

A Whale of a Tale: Marine Mammals in Captivity and the Vancouver Aquarium

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Introduction



Figure 1: Map of global orca habitat shown in light blue and sites of orca captivity highlighted with yellow stars (WDC, 2015).

Holding animals captive has been a common practice since the beginning of the anthropocentric era. Whether this practice has been for human enjoyment, education, or for other reasons, the fact remains that most animal species in existence today are being held captive somewhere in the world. Not all instances of animal captivity are bad. In some cases, the need to protect certain species from being in the wild is an important tool to prevent extinction, and we certainly would know very little about some species if we were not able to get close enough to observe them in captivity. The debate of whether animals being held in captivity is humane or not has been gaining global notoriety in recent years as animal welfare has become one of the more contentious issues in conservation and preservation. Since the onset of this debate, much has been done to regulate and in some cases even eliminate this practice.

In the case of our study, we chose to focus on the orca whale. The main reason we decided to focus on this species in particular is that their habitat spans almost the entire earth making this a truly global issue. Furthermore, given that these creatures are so social, keeping them in captivity away from their families has caused a lot of strife between animal rights groups and government law makers.

The regulations and policies in place to protect the welfare of these noble creatures has depended heavily on the jurisdiction and the purpose for the captivity. Since this is a truly global issue, there are wide ranging laws and policies in place, depending on the country. Globally, there are only between 50 and 60 captive orcas today, in only a handful of locations (see Figure 1). The goals of the current policies is mainly to prevent the capture of any further orca whales, and also ensure that the welfare of these animals is maintained consistently while they remain in captivity. What follows is an in-depth analysis of the current issues, and an assessment of these policies. We conclude with a discussion on how we believe this issue can be best managed going forward.

Framing the issue

There are many reasons why the issue of whale captivity can be deemed a wicked problem. Rittel (1974) names 10 ways which categorize a problem as wicked, all of which this highly complex issue falls under. For example, there is little consensus of perspectives among different individuals and it is very difficult to define the issue in whole terms. There is no scientific analysis or methodology from other social spaces that can be used to solve the issue. Therefore, there is no means to test the solution before it is put into action and it may also negatively impact the whales' wellbeing. Given the many stakeholders and the vast scope of possible solutions to the many issues that are faced, the consequences of decisions that are made with regard to the bigger picture can be drastic and problematic.

The issue can be framed under five major headings: environmental, social, involvement of stakeholders, political and economical. While these factors were separated for clarity, it is important to note that they are all linked and that changes made in one of these factors will affect the whole issue.

The most important category is environmental issues. Firstly, habitat destruction has put much stress on whales in the wild. This can cause populations of certain species to fall rapidly, and in some cases requires the need for repopulation programs in captivity. The Vancouver Aquarium's capturing of marine mammals can be traced back to 1959. In the name of animal care, they have hunted these animals and separated them from their family and community (Hopper, 2014). Their offspring are now domesticated animals and may not survive in the wild (Hopper, 2014; Gruen, 2014). Their life expectancy in captivity is also severely reduced (Appendix 1).

The next category is social problems. Many conflicting opinions have been well publicised since the release of Blackfish(2013). For example, environmentalists protest against facilities that have captured animals for their welfare (Hopper, 2014), while others suggest that whales in captivity are also a danger to human life. Hoyt (1992) also begs the question of ethics; what gives us the right to capture these animals? On the other hand, education is an important social issue and animals in captivity can help raise awareness for children. However, a survey conducted in Greater Vancouver states that 74% of respondents say the best way to learn about whales is to view them in the wild (Zoocheck Canada, 2003).

This leads to the involvement of stakeholders. Public voices, animal rights activists, and animal welfare institutions insist on releasing these animals back to their natural habitat for animals' intrinsic right. The institution's interest would be on keeping these animals because of their economic value, though they would not reveal it as their main motive (Biggsby, 2012). They would also view their captivity as having engendered the relationship that humans have

with the species today (Hutchins et al, 2003). With these views never being reconciled, it is extremely difficult to come to a resolution that everybody agrees to, which illustrates this as a “wicked” problem.

