

The Importance of Evidence, Animal-Based Measures, and the Rule of Law to Ensure Good Animal Welfare

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Marine mammals are among the planet's most popular animals, capturing the public's imagination and affection. This is most readily evidenced at zoological parks where dolphins, killer whales, and other marine mammals inspire, educate, and motivate visitors to care about the natural environment and the animals that inhabit it (Miller et al., 2013). Positive experience with animals crosses generational, economic, and cultural divides: zoological parks provide a safe and accessible place for people to experience and appreciate these intelligent and athletic animals up close.

But beyond the visitor's experience and out of the public eye, the keeping of marine mammals in human care also complements and advances *in situ* species protection. In fact, the legal obligation to engage in *ex situ* conservation under the Convention on Biological Diversity (1993) is met in large part through the work of public and private zoological parks and aquariums and related research. The importance of marine mammals in human care for conservation research also is well recognized. According to scientists, "critical research findings have come from studies of dolphins and related species in managed care environments, which have provided the vast majority of what is known about their perception, physiology, and cognition. . . . The benefits of such research extend well beyond the animals in zoological facilities." As the scientists further note, "The advances that have come from research in marine mammal facilities could not have come from studies of animals in the wild" (*Scientific Statement*, 2016).

While the value of marine mammals in human care for public education, scientific research, and species conservation is clear, the question arises as to how we ensure that the welfare needs of these animals are met. This article describes the international regulatory framework for animal welfare and the trend towards an animal-based approach. It further examines the roles played by professional organisations, governments, the public, and courts in creating the regulatory environment for marine mammals in human care. It concludes that achieving good animal welfare requires professional expertise paired with

informed governmental decision making that reflects sound science, and appropriate checks and balances by courts.

The Role of Accreditation and Certification

Quality zoological parks and aquariums seek membership in professional organizations to participate in collaborative species management programs and scientific study, benefit from information exchange, share and further develop best practices, and address common challenges. A key attribute of these associations, organized at the national or multinational level, is accreditation. According to the European Association of Zoos and Aquariums (EAZA) website, "Running a zoo or aquarium for *ex situ* conservation is a complex interaction of scientific principle, ethics and culture. A shared set of standards and documents helps our members to work together to ensure constantly improving animal welfare, education, research and conservation across Europe and report our progress objectively to our visitors."

Professional association requirements, including standards and guidelines that address animal welfare, generally exceed governmental regulations. For example, while governments require suitable water quality in marine mammal habitats, the standards and guidelines of the Alliance of Marine Mammal Parks and Aquariums (Alliance) and the European Association for Aquatic Mammals (EAAM) require members to meet exacting specifications and maintain documentary evidence of their compliance to ensure good animal welfare (see EAAM, 2009; Alliance, 2017). Accreditation by specialized marine mammal organizations such as the Alliance and EAAM or broader membership organizations such as EAZA can be seen as a "gold standard" that also prompts action by other animal facilities to achieve similar levels of excellence.

Third-party certification systems are complementary to association accreditation programs and can improve public confidence that the welfare needs of animals are being met. The Humane Conservation™

program is a positive example (American Humane, 2016). It is the world's largest certifier of the welfare and humane treatment of animals. Its relatively new program for zoological parks and aquariums has certified 15 parks in the United States and 24 worldwide, including prominent marine mammal parks and aquariums in Canada, France, Hong Kong, Italy, Mexico, and Spain. According to program operator American Humane, "Third-party validation by a trusted organization with verifiable and impartial science-based systems can do much to earn and deserve the confidence that an institution is meeting the humane standards rightly demanded by the public."

The Role of Regulation

While accreditation and certification programs may offer the most detailed and informed controls to ensure good welfare in zoological parks and are important for the public, not every facility opts to participate in such programs. Governmental regulation and oversight, therefore, are important to ensure that all animals in human care are protected. Animal welfare regulation around the world is influenced by international agreements, which can drive global consideration of more effective approaches to ensure good welfare.

