomy (removal of the pulp) (Figures 4 & 5) . These procedures are typically done on orca without the use of any aesthetic (Jett and Ventre 2011).

***Figure 7**. Kiska's right-side maxillae (upper jaw) teeth (see Figure 5 for full frame image), showing the extreme wear. Six (possibly seven) teeth are worn down to nubs. Photo © Ingrid Visser (taken 26 June 2015).*

***Figure 8**. A trainer 'tosses' fish into Kiska's mouth – avoiding all contact with her teeth. Contact with food has recently been cited as a cause of excessive tooth wear by the captivity industry. Photo © Ingrid N. Visser (taken 29 June 2015).*

***Figure 9**. The entrance to the East tank (arrow) is closed with a solid metal gate. Kiska is seen swimming near to the camera and tank wall (only her dorsal fin is visible). Image extracted from a video supplied by One Voice (taken 10th of October 2021).*

***Figure 10**. The entrance to the East tank is open as Kiska swims in her stereotypic counterclockwise swim pattern, past the gate. The bars of the medical tank (see Figure 10) are visible through the open gate. Photo © Ingrid Visser (taken 29 June 2015).*

Observations of Kiska in 2015, during a tooth 'flushing' procedure showed her to 'quiver' and 'flinch' and it is apparent from these behaviours that this is not a 'pleasant' experience for her (and may indicate pain or, at a minimum, distress).

k) When discussing the issues of dental wear in captive orca Graham & Dow (1990), comment that orca kept in net pens do not exhibit the same tooth wear of those kept in concrete tanks. They also state (page 326) "Tooth wear that exposes the pulp cavity also creates a convenient location for the collection of food and debris. The deterioration of the pulp allows space for this material to collect and impact, and it is this space that will require the most attention in tooth care. Because the vacant pulp cavity extends into the gum region it is warm, and thus is an area for incubation that may lead to infection."

13. It is obvious that the tanks holding Kiska do not have any scales for weighing cetaceans, which should be one of the standard tools for proper care. Typically, cetaceans in captivity are weighed on a weekly or monthly basis, and given that the behaviour to slide onto the scale can be trained and produces little to any stress, it would not be inappropriate for an orca such as Kiska to be weighed weekly, should scales be installed. This would ensure a detailed record of her weight could be kept, allow better monitoring of any weight loss and help ensure that her weight was maintained at an optimal point to facilitate her long-term health.

14. There is the statistical evidence (collated from 201 captive orca) that the median survival of orca in facilities outside of the USA is 4.4 years (Ventre and Jett 2015). The age of Kiska is reported to be approximately 45

years old[5]. As such she is an 'outlier' and statistics also show that "Killer whales held in foreign facilities face a 59% higher hazard ratio and a **61% higher chance of death on any given day** than for those held in U.S. facilities." [emphasis added]. (Jett J. & Ventre, 2015).

15. Additionally, from orca research in the wild we now know that these animals can live long lives with females having a mean life expectancy of 46 years and maximum longevity in the order of 80 years (Olesiuk et al., 2005). However, it should also be noted that there is one female calculated to be at least 100 years old (based on her reproductive history – using the age of her oldest known offspring and her own age at primigravida)[6].

16. The tanks that Kiska currently has access to are described in Appendix 1. Measurements were made using Google Earth and are approximately 40x20m (main orca tank), and 17x21m (East tank). The East tank is often 'off limits' to Kiska, as evidenced by Figure 9, which shows the gate closed (compared to Figure 10, showing the gate open in 2015). Additionally, when she is admitted into the East tank, the belugas are removed (i.e., Kiska remains in solitary confinement with no cetacean companions).

17. There is no information publicly available that provides the depth of the tank that Kiska is kept in. However, from visual assessment the tank is not more than approximately 30ft (9 m) at its deepest point and potentially shallower. This is woefully inadequate given that we know that orca regularly dive in excess of 400m (Baird et al., 2005; Matkin et al., 2012) and have been documented diving in excess of 1,000 m (Towers et al., 2018).

18. The small size of Kiska's tank is in violation of Ontario's Regulation 444/19 Article 17(4) where "The enclosure **must** meet the following requirements: 1. The enclosure **must** provide the marine mammal with **sufficient space and features for species-appropriate activities** both in and, if appropriate, out of the water." [emphasis added]. Extracts from Ontario's Regulation 444/19 which are relevant to captive cetaceans, are provided in Appendix 2.

19. It should be noted that the water temperature in all three tanks at Friendship Cove is apparently maintained at 55˚F (12.7˚C) and therefore Kiska could be given access to the East 'beluga' tank, if she was habituated to the presence of belugas. This would additionally provide her with some form of 'companion' animals to alleviate the solitary confinement she is currently subjected to, which has been well documented as unacceptable conditions for such a socially orientated animal.

20. Kiska has been kept in solitary confinement since the removal of Ikaika a male orca belonging to SeaWorld USA. Ikaika was transported to San Diego on 13 November 2011[7]. Therefore, at the date of signing this report (9 November 2021), it has been 9 years, 11 months, 28 days (i.e., just days short of 10 years) since she has had a companion of any sort.

21. In Ontario's Regulation 444/19 Part III, Article 9(1) it states "An animal welfare plan **must** include at least the following:" and under part 6 states "Appropriate social groupings for the marine mammal, **including consideration for a companion animal if the marine mammal is the only animal housed in its enclosure.**" [emphasis added]. Additionally, as noted elsewhere, the interactions with trainers are woefully inadequate and in violation of Ontario's Regulation 444/19 Article 16(2) where "Every marine mammal **must** be provided with **daily training, social enrichment and play sessions** unless otherwise specified in its animal welfare plan." A 'welfare plan' is defined in this same Regulation under Article 9 and **must** include at least; "4. Minimum staff and resource requirements to ensure the physical, psychological and social well-being of the marine mammal." **and** "5. A stimulation program that is sufficient to maintain the marine mammal's health and mental wellness." **and** "6. Appropriate social groupings for the marine mammal, including consideration for a companion animal if the marine mammal is the only animal housed in its enclosure." [emphasis added].

22. If the MarineLand animal welfare plan for Kiska does not include addressing these known issues of her solitary confinement, and minimal trainer contact, then that would be in violation of the law and also below best practise standards.

23. Furthermore, the tank(s) that Kiska is kept in are barren and effectively featureless. They provide only one ("different substrates" because the 'fake rock walls' might be interpreted by some to be 'different', however they and the floor of the tank are all made of concrete), of the seven suggested visual and tactile enrichment features indicated in the Ontario Regulation 444/19 Article 17(4)3 which states:
"The enclosure **must include fixed features that provide visual and tactile enrichment**, which may include, but are not limited to, any of the following:
i. Bubble walls.
ii. Privacy baffles.
iii. Different substrates.
iv. Water jets.
v. Sprinklers.
vi. Mirrors or other reflective surfaces.
vii. Areas on the bottom of the pool that simulate pebbles on the seafloor."

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5 *https://inherentlywild.co.uk/captive-orcas/ Kiska was captured in Oct 1979 at approximately 3 years of age.*
6 *http://www.dailymail.co.uk/sciencetech/article-2628373/Is-oldest-whale-world-Granny-orca-103-years-old-scientists- claim.htm*
7 *https://archive.md/jYqyb*

24. Due to these poor conditions Kiska exhibits pronounced stereotypies (abnormal, repetitive behaviours, often without any externally obvious function) which I observed. They are *inter alia*; logging (floating nearly motionless) at the surface, drifting/extremely slow swimming at the surface, predictable swimming patterns (which include bouts of always swimming in the same direction around the tank, swimming upside down, exhaling bubble streams in the same locations, surfacing in the same locations, surfacing without exhaling or inhaling, body rolls, tail flicks, 'push offs' from walls and head lifts,) as well as rubbing her right pectoral fin on the rails (Figure 11) and rubbing her tail flukes along the edge of the tank (Figures 12 & 13).

25. Damage from rubbing behaviour was reported in the Toronto Star[8] in October 2012. I also documented damage to her tail flukes on 29th May 2017, i.e., 4 years and 8 months later (Figure 10). A video supplied to me by One Voice, taken on the 10th of October 2021, i.e., 9 years after this issue was first reported, shows that the abrasion is still open (Figure 12).

26. The fact that raw wounds are still apparent after so long, is an indication that there are extreme welfare issues at hand and that the facility has not addressed the issue(s). Article 6(5) of the Ontario Regulation 444/19, has been violated as it states; "A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained **in a manner that presents no harm to the wildlife.**" [emphasis added]. Also, if the MarineLand animal welfare plan for Kiska does not include addressing this known behaviour, then that would be below best practise standards.

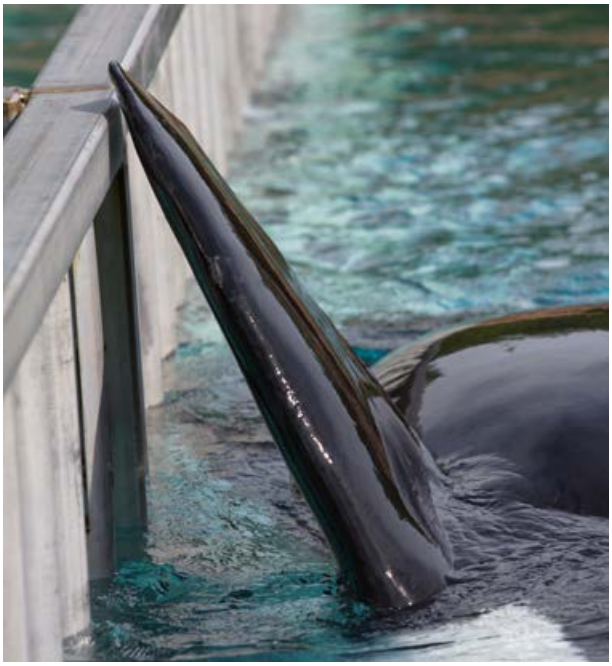

Figure 11. *Kiska rubbing her right pectoral fin along the upper edge of the bars into the medical tank (i.e., her head is towards the camera). This is just one of the many stereotypies (abnormal, repetitive behaviours) that I observed. Of note is that during the visits in 2015, 2017 and 2018 this was the only time I saw her in the East Tank. Photo: © Ingrid Visser (taken 26th June 2015).*

Figure 12. *On the 29th May 2017, Kiska's still had raw wounds on the tips of both her tail flukes (left one shown here and in closeup), which are indicative of a stereotypic behaviour. Raw wounds such as this were reported in the media in October 2012 (4 years and 8 months prior to my visit). Photo © Ingrid Visser (taken 29 May 2017).*

8 *http://www.thestar.com/news/canada/2012/10/18/marineland_killer_whale_bleeding_for_months_trainer_says.html*

27. Stereotypies are well recognised in the scientific literature as being indicators of compromised welfare (see the following references for just a few examples; Broom 1983; Broom and Kennedy 2010; Mason and Rushen 2006; Mason 2010, Marino et al. 2019).

28. Furthermore, there are numerous other examples of Kiska exhibiting stereotypies which can be found on social media, print media, websites and video hosting platforms. Some of those behaviours include rubbing (various body parts such as tail flukes), 'walking' on her pectoral fins in the shallows, body shaking and head/body thrashing.

29. A video supplied to me by One Voice, taken on the 9th of October 2021 shows Kiska thrashing near the glass wall of her tank (see frames from this video in Figure 14). She did not hit her head against the glass; however she was pushing large volumes of water against it. She has her pectoral fins balanced on the shallow ledge area and her head in the shallow area.

30. Kiska is provided with no shade from the long hot summer days and yet she spends time at the surface logging and drifting (and due to the shallow nature of the tanks cannot submerge deep, even if she wished to). It has been shown that cetaceans can get sunburnt (Jett J.S. & Ventre, 2011; Martinez-Levasseur et al., 2011) and as such this lack of shade is unacceptable and is in violation of Article 19(8) of Ontario Regulation 444/19 "(8) Every marine mammal must be provided with an area of shade in its enclosure in accordance with its animal welfare plan." If the MarineLand animal welfare plan for Kiska does not include shade, then that would be below best practise standards.

31. I have been informed that typically the trainers leave the facility at approximately 1845 hrs, but depart from the animal areas at around 1800 hrs. I did not see a trainer approach Kiska during any of the days that I was present, until after 1100 hrs, suggesting that she is not given any contact during this intervening period. There is apparently a disconnect between the trainers and Kiska and no concerted effort to interact with her was made whilst I was there, other than the perfunctory feeding/husbandry sessions (see point 32).

32. During the times that I watched Kiska and during the videos I have watched, there were never any enrichment 'toys' placed in her tank and any interactions with the trainers were a perfunctory measure (i.e., a feed, flushing of her teeth or a quick rub) and none lasted more than 5 minutes.

33. These aspects are in violation of a number of Articles in Ontario Regulation 444/19; for example Article 16(3) states "The enclosure of every marine mammal must have the environmental enrichment objects, if any, specified in its animal welfare plan ". If the MarineLand animal welfare plan for Kiska does not include appropriate and sufficient environmental enrichment, then that would be below best practise.

***Figure 13**. On the 10th October 2021, a video was taken of Kiska's as she lay alongside the trainers (left) and she still had a raw wound on the tip of her tail flukes (left fluke shown here, close-up on right), 9 years after they were first reported in the media. From video supplied by One Voice.*

34. I also note, that in respect of the tank system holding Kiska that they are in violation of Ontario's Regulation 444/19 Part II Article 6(1) which states "A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size," and 6(2) states "A pen or other enclosed structure or area for wildlife kept in captivity must have,
(a) features and furnishings that facilitate and stimulate the natural movement and behaviour of each animal in the pen or other enclosed structure or area; ….
(d) one or more areas that are out of view of spectators;

35. In summary, the situation for Kiska is profoundly disturbing, as her welfare is severely compromised. She exhibits a wide range of stereotypic behaviours indicative of the stress that she is under. She also exhibits physical evidence (i.e., her teeth and her partially collapsed dorsal fin) which are directly related to her confinement in a concrete tank. She is the only orca in the world kept in solitary confinement.

36. RECOMMENDATION: Kiska, if her health allows, should be moved as soon as possible into a genuine seaside sanctuary. Such a location would provide her with physical and mental stimulation and potentially provide an opportunity for companions (e.g., other rescued orca). Although I recognise that currently there is no completed sanctuary for cetaceans in Canada, one in Nova Scotia is currently being constructed and is expected to be able to take occupants in early 2023. In the meantime, bringing the conditions which Kiska is being held into alignment with the Ontario Regulation 444/19 would allow for an improvement of her welfare. An independent assessment by a species-specific expert panel would facilitate identifying the issues and potential mitigation options.

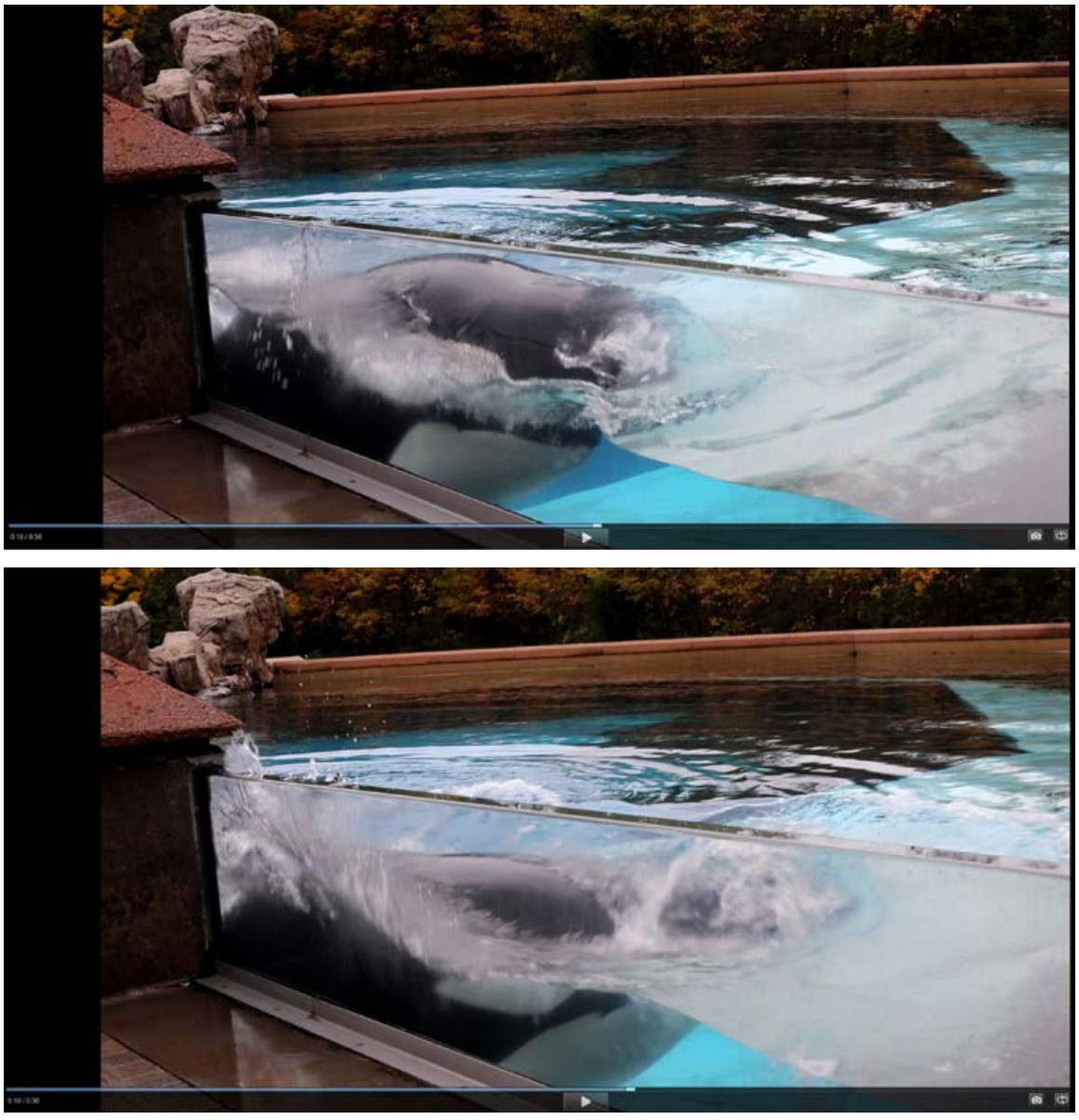

***Figure 14**. A video taken on the 9th of October 2021 shows Kiska thrashing (violently moving her head and body in a left-to-right manner) near the glass wall of her tank (screen grabs 1 second apart are shown). Video supplied by One Voice.*

BELUGA

37. On 16 June 2018, using images from Google Earth Pro, it is possible to count at least 39 beluga in the separate tank systems of Waldorf Stadium, Friendship Cove and Arctic Cove (see Appendix 1 for more details).