Political issues are linked to many other factors. With an increase in activism regarding the ethics of whale captivity and welfare in the media, all levels of society have been exposed to this issue in some respect. With the ethics of zoos and aquariums as a business under scrutiny, the government has been forced to step in and look at creating legislation regarding the ethical treatment of whales.

Lastly, there are many economic issues involved in keeping whales in captivity. This is ranked the lowest compared to the other categories, however, it is still important. For example, the economics of education, the costs of operating a zoo or aquarium, the economic value of the whales themselves, and the generation of revenue from tourism is directly related to whale captivity. It is difficult to put an exact economic value on these issues, but helps clarify some of the issues that are dealt with in this problem.

Governance

There are many international laws surrounding this issue. In 1946, the International Whaling Convention (IWC) was established and by 1986, they had instituted an indefinite ban on commercial whale hunting due to reduced numbers of the mammal’s population. In 1986, the IWC instituted an indefinite ban on commercial whaling which is still in effect, but countries such as Japan and Norway have not honoured it. Another international agreement is CITES; a treaty that provides protection for wild animal and plant species in international trade. It is designed to promote the conservation of endangered species while strictly prohibiting commercial trade (Lang, 2002).

A third international law is the United Nations Convention on the Law of the Sea (UNCLOS) which covers multiple aspects of activities such as protection of the marine environment and regulations on economic and scientific activity on the ocean for optimum conservation and utilization of fisheries (United Nations, 1982). This includes the Marine Mammal Protection Act which protects and conserves marine mammals and maintains the stability of the marine ecosystem by prohibiting fishing with exceptions like scientific research (NOAA, 2014). As of January 2015, 166 countries and the European Union have joined the convention. UNCLOS imposes a duty on nations that have signed this treaty. They have a duty to conserve marine mammals and follow the International Whaling Convention’s guidelines.

On the federal level, the Marine Mammals Regulations, formed by the Canadian government, protects marine mammals from unauthorized hunting and captivity. By law, hunting cetaceans is highly restricted, requiring a license to catch them (Government of Canada, 2015). On the provincial level, the Prevention of Cruelty to Animals Act protects the welfare of animals in captivity (BCSPCA, 2013). The Act is a provincial law to ensure animals that are in captivity would not be treated in an inhumane way. It also promotes a culture against animal cruelty within society.

In Canada, the governance concerning the issue is typically handled by provincial laws. Locally, the Minister of Environment in British Columbia has policies in place to prevent capture but not captivity, although no orcas are currently in captivity in the province. The common ground of all policies and laws is that captivity is not illegal. Ontario, however, has

proposed a law which would outlaw the captivity of orcas, though it is unclear how the existing captive orcas would be handled if such law was passed.

On a local legislative level, we can look at the Vancouver Park Board's policies and regulations concerning this case study. According to No Whales in Captivity, they could "ban the importation of whales and dolphins". In addition, "only the Vancouver Park Board can hold the Vancouver Aquarium accountable through the enactment of a strong bylaw" (The Park Board, 2006).

The voice of the public plays an important role in this issue. In a CBC news article from July 2014, the public addressed the Park Board and 53% of voters were in favour of releasing all cetaceans into the ocean. The aquarium is licensed by the Park Board. Current policy is not to capture mammals for captivity.

Plan of Action:

Triangulation

This is a complex issue with no one answer. As a result, compromises will be made on all aspects (socially, biophysically, economically, politically). The below discussion suggests a few possible solutions on different time scales, and which satisfies different needs. For every solution, however, there will be consequences that will affect each stakeholder uniquely.

Aim

The aim of this project is to effectively manage previous damages. It would not be possible for the cetaceans to return to the wild for survival would be difficult. However, preventing the breeding of these animals in captivity would slowly reduce their numbers until, in the long term, no whales are left in captivity.

Solutions:

This section will look at different solutions to the issue of keeping whales in captivity. This will focus on different time scales from long to short term, while also describing the possible unforeseen consequences for each solution.

Sea Pens

This would be most applicable in the long term to whales newly brought into captivity. As wildlife refuges in the ocean, pens would let these cetaceans either ease their way back into the wild or provide a more natural place for them to live out their lives. This would allow them to experience ocean life. Sea pens would allow for greater area for the whales to live.