International Regulation and the Trend Towards Animal-Based Approaches to Welfare

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is the most prominent multilateral agreement influencing the regulation of marine mammal species around the world. As an instrument designed to ensure sustainable trade, CITES (1973) is not primarily concerned with animal welfare, but addresses welfare as an ancillary matter. For example, the government of an importing country cannot issue an import permit for highly endangered species until it is "satisfied that the proposed recipient of a living specimen is suitably equipped to house and care for it" (Article III.3[b]). CITES does not impose any specific requirements but, instead, leaves it to facilities to demonstrate to their own government the adequacy of the proposed arrangements for the animals concerned. In addition, the export of a live animal of any CITES-listed species is possible only when the government of an exporting country "is satisfied that any living specimen will be so prepared and shipped as to minimize the risk of injury, damage to health or cruel treatment" (Article III.2[c], 5[b]; Article IV.2[b]). CITES guidelines on live animal transport incorporate by reference the International Air Transport Association (IATA) Live Animal Regulations (CITES Resolution Conf. 10.21, 2016).

The World Organisation for Animal Health (known by its French acronym OIE) was founded in 1924 to set intergovernmental animal health standards primarily to manage and control the spread of animal-borne disease. In 2002, its mission was expanded to include animal welfare in light of the close relationship between welfare and health. Its present-day mission includes assisting 180 government members to adopt and implement animal welfare standards, taking into account economic and cultural variations among countries. The first OIE animal welfare standards were published in 2005 and addressed terrestrial animals and farmed fish. As of today, OIE's work remains focused primarily on production animals, but its principles are of general applicability.

The OIE's (2017) *Terrestrial Animal Health Code* defines *welfare* to mean "how an animal is coping with the conditions in which it lives." To make this determination, the OIE advocates the use of outcome-based indicators instead of performance-based prescriptions. This means assessing health and welfare by measurable criteria (e.g., weight, activity, cortisol levels, etc.) rather than over-reliance on prescriptive measures such as mandated enclosure sizes. According to the OIE (2018), animal welfare standards "should focus on the results achieved for the animal."

National Approaches to Regulating Marine Mammal Welfare

The European Union has aligned itself with the OIE's recommendation for a results-driven approach and has created nonbinding protocols to facilitate assessment of the welfare of cattle, pigs, and poultry and other agricultural species (European Commission, 2012-2015). Academic and practical work on objective indicators for many other species is in process. For example, a comprehensive framework for assessing the welfare of bottlenose dolphins and other marine mammal species holds great promise (Clegg et al., 2015). Validation of the 36 proposed measures is underway.

Regrettably, national regulations generally remain focused primarily on resource-oriented rules rather than best results for the animals. For example, national regulations applicable to marine mammals typically dictate space requirements, diet, noise levels, and training techniques. In Belgium, for example, general welfare requirements for all animals are accompanied by governmental orders applicable to zoological parks that specify on a species-by-species basis, the minimum and maximum numbers of animals that can be kept, minimum indoor and outdoor enclosure dimensions, required features in primary enclosures, and additional facilities that must be provided (Law of 14 August 1968; Royal

Decree, 1998; Ministerial Decree, 1999). Overly prescriptive rules can serve as a disincentive for innovative advances in animal care and fail to recognize differing management styles and individual animal needs and preferences.

Other laws reflect a more flexible approach. In Germany, zoological parks can be licensed only if official state veterinarians are satisfied that the welfare needs of the animals concerned are being met as required by the national animal welfare law. For this purpose, guidelines for keeping mammals, also applicable to marine mammals, have been developed to aid state veterinarians with inspections and to inform applicants of expectations (Federal Ministry of Food and Agriculture, 2014). Compliance with the guidelines creates a presumption of complying with the animal welfare law. Where zoological parks do not meet specified resource-based measures for a certain species, the burden shifts to the park to demonstrate that welfare needs are being met by alternative means. For example, if space requirements are not met, a zoological park must be able to demonstrate that reduced space is compensated by management practices and programmes ensuring that the animals have sufficient exercise, stimulation, etc., to maintain good animal health and welfare.

