Conservation Education in Zoos and Aquaria: The Benefits of These Institutions and Their Impact on Conservation Action According to Staff

By

Nathalie Graham

(Supervisor: Katherine Bellomo)

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ABSTRACT

Educational programs in zoos and aquaria have the potential to educate individuals on conservation and create large numbers of pro-environment advocates; over 700 million people visit these institutions annually. Recently, zoological institutions have come under some scrutiny for the housing of animals in captivity and the media has questioned the efficacy of the education occurring in-situ. This study takes a qualitative look into the personal beliefs of staff from varying institutions and their insight into the educational benefit of their zoological institution as well as the value they believe the institution to have. Staff members have varying views but overall they see zoological institutions as places where effective education is happening and people are being influenced in a positive manner, especially visitors of younger demographics. The value of zoological institutions comes under scrutiny depending on the methods used for the housing of animals and the legal guidelines for animal care are deemed as being too low.

Key Words: conservation, education, zoo, aquarium, zoological, staff, qualitative, environment, sustainability.
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Chapter 1: INTRODUCTION

1.1 Introduction to the Research Study

It is estimated by the World Association of Zoos and Aquariums, through collaborations with other associations that more than 700 million people annually visit zoos and aquariums, this accounts for nearly 10% of the world’s population (Gusset & Dick, 2011). There is huge potential for an educational footprint to be created by these 1300 known institutions on their visitors. The perpetual increase of urbanization across the globe is creating a strain on the world’s resources and decreasing the natural habitat available for animal species; conservation education programs are becoming of increasing importance to help people to understand the need to preserve and protect our
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wild habitats and the rich biodiversity this earth provides.

In the wake of numerous programs, books and news articles that have, over the last decade, been shining a negative light on zoos and aquariums for the inhumane treatment of their animals and the limited nature of the enclosures, these institutions have shifted their overall image. Previously the role of Aquariums and zoos was largely that of display of exotic creatures, research and entertainment (Packer & Ballantyne, 2010). Now the biggest role they promote is that of education and conservation effort both in-situ and ex-situ. Most institutions now have dedicated staff and programs solely for the education of their visitors on conservation issues (Packer & Ballantyne, 2010). One of the most controversial programs with the most interest and popularity is the interactive program where participants get up close with the animals of the institution, in some cases, such as dolphin interaction programs, participants can swim with, touch and even feed the animals. These interaction programs as well as the animal shows such as the “Believe” show that showcases trained orca whales in SeaWorld, have recently received an increasingly negative public image due to the small size of the enclosures and the numerous dangerous incidents involving whale and trainer interactions. The most notable case was that of one of Sea World’s head trainers Miss Dawn Brancheau, who was drowned and killed by a large male orca whale during one of their famous performances (BBC News, 2010). With these organizations placing so much emphasis on their educational focus as the driving force behind their institution and programs one must, under the circumstances, question the validity of the impact these educational programs have on their participants. Are interaction programs as well as the other programs and
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exhibits creating a real difference in the conservation action and attitudes of the
participants? After 3-5 months there have been studies that suggest that conservation and
animal knowledge return to pre-visit levels (Miller, Zeigler-Hill, Mellen, Koeppel, Greer
& Kuczaj, 2013). This study is a closer look at the impact zoos and aquariums can have
on our ecological footprint and is taken from the viewpoint of those that work within
these institutions.

1.2 Purpose of the Study

The purpose of this study is to investigate whether staff members of zoos and aquariums
believe visitation to their institution results in an increased knowledge by the participants
on conservation issues and how staff believe they effectively achieve this dissemination
of knowledge. Another particular focus is whether visitation causes a change in a
participant’s conservation action footprint; does visiting a zoological institution cause the
participant to change their lifestyle in any concrete way to impact the environment or
create conservation action such as donations or support for animal welfare organizations
or do the participants change their attitudes on legislation or conservation issues both
nationally and globally. I am interested to find out what areas of their program, staff feel
are effective at achieving ecological action in their participants and what evidence they
have to support their beliefs.