There are many unforeseen consequences as they require an enclosed area and involve being taught to hunt and eat live fish again, along with preparing their physical condition suitable for the wild (Zimmermann, 2014). There have been many case studies of whales being held in sea pens before returning to the wild. For example, in the case of Keiko in 2003, a free access enclosure was constructed to allow him to return to the ocean when he pleased. Rehabilitation before that into the ocean was undergone over a series of years. However, he did return periodically to his caretakers for food and company. (Simon et al, 2009). To allow for successful release, Wells et al (1998) listed several recommendations including: releasing more than one animal together at young age as a social functioning unit in native water; releasing short term capture animals; locating sources of prey; and studying the behaviours of the animals before, during and after release.

The contamination of the waters could also be highly detrimental to the whales as they have no escape. Within captivity, the animals can be isolated if this issue arises, however this would not be possible in open waters. There is also the issue of ensuring good water quality at all times to prevent the buildup of pathogens and parasites (Dineley, 2014). Care must be taken for locations away from human traffic. However, this could be deemed a realistic solution.

Power shift

The best way that the economics of this problem can be managed is through a shift of power to allow each of the stakeholders the ability to legislate the management of the several issues equally. This can happen both on long and short term timescales. Currently, legislation is controlled by the government with assistance of the aquariums which keep whales in captivity (Hinch 2011). An increase of tourism that follows from the captivity of whales benefit both the government and the aquariums themselves (Bulte, 2007).

However, this leads to a conflict of interest and does not satisfy the desires of all stakeholders involved and may have many unforeseen consequences. While the complexity of this problem dictates that it would not be possible to satisfy each stakeholder equally, there would be tremendous value in shifting the balance of power from the government and aquarium authorities to include animal welfare and animal rights activists (Rose 2011).

Economic Incentives

Another issue at stake is the handling of the whales in captivity. Currently, aquariums are economically incentivized to minimize the costs of maintaining the overall health and welfare of their captive whales in order to increase profits (Rose 2011). This means that while living conditions may strictly meet the criteria set forth by the policies in place, they may not exceed them in any way. One solution to this problem could be an incentive program that would provide economic incentives for the aquariums to increase the level of care and welfare of the whales that are in captivity. This is realistic and could occur on a relatively short timescale.

However, as suggested above, the government has little or no incentive to introduce a program like this in the future. Therefore, this would be a solution to the problem that could only be implemented after a shifting of power occurred. The question of how the voices of other stakeholders could be heard still remains. In economic terms, the best way to voice displeasure with the current regime is to reduce their business by avoiding facilities that still participate in whale captivity altogether. While this may seem unrealistic, it may send the clearest message to those that examine issues in strictly economic terms.

System of Value

Normally, implementing policy is dependent on those who have the political capacity. Although opinions from NGOs and animal activists are highly respected by the public and even contribute to the awareness of animal welfare, they do not have the authority to execute policies that cause direct change. On the other hand, private institutions with their own sovereignty over what they own, i.e. captive cetaceans, can decide any policy that is acceptable and meets their need. Although the government has the capacity to implement the above solutions, it faces difficulty because the captive whales are owned by the aquarium so it is harder to put political pressure as well especially when the aquarium is not "abusing" these animals. Therefore, there needs to be a change in the system of value of politicians who constitute the federal government. According to Fisheries and Oceans Canada, their

goal in their acts and regulation is “to improve the sustainability of the aquatic ecosystems while promoting economic prosperity.” This shows that the department cares for the conservation of the marine species population, mainly in order to benefit Canada’s economy.

The problem that lies ahead is that the government primarily seeks for welfare of the nation. Unless there is a fundamental change in their system of value, there would be little or no actions being carried out for cetacean welfare as a consequence. Due to this issue this proposal would be a long term solution due to the many stakeholders involved, and time needed to implement a system change.