Progress towards an animal-based regulatory approach also has been achieved elsewhere. In the United States, the keeping of non-agriculture animals is governed at the federal level by the Animal Welfare Act (AWA) (1966), administered by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. The AWA requires facilities that display animals to the general public to be federally licensed and subject to regular inspections. Facilities must maintain a "program of veterinary care" and meet additional rules that govern housing and transport. The rules provide parameters that allow each facility to adapt its operations to meet the law's requirements. For example, facilities must ensure that animals can exhibit their normal behaviors while confined for transport or secondary housing. The regulations reflect a balance between prescriptive regulatory requirements and allowing each facility to cater to the needs of individual animals, different species, management styles, and physical environments.

The Role of Public Opinion

If political representatives properly represent the diverse views of their constituencies, then government regulation should reflect the will of the majority. However, in today's world of "fake news" and well-financed and often ideologically motivated activist organizations urging governments at every level to establish bans and regulatory restrictions relative to certain charismatic species of animals in

human care, the question arises as to whether legislation is indeed representative of the views of the people or fundamentally in the best interests of the animals.

The fabrication of news with the intent to deceive is clearly "fake news." But is it also "fake news" when "people knowingly portray false information as if it were true," when "journalists report stories before they check all their facts and sources to be sure they are accurate," or when "news organizations slant their stories to promote a certain point of view" (Knight Foundation, 2018). According to a 2017 survey on news media in the U.S. by Gallup and the Knight Foundation (2018), there is little consensus on the subject. What people do tend to agree on, however, is that misinformation on the Internet is a major problem (73%) and that the proliferation of online sources is making it more difficult to identify what is actually true or important (58%). Legislators are faced with the same challenge as the public to ascertain the accuracy of the information on which they rely in formulating policies and regulatory measures.

Those opposing the public display of marine mammals—and dolphins and killer whales (*Orcinus orca*) in particular—point to a growing list of countries that have established legislative bans and restrictions relative to cetaceans in an apparent effort to demonstrate a "trend" against cetaceans in human care. In reality, most of the countries mentioned have laws that prohibit the live take or import of cetaceans from the wild for commercial purposes and/or prohibit interactions, including swimming with and feeding of cetaceans in wild settings (Convention on Migratory Species, 2017). Australia, for example, is often held up as a "best case" example in campaigns against cetaceans in human care. Australian law does prohibit the take of a cetacean from the wild for live display (Environmental Protection and Biodiversity Conservation Act, 1999). However, Australia continues to be home to a well-known and popular marine mammal park exhibiting a variety of marine mammals, including captive-bred bottlenose dolphins, that serves public education, research, and conservation functions.

The list of national bans also is often used by campaigners to imply that marine mammal parks depend on ongoing takes of dolphins from the wild. In fact, the sustainability of populations of bottlenose dolphins in human care in accredited parks has been well secured through successful breeding efforts, thus eliminating the need for wild takes (van Elk & Garcia-Hartmann, 2013). Misleading information about bans and restrictions does not stop there. In a further example of taking liberty with the truth, the United Kingdom often is incorrectly reported as having banned the keeping of dolphins. The reality is that while no dolphins are kept in zoological parks

in the UK today, it remains possible under strict governmental guidelines (*Secretary of State's Standards*, 2012).

Another tactic by animal activists is to exploit isolated examples to support a campaign for a broadly applicable ban or restriction. The tactic of publicizing images of “sad” individual animals “behind bars” to fuel campaigns against all zoological parks is nothing new.

While nongovernmental organizations serve an important public function in bringing public attention to societal issues and injustices, sometimes what is advocated is not based on sound science or need from the perspective of the animal but, rather, on an ideological agenda. In the field of animal welfare, the objective of animal activist groups is often to secure governmental intervention to bring an end to activities or practices with which the groups disagree. But when such groups target zoological parks in general as opposed to shedding light on instances of noncompliance with the law or abuse or neglect, are they actually speaking for the public?