The study will be conducted through personal interviews of the staff that work at
zoological institutions, particularly the staff that are involved in the education
department. Due to the scope of the study the research will be limited to staff members
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from 2 zoological institutions located in the United Kingdom. Participants for the study will have been working within their zoological institution for greater than 1 year to ensure that they have a depth in understanding of the programs run at their institution as well as the mission of their workplace. The study will be conducted between the months of May 2014 and March 2015.

1.3 Research Questions

• Do staff members feel that participants' attitudes have been changed by the visit to become more environmentally conscious?

• Do staff members know that visitors/participants are more likely to support pro-environmental legislation following a visit?

• What is the motivation behind visiting these institutions (e.g. leisure, entertainment, education)?

• Do staff members believe the value of the institution outweighs the enclosure sizes?

1.4 Background of the Researcher

I grew up in Zambia amongst a wealth of wild flora and fauna and was always outside amongst nature or inside watching nature documentaries. As a young child my heroes
were naturalists such as David Attenborough or scientists such as Richard Dawkins. At the age of 11 I was sent to Ireland for boarding school and was thrust into an all too unfamiliar city life and it became apparent to me then, the lack of biological knowledge the majority of people who lived in urbanized cities possessed. In my schooling education we learnt the sciences and biology but rarely was there ever a truly natural experience for students to engage in wildlife in a hands-on way. I remember many of my peers thinking in very short term ways about global warming, often commenting that it wouldn’t “affect their lives” and I came to the alarming realization that many if not most of the people I knew did not know or care about conservation.

I went on to study Zoology at undergraduate level amongst many who shared my views on spreading awareness for the plight of animal species. After I graduated I went on to work at a marine research institute in South Africa and it was there that I truly got involved with environmental education for the public, running summer camps, giving talks at aquariums and instructing interns on the importance of marine species for the balance of our oceans and environment. It was running the educational programs at the aquarium that became of real importance to me as it not only attracted those individuals that had a keen interest in the environment but also those who were simply seeking an entertaining day and had no inclination towards an eco-friendly lifestyle; it was these individuals that I had the potential to affect the most.

As my interest in the education grew I became increasingly aware of the negative image institutions such as SeaWorld were receiving through hard-hitting documentaries like “The Cove”. This information conflicted completely with my beliefs of what these
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institutions were capable of and it was disheartening to think that these places that stated conservation as one of their core roles would be involved with the systematic slaughter of hundreds of the animals they seemingly cherish in their exhibits. There were some shining lights amongst this dark picture such as The Monterey Bay aquarium where animals are only kept for months at a time and released, to create an inspiring balance of research and tagging as well as public education and attraction (Ezcurra, Lowe, Mollet, Ferry & O’Sullivan, 2012). With so many institutions that do not run their programs in the same format as those in Monterey I couldn’t help but wonder whether these institutions were really worth their weight in education. Did the educational value outweigh the conditions of the few large mammals kept in captivity? Could these programs truly affect participants’ perceptions and attitudes and create individuals who are more eco-friendly and more likely to support pro-environment legislation? When the MTRP presented itself, this was the obvious choice for my research, that is, a closer look into the educational value of these institutions. My goal is to ascertain the environmental benefits of these programs and understand how we can best initiate change in people who are disenchanted or disinterested in the environment and it’s important role in our survival on this planet.