References

Peer Reviewed Articles

Biggsby, P. (2011) “A Whale of a Story: The Case for Cetacean Captivity.” ProQuest Dissertations Publishing Retrieved from <http://search.proquest.com.ezproxy.library.ubc.ca/docview/1152192264?pq-origsite=summon>

Gruen, L. & Oxford Scholarship Online.(2014). The Ethics of Captivity. New York, NY: Oxford University Press. Retrieved from <http://www.oxfordscholarship.com.ezproxy.library.ubc.ca/view/10.1093/acprof:oso/9780199977994.001.0001/acprof9780199977994>

Hinch, P. R., Hinch, P. R., & De Santo, E. M. (2011). Marine policy: Factors to consider in evaluating the management and conservation effectiveness of a whale sanctuary to protect and conserve the North Atlantic right whale (*Eubalaena glacialis*) Elsevier. doi:10.1016/j.marpol.2010.09.002

This source comes from another peer reviewed journal called Marine Policy from an issue in 2011. The article looks at the protection of the North Atlantic right whale and the effect of a marine protected area system as a means to protect marine life. The article uses a specific case study from New Brunswick, but given that the legislation is still Canadian, there is useful information to be found. This article delves into the legal framework surrounding the protection of marine life in Canada, and even mentions specific acts and policies in place in Canada today. The data gathered in this article is mainly geographical and relates to the specific case study examined, but the information on Canadian policy will be valuable when framing the issue of whales in captivity.

Hoyt, E. (1992) The Performing Orca Why the Show Must Stop. An indepth review of the captive orca industry. Whale and Dolphin Conservation Society, Bath, pp. iix, 1104.

Hutchins, M., Smith, B., & Allard, R. (2003). “In Defense of Zoos and Aquariums: The Ethical Basis for Keeping Wild Animals in Captivity.” Journal of the American Veterinary Medical Association 223.7 95866. Retrieved from <http://avmajournals.avma.org.ezproxy.library.ubc.ca/doi/abs/10.2460/javma.2003.223.9582>

This article is peer-reviewed article that explains the various activities and programs that zoos and aquariums carry out for conservation, contrary to the popular accusation of destroying animal welfare. The article is noteworthy because it describes what zoos and

aquariums do for conservation, just as they present themselves to the public. It was searched on the UBC library website “cetacean capacity aquarium”. This method is appropriate because it was found through a library website which is able to filter non-academic articles. The article is a reliable reference because it has credible source, trustworthy, accurate content, and reliable and supported argument. It supports the aquarium’s

conservation efforts; confirms the aquarium’s perspective on cetacean captivity. Yet, it does not cover the argument of the opposite side in depth.

Rittle, H. W. & Webber, M.M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2), 155-169. doi:10.1007/BF01405730

This is a peer-reviewed article that addresses the wicked problems that one faces when planning a policy to deal with a certain problem; the problems are also often not definitive. The article is noteworthy because it mentions particularly useful since it suggests a change in the approach to deal with a social problem that is contrary to the conventional scientific approach. The article was searched via UBC library and this method is appropriate since the search engine is able to filter peer-reviewed articles. This article is from a reliable source because it was published by Springer, a global publishing company. While the article shows a need for a different way to deal with policy problems that are wicked, their explanation of the problem is rather theoretical and it does not handle problem within our case study.

Simon, M., Hanson, M. B., Murrey, L., Tougaard, J. & Ugarte, F. (2009), From captivity to the wild and back: An attempt to release Keiko the killer whale. *Marine Mammal Science*, 25: 693–705. doi: 10.1111/j.17487692.2009.00287.x

Wells, R.S.K., Bassos-Hull, K., & Norris, K.S. (1998) Experimental return to the wild of two bottlenose dolphins. *Marine Mammal Science*. 14:5171.

This is a scientific article that covers the experiment of releasing two young male bottlenose dolphins that were captured two years ago back into nature. The article is noteworthy because it specifically deals with the solution to the problem which animal activists are promoting; it is also useful because it exemplifies the solutions that are often contested by those who own captive cetaceans, thinking it is not feasible. The article was researched via UBC library and it is an appropriate method since the website provides multiple reliable research articles while filtering any grey literature. The reliability of the article comes from the fact that it is an article from a scientific journal “*Marine Mammal Science*”. The article provides an example of reintroducing captive cetaceans back to their natural habitat. The issue with this article, however, is that the dolphins in the article are not domesticated which constitutes the inability of the current captive cetaceans to survive in the wild; this means that the result from the article cannot be a complete evidence that can support releasing of captive cetaceans.