Take, for example, the United Kingdom. Every year, more than 700 million people visit zoos and aquariums worldwide (Gusset & Dick, 2011). Dolphins are among the most popular animals for visitors. It might be asked whether the absence of marine mammal parks in the UK is the reason that British nationals and residents appear to visit parks and engage in dolphin interactions in other countries more than any other demographic group. Whether or not their views can be said to accurately reflect public opinion, animal rights activist groups can have a significant impact on regulations in the name of animal welfare, particularly at the local government level.

The Role of Evidence

When governments take the time to inquire more deeply into “animal welfare” claims and consider how and why cetaceans are kept in zoological parks, they tend to reject proposals for bans and extreme restrictions. In Belgium, for example, the Parliament passed a nonbinding resolution in 2005 opposing the establishment of any new dolphinarium in the country. Not satisfied with this, activists continued to target the only park in Belgium and sought to close its doors. In 2011, a working group was created within the Belgian Council for Animal Welfare to re-evaluate the standards for keeping dolphins in captivity under Belgian law. This working group included experts from zoological parks, scientists, and representatives from the government and campaign organizations who claimed that the welfare needs of dolphins could not be met in human care. After two years of work, the Council for Animal Welfare concluded that scientific studies on

European dolphinarium did not show that the species were unduly stressed. It also concluded that there was no unequivocal evidence that keeping dolphins in human care negatively impacted their welfare. At the end of the day, the Council found that the discussion about keeping dolphins in captivity remains one based on ethics, conservation, and education—not welfare. As such, the Council made only limited recommendations for improvements at the Belgian park, advising that it should comply with EAAM standards and guidelines on space within 12 years (Opinion of the Belgian Animal Welfare Council, 2013).

In Germany, the Alliance 90/Greens brought a motion in the German Bundestag to end the keeping of dolphins. The Committee on Food, Agriculture and Consumer Protection held a public hearing on the matter in May 2013 at which zoological professionals, academics, biologists, and nongovernmental organizations presented evidence and views. Having received this information, the Committee declined to take further action on the motion (German Bundestag, 2013). A similar motion to establish a ban on the keeping of cetaceans in the German state of North Rhine-Westphalia was rejected in October 2014 (State Parliament of Nordrhein-Westfalen, 2014).

Following the May 2017 announcement of a ban on keeping and reproduction of dolphins and orcas in France, animal activists began work to urge other EU countries to follow suit. The Dutch Minister of Economic Affairs swiftly rejected the idea. In a letter to the Dutch Parliament, the Minister stated that a ban on cetaceans was unnecessary because the park in the Netherlands possesses a zoo license under which it is required (1) to hold the animals in a way that respects as much as possible the different behaviors of the animals, whereby the social lifestyle of the animals must be taken into account as well as the needs of the individual animals; (2) provide information and educational programs to its visitors; (3) take part in research that is beneficial to the conservation of animal species; and (4) adequately train the staff and exchange information with other zoological parks (Letter from Dutch Minister to Parliament, 2017).

Increasingly, activists focus their campaigns on government officials and politicians at a more local level. Legislative initiatives within local or regional bodies pose greater risks of resulting in non-evidence based bans and restrictions because of the short timeframe typically involved from publication of the proposal to decision. As the texts of such proposals generally incorporate the same unsubstantiated claims shopped around by the activists, the campaigners’ lobbying often is clear on the face of the documents. Those who successfully influence officials or politicians to introduce such measures

also undoubtedly have information about when the proposed measure will be introduced within the legislative body. With this information, activist groups have time to line up supporters to carry out digital campaign activities and travel to any public hearings, to draft statements, to print banners, and to order t-shirts. The targeted parks, on the other hand, may only learn of proposals to shut down their activities when they hit the news.