38. I have been informed that up to four beluga at a time are held in the Waldforf Stadium, however it is not possible to ascertain exactly how many are held there at any one time when using Google Earth, due to the roof partially over the tiny beluga tank, however, on 16 June 2018, two can be seen. I note that an undisclosed number may also be held indoors, i.e., in tanks not visible to Google Earth (Penfound & McHattie, 1998)[9].

39. There were reportedly 54 beluga at MarineLand on 4 March 2019[10]. The breeding program was still active on that date.

40. Although breeding has been stopped due to the Canadian legislation Bill S-203 (it came into force on 21 June 2019), five beluga were transported to the Mystic Aquarium in the USA, where they may be used for breeding[11].

41. Anecdotal information supplied to me (via various sources) indicates that there are, as of October 2021, approximately 40 beluga in MarineLand held in three tank systems; Waldorf Stadium, Friendship Cove and Arctic Cove (however I note that one tank at Arctic Cove was not accessible to the public during the site visits, therefore an exact number could not be determined).

42. If there are indeed 40 belugas in the three tank systems, it can be calculated that each beluga has no more than 101.14 m^2 surface area (or 103.74 m^2 when calculated based on the 39 beluga visible on 16 June 2018, see Appendix 1 for details).

43. Surface area is not the only measurement that must be taken into account when considering 'space' for a cetacean. For example, depth and straight-line swim-distance (which impacts swim speed), should also be considered.

44. In the wild, beluga's have been documented regularly diving to depths in excess of 900 m[12]. The tanks at Friendship Cove are no more than 9 m deep (pers. observation) and at Arctic cove they are less than the body length of an adult beluga (Figure 15) (where body size of an adult beluga is approximately 5.5 m ♂ and 4.3 m ♀[13]).

45. Due to the small tanks at MarineLand, the beluga are prevented from swimming any distance (and at their normal swim speeds) for more than just a few body-lengths (i.e., they can only swim a maximum of 8.2 ♂/ 10.6 ♀. body lengths in a straight line, and only if they are held in the largest tank, the East Arctic Cove tank). See Appendix 1 for measurements of tanks.

46. Belugas have been documented swimming at speeds of 7-9km/hr during dives and more than 6km/hr during migrations, which can last for weeks[14]. Effectively, migrating cetaceans travel[15] in consistent directions for extended periods, and belugas are known to exhibit such "unidirectional travel" and typically travel in one direction/straight line during migrations[16].

47. Belugas are also known to migrate over 800 km[17] and 1,100 km[18]. The shortest distance covered during a migration was 18.2 km/day[33]. Male belugas have been documented travelling more than 71 km/day, and female belugas 65.4 km/day[33].

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9 *Additional information such as repurposing of tanks from orca to belugas, based on visits by the authors and other scientists, advocates and information from ex-trainers, e.g., see https://www.thestar.com/news/canada/2012/08/25/marineland_readers_activists_demand_change_regarding_care_of_sea_mammals.html*

10 *See Affidavit, dated 4 March 2019, signed by Andrew Burns and Marie Holer in documents supplied to USA Government (NOAA) with respect to application to import five beluga into the USA from MarineLand Canada.*

11 *https://archive.md/P9jtj*

12 *The deepest maximum daily depth recorded was 956 m for an adult male, although 2 adult females also attained maximum daily depths >900 m – see Hauser DD, Laidre KL, Stern HL, Moore SE, Suydam RS, Richard PR. Habitat selection by two beluga whale populations in the Chukchi and Beaufort seas. PLoS One. 2017 Feb 24;12(2):e0172755.*

13 *Body sizes from Jefferson, T. A., M. A. Webber and R. L. Pitman (2008). Marine mammals of the world. A comprehensive guide to their identification. Amsterdam, Academic Press.*

14 *Heide-Jørgensen, M. P., P. R. Richard and A. Rosing-Asvid (1998). «Dive Patterns of Belugas (Delphinapterus lencas) in Waters near Eastern Devon Island.» Arctic 51(1): 17-26 and Richard, P. R., A. R. Martin and J. R. Orr (2001). «Summer and autumn movements of belugas of the Bastern Beaufort Sea stock.» Arctic 54(3): 223-236.*

15 *Hauser, D. D. W., K. L. Laidre, R. S. Suydam and P. R. Richard (2014). «Population-specific home ranges and migration timing of Pacific Arctic beluga whales (Delphinapterus leucas).» Polar Biology 37: 1171-1183.*

16 *Richard, P. R., A. R. Martin and J. R. Orr (2001). «Summer and autumn movements of belugas of the Bastern Beaufort Sea stock.» Arctic 54(3): 223-236.*

17 *Shpak, O. V., R. D. Andrews, D. M. Glazova, D. I. Litovkac, R. C. Hobbs and L. M. Mukhametov (2010). «Seasonal migrations of Sea of Okhotsk beluga whales (Delphinapterus leucas) of the Sakhalin–Amur summer aggregation.» Russian Journal of Marine Biology 36(1): 56-62.*

18 *Hauser, Donna DW, Kristin L. Laidre, Robert S. Suydam, and Pierre R. Richard. «Population-specific home ranges and migration timing of Pacific Arctic beluga whales (Delphinapterus leucas).» Polar Biology 37, no. 8 (2014): 1171-1183.*

***Figure 15**. Four belugas near the tank wall. The closest animal hangs in a near vertical position. This is an adult female based on the fact that this was the 'nursery' tank with mothers and offspring (the dark grey flukes of a young animal can be seen at the back of the group) and her overall size in comparison to other beluga in the tank. An adult female beluga would be approximately 4.3m in length, therefore this tank is certainly no deeper than 4.3m (she has part of her head out of the water and her body is in a slight S shape). Note the poor condition of the tank walls with chipped paint (dark patches) and the floor of the tank with algae and detritus (dark patches) such as whale faeces and dead fish. Photo © Ingrid Visser (taken 31 August 2018).*

48. The inadequate beluga tanks at MarineLand, are all in violation of Ontario's Regulation 444/19 Article 17(4) where "The enclosure **must** meet the following requirements: 1. The enclosure **must** provide the marine mammal with **sufficient space and features for species-appropriate activities**…." [emphasis added].

49. Male belugas have killed young beluga at MarineLand[19]. In the wild female beluga self-segregate from the males[20], hypothesised as a way to prevent such aggression.

50. Aggression is rampant at MarineLand, with some beluga showing extensive rake marks (parallel teeth marks) over significant portions of their body. Although the males are currently apparently separated from the females to prevent breeding, these individuals are now all locked into smaller tanks, which further compromises their welfare. Regardless, the level of rake marks is 'Score 2' using the 0-1-2 ranking suggested by Clegg et al. (2015)) – where > 15% of the body exhibits rake marks (e.g., see Figure 16 for some examples).

51. Furthermore, aggression is one aspect specifically addressed in Ontario's Regulation 444/19 Article 17(4)4, where "If more than one marine mammal is housed in the enclosure, the enclosure must include privacy baffles, other fixed features or retreat areas that allow a marine mammal to separate itself from other marine mammals **in order to avoid aggression**, unwanted attention or disturbance." This is clearly not the case in MarineLand for any of the beluga tanks.

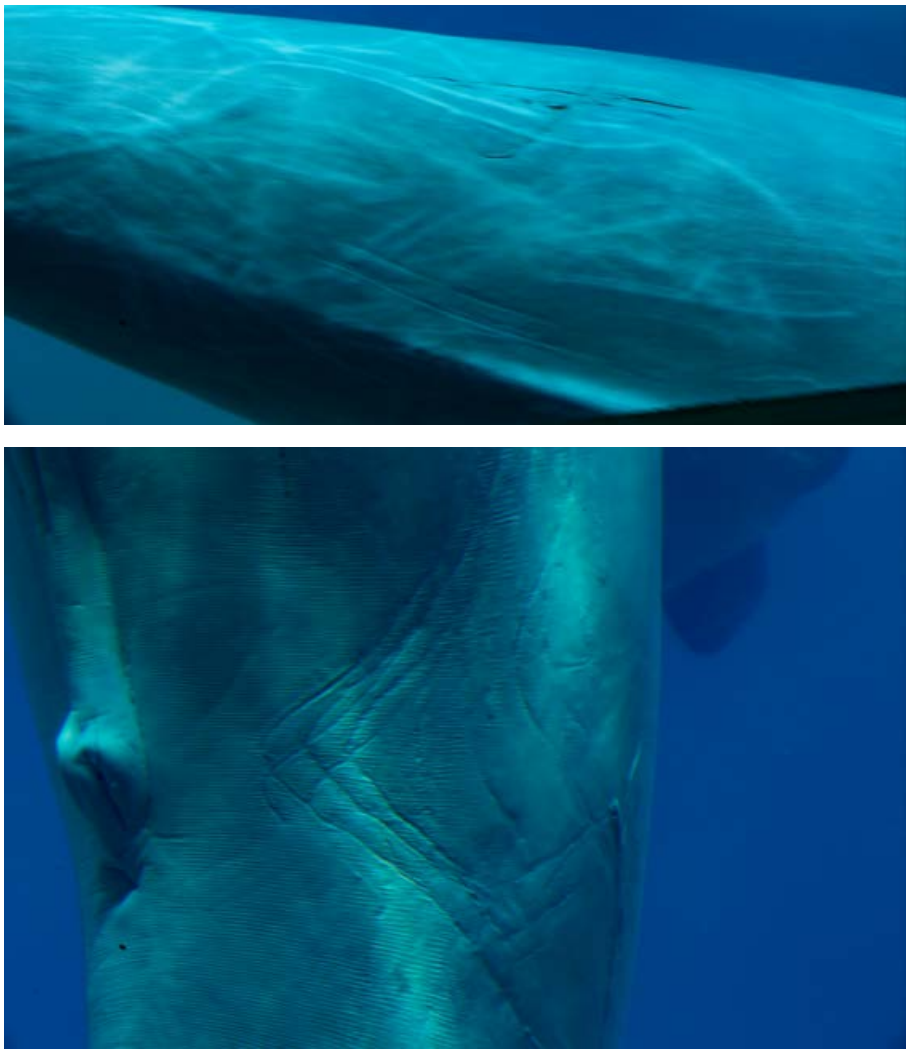

***Figure 16**. Examples of rake marks (parallel scars & wounds from teeth) documented on two different belugas at MarineLand. Extensive rake marks are typically a sign of aggression and an indicator of compromised welfare. Photos © Ingrid Visser (taken 31 August 2018).*

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19 *Diebel, L. and L. Casey (2013). MarineLand: Inside the Controversy. Toronto Star Newspapers Limited, One Yonge St. Toronto, ON M5E 1E6, Canada, Toronto Star Newspapers Limited under the imprint Star Dispatches.*

20 *Richard, P. R., A. R. Martin and J. R. Orr (2001). «Summer and autumn movements of belugas of the Bastern Beaufort Sea stock.» Arctic 54(3): 223-236. and Halteman, D.M. and Ryan, W.L., 2019. The Effect of Group Composition on the Social Behaviors of Beluga Whales (Delphinapterus leucas) in an Artificial Environment. Aquatic Mammals, 45(3), pp.303-310.*

52. MarineLand has claimed that their facility is perfectly adequate to house the large numbers of belugas held there and yet the facility does not appear to acknowledge the levels of aggression or other behavioural issues exhibited by the cetaceans. In a statement they said the facility "meets or exceeds the highest internationally recognized standards of care for its whales in the world."[21]. These and similar claims have been long-running and were also part of their submissions to the Canadian Government, in objection to Bill S-203[22]. However, in contrast to their statements, this report (and others reaching back decades, such as Penfound & McHattie, 1998) clearly show gross violations of Ontario's Regulation 444/19 and basic standards that are far lower than best practise.

53. These aggressive interactions between the belugas are of concern and in violation of Ontario's Regulation 444/19 Part II Article 6 (1)(b) where a pen must ".. enable each animal in the pen or other enclosed structure or area **to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed**" as well as Article 16(2) where "Every marine mammal **must** be provided with **daily training, social enrichment and play sessions** unless otherwise specified in its animal welfare plan." A 'welfare plan' is defined in this same Regulation under Article 9 and it **must** include "6. **Appropriate social groupings for the marine mammal**, including consideration for a companion animal if the marine mammal is the only animal housed in its enclosure." [emphasis added].

54. Furthermore, Ontario's' Regulation 444/19 Part II, Article 5(3) states "Wildlife kept in captivity **must** be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species." and yet this level of rake marks indicates this is not being adhered to.

***Figure 17**. A beluga presses up against the glass with its back as part of its pattern-swimming stereotypic (abnormal) behaviour. Photo taken by One Voice at Friendship Cove, 9th October 2021.*

55. I have also documented a range of stereotypic behaviours in the belugas, including (but not limited to); pattern swimming, rubbing/pressing against the tank walls (Figure 17) and lying on the bottom of the tank (Figure 18) and self-harming (Figures 19 & 20). As noted for Kiska, the stereotypic behaviour observed in the beluga (i.e., self-harming, pattern swimming etc) are of concern as this type of abnormal behaviour is well recognised in the scientific literature as being indicators of compromised welfare.

***Figure 18**. A young beluga lying motionless and upside down on the tank floor. This type of abnormal behaviour is indicative of stress. Also of note is the extremely dense algae growing on the floor of the tank, which is a reservoir for faeces and detritus and a breeding ground for bacteria and other microorganisms. Photo © Ingrid Visser (taken 31 August 2018).*

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21 *https://www.cbc.ca/news/canada/hamilton/2-marineland-belugas-moving-to-spain-after-ottawa-issues-permits-1.5273901*
22 *https://sencanada.ca/en/Content/Sen/Committee/421/POFO/16ev-53331-e*

***Figure 19**. A young beluga approaches the camera (top) and then begs for food (bottom). The extensive damage from self-harming/mutilation is evident, particularly on the tips of the mandibles and extending down the chin, however some wounds are also visible on the top jaw. He has worn teeth in both his upper and lower jaws (bottom). See Figure 20 which shows another beluga with self-harming wounds and Figures 23 & 25 for additional teeth issues on other beluga at MarineLand. Photos © Ingrid Visser (taken 31 August 2018).*

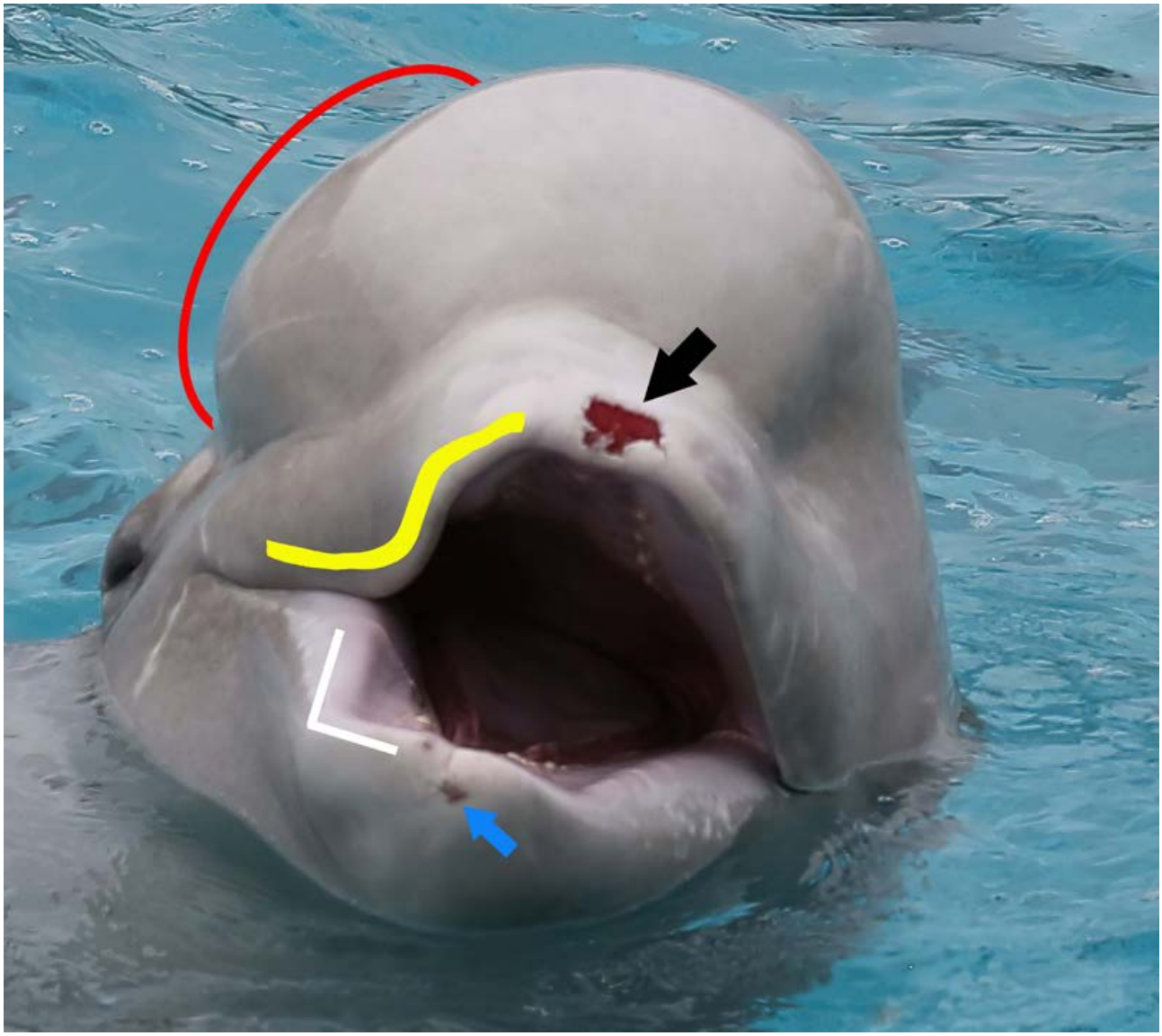


***Figure 20**. Another young beluga approaches the camera, exhibiting an open wound on the tip of the rostrum (upper 'beak', black arrow) and a smaller wound on the tip of the mandibles (lower jaws, blue arrow). Of note is the apparent malformation of the animals right side. If one compares the left to the right, the abnormality becomes immediately apparent. For example, on the animals right the melon (upper bulbus area of the head) is bulging outwards (indicated with red line), the right eye appears to be in a section of the head that is also bulging outwards and the eye appears to be squinting. The right jaws are distorted (with the upper 'lip' hanging inwards toward the mouth (yellow line) and the right lower jaw having a L shape to it, indicated with white lines). When compared to a beluga of similar age, the distortion is even more evident (e.g., see Figure 19). It is not clear what could have caused such an extensive disfigurement of this animal's right side; it could be congenital or a result of trauma from ramming or similar aggressive interaction or a large tumour or other pathogen. Photo supplied by One Voice (taken 8 October 2021).*

56. I have also noted a number of injuries to the belugas during my visits and in the images and videos supplied to me. There are the aggression injuries in Figure 16, the 'self harming' / self mutilation' injuries illustrated in Figures 19 and 20 but of note are additional injuries from unknown sources, which do not appear to fall into this category; such as those in Figures 20-22. Furthermore, there are the issues of the teeth of the belugas at MarineLand (see below).