Government Documentation

BC Society for the Prevention of Cruelty to Animals (2013). Prevention of Cruelty to Animal Act. Retrieved from <http://www.sPCA.bc.ca/cruelty/legislation/pca-act.html?referrer=https://www.google.ca/>

Government of Canada (2015). Marine Mammal Regulations. Retrieved from <http://laws-lois.justice.gc.ca/eng/regulations/sor9356/page1.html#docCont>

This is a set of federal regulations from the Government of Canada that protects the marine mammals from overexploitation through intensive fishing. The regulations are noteworthy because it shows the the current governance practices of the Government of Canada towards the conservation of marine mammals. It was on the website of the Government of Canada so the source is very trustworthy. The source of the regulations is reliable source with detailed description of the limitations of the fishing these animals, established by the Justice Law Department. The regulations, however, do not involve captive cetaceans in private institutions.

United Nations (2012). Convention on the Law of the Sea of 10 December of 1982.

Retrieved from h

http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm

National Oceanic and Atmospheric Administration Fisheries (2014). Marine Mammal Protection Act. Retrieved from <http://www.nmfs.noaa.gov/pr/pdfs/laws/mmpa.pdf>

This is a act established by the U.S. in 1972 to prohibit the fishing of marine mammal in the U.S. waters. This act is noteworthy because it covers the governance practice by the U.S. regarding marine mammal protection, showing how Canada's neighboring country is dealing with the issue. It found via Google and the article itself was found on the NOAA website. The article's source is reliable because NOAA is a governmental administration of U.S. for ocean and atmosphere. The strength of the article is describes with much detail on the regulations and policy concerning marine activities with view of protection of marine mammal in the US water. The weakness of the article is that its jurisdiction remain in the U.S., not being applicable to Canadian affairs.

Popular Media

CBC News (2014). Vancouver Aquarium's Whale Program Provokes More Debate.

Retrieved from <http://www.cbc.ca/news/canada/britishcolumbia/vancouveraquariumswhale-programprovokesmoredebate1.2720274>

Cowperthwaite, G. (Director), Oteyza, M. V., Despres, E., Ingalls, J., Towey, C., Beal, J. (2013).

Blackfish. Magnolia Pictures [Film], Magnolia Home Entertainment.

This data source is a documentary produced in 2014 to show the reality of keeping whales in captivity. It focuses on animal welfare (biophysical factors) the involvement of stakeholders (such as SeaWorld and Fisherman) as well as social factors. It describes a Tilikumrelated death in February 2010 of senior SeaWorld trainer Dawn Brancheau. This documentary was controversial as it split opinions between many different parties involved. Blackfish argues that killer whales are not aggressive in the wild and implies that confinement can lead to dangerous behaviour toward both humans and fellow marine mammals. SeaWorld disputes suggesting that they adapt very well socially to their lives at SeaWorld. This disagreement between stakeholders can be seen as a social issue due to conflict created from opposing opinions. It discusses contradicting factors resulting in human injury. However, it still outlines the fact that there is an issue for human safety. It is useful as it involves many interviews with different stakeholders however it is a media force, it has been made and edited to shock and draw attention. Therefore is could be biased, an exaggeration of the truth. There may be a conflict of interest involved with this source as it has several purposes including profit based. It is noteworthy as it is a contributing factor to

why there is an increased public interest in the captivity of whales, however the facts gained cannot be used alone in arguments for or against captivity.

Dineley, J. (2014) Sea Pens: Not the Panacea They Are Perceived. Marine Animal Welfare. Retrieved from <http://marineanimalwelfare.blogspot.ca/2014/02/seapensnotpanaceathey-areperceived.html>

Rose, N.A. (2013). A win win solution for captive orcas and marine theme parks. CNN. Retrieved from <http://www.cnn.com/2013/10/24/opinion/blackfishcaptiveorcassolutions/>

Hopper, T. (2014). "Captive Audience; Vancouver Aquarium Under Public Siege for Holding Whales and Dolphins in its Tanks." National Post. Retrieved from <http://news.nationalpost.com/news/canada/fateofvancouveraquariumhangsinthebalancewhalejailunderpublicsiegeforkeepingbelugasincaptivity>