The recent bill to prohibit the transfer of captive cetaceans in the State of Hawaii is a classic example. On 24 January 2018, two Hawaiian state senators introduced a bill that would prohibit the state government from issuing a permit for the inter-state, intra-state, or inter-facility transfer of captive cetaceans for “breeding and entertainment purposes.” The bill contained demonstrably unsubstantiated claims and allegations taken straight from the activists’ songsheets. For example, the bill stated that the legislature “finds [that] survivorship of cetaceans is reduced, sometimes drastically, in a captive environment” (Hawaii State Legislature, 2018b). It is simply untrue that survivorship of dolphins in marine mammal facilities is reduced compared to dolphins in the wild.¹

The Hawaiian bill passed a First Reading on 26 January 2018, just two days after it was introduced, and was referred to committee. Three days later, the Committee on Agriculture and Environment announced that it would hold a public hearing on the bill in just two days on 2 February 2018. The Committee received over 500 testimonies, 64% of which opposed the bill. Opposition letters were submitted by scientists who collaborate with the marine mammal parks in Hawaii to conduct research and collect data that is virtually impossible to gain from animals in the wild. Hundreds of Hawaii’s schoolchildren wrote opposition letters that highlighted the educational value of these institutions. A Change.org petition created by one of the Hawaiian marine life parks garnered almost 2,000 signatures in opposition to the bill within only three days. Local residents appeared in person to offer testimony in support of the keeping and breeding of cetaceans by the accredited parks in Hawaii. Based on this evidence and following consultation with Committee members, the Committee chair deferred the bill indefinitely (Hawaii State Legislature, 2018a).

Once a regulatory ban or restriction is put in place, governments typically are unwilling to actually consider whether the measure was founded on science and evidence; however, it does happen. Zoological parks in Italy provided evidence to government officials that the 2002 ban on in-water interactions with dolphins in Italy was not based on science and was contradictory to the fact that in-water interactions were allowed with other species. To its credit, the Italian government reviewed the evidence and prohibition in question. In early 2018, the Italian law

on the conservation of *Tursiops truncatus* specimens in human care was amended to eliminate the ban on public interactions with dolphins. Under the revised law, members of the public may enter the dolphin pool as part of specific programmes planned and carried out by licensed zoological parks for the purposes of public education and raising awareness about the conservation of biological diversity. Such programmes must be communicated to authorities more than 30 days in advance, and a veterinarian must determine the suitability of the animals involved and report on their health and well-being on an ongoing basis (Decree of 20 December 2017).

The Role of Courts

A number of recent cases illustrate how animal rights activist groups have improperly attempted to stretch the law but have been thwarted by the courts, which have applied well-established legal principles, if not plain old common sense.

In 2011, People for the Ethical Treatment of Animals (PETA) filed suit against SeaWorld in federal court in California, claiming that five of the company’s killer whales were being unlawfully imprisoned in violation of the Thirteenth Amendment to the U.S. Constitution, which prohibits “slavery and involuntary servitude.” The court was not the least fooled and threw out the case holding that “[t]he clear language and historical context reveal that only human beings, or persons, are afforded the protection of the Thirteenth Amendment.” Without a valid Thirteenth Amendment claim, because “the Amendment only applies to humans, and not orcas,” the court held that PETA had no standing to bring its case (*Tilikum ex rel. People for the Ethical Treatment of Animals, Inc. v. SeaWorld Parks & Entertainment, Inc.*, 2012).

Similar to PETA, but with a different approach, the Nonhuman Rights Project (2017) has filed four *habeas corpus* petitions over the last five years in two different U.S. states to secure (so-called) legally recognized fundamental rights for nonhumans for apes and elephants. It has lost all four cases but continues to persist with an appeal. In the most recently decided case, a Connecticut state court dismissed the petition for writ of *habeas corpus* filed to free three elephants, holding not only that the Project had no standing, but also that the petition was wholly “frivolous” without any chance of succeeding.

Earlier this year, a federal Court of Appeals based in Florida upheld a lower court’s ruling that the killer whale “Lolita” was not being “harassed” or “harmed” by its owner, Miami Seaquarium, under the Endangered Species Act. The court held that “[u]nder the ESA, ‘harm’ or ‘harass[ment]’ is only actionable if it poses a threat of serious harm” to the endangered species and that the evidence, even

when viewed most favorably to PETA and two other activist groups who had brought suit, did not meet that standard. The court found that the conditions under which Lolita was held fully complied with federal animal welfare standards under another statute, the AWA (*PETA v. Miami Seaquarium*, 2018). In essence, the court rejected the misguided theory that the activists had posited—namely, that keeping an animal as required by the AWA could nonetheless violate another federal statute.