57. In the wild, belugas have a varied diet consisting of octopus, squid, crabs, shrimp, clams, snails and sandworms as well as a variety of fish, including salmon, eulachon, cod, herring, smelt and flatfish. Due to their foraging techniques, their teeth may become worn with age.

58. At MarineLand, despite the fact that the belugas do not forage (i.e., their food is dropped directly into their mouths and typically does not make contact with any teeth and there is no substrate such as pebbles or sand for the belugas to forage in) a number of individuals have worn teeth, including young animals.

59. Belugas possess 18 to 20 widely spaced teeth in both the maxillae and mandibles, i.e., a total of 36 to 40 teeth (Stewart & Stewart, 2014). They are 'peg-like', homodont and once damaged, or worn, do not recover or regrow.

60. I documented tooth damage/wear in a number of animals including very young (e.g., see Figures 19, 23-25 for some examples).

61. The range of injuries on the belugas illustrate that MarineLand is not meeting the requirements of Ontario's Regulation 444/19, Article 6(5) that "A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, **must be designed, constructed and maintained in a manner that presents no harm to the wildlife**." [emphasis added].

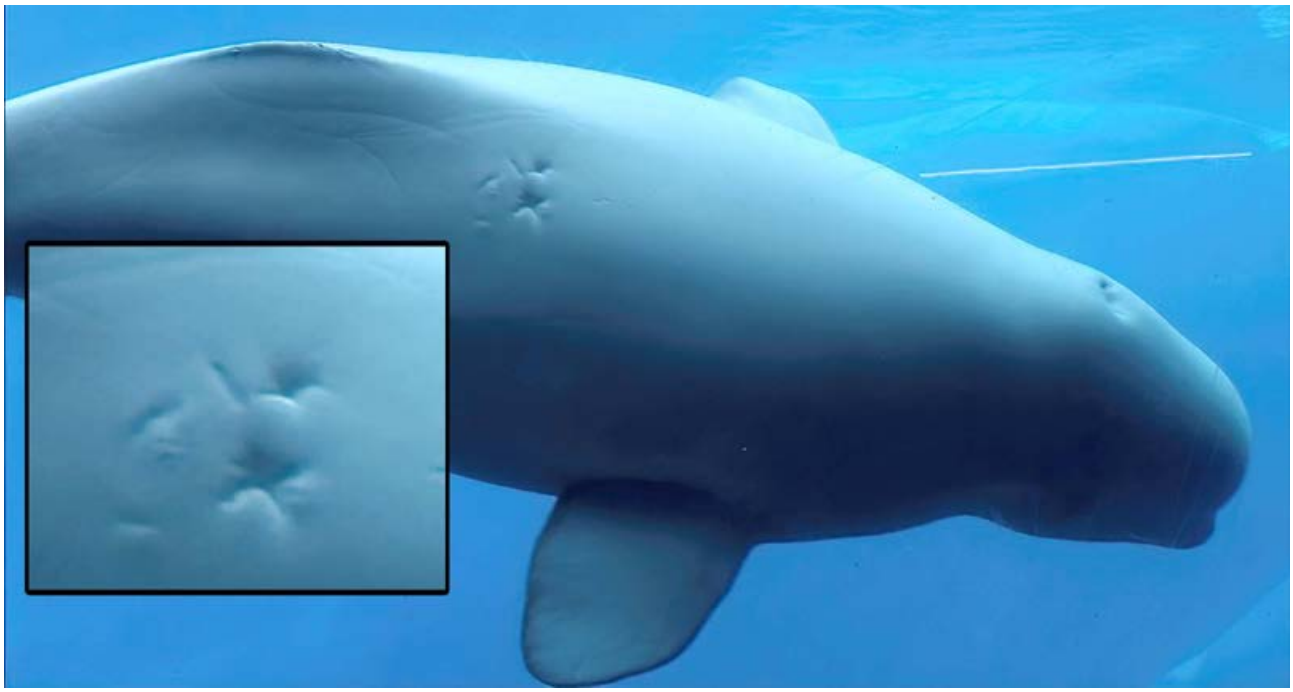


***Figure 21**. A beluga exhibits four puncture marks on its right dorso-thorax. The two anterior scars are deeper than the posterior ones (insert) and clearly deep enough to have pierced the epidermis and likely also the blubber. This image was extracted from a video supplied by One Voice (taken 10 October 2021).*

***Figure 22**. A beluga exhibits four marks on its dorso-thorax. It is unclear what these are, but they are also impacting the epidermis, as indicated by the pale grey area surround the dark marks. Photo © Ingrid Visser (taken 31 August 2018).*

62. Furthermore, the tanks at Friendship Cove and Arctic Cove are inadequate because they provide the beluga with no shade. Additionally, all the beluga tanks are shallow (particularly Waldorf Stadium and Arctic Cove) and therefore the animals cannot submerge deep enough to avoid glare. As well, the walls and bottom of the tanks are painted a pale blue (particularly Waldorf Stadium and Arctic Cove, see Figure 25 and Appendix 1) which reflects the light further. Although the Waldorf Stadium beluga tank is partially shaded, the upper tank walls are a pale cream colour and underwater area is pale blue. These both reflect glare into the tank. Furthermore, the main show tank which is similar in colour (see Figure 36) has no shade and the animals are often squinting or have closed eyes (see Figure 34).

63. This issue of shade/glare is unacceptable and is in violation of Article 19(8) of Ontario Regulation 444/19 "(8) Every marine mammal must be provided with an area of shade in its enclosure in accordance with its animal welfare plan." If the MarineLand animal welfare plan for the beluga does not include shade, then that would be below best practise.

64. During the whole time that I watched the belugas in 2015, 2017 and 2018 as well as during the videos I have watched from the 8th, 9th & 10th of October 2021, there only two instances where any enrichment 'toys' were placed in any of the beluga tanks. They involved four toys in 2017 (Figure 26) and one in 2018 (Figure 27) being tossed into the water at Friendship Cove. Of note is that there were only these toys (despite the number of belugas) and therefore this created 'competition' for each toy, resulting in aggression.

65. Typically, the only interactions I documented between the trainers and the belugas were perfunctory (e.g., feeding, a quick pat or rub, one 'trick' requested to just one or two animals - i.e., not all individuals in any one session experienced an interaction) and none lasted more than 10 minutes. The only time there was more engagement was during 'public' feeding sessions (where the public pay extra money to feed the beluga, Figures 28 & 29) i.e., that engagement revolved around the public handing fish to the beluga(s) and patting them. This type of interaction is stressful for the cetaceans (Rose & Parsons, 2019). Public encounters of the belugas were apparently cancelled during 2021 due to Covid-19 (Figure 30).

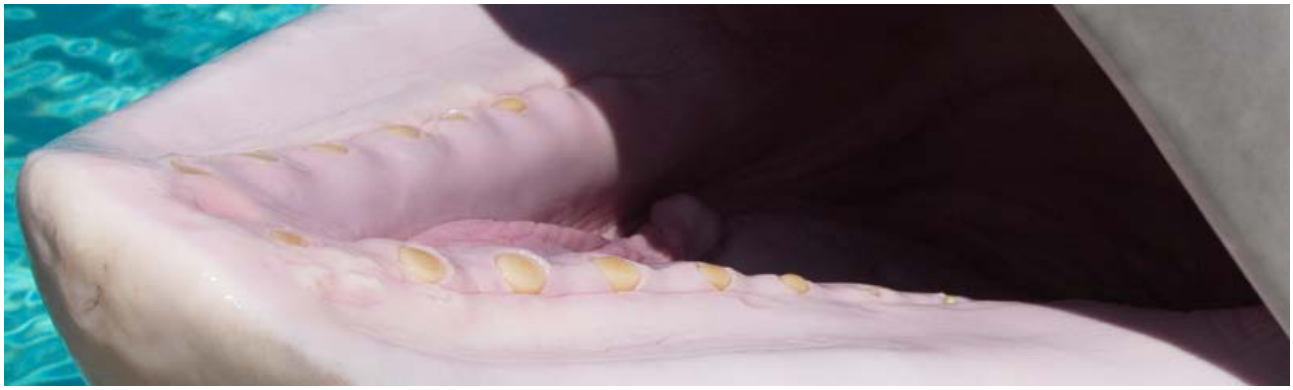


Figure 23. *A beluga at Arctic Cove exhibits the grey colouring typical of younger beluga (left). However, note the worn-down teeth. The 'nubs' of the teeth are worn down to the gum (close-up, bottom), illustrating that the 'lack of teeth' is not because the teeth have not yet erupted (compare to Figure 24, of a similar aged individual). Photo © Ingrid Visser (taken 26 June 2015).*

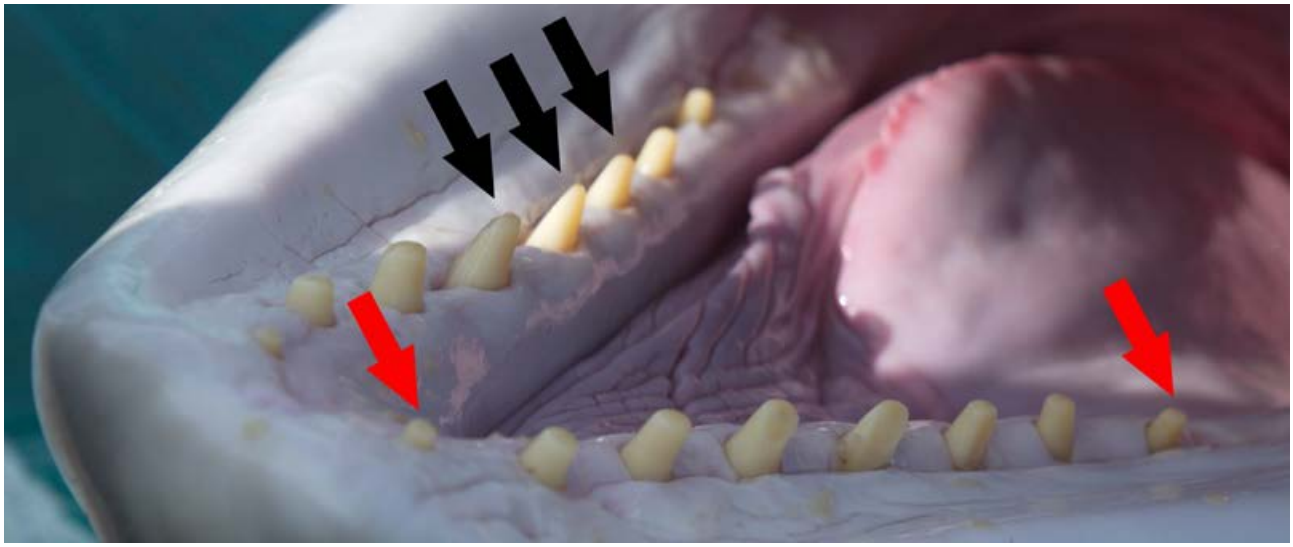


***Figure 24**. At Arctic Cove, a similar aged young beluga to that photographed in Figure 23, has some typical teeth with 'pristine' conical crowns (black arrows), although excessive wear has also begun on a number of other teeth (e.g., all the teeth between the red arrows). Photo © Ingrid Visser (taken 31 August 2018).*

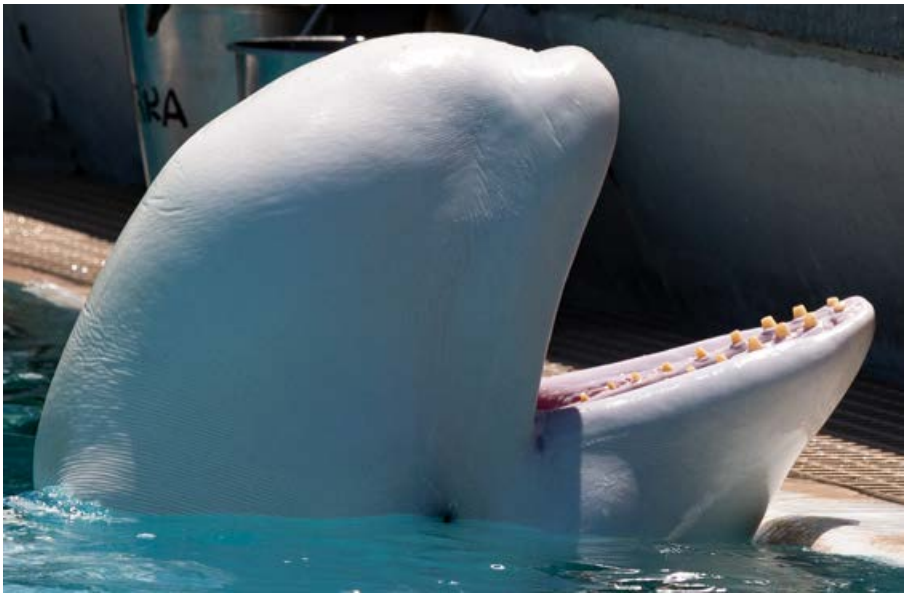
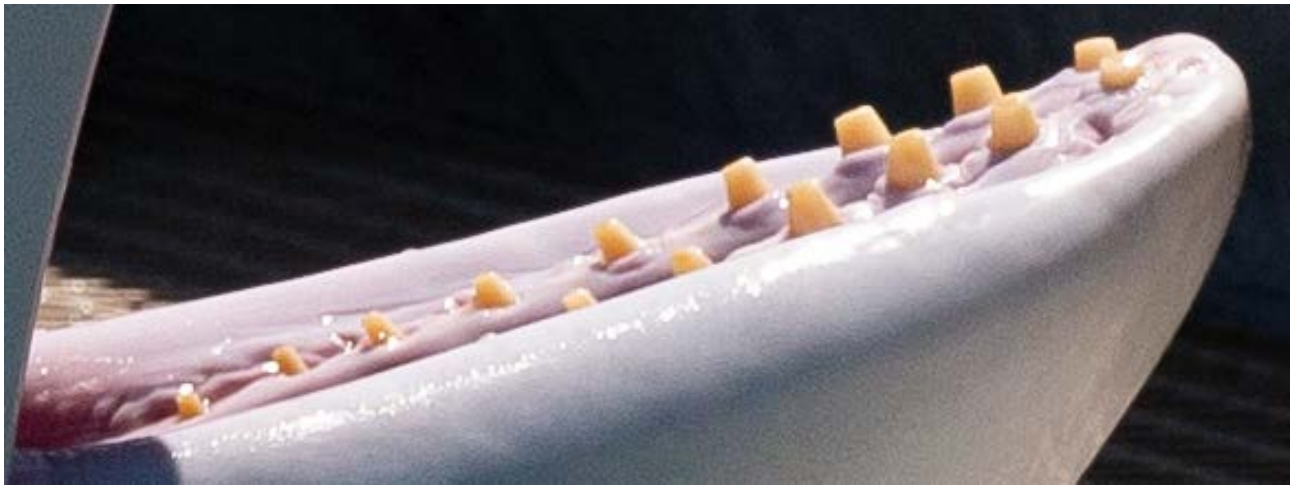


***Figure 25**. An adult female beluga (right), at Arctic Cove with partially worn-down teeth. The wear to the teeth can be seen in the close-up (bottom). Photo © Ingrid Visser (taken 26 June 2015).*



66. The interactions with trainers and the belugas are woefully inadequate and in violation of Ontario's Regulation 444/19 Article 16(2) where "Every marine mammal **must** be provided with **daily training, social enrichment and play sessions** unless otherwise specified in its animal welfare plan." [emphasis added]. A 'welfare plan' is defined in this same Regulation under Article 9 and **must** include at least; "4. Minimum staff and resource requirements to ensure the physical, psychological and social well-being of the marine mammal." **and** "5. A stimulation program that is sufficient to maintain the marine mammal's health and mental wellness."

67. I have been informed that typically the trainers leave the facility at approximately 1845 hrs, but depart from the animal areas at around 1800 hrs (and noting that the last training sessions, when I visited, were scheduled for 1730 (2015), 1700 (2018) hrs, Figures 30-33). I did not see a trainer approach the belugas during any of the days that I was present, until after 1100 hrs, nor were any training schedules indicated prior to this time, suggesting that they are not given any contact during this intervening period. There is apparently a disconnect between the trainers and the belugas and no concerted effort to interact with them was made whilst I was there.

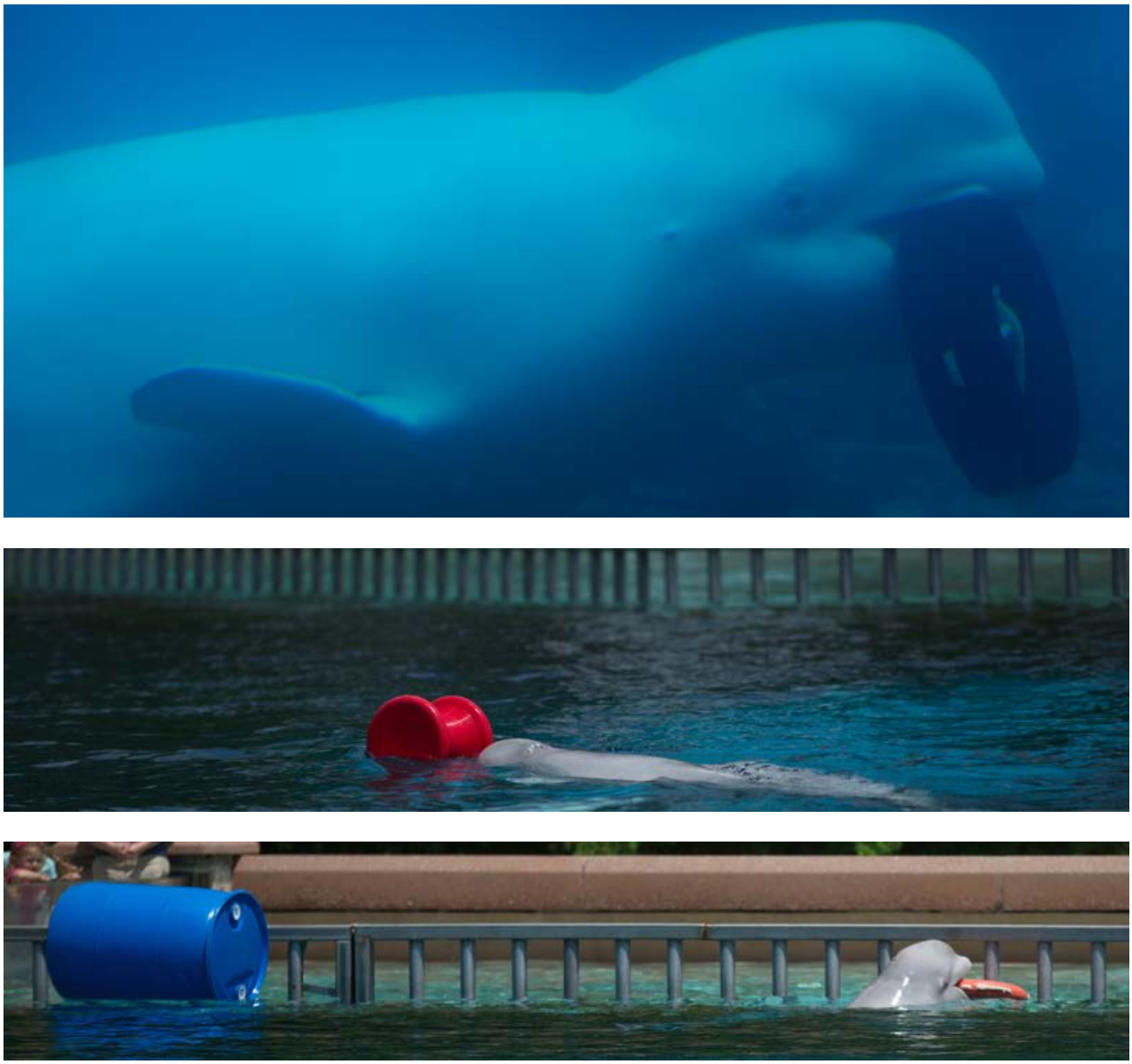


***Figure 26**. A rubber vehicle tyre (upper), a plastic 'dumbbell' (middle), a 'life ring' and a plastic drum (lower) were provided to the belugas at Friendship Cove on 29 May 2017. The drum was ignored by all the belugas. Photos © Ingrid Visser (taken 29 May 2017).*

68. These aspects are in violation of a number of Articles in Ontario Regulation 444/19; for example Article 16(3) states "The enclosure of every marine mammal **must** have the environmental enrichment objects, if any, specified in its animal welfare plan. "If the MarineLand animal welfare plan for the belugas does not include appropriate and sufficient environmental enrichment, then that would be below best practise standards.