This is a news article that addresses the complicated situation of the Vancouver Aquarium's cetacean captivity and the conflict with animal activist who promote releasing of the animals. The article is noteworthy because provides the general background on why the case is a wicked problem. article is useful because it reveals the essence of the problem which is not simple but complicated, involving many different interests and biological circumstances. It also shows the stakeholders who are involved in the problem. The article was searched on UBC library website with "cetacean captivity". This method is appropriate because it allows us to look for peer-reviewed articles. This article is quite reliable because it has a source with clear source, though it may lack certain authority. Its content is reliable, covering both stakeholders' opinion; and it is supported with evidence from different parties. It is also specific to the case and covers perspectives of both the aquarium and animal activists regarding the issue. The fact that it is a news article, not a research article, makes it less credible compared to other peer-reviewed sources.

Grey Literature

Coalition for No Whales in Captivity. (2006). The Park Board. Retrieved from <http://www.vcn.bc.ca/cmeps/4.html>

Dineley, J. (2014). Sea Pens: Not the Panacea They Are Perceived. Marine Animal Welfare. Retrieved from <http://marineanimalwelfare.blogspot.ca/2014/02/seapensnot-panaceatheyareperceived.html>

This is a grey literature that explains the complicated situation of Sea Pens as solution to the rehabilitation of the captive cetaceans back into the wild. The article is noteworthy because it addresses the issue with Sea Pen as a solution, thus, presents both positive and negative aspects of the approach. The article was found by first researching on some of the solutions for rehabilitating captive cetaceans. Setting up sea pens was one of them and further research soon led to this article. Although this is a grey literature, it is reliable because it uses quotes from a report written by the UK government and the Animal Welfare Act of the United States, which critically analyses the issue of sea pens. The strength of the article is that it does not merely presents sea pens as a perfect solution but discusses its obstacles as well, creating a balanced perspective toward the problem . The problem with the article would be the fact that it is not a peer reviewed article, which solidifies its credibility.

The Orca Project (2015). "How to Help". Retrived from:
<https://theorcaproject.wordpress.com/howtohelp/>

Rose, N. A. (2011). Killer Controversy: Why Orcas Should No Longer Be Kept in Captivity. Washington, DC: Humane Society International and The Humane Society of the United States.

Finding good grey literature can be difficult. However, given that the stakeholders in the wicked problem of whales in captivity extends to the general public, it is important to examine the opinions from the public in order to gain a better understanding on all the views and stances that exist. This particular article is not from a peer reviewed journal, although it has been put together by the NGO 'The International Humane Society' and 'The Humane Society of the United States'. Interestingly, the article has been prepared by a senior scientist at the society, and a Ph. D at that. Therefore, there should be some valuable information to be found. This article focuses more on the humane treatment of orca whales in captivity, which is a significant issue as it pertains directly to the issue we are looking at in our case study. While there is no specific data or economic focus in this article, it will still serve as a valuable tool in helping frame the problem.

Zimmerman, T. (2014) The monumental plans which could set orcas free. The Dodo. Retrieved from: <https://www.thedodo.com/themonumentalplansthatcoul479028620.html>

Zoocheck Canada. (2003). Poll results show majority oppose whales in captivity. Retrieved Septemebr 22, from [http:// www.zoocheck.com](http://www.zoocheck.com)