In another case involving an individual animal, activist groups have repeatedly challenged a government permit allowing the transfer of an animal from one European park to another. The killer whale “Morgan” was rescued at the request of the Dutch government in June 2010 in shallow waters off the coast of the Netherlands and rehabilitated over the course of several months by a zoological park that also houses bottlenose dolphins. When it became clear that she would be unable to survive in the wild, the park proposed, and the government agreed, that she should be transferred to a zoological park in Spain where she could live with conspecifics.

Activist groups filed objections to the government’s decision to grant a permit for Morgan’s transport to Spain. In an administrative review in 2011, the government dismissed the claims, finding them to be unfounded (Secretary of State, 2011). Following this ruling and in accordance with the government-issued permit, Morgan was lawfully transported to her new home in November 2011. She quickly adjusted to her new home and conspecifics but subsequently was found to be deaf. The activists appealed the government’s decision, but their claims were rejected in 2012 (Court of Amsterdam, 2012). A further appeal was rejected by the highest state administrative court in 2014 (Council of State, 2014). Although Morgan continues to thrive in her new home, opponents persist in filing legal actions in the hope of one day releasing her into the wild where, experts agree, she will not survive. In 2017, the same groups filed another legal action claiming that the decision to move Morgan was based on incorrect information. The court’s decision is pending.

On 29 January 2018, the French administrative court invalidated a decree on the keeping of cetaceans on the grounds that it was adopted in violation of requirements for consultation with the public and a national expert body. The decision overturned a ban established by the previous government on the eve of presidential elections to prohibit the keeping of cetaceans, other than the 30 dolphins and killer whales present in France as of May 2017, and furthermore reversed a prohibition on breeding dolphins. Also invalidated with annulment of the decree were bans on the use of chlorine and animal interactions, and requirements for significant changes to enclosure sizes and features that

were not supported by evidence of need or benefit (Council of State, 2018).

Most recently, in February 2018, the Supreme Court of British Columbia overturned a prohibition by the Vancouver Park Board on the breeding and performance of cetaceans. The bans were invalidated on the grounds that the Park Board has no jurisdiction to impose restrictions on the day-to-day running of the aquarium in Vancouver, Canada (*Ocean Wise Conservation Association v. Vancouver Board of Parks and Recreation*, 2018).

Conclusion

Maintaining healthy and sustainable *ex situ* populations of marine mammals and other species in zoological parks can be critical for educating the public about biodiversity challenges and solutions and for contributing to *in situ* conservation and habitat protection. Unfortunately, when public policy is unduly influenced by emotion or ideologically based decision making rather than sound science, the unintended consequences can impact not only animal welfare but education, conservation, and research. Additionally, overly prescriptive regulatory frameworks which are not “animal centric” can stifle innovations and improvements in animal care that can best be achieved by experienced professionals in the interest of the animals. Proper regulation, oversight, and enforcement will always be necessary to protect animals in case of human failure to do so. Where governments or activists overstep the mark, courts have an important role to ensure that animal welfare regulation is evidence-based and properly applied.

Endnote

¹ While this may have been true decades ago (as noted in older references sometimes used to support this claim), survival rates have consistently increased over the years in marine mammal parks and aquariums (Small & DeMaster, 1995; Innes, 2005), with the most recent study showing an annual survival rate of 0.97 for dolphins in U.S. facilities (Innes, 2005). This is demonstrably higher survival rate than found for populations of wild dolphins, with survival rates ranging from 0.902 to 0.961 (Wells & Scott, 1990; Stolen & Barlow, 2003; Mattson et al., 2006; Neuenhoff, 2009; Robeck et al., 2015).