1.5 Overview of the Literature

The literature review made it very clear to me how little information available there is on my topic of study. There are numerous papers that speak of the benefits of the research being done in these institutions (Ezcurra, Lowe, Mollet, Ferry & O’Sullivan, 2012)
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(McCormick, 1993) and the shifting role of aquariums from centers for entertainment and display to centers for conservation (Hutchins, 2003) but there is little research on whether participation in these programs has any direct impact on the participants.
Chapter 2: LITERATURE REVIEW

2.1 General Consensus on Aquariums and Zoos

At present there has been a lot of negative press about Zoos and Aquariums from some influential organizations including PETA (People for the Ethical Treatment of Animals) and CAPS (Captive Animals Society). The enclosure size is often cited as one of the main ethical concerns surrounding these institutions with PETA citing that the “cages and cramped enclosures at zoos deprive animals of the opportunity to satisfy their most basic needs” (“Animal Rights Uncompromised: Zoos”, n.d.). It is true that the AZA (Association of Zoos and Aquariums) guidelines for an elephant enclosure state that standard outdoor space for an elephant must be a mere 167 square feet, which is smaller than the penalty area of a soccer field (Association of Zoos and Aquariums, n.d.). In the wild elephants can roam 30 miles in just one day and yet in captivity they are resigned to a small box like, in many cases concrete, enclosure (“Get Elephants Out of Zoos”, n.d.). This situation worsens for avian animals and species such as the cheetah which would not only travel far distances but are built for speed and, while in an enclosure, are unable to express their instincts to hunt and run/fly.

Another common concern is the treatment of animals as commodities, especially baby animals, which generate high visitor revenue (“Zoos: An Idea Whose Time Has Come and Gone”, n.d.). “The Cove” is a natural history documentary that exposed SeaWorld’s involvement in the purchase of wild dolphins from Taiji, Japan, a cove where hundreds of dolphins are netted in and individuals that are aesthetically pleasing are picked out for captivity while the rest are slaughtered for their meat by the local
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fishermen (Psihoyos, 2009). The association with such an aquarium giant such as SeaWorld and this behaviour has caused many to question the ethics behind housing large mammals in captivity. Zoos and Aquariums also take little account of the relationships present in the groups of animals they house. Frequently, possibly the majority of the time, animals that are naturally extremely intelligent and social are grouped with individuals from completely different social groupings and even come from countries in differing continents (Barkham, 2013). For extremely social animals this poses severe problems as behavioural patterns expressed by individuals are completely different from pod to pod and so the animals may fail to form normal social groupings with one another (Morton, 1990). Even if they do form adequate social relationships, their lives are very transient and for the right price an animal can be bought by another institution and can be transferred numerous times, this happens frequently with orca whales as females become increasingly protective of their offspring, whom they would normally spend their entire lives with, and are less cooperative in shows and displays (Jett & Ventre, 2011). These infants produced by breeding programs create high revenue when they are young, however they are usually very long-lived animals and their infancy does not last long. This leads to surplus of adult animals and due to lack of enclosure space, surplus animals in zoos and aquariums are either “warehoused” in a sub-standard enclosure away from the public eye or sold to another zoo or animal dealer, either option normally results in detrimental conditions for the animal (Minasian, 2011).

These institutions often describe themselves as operating to prevent the extinction of species, however the animals that are normally commonplace in these institutions are
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usually the large charismatic species and often these animal species (like common bottlenose dolphins) are not on the IUCN (International Union for Conservation of Nature) red lists (The IUCN Red List of Threatened Species, 2012). There is also little hope of these captive animals contributing directly to the conservation of their own species through population numbers as captive animals are normally too far detached from their wild origins to be returned to the wild and have any real chance of survival (Keiko the Killer Whale Dies, 2003). The behaviour animal’s express in captivity is often in stark contrast to their wild counterparts and it has been noted that many animals experience mental frustration and begin displaying unnatural behaviours such as bar biting and self-mutilation. In some cases the conditions are so mentally exhausting that animals turn to cannibalism, such was the case in Heilongjiang Zoo where a penguin was filmed eating its own young (ITN, 2012).

The conditions the animals themselves are in while in captivity are often cited as one of the key aspects that make their captivity unethical. Not only do many animals experience mental frustration and strange behaviours but they also experience poor physical conditions with many elephants experiencing damaging foot rot and other species experiencing physical attacks by other animals in their “social group” leading to cuts, bruises and occasionally death such as the fatal attack of one tiger on another at Munda Wanga Zoo in Lusaka, Zambia (Reported Incident by Keeper).