69. I have documented that the trainers stand on the pectoral fins and faces of the beluga during the shows at Waldorf Stadium. Such displays are not educational and can create issues for the belugas skeletal structure and muscles as their muscles/pectoral fins/scapular have not evolved to carry such weight and the neck vertebrae are not fused, yet they are supporting the full weight of an adult human (Figure 34). Online videos, posted by the public show that these types of tricks are still performed in 2020.[23]

70. Such actions are in violation of Ontario's Regulation 444/19, Part II, Article 5 (2) "Wildlife kept in captivity must be provided with a daily routine that facilitates and **stimulates natural movement and behaviour**." [emphasis added] as there is nothing natural about these types of behaviours of carrying people around. Furthermore, the Canadian Federal Bill S-203, which assented in legislation on 21 June 2019, states in Chapter 11, Criminal Code "(4) **Every one commits an offence who promotes, arranges, conducts, assists in, receives money for or takes part in** any meeting, competition, **exhibition**, pastime, practice, **display or event at or in the course of which captive cetaceans are used for performance for entertainment purposes** unless such performance is authorized pursuant to a licence issued by the Lieutenant Governor in Council of a province or by such other person or authority in the province as may be specified by the Lieutenant Governor in Council." [emphasis added]. I am unaware of any such exemption licence having been issued to MarineLand. Regardless, any such "exhibition, pastime, practice, display or event at or in the course of which captive cetaceans are used for performance for entertainment purposes" would not be in the best interest of the animals and would be counter intuitive to the spirit and essence of Bill S-203.

71. I also note, that in respect of all three tank systems that hold belugas at MarineLand, they are in violation of Ontario's Regulation 444/19 Part II Article 6(1) which states "A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size," and 6(2) states "A pen or other enclosed structure or area for wildlife kept in captivity must have,

(a) **features** and furnishings **that facilitate and stimulate the natural movement and behaviour of each anima**l in the pen or other enclosed structure or area; …

(b) one or more **areas** that are **out of view of spectators**.

***Figure 27**. A circular rubber ring was provided to the belugas at Friendship Cove on 31 August 2018. It was the only toy provided to any of the cetaceans that I documented during my 2018 visit. A second beluga can be seen approaching, who wished to play with the toy, but it was not permitted to have access by the adult holding the ring. Photo © Ingrid Visser (taken 31 August 2018).*

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23 *Trainers ride on and stand on belugas in 2020. https://www.youtube.com/watch?v=hgA4IDRK64s*

72. In summary, the situation for the belugas is profoundly disturbing, as their welfare is severely compromised. They exhibit a wide range of stereotypic behaviours indicative of the stress that they are under. They also exhibit physical evidence of stress and compromised welfare (i.e., teeth wear, injuries, excessive rakes marks, pathogens) which are directly related to their confinement in concrete tanks. This is the largest collection of belugas held in captivity and the poor conditions and overcrowding are significant.

73. RECOMMENDATION: The belugas, if their health allows, should be moved as soon as possible into a genuine seaside sanctuary. Such a location would provide them with physical and mental stimulation and provide an opportunity for increased space per individual. Although I recognise that currently there is no completed sanctuary for cetaceans in Canada, one in Nova Scotia is currently being constructed and is expected to be able to take occupants in early 2023. In the meantime, bringing the conditions which these beluga are being held into alignment with the Ontario Regulation 444/19, would allow for an improvement of their welfare. An independent assessment by a species-specific expert panel would facilitate identifying the issues and the potential mitigation options.

***Figure 28**. Five belugas lined up to be fed and patted (centre) by tourists who have paid extra for this 'encounter'. These types of interactions are stressful for the animals (see Rose & Parsons 2019 for details). Photo © Ingrid Visser (taken 26 May 2015).*

***Figure 29**. On any given day, a large number of tourists line up to feed and pat the beluga. These interactions are the only time that I observed the trainers interacting with the beluga for more than a few minutes. Photo © Ingrid Visser (taken 31 August 2018).*

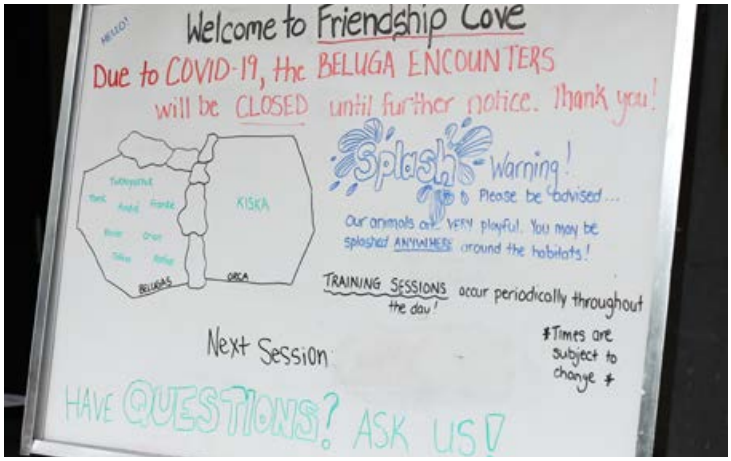

***Figure 30**. A whiteboard at Friendship Cove in October 2021, stating that beluga encounters are closed "due to Covid-19". Of note is that the names of eight beluga are shown for the West tank (the left tank in the drawing) indicating how many beluga are in this tank. No indication is given that either the belugas or Kiska (the solitary orca) are given access to the East tank. See the following Figures (31-33) of examples of this board in 2018, 2017 and 2015. Photo supplied by One Voice (taken 8 October 2021).*

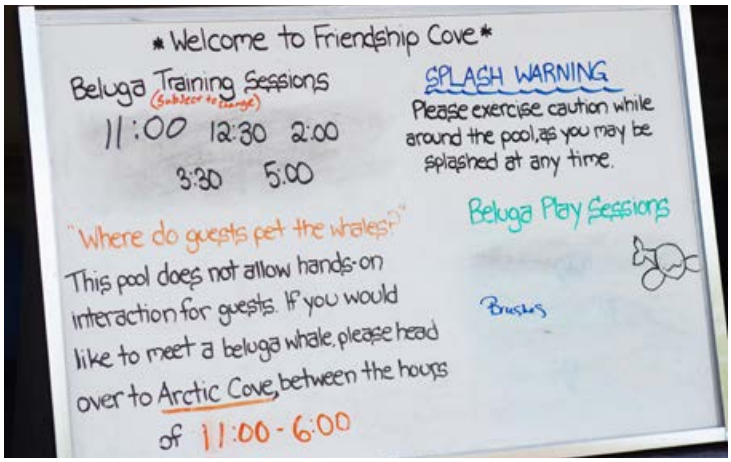

***Figure 31**. A whiteboard at Friendship Cove in August 2018, indicating the beluga training (feeding) sessions, as well as to go to Arctic Cove to interact with the belugas. Of note is that the 'Beluga Play Sessions' indicates that 'brushes' will be available to the animals. During my three day visit during August 2018 I did not see any brushes provided to the belugas. Photo © Ingrid Visser (taken 31 August 2018).*

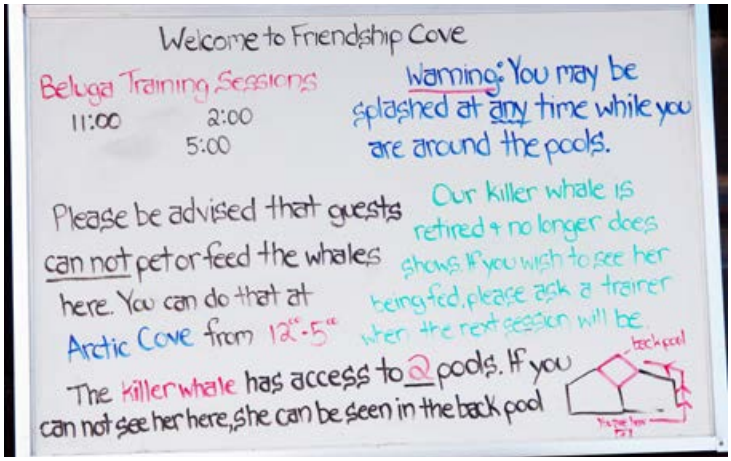

***Figure 32**. A whiteboard at Friendship Cove in May 2017. Again, the earliest timing that the beluga receive food or training is indicated as 11:00 hours. 'Pet or feed' the belugas at Arctic Cove is again promoted. On this date there was explicit mention of Kiska having access to the east ('back') tank. Photo © Ingrid Visser (taken 29 May 2017).*

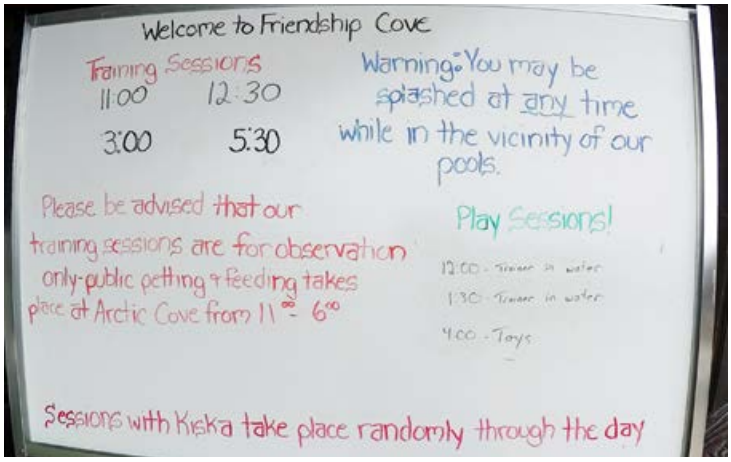

***Figure 33**. A whiteboard at Friendship Cove in June 2015, again indicates the trainers do not interact with the belugas until 11:00 hours. However, in 2015 the last session was 30 mins later than stated in 2017, 2018 or 2021. 'Pet or feed' the belugas at Arctic Cove is promoted. Three play sessions for the belugas are noted; 1200 hrs, 1300 hrs and 1600 hrs. Photo © Ingrid Visser (taken 28 June 2015).*

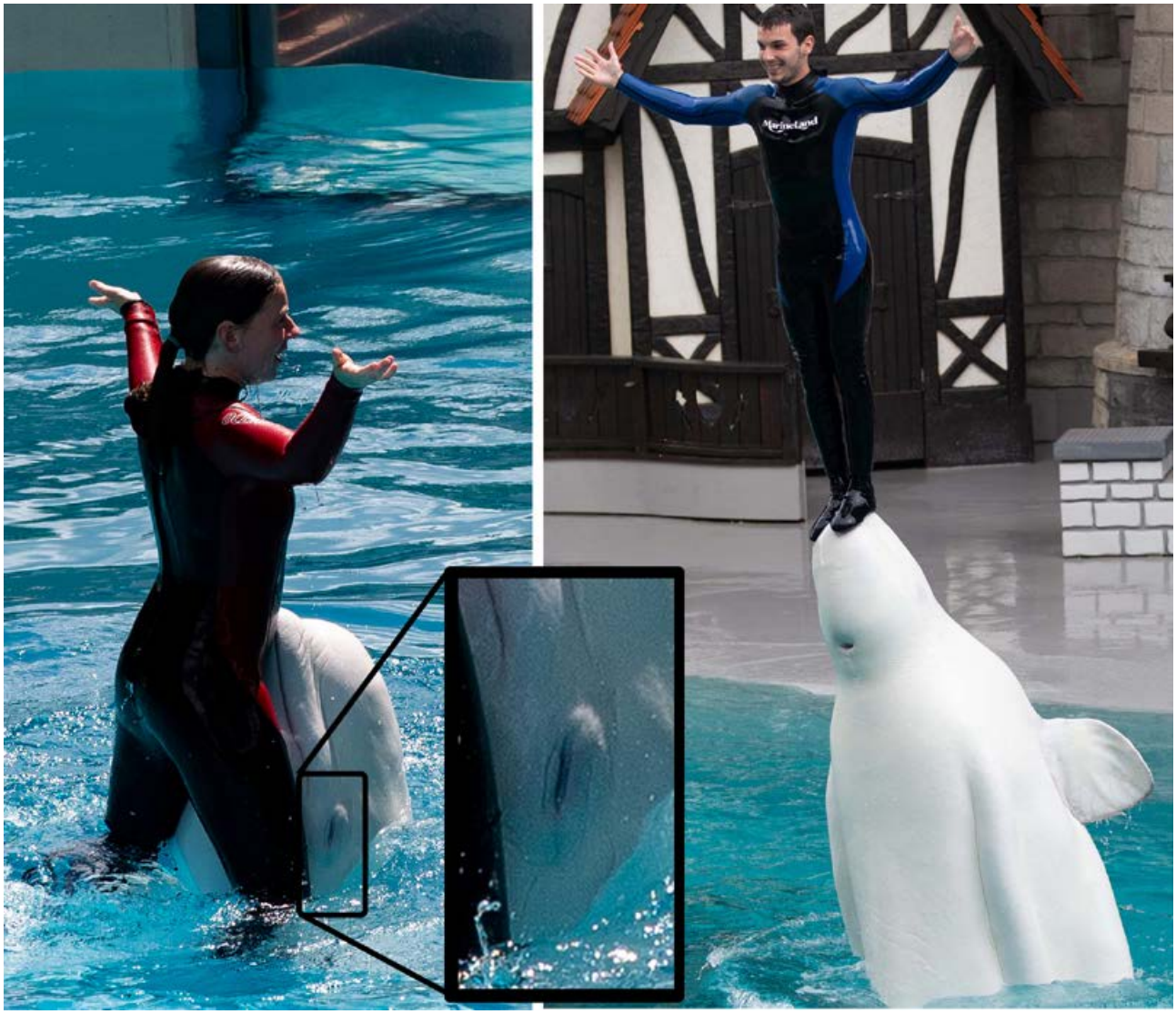

***Figure 34**. During the beluga section of the show at Waldorf Stadium, trainers stand on the pectoral fins (left) which creates undue pressure on the muscles, scapula, ulnar and radius of each pectoral fin and when standing on the rostrum (right), the animals unfused neck vertebrae. The pale colouring of the tank reflects light and the lack of shade exacerbates this – resulting in the animals often squinting (insert, left). It is not clear if this practice of standing on the belugas continues at MarineLand in 2021, as the Canadian Federal Bill S-203, states in Chapter 11, Criminal Code (4) that every one commits an offence who assists in, or takes part in any, exhibition or display in the which captive cetaceans are used for performance for entertainment purposes, however, cetaceans are still used in these types of shows in various ways (see section on bottlenose dolphins) and standing on belugas was documented in 2020 (see footnote #23). Photos © Ingrid Visser (taken (left) 26 June 2015 and (right) 20 May 2017).*

***Figure 35**. Two beluga (only one is visible here, but see Figure 36) are kept in this tiny tank with just an 11m diameter. Although partially shaded, the pale cream colour of the upper tank walls and the pale blue of the under water area both reflect glare into the tank. Furthermore, the main show tank which is similar in colour (see Figure 36) has no shade and the animals are often squinting or have closed eyes (see Figure 34). Photo © Ingrid Visser (taken 31 August 2018).*

***Figure 36**. Two belugas (yellow arrows) are kept in the tiny tank which is only 11m in diameter. Furthermore, the main show tank, which at this moment holds two of the five bottlenose dolphins (red arrows) is similar in colour and has no shade. There are multiple violations of Ontario's Animal Welfare Regulation 444/19 (see text for details). Photo © Ingrid Visser (taken 29 May 2017).*

BOTTLENOSE DOLPHINS

74. There are five bottlenose dolphins held at MarineLand. They are all female and all were sourced from the wild (Figure 37). Black Sea dolphins are genetically isolated from other bottlenose dolphins and are also morphologically distinct (Viaud-Martineza et al, 2008).[24]

75. As early as 1967 there was a closure of the fisheries for cetaceans from the Black Sea, by the USSR, Romania and Bulgaria (Smith, 1978)[25], however captures for dolphinariums have continued[26], despite the Black Sea population of bottlenose dolphins being protected by numerous worldwide, European, regional and national legislative acts. Furthermore, there does not appear to be any export permits for Canada[27], so it is unclear how these individuals arrived in captivity in MarineLand.

76. The bottlenose dolphins at MarineLand are all kept in the Waldorf Stadium, which is woefully inadequate for five bottlenose dolphins and two belugas. The tank system has a show tank that is a maximum of 26 m length and a circular tank of 11m diameter for the dolphins (see Appendix 1).

77. With the bottlenose dolphins being held in the same tank system as the belugas, the water temperature is compromised for both species, as they would not normally be found together in the same temperature range, in the wild. Therefore, the temperature in the tanks is inappropriate for one (or both) species and in violation of Regulation 444/19, Part III, Article 19(1) "Every marine mammal **must** be provided with environmental temperature and humidity ranges appropriate for the species." [emphasis added].

78. All five of the bottlenose dolphins exhibit a physical manifestation of living in a small circular tank, in that their dorsal fins all show partial collapse/tilt to the animals' left (Figure 38). This is a direct result of their protracted abnormal stereotypic counterclockwise swimming (see Figure 38 for an example and Sobel (1994)[28] for details of research illustrating this phenomenon in other Black Sea bottlenose dolphins held in captivity).