Figures

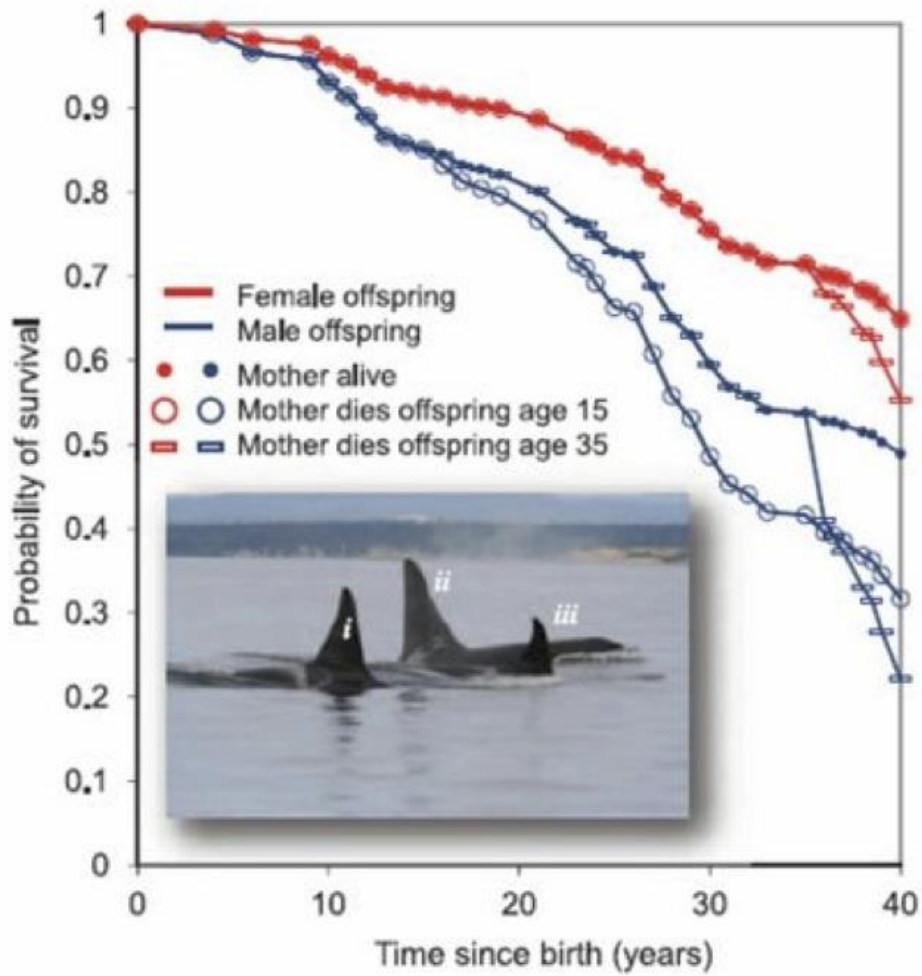
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Appendix:

Whale and Dolphin Conservation. Poll Reveals Americans Oppose Keeping Orcas in Captivity (2007). Retrived from: <http://us.whales.org/blog/2012/07/pollrevealsamericans-opposekeepingorcasin captivity>

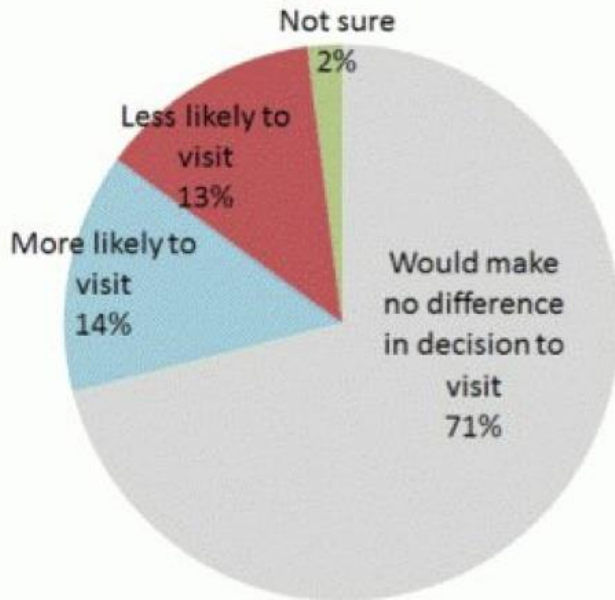
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Appendix



Appendix 1: Data from the WDC showing how life expectancy differs within captivity and in the wild. This highlights the one of the biophysical implications of whale capture (Yong, 2012)

Suppose zoos, aquariums and marine mammal theme parks in the United States that currently keep killer whales were to **stop** keeping killer whales in captivity. Would this make you more or less likely to visit these places, or would it make no difference?



Appendix 2: Graphic showing data collected by the WDC illustrating responses to reduced orca captivity in the US. Thus illustrating the minimal impact on revenue due to not housing whales for display (WDC, 2007).

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