2.2 Motivations for Learning
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Due to the nature of Zoos and Aquariums and how their programs are structured, visitors experience free-choice or informal learning (Miller et al. 2013), that is that the visitor is completely in control of how much of the educational information they come into contact with, their understanding of the information, the connection made with the animals on display and their involvement in educational experiences such as the interactive exhibits (Miller et al. 2013). When learning is dependent on the learner’s actions and interests, the motivation for their visit becomes increasingly important in how these institutions display and attempt to inform their visitors (Packer & Ballantyne 2010). Falk (2009) suggests that when visitors enter an institution they have pre-formed identity goals, which have a direct impact on how they experience the exhibits and the meaning they attribute to them. Packer and Ballantyne (2010) found that visitors to aquariums were more likely to be visiting for the social and entertainment aspects than those who visited an art gallery or a science centre. However these visitors did believe that the potential for learning in aquariums was high and that the learning opportunities presented at aquariums were fun (Packer & Ballantyne, 2010). Packer and Ballantyne (2010) believe this synergy between education and entertainment is the key to motivating visitors to learn and leave with a productive and educated experience. It is clear that the motivations of participants impact their exposure to educational material and the type of materials they are exposed to have differing effects on their learning.

2.3 The Impact of Experiences on Participants
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Zoos and aquariums have a difficult task when it comes to educating their visitors, with a huge range in age, gender, ethnicity and socioeconomic backgrounds of their visitors, the information they present must appeal to an extremely wide audience who, as previously stated, can decide at any stage that the educational aspect of the visit is no longer attractive to them. Not only this but the information has to compete with so many other aspects present such as the ambient noise, the distraction of friends and family members, restaurants and food vendors as well as the numerous gift shops whose draw of souvenirs is hard to resist. So amongst all of these competing factors zoos and aquariums must attempt to inspire visitors and connect them to the environment in such a way that will benefit conservation efforts.

One of the most popular programs that endeavours to connect people directly to the wildlife is the interaction program, such as dolphin shows and touch tanks. Miller et al. (2013) conducted a study specifically on the effects that dolphin shows and interaction programs had on their participant’s education. They found that both immediately post-visit and 3 months post-visit participants of interaction programs showed increased knowledge, positive attitude and behaviour towards conservation. It is also interesting to note that individuals who experienced a dolphin show but did not take part in the interaction program with the animals showed a similar increase in conservation knowledge however their attitudes and behaviours returned to pre-visit conditions after just 3 months. Miller et al. (2013) found that many participants in the interaction program believed it was one of the best experiences they had ever had, showing a clear and definite enthusiasm and enjoyment in the program.
Packer and Ballantyne (2010) looked at the effect simply visiting zoological institutions had on participant’s education and the picture presented was not as positive. Only 5% of 1000 visitors surveyed believed they had changed their values or attitudes following the visit and only 7% had taken any direct action to support conservation or pro-environment initiatives. Those who did report a change in actions and attitudes were more likely to remember sensory experiences such as smells and sights as well as emotional connections such as protective instincts or concern for the animals wellbeing (Packer & Ballantyne, 2010). Aquariums in particular seemed to elicit emotional responses in visitors and caused them to reflect upon their own lifestyles in a new way, many feeling a strong emotional connection to what the animals may have been thinking or feeling. Falk (1983) also found that the duration visitors spent at the zoological institution had a direct positive correlation with the amount of learning they achieved and Altman (1998) found that interactive experiences were able to hold participants attentions longer than visual information or displays. These interactive displays, such as the elephant interaction program at Zoo Atlanta, also created more immediate conservation action; Swanagan (2000) found that visitors who took part in the interaction program were more likely to return donation cards handed out at the end of the Zoo visit and that the important factor was visitors ability to make a personal connection to conservation issues. There are however many theories on the factors that influence a participant’s learning.