79. Although the dolphins are at times permitted into the Show tank (Figure 36), this area still remains inadequate in size, depth and complexity. It contains no features for enrichment, nor an area that is 'off display'. These are all aspects which violate Regulation 444/19.
Ontario's Regulation 444/19 Part II Article 6(1) states "A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size," and 6(2) states "A pen or other enclosed structure or area

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Living

bottlenose

Name / Species	Sex	Acquired:	By:	Mother	Father
Echo Bottlenose, Black Sea	F	2000-xxx-xx Black Sea, Russia	Capt	Wild	Wild
Lida Bottlenose, Black Sea	F	2000-xxx-xx Black Sea, Russia	Capt	Wild	Wild
Marina Bottlenose, Black Sea	F	2001-xxx-xx Black Sea, Russia	Capt	Wild	Wild
Sonar Bottlenose, Black Sea	F	2001-xxx-xx Black Sea, Russia	Capt	Wild	Wild
Tsunami Bottlenose, Black Sea	F	2001-xxx-xx Black Sea, Russia	Capt	Wild	Wild

***Figure 37**. Data extracted from Cetabase (www.cetabase.org), an online independent dataset of facilities holding marine mammals. The five bottlenose dolphins at MarineLand were all taken from the wild, and captured from the Black Sea, Russia.*

24 *https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1071&context=usdeptcommercepub*
25 *Smith TD. Current understanding of the status of small cetacean populations in the Black Sea. Mammals in the Seas: Report. 1978;4:121.*
26 *https://heima.hafro.is/~gisli/iwc2003/sc55docs/SC-55-ForInfo16%5b1%5d.pdf*
27 *https://heima.hafro.is/~gisli/iwc2003/sc55docs/SC-55-ForInfo16%5b1%5d.pdf, page 12*
28 *Sobel N.A., Supin A.Y. & Myslobodsky M.S. 1994. Rotational swimming tendencies in the dolphin (Tursiops truncatus). Behavioural Brain Research. 65:41-45.*

***Figure 38**. All five of the bottlenose dolphins at at Waldorf Stadium, MarineLand, exhibit dorsal fins that show partial collapse/tilt to the animals left, indicating excessive and protracted counterclockwise swimming in a circular tank. Photo © Ingrid Visser (taken 29 May 2017).*

for wildlife kept in captivity **must** have,

(a) **features** and furnishings **that facilitate and stimulate the natural movement and behaviour of each animal** in the pen or other enclosed structure or area; ….

(d) one or more **areas that are out of view of spectators**.

80. The Canadian Federal Bill S-203, states in Chapter 11, Criminal Code (4) that every one commits an offence who assists in, or takes part in any, exhibition, display in the which captive cetaceans are used for performance for entertainment purposes. Clearly these dolphins are used in exhibitions and displays in circus-like shows set to music. These are neither educational, nor for conservation nor research (see Figures 41 & 42 for examples of the tricks the animals are required to perform to get their food).

81. Even when in the Show tank the animals still swim predominantly in an antic-clockwise direction (personal observations during 2015, 2017 and 2018, and see the direction that the two dolphins are facing in Figure 36).

82. Some of the bottlenose dolphins show rake marks (wounds and scars) from other bottlenose dolphins. The extremely small tank system at Waldorf Stadium provides no areas for the animals to escape attacks. This is in violation of Ontario's Regulation 444/19 Part II Article 6 (1)(b) where a pen must "… enable each animal in the pen or other enclosed structure or area **to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed**" as well as Article 16(2) where "Every marine mammal must be provided with **daily training, social enrichment and play sessions** unless otherwise specified in its animal welfare plan." A 'welfare plan' is defined in this same Regulation under Article 9 and it **must** include "6. **Appropriate social groupings for the marine mammal**, including consideration for a companion animal if the marine mammal is the only animal housed in its enclosure." [emphasis added].

83. In summary, the situation for the bottlenose dolphins is severely compromised, as their welfare is impacted by the small tanks, the water temperature and the poor water quality (see further details below). They exhibit a range of stereotypic behaviours, the most obvious one being counterclockwise swimming which has resulted in all the dolphins having dorsal fins which are partially collapsed to the left.

84. RECOMMENDATION: The dolphins, if their health allows, should be moved as soon as possible into a genuine seaside sanctuary. Such a location would provide them with physical and mental stimulation and provide an opportunity for increased space per individual. Although I recognise that currently there is no sanctuary for cetaceans in Canada that falls within the year-round distribution of bottlenose dolphins, there could be the opportunity to rehabilitate these dolphins to return to the wild as they were all born in the Black Sea. In the meantime, bringing the conditions which these dolphins are being held into alignment with the Ontario Regulation 444/19, would allow for an improvement of their welfare. An independent assessment by a species-specific expert panel would facilitate identifying the issues and the potential mitigation options. Additionally, the circus-like shows should be halted as they are not in the best interests of the animals, even if an exemption under Bill S-203 has been issued. If there is no exemption, then this is criminal violation of the Bill.

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28 *Sobel N.A., Supin A.Y. & Myslobodsky M.S. 1994. Rotational swimming tendencies in the dolphin (Tursiops truncatus). Behavioural Brain Research. 65:41-45.*

***Figure 39**. One of five bottlenose dolphins surfaces just prior to a 'show', as it swims in a counterclockwise direction at Waldorf Stadium. Note in the close-up (lower) the rust (or similar) streaks are leaking into the tank, indicative of the poor maintenance at the facility. Photo© Ingrid Visser (taken 29 May 2017).*

***Figure 40**. One of the bottlenose dolphins with rakes near its eye from other bottlenose dolphins. Typically, such rake marks are a sign of aggression. Note also that it has its eye closed, due to the glare and lack of shade. Photo © Ingrid Visser (taken 31 August 2018).*

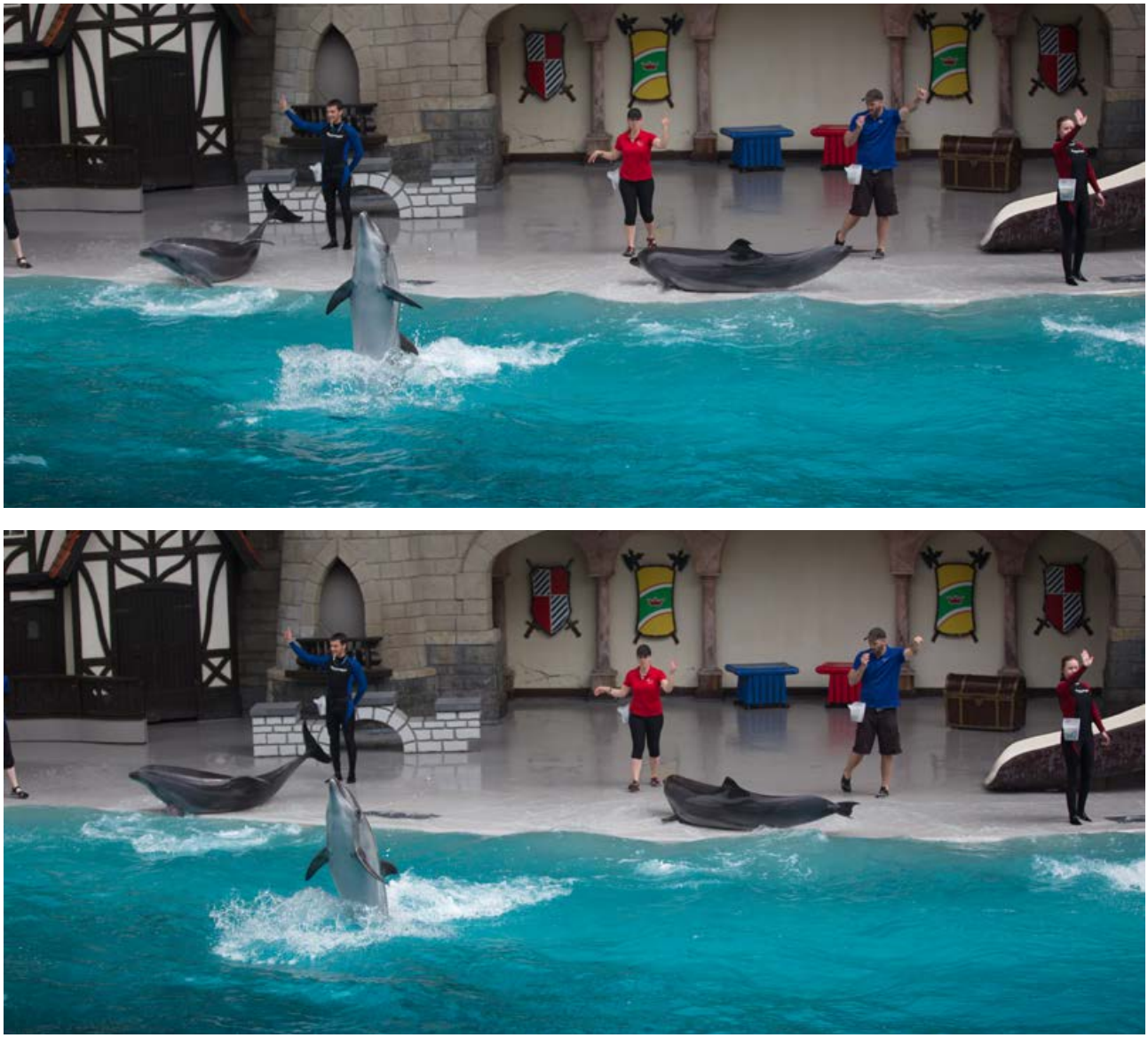

Figure 41. *The dolphins are made to perform unnatural behaviours during the circus-like show at Waldorf Stadium. The two dolphins beached on the stage are made to spin in circles, whilst the dolphin in the centre is made to 'tail-walk' (see Figure 42 for further details). Photos © Ingrid Visser (taken 29 May 2017).*

***Figure 42**. The sequence of the 'spinning dolphin' trick (starting in Figure 41) is continued here, where the dolphin is required to dip its tail into the water (top) to 'restart' another spin and then is expected to rotate around on its ventral surface (middle and lower). Combined, the 5 images from these two Figures all occurred within 1 second. This is not 'natural', nor 'normal' behaviour for dolphins and clearly provides no educational value. Note the tilted angle of the dorsal fin in the lower image, a sign of excessive and chronic counterclockwise swimming. Photos © Ingrid Visser (taken 29 May 2017).*

WATER QUALITY & TANKS

85. The tanks at MarineLand clearly are in a state of disrepair. Since I first visited them I have noted that they have peeling/chipped paint (e.g., Figure 15), rust or other seepage leaking into the water in the tanks (e.g., Figure 39), cracks, water leaks (Figure 44) etc.

86. MarineLand is so aware of these issues that they have a permanent sign displayed at the underwater viewing area of Friendship Cove (e.g. Figure 43, showing the same sign in 2017 and in 2021). Despite their claim, after four year the tanks were still leaking (see Figure 44).

87. These types of issues were visible during the One Voice visit as well (e.g., water leak with build-up of algae and other detritus, indicating poor maintenance and cleaning, Figure 44).

88. The amount of algae growing on the tank floors of Friendship Cove has been an issue since at least the 28th of May 2014 and it continues today. The extent is clearly visible even from satellites orbiting the earth (e.g., see 'The water quality status' section, pages 13-16, in Appendix 1, where I provide a series of images downloaded from the publicly available 'Google Earth Pro' timeline history section, showing Friendship Cove in May 2014, June 2014, June 2015, April 2016, July 2016, September 2016, October 2016, April 2017, June 2018, July 2018, September 2018. Of those 11 images, none show the facility clear of algae).

***Figure 43**. A permanent sign at the underwater viewing area of Friendship Cove, taken in 2017 and 2021. Photos © top; Ingrid Visser (taken 29 May 2017), lower; supplied by One Voice (taken 8 October 2021).*

***Figure 44**. One of the many leaks in the underwater viewing areas at MarineLand, note the build-up of algae and other detritus. This area clearly hasn't been cleaned for a significant amount of time. Photo supplied by One Voice (taken 8 October 2021).*

89. This poor quality of the enclosures at MarineLand is in violation of a range of Articles in Ontario's Regulation 444/19 ("Standards of Care and administrative Requirements"). For example Part III, under the section "Enclosure" Article 17(2) states "Measures must be taken to **minimize the risk that the enclosure will be contaminated with potentially harmful microorganisms**." [emphasis added] and under "Enclosure water quality" Article 18(2) states "The person who possesses the marine mammal shall maintain a program for monitoring water quality **to ensure that a healthy aquatic environment is provided**, including daily monitoring of water salinity." [emphasis added]

90. Of relevance to the situation at MarineLand, is a USA Government inspection of Miami Seaquarium (Florida, USA) on 8 June 2021[29], which found that there was also algae growing in one of the seapens and that "The attending veterinarian evaluated samples of the algae floating in Flipper pool and observed several species of parasites – nematodes, arthropods, and other unidentified species." A manatee living in that same water system was evaluated and "… severe clinical presentation of diffuse nematode larval migrans [migration of immature worms] with a secondary bacterial infection. Skin biopsies showed nematodoiasis. Parasites that were identified include arthropods (mites), copepods, and nematodes." The increase in algae was noted as occurring "without [the water] being adequately treated to prevent the overgrowth of algae…" and this led to health issues for the animals.

91. The findings by the USA Government are highly relevant to the situation at MarineLand because the increased algae observed at this Canadian facility is also indicative of an ongoing and systemic problem with their own filtration system. Clearly the pumps at MarineLand are not appropriately circulating the water (see the algae distribution patterns which remain consistent over the four years documented in Appendix 1) and/or the chemicals in the water are not adequate. Although not connected directly to the ocean, pathogens can still enter the system via humans and wildlife (see Figures 45 & 46) and grow in these algae rich environments.

92. Such an excessive growth of algae can only happen if the water is also nutrient-rich; at MarineLand the source of such nutrients are the cetacean's urine and faeces as well the remains of dead fish which are fed to the cetaceans, all of which are not adequately filtered out of the water (see Figure 47 for some examples). Suggestions might be made by some, that such algae growth is a sign of 'good water quality' (e.g., the plants can grow because of a balanced pH level), but this is a distortion of the facts as excessive algae growth is detrimental to the animals health.

93. The Ontario Regulation 444/19 notes in Article 17(2) that "Measures **must** be taken to **minimize the risk that the enclosure will be contaminated with potentially harmful microorganisms**." Yet, the swaths of algae on the tank floors not only prevents efficient cleaning of the tank they also act as reservoirs for such potentially harmful microorganisms.

94. Furthermore, Ontario's Regulation 444/19 Part III, under the section "Enclosure water quality" Article 18(5), states "Water circulation equipment in the enclosure **must** be sufficient to circulate water throughout the pool." Algae beds reduce water flow and prevent effective water circulation.

95. Furthermore, I have documented wildlife around the tanks at MarineLand, (e.g., gulls Figures 45 & 46) and observed gulls defecating on the tank surroundings (e.g., the fake rocks at Friendship Cove, Figure 45 and on the tank surroundings at Arctic Cove, Figure 46). These faeces then potentially wash into the tanks when it rains (e.g., at Friendship Cove), or onto the ground where all the tourists/trainers walk (Figure 46) – and who then enter other animal display areas. I have also observed the gulls landing on the water and attempting to take fish which are for the cetaceans, or to take fish scraps if the cetaceans regurgitate (see Figure 46, showing a gull waiting on the side of the tank during a beluga feeding session).

***Figure 45**. A gull perches on a fake rock at Friendship Cove. Gulls are known to be vectors for a range of pathogens which cetaceans are susceptible to. With the excessive algae growth in the tanks and poor water circulation, harmful microorganisms can accumulate. Photo ©Ingrid Visser (taken 31 August 2018).*

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29 *Gonzales E. 2021. Inspection Report + follow up inspection (Miami Seaquarium, Festival Fun Parks LLC). . 17 pp. Available from United States Department of Agriculture, Animal and Plant Health Inspection Service*

96. Gulls of various species are known to act as vectors for a range of pathogens such as salmonellae, Campylobacter spp. and Cryptosporidium[30] all three of which have been documented as pathogens in cetaceans.[31] Some of the gulls in the Niagara Falls area travel extensively[32] and can therefore bring into the facility a range of pathogens.

97. Viewing the tanks of Arctic Cove from a satellite shows similar issues in terms of algae growth (e.g., see Figure 5c, in Appendix 1).

98. On the ground (both from the tank sides and through the underwater viewing areas) shows further examples of the issue at Arctic Cove (e.g., Figures 48 and 49). Likewise, similar types of photographs show the issues at Waldorf Stadium (e.g., Figures 50 and 51).

***Figure 46**. A gull perches on the tank surroundings at Arctic Cove, awaiting the chance to scavenge dropped fish during a feeding session. The gulls also land on the water. Note the gull faeces on the tank surround. Photo supplied by One Voice (taken 08 October 2021).*

***Figure 47**. Three images showing detritus (algae (top) fish scraps (middle, lower), faeces (middle, lower) floating in the water at Arctic Cove on 31 August 2018. These images were taken through thick perspex/glass windows (i.e., the items were of sufficient size to be visible through the barrier and large enough for the camera to focus on). Much smaller particles were visible but it was not possible to photograph them. Note the green algae layer on the bottom of the tank in the lower image. Photos ©Ingrid Visser (taken 31 August 2018).*

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30 *Fenlon DR. Seagulls (Larus spp.) as vectors of salmonellae: an investigation into the range of serotypes and numbers of salmonellae in gull faeces. Epidemiology & Infection. 1981 Apr;86(2):195-202.*
Moore JE, Gilpin D, Crothers E, Canney A, Kaneko A, Matsuda M. Occurrence of Campylobacter spp. and Cryptosporidium spp. in seagulls (Larus spp.). Vector Borne and Zoonotic Diseases. 2002 Jun 1;2(2):111-4.

31 *Goldman, C.G., Matteo, M.J., Loureiro, J.D., Almuzara, M., Barberis, C., Vay, C., Catalano, M., Heredia, S.R., Mantero, P., Boccio, J.R. and Zubillaga, M.B., 2011. Novel gastric helicobacters and oral campylobacters are present in captive and wild cetaceans. Veterinary microbiology, 152(1-2), pp.138-145.*
Grilo, M.L., Gomes, L., Wohlsein, P., de Carvalho, L.M., Siebert, U. and Lehnert, K., 2018. Cryptosporidium species and Giardia species prevalence in marine mammal species present in the German North and Baltic Seas. Journal of zoo and wildlife medicine, 49(4), pp.1002-1006.
Valderrama Vasquez, C.A., Macgregor, S.K., Rowcliffe, J.M. and Jepson, P.D., 2008. Occurrence of a monophasic strain of Salmonella group B isolated from cetaceans in England and Wales between 1990 and 2002. Environmental microbiology, 10(9), pp.2462-2468.