Literature Cited

- Alliance of Marine Mammal Parks and Aquariums (AAMPA). (2017). *AAMPA accreditation standards & guidelines*. Alexandria, VA: AAMPA.
- American Humane. (2016). *Arks of hope, ambassadors for animals: The pivotal position of zoos and aquariums and next steps in ensuring the welfare of animals in*

- human care*. (White paper). 26 pp. Retrieved from <http://humaneconservation.org/about/white-paper>
- Animal Welfare Act (AWA), 7 U.S.C. § 2131 et seq. (1966) (United States).
- Clegg, I. L. K., Borger-Turner, J. L., & Eskelinen, H. C. (2015). C-Well: The development of a welfare assessment index for captive bottlenose dolphins (*Tursiops truncatus*). *Animal Welfare*, 24, 267-282. <https://doi.org/10.7120/0962786.24.3.267>
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 993 UNTS 243, Article III.2(c), 5(b); Article III.3(b); and Article IV.2(b) (1973). Retrieved from www.cites.org
- CITES, Resolution Conf. 10.21 (Rev. CoP16), *Transport of live specimens*. (2016). Retrieved from <https://www.cites.org/eng/res/10/10-21R16.php>
- Convention on Migratory Species of Wild Animals, COP12/Doc.24.2.4/Rev2 (22 June 2017).
- Council of State. (2014, April 23). Case No. 201300892/1/A3 (The Netherlands).
- Council of State. (2018, January 29). Case Nos. 412210 and 412256 (France).
- Court of Amsterdam. (2012, December 13). Case Nos. 11/5030 and 11/5031 (The Netherlands).
- Decree of 20 December 2017, Implementation of directive 1999/22/CE relating to the keeping of wild animals in zoos (GU Serie Generale n.2 del 03-01-2018), Article 37 (Italy).
- Environmental Protection and Biodiversity Conservation Act, Section 238 (1999) (Australia). Retrieved from www.legislation.gov.au/Details/C2016C00777
- European Association for Aquatic Mammals (EAAM). (2009, September). *Standards and guidelines for the management of bottlenose dolphins (Tursiops sp.) under human care*. Brussels, Belgium: EAAM.
- European Association for Zoos and Aquaria (EAZA). *EAZA documents*. Retrieved from <https://www.eaza.net/about-us/eazadocuments>
- European Commission. (2012-2015). *Communication from the European Commission on the EU Strategy for the Protection and Welfare of Animals* (COM(2012) 6 final/2).
- Federal Ministry of Food and Agriculture. (2014). *Opinion on minimum requirements for the keeping of mammals* (Germany). Retrieved from www.bmel.de/SharedDocs/Downloads/Tier/Tierschutz/GutachtenLeitlinien/HaltungSaeugetiere.pdf?__blob=publicationFile
- German Bundestag. (2013). *Controversy over 16 dolphins in German zoos* (Germany). Retrieved from https://www.bundestag.de/dokumente/textarchiv/2013/44669679_kw20_pa_landwirtschaft/212286
- Gusset, M., & Dick, G. (2011). The global reach of zoos and aquariums in visitor numbers and conservation expenditures. *Zoo Biology*, 30, 566-569.
- Hawaii State Legislature. (2018a). *SB 3055, Relating to cetaceans* (United States). Retrieved from https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=3055
- Hawaii State Legislature. (2018b). Senate Bill No. 3055, Section 1 (United States). Retrieved from www.capitol.hawaii.gov/session2018/bills/SB3055.htm
- Innes, W. S. (2005). *Survival rates of marine mammals in captivity: Temporal trends and institutional analysis* (Master's thesis). Duke University, Durham, NC.
- Knight Foundation. (2018). *American views: Trust, media and democracy*. Retrieved from <https://knightfoundation.org/reports/american-views-trust-media-and-democracy>
- Law of 14 August 1968 concerning the protection and well-being of animals (Belgium).
- Letter from the Dutch Minister of Economic Affairs to the Dutch Parliament, reaction to the letter of the Foundation Bite Back concerning the prohibition on importing and breeding dolphins in captivity and for entertainment (25 October 2017) (The Netherlands).
- Mattson, M. C., Mullin, K. D., Ingram, G. W., Jr., & Hoggard, W. (2006). Age structure and growth of the bottlenose dolphin (*Tursiops truncatus*) from strandings in the Mississippi Sound region of the north-central Gulf of Mexico from 1986-2003. *Marine Mammal Science*, 22, 654-666. <https://doi.org/10.1111/j.1748-7692.2006.00057.x>
- Miller, L. J., Zeigler-Hill, V., Mellen, J., Koepfel, J., Greer, T., & Kuczaj II, S. A. (2013). Dolphin shows and interaction programs: Benefits for conservation education? *Zoo Biology*, 32, 45-53.
- Ministerial Decree of 3 May 1999 laying down minimum standards for the keeping of mammals in zoos (Belgium).
- Neuenhoff, R. D. (2009). *Age, growth and population dynamics of common bottlenose dolphins (Tursiops truncatus) along coastal Texas* (Master's thesis). Texas A&M University, College Station.
- Nonhuman Rights Project, Inc. ex Rel. Beulah, Minnie & Karen*, 2017 WL 7053738 (CT. Sup. 2017) (United States).
- Ocean Wise Conservation Association v. Vancouver Board of Parks and Recreation*, 2018 BCSC 196 (Canada).
- OIE-World Organization for Animal Health. (2017). *Terrestrial animal health code*. Retrieved from <https://www.oie.int/doc/ged/D10905.PDF>
- OIE-World Organization for Animal Health. (2018). *Welfare at a glance*. Retrieved from www.oie.int/en/animal-welfare/animal-welfare-at-a-glance
- Opinion of the Belgian Animal Welfare Council of 10 December 2013 on the keeping of dolphins (Belgium).
- People for Ethical Treatment of Animals, Inc. v. Miami Seaquarium*, --- F. 3d ---, 2018 WL 385682 (11th Cir., 2018) (United States).
- Robeck, T. R., Willis, K., Scarpuzzi, M. R., & O'Brien, J. K. (2015). Comparisons of life-history parameters between free-ranging and captive killer whale (*Orcinus orca*) populations for application toward species management. *Journal of Mammalogy*, 96(5), 1055-1070. <https://doi.org/10.1093/jmammal/gyv113>
- Royal Decree of 10 August 1998 concerning the recognition of zoos (Belgium).
- Secretary of State. (2011, October 12). Decisions No. 11/5030 and 11/5031 (The Netherlands).