2.4 Facilitation of Learning
As previously stated, a person’s personal motivation is a direct indicator of their learning, with people that were interested in the environment pre-visit gaining the most information from zoological exhibits. Packer & Ballantyne (2010) and Falk (2009) have argued that the marketing behind the image of zoos and aquariums has a great influence on the amount of learning experienced by all visitors. With a clear shift in focus from entertainment and social centres, to centres for conservation and learning the visitors should themselves adjust their expectations of what they are going to the institution to experience and this alteration in visitor outlooks should, therefore, have a positive effect on the amount of learning all visitors engage in (Packer & Ballantyne, 2010).

According to Packer and Ballantyne (2010) the reflective engagement, that is, the connection through thoughts, feeling and emotions was the most important factor in impacting a visitor’s learning. Exhibits that elicit emotions such as anger for the current state of the environment or sadness and compassion for the plight of the animals were strongly associated with increased knowledge acquisition and learning. Kolb (1984) suggested that learning follows a cycle beginning with the experience itself, which connects reflectively with the participant causing them to re-evaluate their environmental position, which in turn leads to some kind of action being taken on the part of the visitor. The emotional connection participants have is therefore of paramount importance when deciding on the design and organization of Zoos and Aquariums, as this is a cycle and many visitors will either visit a new institution or re-visit one they have already encountered. There is potential to increase environmental action each time with the
participants increasing their knowledge and interest with each visit resulting in them taking more learning from subsequent visits (Kolb, 1984).

Interactive exhibits or exhibits that allow participants to get very close to the animals and organisms they encounter, have benefits towards conservational learning but there has not been enough in-depth studies into participant’s feelings and learning goals that they bring with them when they visit. The bulk of information on this topic has been gained through quantitative measures and a qualitative look may glean new insights into the true motivations and learning of participants, it is for this reason exactly that I have chosen a qualitative methods approach to this topic in order to hopefully gain new insight into an area of education shrouded in mystery and negative public image.

Chapter 3: METHODOLOGY

3.1 Introduction

This qualitative study seeks to investigate whether staff believe that the visitation of zoos and or aquaria creates a positive environmental impact on its visitors, which translates directly into a more pro-environmental attitude towards living and government policies.
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In addition, motivations for visiting the institution, as well as the perceived value of the institution, will be explored. This investigation will use interviews with staff from two different zoological institutions.

3.2 Method Overview

Data collection will be done through interviews with staff of various zoological institutions to gain a personal and individual insight into their perspectives on the value of the institution and the perceived impact these institutions can have on people’s lives post-visit. Interviews will be conducted through online connection applications.

3.3 Participants

My participants are three staff members of zoological institutions; they have access to the educational programming within their prospective zoo and aquarium and are familiar with their institution’s mandates towards conservation education and how they seek to achieve these. All interviewees have been with their prospective institutions for greater than one year, allowing them a deeper knowledge than candidates with more limited work experience. My participants differ in geographical location and ethnicity, allowing me to explore more diverse perspectives on the topic of conservation education and hopefully drawing out geographical differences in conservation priorities. Interview participants were recruited using connections through my undergraduate studies in Zoology at Cardiff University, UK.
3.4 Data Collection and Analysis

Data collection will occur between May 1\textsuperscript{st} 2014 and March 31\textsuperscript{st} 2015. Data collection will be done through informal qualitative interviews with staff, all responses being recorded using a Dictaphone (All interview questions can be found in Appendix B). Interviews will last no more than 60 minutes per person. Participants will not be informed of the questions in advance to avoid scripted and analyzed answering. Interviews will begin with an outline of the ethics review for the interviewee and an explanation of the questioning process. Interviewees will be told that they are not obligated to answer any of the questions asked and that they may reserve their right to not answer a question by saying the word “pass” to the interviewer. All the questions asked will be the same for each interviewee for consistency of the process.