32 *https://nystateparks.blog/2019/11/26/gorge-ous-gulls-of-the-niagara-in-winter/*

***Figure 48**. A young beluga (age is indicated by the grey, not white body colour) swims past an underwater viewing window. It exhibits damage to the tips of its mandibles (see Figure 19 for a topside view of this damage). Also of note is the extremely dense algae growing on the floor of the tank. Photo ©Ingrid N. Visser (taken 31 August 2018).*

***Figure 49**. A mother and calf beluga swim over one of the few pale blue (i.e., relatively algae-free) areas of the tank floor . Of note is the extremely dense algae growing on the floor behind the beluga. Additionally, the floor of the tank has detritus (isolated dark patches) such as whale faeces and dead fish (see Figure 47 for this type of detritus in the water coloumn). See Figure 50 for a similar view in 2021.) Photo ©Ingrid N. Visser (taken 31 August 2018).*

99. In conclusion, I have compiled this report because of my deep concern for the welfare and wellbeing of the cetaceans held at MarineLand. There have been numerous complaints laid about the wellbeing of the cetaceans at this facility, stretching back decades, and reports have been presented to the Canadian Federal and Provincial Governments, the Niagara Falls Humane Society and the Ontario Society for the Prevention of Cruelty to Animals.

100. Yet despite all these concerns, the situation for the animals has not improved to any degree that would have meaning for the animals. For example, during all the visits I have made in 2015, 2017 and 2018 as well as the evidence provided to me from a more recent visit, the cetaceans continue to show signs of extreme distress and wilful neglect. These issues clearly need to be addressed with a matter of urgency.

***Figure 50**. A beluga swims past an underwater viewing window in the Arctic Cove tank system. The pale (i.e., relatively algae-free) areas of the tank floor and the dense algae growing on the floor of the tank are visible (see similar issues in Figure 40, three years prior). Photo supplied by One Voice (taken 08 October 2021).*

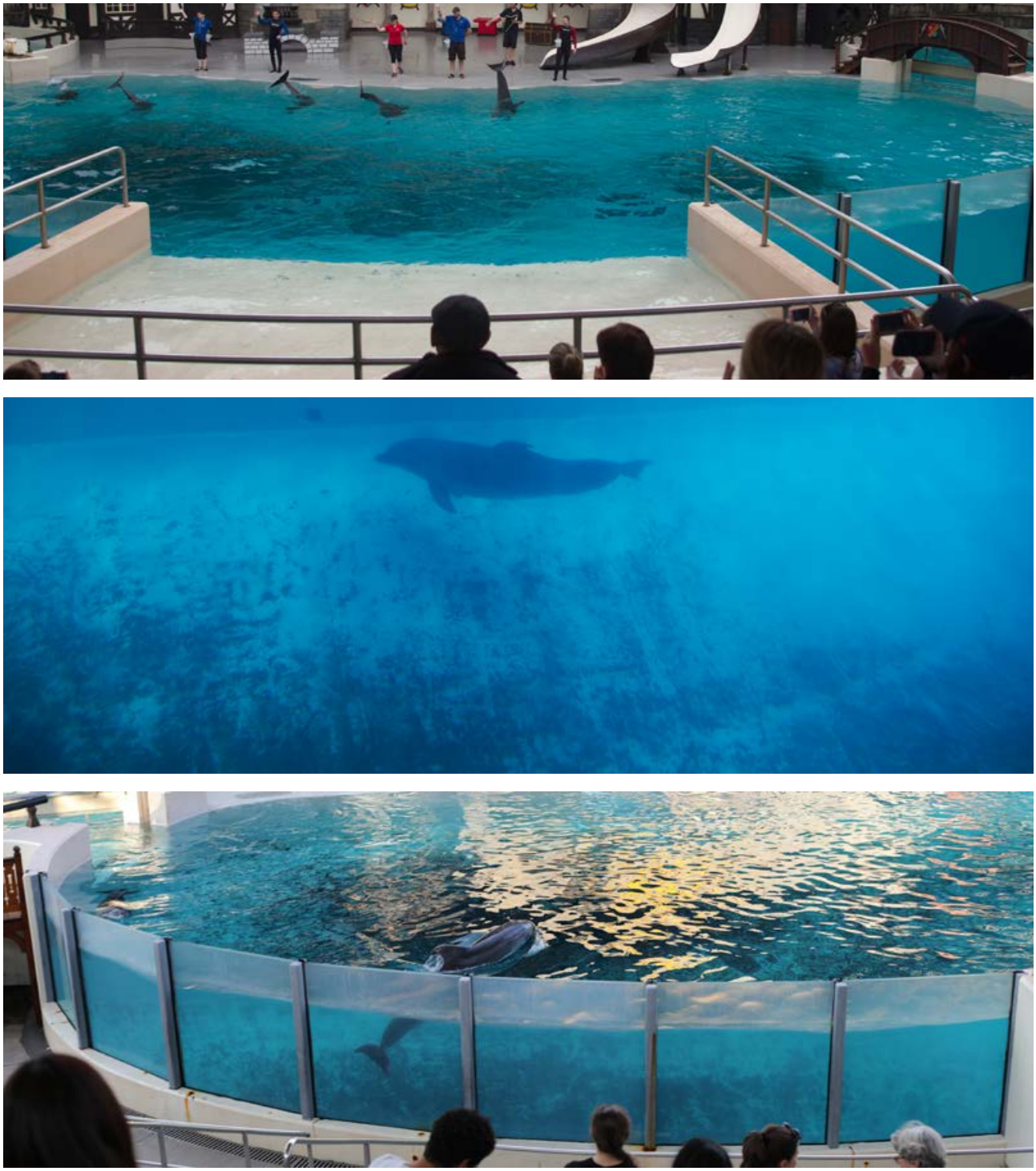

Figure 51. *The show tank at Waldorf Stadium has exhibited algae growth since I first documented it in 2017. In 2017 (top) the algae growth is clearly visible from the stadium seats and through the tank window (middle). In 2021 (bottom) it remains visible. Photos; top & middle Ingrid Visser (taken 29 May 2017), lower supplied by One Voice (taken 08 October 2021).*

SOLUTIONS

It might be proposed that, given the poor conditions at MarineLand, some (or all) of the cetaceans are exported to other facilities (e.g., in China where there is a high-demand market). It would be my strong recommendation that this should not occur for any individual. Having witnessed the appalling conditions for cetaceans in China and given that there are no animal welfare protection laws there, the welfare of any exported individuals would not improve. Likewise, having seen the conditions in L'Oceanogràphic, a facility in Spain where it has been proposed that some of MarineLand's belugas be exported, it is very clear that the animals welfare would be severely compromised in that facility[33].

Additionally there is no recourse once the animals leave the protection of Canada. Once in any foreign country they could be used in violation of Bill S-203, which currently protects them (e.g., this has happened with the export permit for the beluga who were recently sent to the USA – in 5 years the current conditions expire and these animals can then be bred or re-exported to anywhere in the world).

Also the logistics of repatriation, should there be violations or compromised welfare, are effectively unfeasible (e.g., see the case of the orca Morgan who was moved from the Netherlands to Spain and who has been brutally attacked, is used in commercial shows and has been bred, despite the authorities not authorising these actions)[34].

Furthermore, despite outspoken criticism of the export of five beluga to the USA, that 'research' project has already proven to be fatal for one beluga and severely compromised the health of another.

In order to honour the spirit and letter of the law of Bill S-203, and to improve the welfare for the cetaceans at MarineLand, concerted efforts should be made to implement a genuine sea sanctuary for these cetaceans.

Compiled by Dr Ingrid N. Visser, for One Voice, on 9 November 2021

Ingrid N. Visser (PhD)

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33 *See submission dated 6 November 2019, "Emergency hold for export permit for x2 Beluga to Spain" and supplied to Canadian Fisheries Minister Johnathan Wilkinson. Available from Ontario Captive Animal Watch and Zoocheck (www.zoocheck.com) and see https://archive.md/sj1mY*

34 *Spiegl M. & Visser I.N. 2015. CITES and the Marine Mammal Protection Act: Comity and Conflict at Loro Parque. Free Morgan Foundation. 129 pp.*

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Visser I.N. & Lisker R.B. 2016. Ongoing concerns regarding the SeaWorld orca held at Loro Parque, Tenerife, Spain. Free Morgan Foundation. 67 pp.

Zembla Dutch TV, documentary "Orca Morgan's life in captivity", where those responsible for Morgan when she was in the Netherlands acknowledge that she has been used outside of the intended and permitted uses and that they are unable to do anything as she now resides in Spain. https://youtu.be/XyFIbmFcuqM

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APPENDIX I

There are three cetacean tank systems at MarineLand.

***Figure A**. Google Earth image taken on 16 June 2018, showing the relative locations from North to South (with the entrance to the park just out of frame to the northwest). The species held in each tank system are indicated in the annotations.*

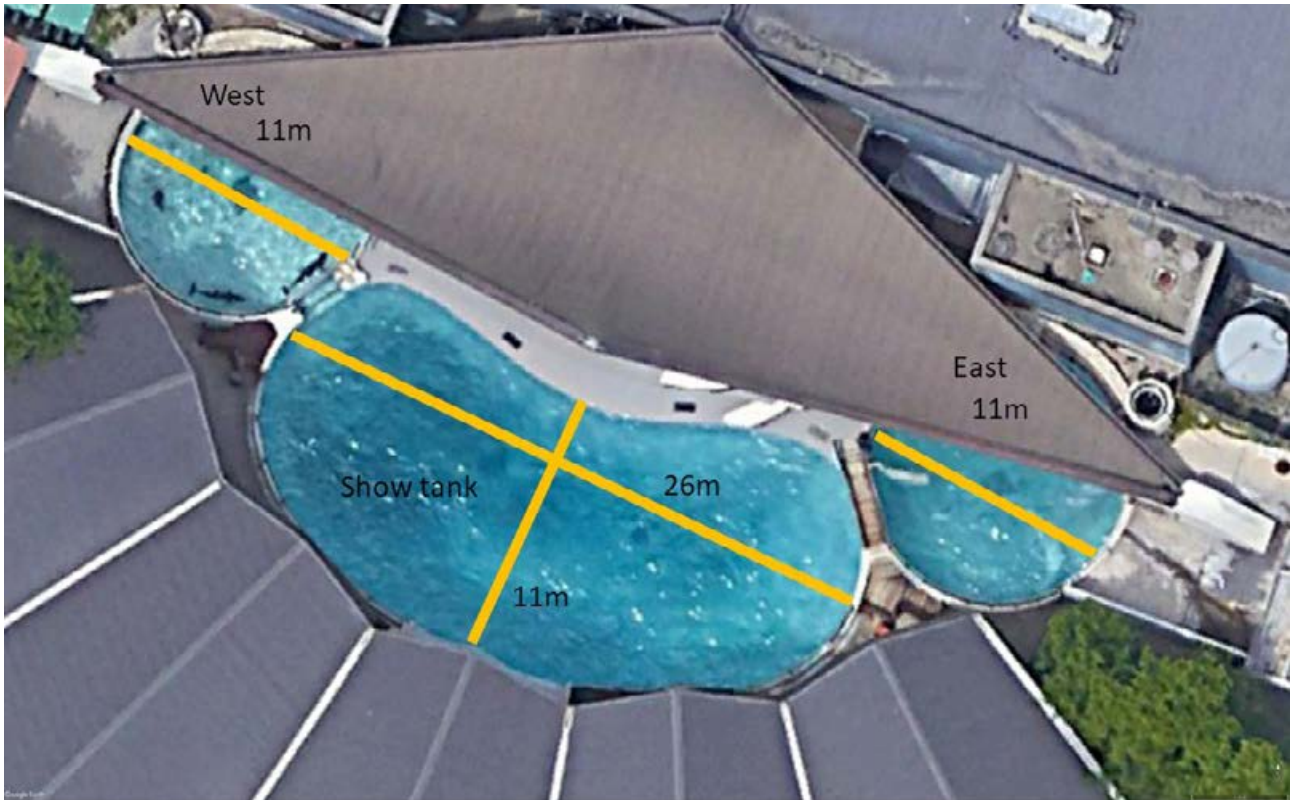

***Figure B**. Waldorf Stadium is comprised of one show tank and two circular tanks. Yellow lines and measurements indicate maximum distances in two directions across the show tank and the diameters of the West and East circular tanks. Five dolphins are kept in the West tank (two are visible) and two belugas (both are visible) are kept in the East tank. There are no 'behind the scenes' tanks – this is the entire tank complex.*

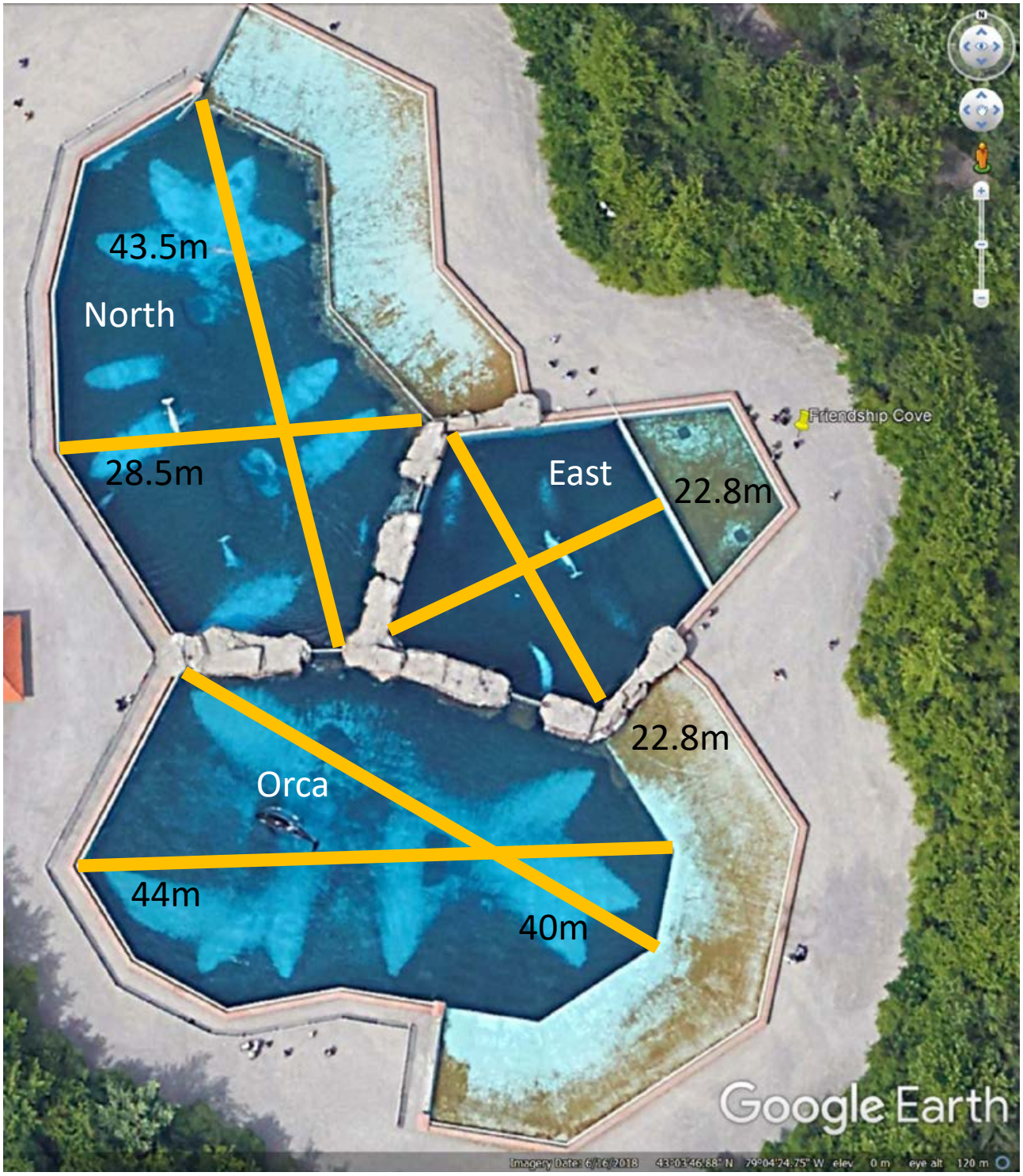

***Figure Ca**. Friendship Cove is comprised of two beluga tanks and one orca tank (however, the East beluga tank is occasionally opened to the orca – but only when the beluga are removed). Yellow lines and measurements indicate maximum distances in two directions across each tank. See Figures Cb to Cf for surface areas.*

***Figure Cb**. At Friendship Cove, the North tank has a minimum perimeter of 114 m and a minimum surface area of 817.66 m^2. Note this excludes the shallow area to the north-east of the tank, which is cordoned off by a fence. Measurements from Google Earth. A total of 10 belugas can be seen in the two tanks (see Figure Cc for a close up of the East tank).*

***Figure Cc**. At Friendship Cove, the East tank has a minimum perimeter of 71.5 m and a minimum surface area of 343.99 m^2. Note this excludes the shallow area to the east of the tank, which is cordoned off by a fence. A total of two belugas can be seen in this tank, but occasionally this tank is closed off to the beluga and is opened for the lone orca (who uses the south tank exclusively, see Figure Cd). Measurements from Google Earth.*

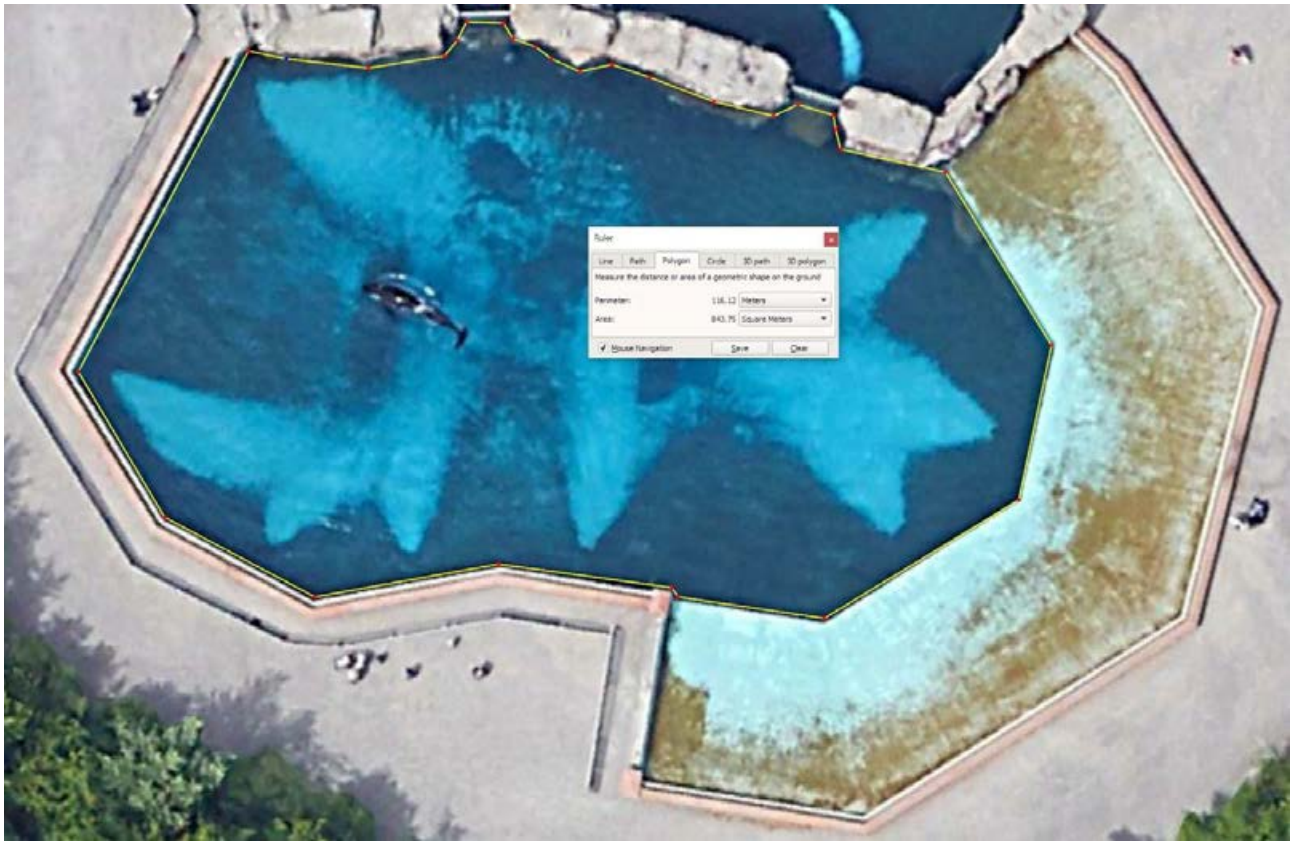

***Figure Cd**. At Friendship Cove, the orca tank has a minimum perimeter of 116.12 m and a minimum surface area of 843.75 m^2. Note this excludes the shallow area to the east of the tank, which is too shallow for Kiska to utilize effectively for swimming. One orca can be seen in this tank, but occasionally the East tank (visible with a single beluga near the gate) is opened for her use (however the beluga's are removed, so she remains socially isolated, no matter the tank configurations), see Figure Cc). Measurements from Google Earth.*