- Scientific statement supporting research and marine mammal facilities.* (2016). Retrieved from <https://www.aquablog.ca/2017/03/scientist-statement-supporting-research-in-marine-mammal-facilities>
- Secretary of State's standards of modern zoo practice, Annex G Supplement: Additional standards for UK cetacean keeping* (2012) (United Kingdom).
- Small, R. J., & DeMaster, D. P. (1995). Survival of five species of captive marine mammals. *Marine Mammal Science*, *11*, 209-226. <https://doi.org/10.1111/j.1748-7692.1995.tb00519.x>
- State Parliament of Nordrhein-Westfalen, Committee record Apr 16/711, Committee for Climate Protection, Environment, Nature Conservation, Agriculture and Consumer Protection, dated 29 October 2014 (Germany).
- Stolen, M. K., & Barlow, J. (2003). A model life table for bottlenose dolphins (*Tursiops truncatus*) from the Indian River Lagoon System, Florida, U.S.A. *Marine Mammal Science*, *19*, 630-649. <https://doi.org/10.1111/j.1748-7692.2003.tb01121.x>
- Tilikum ex rel. People for the Ethical Treatment of Animals, Inc. v. SeaWorld Parks & Entertainment, Inc.*, 842 F. Supp. 2d 1259 (S.D. Cal., 2012) (United States).
- United Nations Convention on Biological Diversity, 1760 UNTS 79; 31 ILM 818, Article 9, *Ex-situ* conservation (1992). Retrieved from www.cbd.int
- van Elk, C., & Garcia Hartmann, M. (2013). *Tursiops truncatus EEP*. (Unpublished paper). Retrieved from <https://eaam.org/wp-content/uploads/2018/02/Tursiops-Truncatus-EEP-January-2013.pdf>
- Wells, R. S., & Scott, M. D. (1990). Estimating bottlenose dolphin population parameters from individual identification and capture-release techniques. *Report of the International Whaling Commission*, Special Issue 12, 407-415.