Post-interview all responses will be fully transcribed and reviewed for accuracy on multiple occasions. The interviews, once transcribed, will be assessed individually to form a full understanding of each participant’s standpoint. Following this, interviews of visitors will be cross-analyzed to discover similarities and differences in staff responses. The information will then be reviewed into thematic groupings that will be selected during the review process. The groupings created will then be investigated alongside the present literature to view any disputes or information in accordance with the literature review. When the study is complete all information and interview will be stored in a secure password protected format to ensure the information remains private.

3.5 Ethical Review Procedures
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This study followed the approved ethical review procedures for the Masters of Teaching Program at the Ontario Institute for Studies in Education (OISE). Under this ethical review educators and parents could be interviewed as well as other administrative education staff. No children or adolescents were involved in the study under the guidelines of this ethical review.

Participants were given a consent form (Appendix A) outlining the purposes and methods of this study, which they read over and signed to signify voluntary agreement to take part in the study. Each participant was emailed a scanned copy of the letter to hold in his or her own personal records along with the contact information of the researcher. At any point in time any or all participants could have chosen to opt out of the whole study, or indeed not answer particular interview questions with no explanation necessary; this was made clear prior to interviewing any participant. Only my supervisor and myself had access to any of the interviewee’s information and personal details. All participants remained anonymous through the use of pseudonyms and the data collected has only been used for the purposes of fulfilling the needs of this study. All participants were aware of all the possible uses their data might have so they could be fully comfortable with the direction of the research.

3.6 Limitations of Study

There are a number of limitations, the first being that sample size in the study was small. To truly understand in general terms the influence zoological institutions have on individuals we would want to conduct a more comprehensive study, possibly including
quantitative data but for the purposes of this study, achieving a more robust sample size was not possible. My interviews were conducted with staff members of particular institutions and taking into account their affiliation with their institution, my participants may have been biased in their answers, wanting to display their place of work in a positive light. It would have been of great benefit to be able to interview participants of the educational programs available at the institutions that were investigated; these interviews may have offered a less biased personal opinion on the institution itself, as visitors would not feel obligated to portray their experience in a particular light.
Chapter 4: FINDINGS

In this chapter you will find the results of the three interviews I conducted during the study period; procedure and dates of this study may be located in Chapter 3. While analyzing my data four themes emerged that were closely linked to my research questions. These four themes were: staff perceptions of purpose, environmental impact on participants and legislation, conservation learning and finally value weighed against cost. My findings will be presented under the four themes as well as under the individual interviewed in some cases.

4.1 Participants

The three participants selected for interview work in varying sizes of zoological institutions and are geographically located in both the United Kingdom and South Africa.

The participant that will be referred to as Dora (all names are pseudonyms) has been working in a small aquarium located on the South African coast for 1.5 years. She has the least work experience of all my participants with regards time but is heavily involved in the complete running of the aquarium as well as the education programs that stem from it. She has had the opportunity to educate interns on how to conduct themselves in the aquarium and has a close relationship with the directors and co-
founders of the company she works for, this enables a deep understanding of the company’s mission.

My second participant whom will be referred to as Lewin has been working at a large zoo in the south of England for more than 2 years but has been with the zoo for three years if you include a placement there. Lewin has a deep understanding of the animal conditions in his zoo as he is directly involved in husbandry and care making him a valuable asset to understanding whether the value of the institution outweighs the means by which it is achieved. He is also involved in public educational talks and creating educational material for the public.

My final participant, whom I will be referring to as Andy, has been working at an extremely large zoological institution located in the midlands, United Kingdom. Andy has a wealth of experience and has been with the zoo for twelve years. He provides a considerable depth of knowledge to the study. The role Andy plays at the zoo is two-fold, he is involved in the education department and in the creation of educational materials but also, interestingly, is involved in research on the impacts visits to his institution have on patrons. Andy is invaluable to the study because he has the ability and knowledge to give in depth personal accounts on the effect his institution is having on the public.

4.2 Staff Perceptions of Purpose

It is important to understand what the participants feel is the purpose of their institution. It is interesting to see if they believe their purpose to be one of environmental impact or
simply entertainment. This distinction of role will no doubt influence beliefs on the amount of impact and the value an institution can have for participants.