***Figure Ce**. At Friendship Cove, the North medical tank has a minimum perimeter of 87.75 m and a minimum surface area of 273.71 m². The maximum length is 36.5 m and the maximum width is 7.7 m. No cetaceans can be seen in this tank. Measurements from Google Earth.*

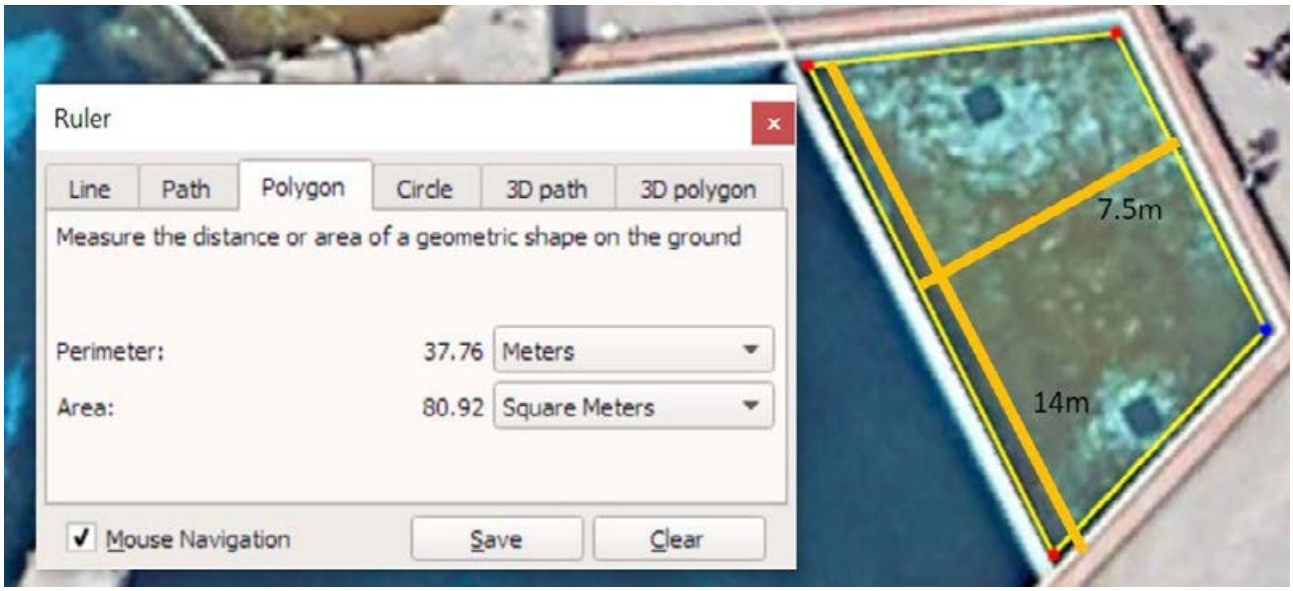

***Figure Cf**. At Friendship Cove, the East medical tank has a minimum perimeter of 37.76 m and a minimum surface area of 80.92 m². The maximum length is 17m and the maximum width is 7.5 m. No cetaceans can be seen in this tank. Measurements from Google Earth.*

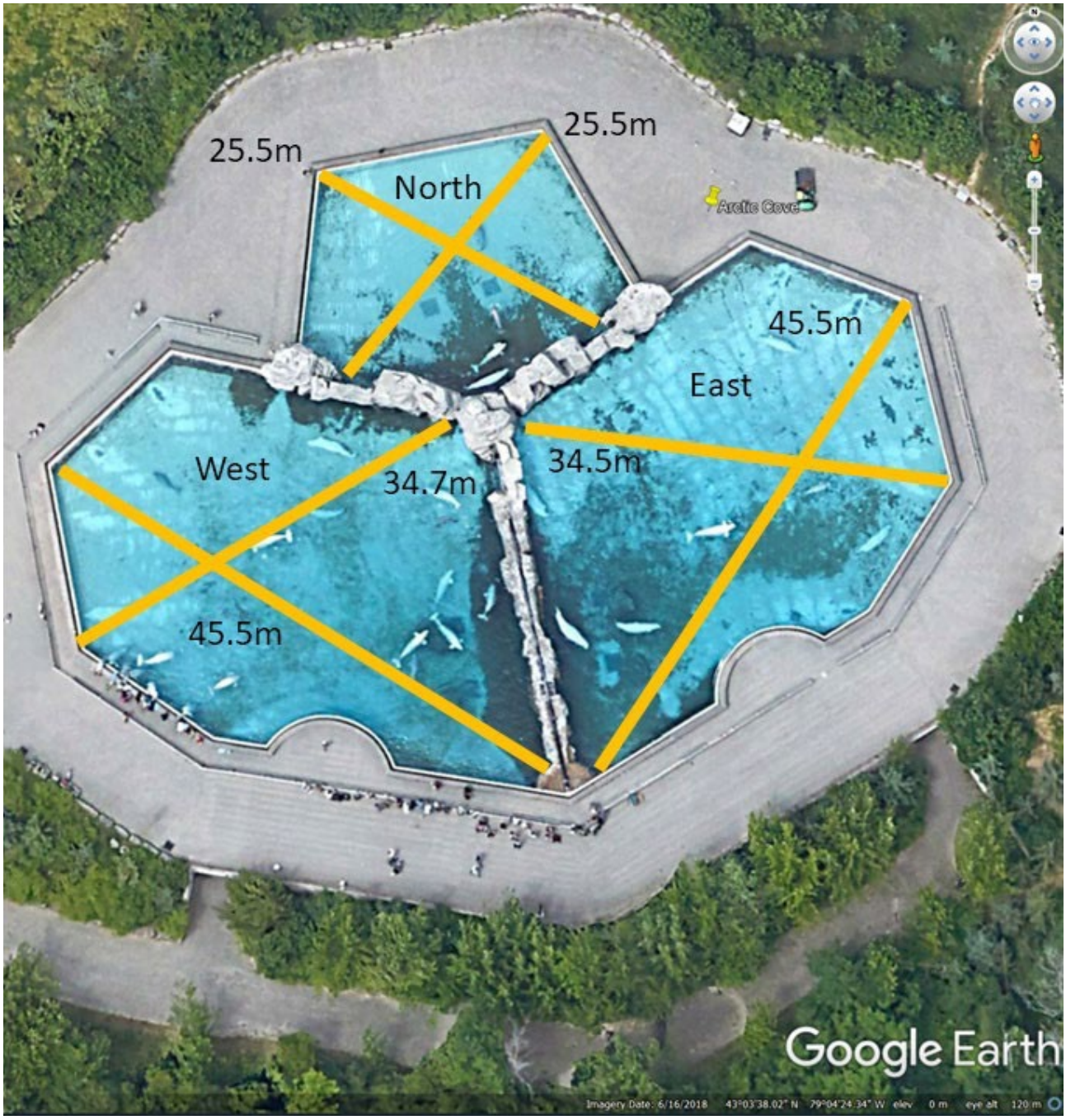

***Figure Da**. Arctic Cove is comprised of three tanks, all holding belugas. Yellow lines indicate maximum distances in two directions across each tank. See Figures Db to Dd for surface areas.*

***Figure Db**. At Arctic Cove, the North tank has a minimum perimeter of 78.17 m and a minimum surface area of 392.08 m². A total of four belugas can be seen in this tank. Measurements from Google Earth.*

***Figure Dc**. At Arctic Cove, the West tank has a minimum perimeter of 121.44 m and a minimum surface area of 895.20 m².*

***Figure Dd**. At Arctic Cove, the East tank has a minimum perimeter of 119.87 m and a minimum surface area of 895.87 m^2.*

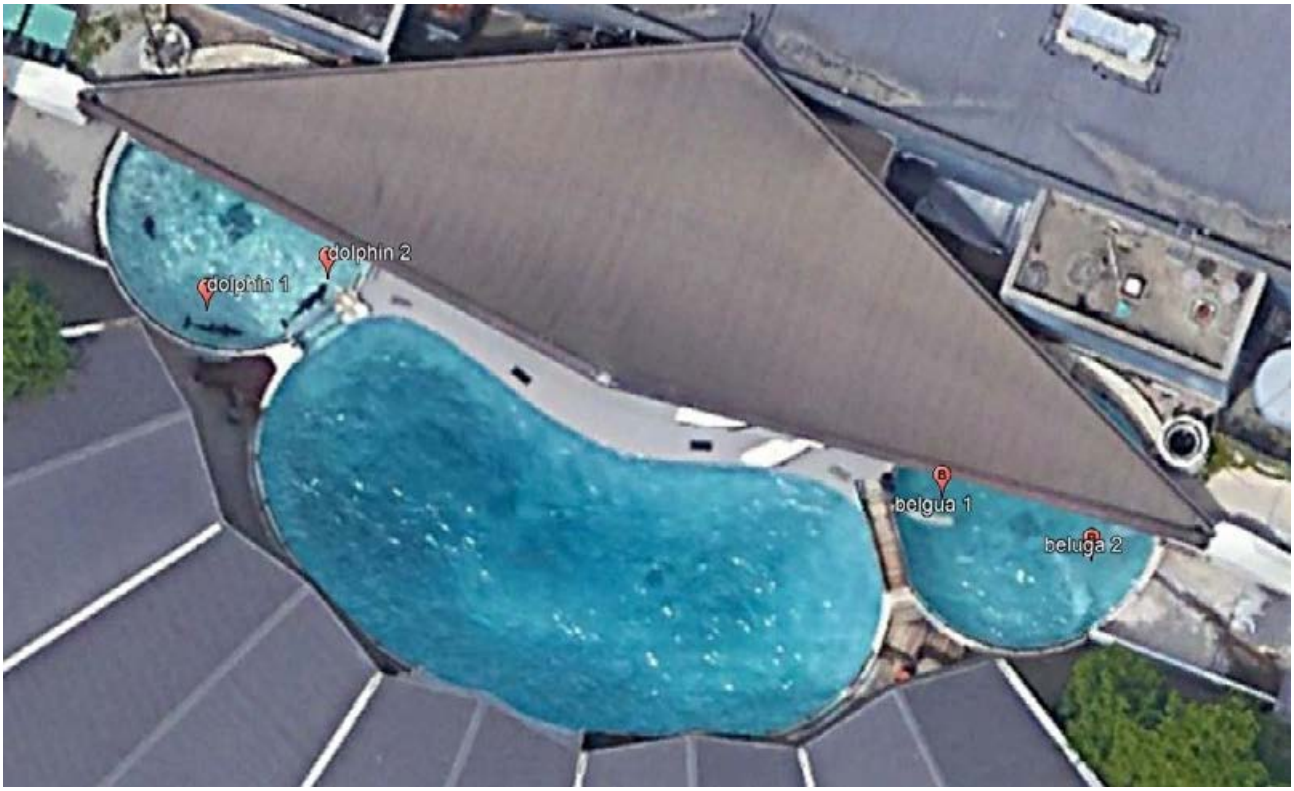

***Figure Ea**. At Waldorf Stadium 2 belugas and 2 dolphins can be seen in this tank system. Image from Google Earth taken on 16 June 2018.*

***Figure Eb**. At Friendship Cove total of 9 belugas and 1 orca can be seen in this tank system. Image from Google Earth taken on 16 June 2018.*

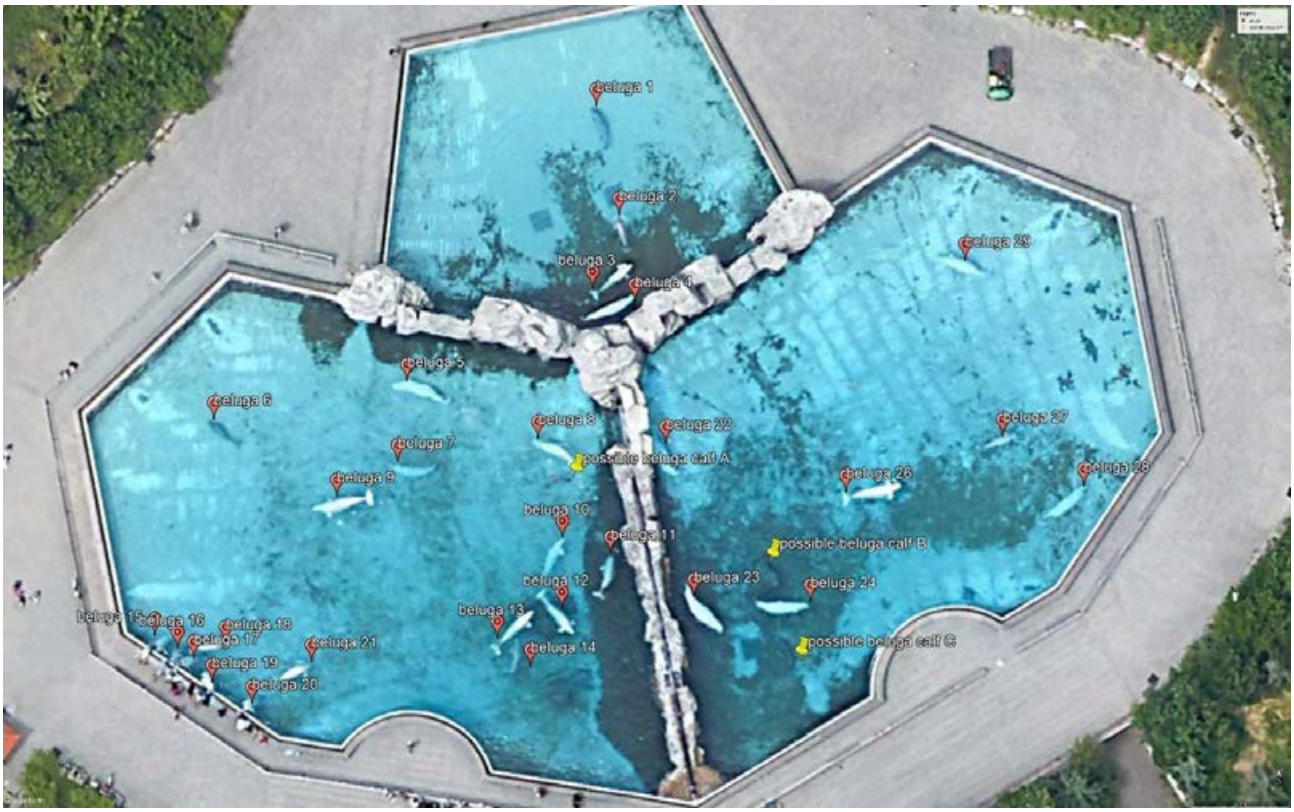

***Figure Ec**. At Arctic Cove at least 29 belugas can be seen in this tank (with a possible further 3 calves). Image from Google Earth taken on 16 June 2018.*

TANK DIMENSIONS, SURFACE AREA AND SPACE PER BELUGA

Table 1. Dimensions and surface area comparisons (see main text & figures herein for details) On the 16 June 2018, when the water clarity was sufficient to count most of the animals in images from Google Earth, 2 belugas were counted in the Waldorf Stadium, 9 in Friendship Cove, 28 in Arctic Cove (i.e., 39 belugas were at the facility).

FACILITY & TANK	Max length	Max width	Max depth (m)	Area (m^2) (measured)	belugas	Area m^2 / beluga
Waldorf Stadium West*	11 excluded	11 excluded	2?	83.28 excluded	0 excluded	0 excluded
Waldorf Stadium Show§	26	11	3?	263.84	2 Δ	131.92
Waldorf Stadium East	11	11	3?	83.28	(2 Δ)	41.64
Sub totals for Waldorf	**~**	**~**	**~**	**347.12**	**2**	**173.56**
Friendship North	43.5	28.5	10	343.99	7	
Friendship East	22.8	22.8	10	817.66	2	
Friendship North Medical	36.5	7.7	(2?)	273.71	0	~
Friendship East Medical	17	7.5	(2?)	80.92	0	~
Friendship Cove Orca*	44 excluded	40 excluded	10	842.64 excluded	0 excluded	0 excluded
Medical tank Orca (shallow areas)	excluded	excluded	2?	excluded	excluded	excluded
Sub totals for Friendship	**~**	**~**	**~**	**1,516.28**	**9**	**168.47**
Arctic Cove North	25.5	25.5	5	392.08	4	
Arctic Cove West	45.5	34.7	5	895.20	17	
Arctic Cove East	45.5	34.5	5	895.87	7	
Sub totals for Arctic				**2,182.48**	**28**	**77.94**
Total					**39ʊ**	**103.74**

* this tank is not available because of other species (bottlenose dolphin or orca)
ʊ this is the minimum number of beluga as an additional three calves (see Figure Ec)
§ this tank is typically not available but is included in the total space available
Δ these two beluga are either in the East tank or the Show tank (i.e., total of 2 in this tank system)

Table 2. Maximum dimensions of tanks *cf* number of beluga body lengths
Using an adult beluga size of 5.5 m (♂) and 4.3 m (♀)[1] the maximum number of body lengths that a beluga can swim in a straight line are indicated.

FACILITY & TANK	Max Tank length	# of body lengths
Marineland		
Arctic Cove North	25.5	4.6 ♂/ 5.9 ♀
Arctic Cove West	45.5	8.2 ♂/ 10.6 ♀
Arctic Cove East	45.5	**8.2 ♂/ 10.6** ♀
Friendship North	43.5	7.9 ♂/ 10.1 ♀
Friendship East	22.8	4.1 ♂/ 5.3 ♀
Friendship North Medical	36.5	6.6 ♂/ 8.4 ♀
Friendship East Medical	17	3 ♂/ 3.9 ♀

1 *Body sizes from Jefferson, T. A., M. A. Webber and R. L. Pitman (2008). Marine mammals of the world. A comprehensive guide to their identification. Amsterdam, Academic Press.*

THE WATER QUALITY STATUS

Since at least the 28th of May 2014 the poor water quality in the Friendship Cove tank system has been visible on Google Earth. The following are all the images available in the 'history' for this site, until the most current image 23 September 2018. For each image note the number of people around the tank edges and the distribution of the cetaceans to confrim that each image is from a different date.

***Figure Fa**. At Friendship Cove, the light blue areas are those that are relatively algae-free. The medical tank in the East tank shows a lighter green algae area. Taken 28 May 2014.*

***Figure Fb**. Although similar in distribution, the light blue areas in this image, taken 25 days later shows subtle differences compared to Fa. Taken 22 June 2014.*

***Figure Fc**. Taken 6 June 2015.*

***Figure Fd**. Taken 24 April 2016.*

***Figure Fe**. Taken 21 July 2016.*

***Figure Ff**. Taken 11 Sept 2016.*

***Figure Fg**. Taken 15 October 2016.*

***Figure Fh**. Taken 31 October 2016.*

***Figure Fi**. Taken 14 April 2017.*

***Figure Fj**. Taken 16 June 2018.*

***Figure Fk**. Taken 9 July 2018.*

***Figure Fl**. Taken 23 September 2018. (this is the most recent photograph available on Google Earth)*

APPENDIX 2

Extracts from the Ontario Animal Welfare Law "Standards of Care and administrative Requirements" as pertains to the cetaceans kept at MarineLand (Reg. 444/19). Under Provincial Animal Welfare Services Act, 2019, S.O. 2019, c. 13

The whole document can be consulted on this link:
January 1, 2020. **https://www.ontario.ca/laws/regulation/190444#BK6**

PART I
APPLICATION AND DEFINITION

Application
1. (1) The basic standards of care applicable to all animals are set out in section 3.

(2) In addition to the basic standards of care applicable to all animals set out in section 3,
(a) standards of care specific to dogs that live primarily outdoors are set out in section 4; and
(b) standards of care specific to wildlife kept in captivity are set out in sections 5 and 6.

(3) In addition to the basic standards of care applicable to all animals set out in section 3 and the standards of care specific to wildlife kept in captivity set out in sections 5 and 6, the standards of care specific to primates kept in captivity are set out in section 7.

(4) **In addition to the basic standards of care applicable to all animals set out in section 3 and the standards of care specific to wildlife kept in captivity set out in sections 5 and 6, the standards of care and administrative requirements specific to marine mammals kept in captivity are set out in Part III.**

(5) **A requirement that a standard of care be adequate and appropriate or necessary is a requirement that the standard of care be adequate and appropriate or necessary to the specific animal, having regard to its species, breed and other relevant factors.**

PART II
GENERAL STANDARDS OF CARE FOR ANIMALS

Standards of care for captive wildlife
5. (1) Wildlife kept in captivity must be provided with adequate and appropriate care, facilities and services to ensure their safety and general welfare as more specifically set out in subsections (2) and (3) and sections 6 and 7.

(2) Wildlife kept in captivity must be provided with a daily routine that facilitates and stimulates natural movement and behaviour.

(3) Wildlife kept in captivity must be kept in compatible social groups to ensure the general welfare of the individual animals and of the group and to ensure that each animal in the group is not at risk of injury or undue stress from dominant animals of the same or a different species.

Standards for enclosures for captive wildlife
6. (1) A pen or other enclosed structure or area for wildlife kept in captivity must be of an adequate and appropriate size,
(a) to facilitate and stimulate natural movement and behaviour;
(b) o enable each animal in the pen or other enclosed structure or area to keep an adequate and appropriate distance from the other animals and people so that it is not psychologically stressed; and
(c) to ensure that the natural growth of each animal in the pen or other enclosed structure or area is not restricted.

(2) A pen or other enclosed structure or area for wildlife kept in captivity must have,
(a) features and furnishings that facilitate and stimulate the natural movement and behaviour of each animal in the pen or other enclosed structure or area;
(b) shelter from the elements that can accommodate all the animals in the pen or other enclosed structure or area at the same time;
(c) surfaces and other materials that accommodate the natural movement and behaviour of each animal in the pen or other enclosed structure or area;
(d) one or more areas that are out of view of spectators; and
(e) one or more sleeping areas that can accommodate all the animals in the pen or other enclosed structure or area at the same time and that are accessible to all the animals at all times.

(3) A pen or other enclosed structure or area for wildlife kept in captivity must be made of and contain only materials that are,
(a) safe and non-toxic for the animals kept in the pen or other enclosed structure or area; and
(b) of a texture and design that will not bruise, cut or otherwise injure the animals.

(4) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and locked or otherwise secured to prevent,
(a) interaction with people that may be unsafe or

inappropriate for the wildlife;

(b) animals escaping from the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means; and

(c) animals or people, other than people who are required to enter the enclosure as part of their duties, from entering the pen or other enclosed structure or area by climbing, jumping, digging, burrowing or any other means.

(5) A pen or other enclosed structure or area for wildlife kept in captivity and any gates or other barriers to it, including moats, must be designed, constructed and maintained in a manner that presents no harm to the wildlife.

Standards of care for captive primates

7. Every primate kept in captivity must be provided with,

(a) daily interaction with a person having custody or care of the primate;

(b) a varied range of daily activities, including foraging or task-oriented feeding methods; and

(c) interactive furnishings, such as perches, swings and mirrors.

PART III
ADDITIONAL STANDARDS OF CARE AND ADMINISTRATIVE REQUIREMENTS FOR MARINE MAMMALS

ANIMAL WELFARE COMMITTEE

Animal welfare committee

8. (1) A person who possesses at least one marine mammal in Ontario shall establish and maintain an animal welfare committee to develop an animal welfare plan for each marine mammal the person possesses.

(2) Subsection (1) does not apply to a marine mammal who is possessed in Ontario for 30 continuous days or less.

(3) The animal welfare committee must be comprised of at least the following members:

1. A marine mammal veterinarian.
2. A person who,
   i. is not an employee or independent contractor of the person who possesses the marine mammal, and
   ii. is a resident of the municipality where the marine mammal is located.
3. A person who,
   i. is not an employee or independent contractor of the person who possesses the marine mammal, and
   ii. has studied marine mammal biology at a post-secondary institution.
4. A person who is responsible for the daily care of the marine mammal.
5. A person who is responsible for the maintenance of the location where the marine mammal is kept.

(4) The animal welfare committee must be chaired by the marine mammal veterinarian member.

(5) The chair of the animal welfare committee shall,

(a) schedule the animal welfare committee's meetings;

(b) conduct the animal welfare committee's meetings;

(c) determine the number of members of the animal welfare committee that constitutes a quorum for any purpose; and

(d) provide recommendations to the person who possesses the marine mammal regarding persons to appoint to the animal welfare committee, if appropriate.

(6) The animal welfare committee must meet at least once every six months.

Animal welfare plan

9. (1) An animal welfare plan must include at least the following:

1. Procedures for routine interactions with, and routine care of, the marine mammal.
2. Training requirements for the marine mammal.
3. A plan to collect and record information about the marine mammal, whether by observation of the animal's behaviour or by other means, to ensure that appropriate care can be provided to it and to ensure that the animal welfare plan is based on appropriate evidence.
4. Minimum staff and resource requirements to ensure the physical, psychological and social well-being of the marine mammal.
5. A stimulation program that is sufficient to maintain the marine mammal's health and mental wellness.
6. Appropriate social groupings for the marine mammal, including consideration for a companion animal if the marine mammal is the only animal housed in its enclosure.
7. A plan for providing the marine mammal with feedings at night, if appropriate.
8. A plan for providing the marine mammal with social interaction at night, if appropriate.
9. A plan for providing the marine mammal with training, social enrichment and play sessions, if appropriate.
10. A list of the types of environmental enrichment objects that must be provided in the enclosure of the marine mammal, if any, the number of objects that must be provided and the schedule for changing those objects.
11. Detailed species-specific enclosure and environmental requirements for the marine mammal, including requirements regarding the number and type of fixed features to be included in the marine mammal's enclosure, that take into account the unique needs of the individual

marine mammal and that are designed to ensure its well-being and ensure compliance with the requirements of this Regulation.

12. If the marine mammal requires a portion of its enclosure be shaded, the minimum portion of the enclosure that must be shaded to meet its needs.
13. Situations where the marine mammal must be housed in an indoor enclosure, if any.
14. Methods to ensure that enclosure air is free of harmful concentrations of pollutants.
15. Measures to ensure the welfare of the marine mammal in the event of a disruption of normal operations, such as a power failure, an extreme weather event or a labour disruption.
16. A determination of whether it would be consistent with the immediate and long-term health of the marine mammal and of any offspring to attempt to breed the marine mammal, having regard to the age and health of the marine mammal, the health care needs of any offspring and the immediate and long- term housing needs of the marine mammal and of any offspring.
17. A plan for the care of any offspring if the marine mammal is to be bred, including procedures for hand-rearing the offspring if hand-rearing could be required.
18. Procedures for euthanasia of the marine mammal.
19. A list of records related to the marine mammal that must be maintained.

(2) In developing the portion of the animal welfare plan referred to in paragraphs 5 to 10 of subsection (1), the animal welfare committee must consult with a person or persons with expertise in the social and enrichment needs of the marine mammal's species.

(3) The animal welfare committee must complete the animal welfare plan within six months after the day the person obtained possession of the marine mammal.

(4) The animal welfare committee must review every animal welfare plan it has developed at least annually.

Compliance with animal welfare plan

10. Every person who has custody or care of a marine mammal shall ensure that the marine mammal is cared for in a manner that is consistent with its animal welfare plan.

HEALTH AND GENERAL CARE

Nutrition

11. (1) Every marine mammal must be provided with a diet that,

(a) includes a sufficient range of food of appropriate quality that meets the nutritional needs of the marine mammal;

(b) accommodates individual preferences, subject to the availability of particular types of fish or other food items; and

(c) complies with the dietary requirements in the program of preventative health care referred to in section 13.

(2) Vitamin supplementation must be provided in accordance with a marine mammal veterinarian's advice.

(3) Food inventories for the marine mammal must be managed and properly stored to ensure the availability of food of appropriate quality that meets the nutritional needs of the marine mammal.

(4) Any sudden or unexpected change in a marine mammal's appetite must be brought to a marine mammal veterinarian's attention immediately.

(5) Food deprivation shall not be used as a method of training a marine mammal.

Reproduction

12. (1) The reproduction of every marine mammal must be managed in a way that promotes the immediate and long-term health of the marine mammal and any offspring.

(2) Pre-parturient and lactating female marine mammals must be held in appropriate social groups within enclosures that encourage successful rearing of offspring.

(3) A marine mammal must not be bred if the breeding would be inconsistent with its animal welfare plan.

Preventative and veterinary care

13. (1) Every marine mammal must be provided with a program of preventative health care designed by a marine mammal veterinarian.

(2) The program must include,

(a) a complete annual physical examination;

(b) the establishment of diets specific to the marine mammal;

(c) regular oral examinations at frequencies specified by the marine mammal veterinarian; and

(d) regular treatment of any dental problems.

(3) Every marine mammal must be under the care of a marine mammal veterinarian who provides preventative care and who is readily available to provide emergency care at any time of day.

Post mortem examination

14. (1) If a marine mammal dies, a post mortem examination of the body must be conducted by a marine mammal veterinarian.

(2) The findings of the marine mammal veterinarian must be recorded in a report that is reviewed by a pathologist with experience caring for marine mammals.

(3) The marine mammal veterinarian must be asked for recommendations to prevent similar deaths.

Public contact program

15. (1) This section applies to marine mammals who are housed in an enclosure that could expose them to physical contact with members of the public.

(2) The person who possesses the marine mammal must have a written policy that,

(a) clearly identifies any risks to the health or safety of the marine mammal associated with the physical contact;

(b) identifies and addresses any other safety issues or concerns; and

(c) identifies the qualifications of the persons who are overseeing the physical contact.

(3) Any risks identified in the written policy must be mitigated.

Enrichment and social needs

16. (1) Every marine mammal must be provided with a feeding enrichment program which may include, but is not limited to, the use of live fish, the introduction of novel foods or the use of task-oriented feeding methods.

(2) Every marine mammal must be provided with daily training, social enrichment and play sessions unless otherwise specified in its animal welfare plan.

(3) The enclosure of every marine mammal must have the environmental enrichment objects, if any, specified in its animal welfare plan.

(4) The environmental enrichment objects must be non-toxic and must not be breakable or ingestible by the marine mammal.

ENCLOSURE

General enclosure requirements

17. (1) Every marine mammal must be provided with an enclosure that meets the requirements of this section.

(2) Measures must be taken to minimize the risk that the enclosure will be contaminated with potentially harmful microorganisms.

(3) The enclosure must be provided with a backup generator or generators that are sufficient to provide power to the enclosure in the event of a power failure.

(4) The enclosure must meet the following requirements:

1. The enclosure must provide the marine mammal with sufficient space and features for species-appropriate activities both in and, if appropriate, out of the water.
2. The enclosure must be designed to facilitate cleaning.
3. The enclosure must include fixed features that provide visual and tactile enrichment, which may include, but are not limited to, any of the following:
   i. Bubble walls.
   ii. Privacy baffles.
   iii. Different substrates.
   iv. Water jets.
   v. Sprinklers.
   vi. Mirrors or other reflective surfaces.
   vii. Areas on the bottom of the pool that simulate pebbles on the seafloor.
4. If more than one marine mammal is housed in the enclosure, the enclosure must include privacy baffles, other fixed features or retreat areas that allow a marine mammal to separate itself from other marine mammals in order to avoid aggression, unwanted attention or disturbance.
5. The enclosure must have a drain that can lower water levels to facilitate cleaning and animal management activities.

(5) In addition to a pool of water, an enclosure that houses a sea otter or a member of the family Phocidae (true seals), the family Otariidae (eared seals and sea lions) or the family Odobenidae (walruses) must have a permanent haul-out.

(6) The haul-out mentioned in subsection (5) must be capable of simultaneously accommodating all of the marine mammals listed in that subsection that are housed in the enclosure.

Enclosure water quality

18. (1) Every marine mammal in an enclosure must be provided with a reliable water supply that is sufficient to ensure the marine mammal's health.

(2) The person who possesses the marine mammal shall maintain a program for monitoring water quality to ensure that a healthy aquatic environment is provided, including daily monitoring of water salinity.

(3) The salinity of the water must be maintained within the range appropriate for the marine mammal.

(4) The results of the water quality tests must be recorded and kept for at least one year.

(5) Water circulation equipment in the enclosure must be sufficient to circulate water throughout the pool.

(6) An enclosure that houses a marine mammal must meet the following water quality requirements:

1. Coliform bacteria in the water must not exceed 500 MPN (most probable number) per 100 mL, and testing must occur at least weekly.
2. The water must be tested at least twice daily and

treated as necessary to maintain pH values not less than 7.2 or more than 8.2.
3. The total free and combined chlorine concentration must not exceed 1.5 mg/L, and the water must be tested at least twice daily for chlorine concentration.
4. The water must be free of residual dissolved ozone.

Environmental protection

19. (1) Every marine mammal must be provided with environmental temperature and humidity ranges appropriate for the species.

(2) Every marine mammal must be provided with shelter from inclement weather if it is necessary for the marine mammal's comfort or well-being.

(3) Any artificial light used in the enclosure must be as similar as possible to the light spectrum of sunlight.

(4) Every marine mammal must be provided with exposure to natural or simulated annual photoperiods that reflect the needs of the species, particularly with respect to moult.

(5) Every marine mammal must be protected from noise that could cause auditory discomfort or distress.

(6) The enclosure air must be free of harmful concentrations of pollutants.

(7) Every marine mammal must be housed in an enclosure that is outdoors or that provides access to an outdoor area unless its animal welfare plan provides otherwise.

(8) Every marine mammal must be provided with an area of shade in its enclosure in accordance with its animal welfare plan.

Other enclosures and areas

20. (1) An enclosure for veterinary care or temporary holding of marine mammals must be provided.

(2) A quarantine area to isolate marine mammals must be provided.

(3) A method to separate any marine mammal for behavioural or management purposes must be provided.

OTHER ADMINISTRATIVE REQUIREMENTS

Information management and records

21. (1) Every marine mammal must be individually identifiable.

(2) The means used to ensure that a marine mammal is individually identifiable must be minimally intrusive.

(3) Procedures must be put in place for every marine mammal to ensure timely transfer of critical information between persons who provide care to the marine mammal.

(4) The following records must be kept for every marine mammal:

1. The date that possession of the marine mammal was obtained by the person who possesses the marine mammal.
2. Whether the marine mammal was captive-born or wild-caught.
3. The name of the person from whom the marine mammal was acquired, if applicable.
4. The species, sex, colour, markings and physical abnormalities, if any, of the marine mammal.
5. The marine mammal's date of birth or, if wild-caught, the marine mammal's estimated date of birth.
6. The marine mammal's parents, if known.
7. Records related to any attempt to breed the marine mammal, including the identity of the marine mammal with which breeding was attempted, the outcome of the breeding and the identity of any offspring.
8. Veterinary clinical records.
9. A list of any medication given to the marine mammal and the reason for which it was given.
10. Training records.
11. A record of any abnormal behaviours exhibited by the marine mammal, including the expression of any stereotypies, such as inappetence or food refusal, vomiting, actions that result in self-inflicted injuries or aggression towards trainers or other animals.
12. Any information that the marine mammal's animal welfare plan requires to be maintained.

(5) The records required by this section must be retained for five years following the death of the marine mammal.

Transfer and movement

22. (1) A written policy must be prepared for every marine mammal to promote the marine mammal's welfare when it is transferred between social groups or moved to another location.

(2) Before a marine mammal is transferred or moved, a behavioural and medical assessment must be carried out by a marine mammal veterinarian to determine whether it can be safely transferred or moved.

(3) Before a marine mammal is transferred or moved, the transportation must be planned and documented in a detailed transportation plan, approved by the marine mammal's animal welfare committee, that addresses the marine mammal's health and well-being during transport.

(4) The transportation plan must accompany the marine mammal during the transfer or move and be made available for review by any person involved in the transfer or move.

(5) A marine mammal must be accompanied by one or more attendants during the transfer or move who are competent and knowledgeable in the transportation of that species. At least one of the attendants must be a marine mammal veterinarian or a person licensed to practise veterinary medicine in the jurisdiction to which the marine mammal is being moved or from which it is being moved.

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