_Dora_

Dora believes her aquarium has two major roles. The first role is one of educating the public so that they “leave better informed and having had a positive experience” with the animals. She believes her role to be one of education while at the aquarium both for the public and for the interns that come in to volunteer on a monthly basis. The second role of this institution is one of scientific research and conservation. Research is conducted on animals at the aquarium: they are tagged and behavioral tests are run. The aquarium is also involved in a much larger research capacity as it is connected to a marine research center. Dora notes that the aquarium is used for funding this larger research program through visitor donations and spending. The aquarium is directly involved in conservation through its tagging program of its species. This aquarium is unique in that the animals housed here are transient: they are only kept in the aquarium for a couple of months before they are re-released back to the ocean. With this tagging program the aquarium builds population information on species in the area.

_Lewin_

Lewin believes that the purpose of the institution is very much dependent on who you are as an individual. He believes that the purpose is one of public engagement: to encourage advocacy and behavior change in it’s participants that could benefit conservation. The goal is to make the public care about the environmental issues they present at the zoo and help them understand what actions are being taken both for and
against these issues. Interestingly, Lewin believes that many visitors see the zoo as a place for leisure and for recreation but he says that this is not the main goal of the institution, it is merely a means of engaging the visitors. The direct role in conservation cannot be ignored, Lewin says; his institution has many breeding programs and research that goes on to assist conservation efforts.

Andy

Andy was extremely succinct in his interview and almost scientific in his short answers. When describing the role of the zoo he works at he simply stated directly the mission of his zoo, which is: “to be a major force in conserving biodiversity worldwide”. He did not elaborate on how this purpose was to be achieved and did not mention that the zoo may have an educational role in conservation. Although Andy did mention that many people visit the zoo for a social reason such as spending time with family he never mentioned that his zoo is involved with the entertainment of it’s visitors.

4.3 Environmental Impact on Participants and Legislation.

The Importance of Personal Contributions

It was important to me to understand my participants’ personal beliefs about being environmentally conscious and to understand the actions they take. I was interested to see if they were active in being environmental advocates as this shows if they personally believe that one person can have an impact and make a difference. This helps me understand if they are following their institution’s mission and in turn whether they are likely to instill environmental ideals in their visitors.
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Lewin and Dora appeared to take personal contributions to the environment very seriously. They both stated that it was “important” to lead an environmentally conscious lifestyle themselves as they felt that modeling this practice was a key factor in influencing the behavior of visitors to their institutions or of people in their lives. Lewin believed that it was in fact a responsibility of his to live a greener lifestyle due to his profession and went as far as saying it was “everybody’s responsibility” to inform their lifestyle in an environmental way. They clearly valued the impact an individual can have and Lewin was adamant that “any attempt at being environmentally conscious” was a “valid and worthwhile” endeavor.

Andy believed that it was, “to a degree” important to lead an environmentally conscious life and that it was fairly easy to “do your bit” but believed that he would not want to pressure anyone into action. Interesting that he would equate his own actions with pressuring others. In the interview Andy appeared hesitant to divulge his own personal environmental actions, saying that he did “the usual” sort of thing like recycling and ethical purchasing. It is a possibility that he did not describe his actions in detail because, for him, they seemed obvious and not worth mentioning. Perhaps Andy did not describe that many actions because he does not perform many environmental actions himself. It was made clear that Andy believes that environmental change must happen on a “societal” level more than an “individual” one. The government has a huge responsibility in Andy’s eyes to initiate action.

Impact of Institutions on Personal Action
All of my interviewees believed that in some capacity their institution had a positive impact on visitors’ environmental consciousness but their degree of impact and who was more impacted was debatable. Andy was very clear that his institution had a direct impact on biodiversity-related knowledge, even referencing a paper in his answer that showed that 6,000 visitors statistically increased their knowledge post-visit. He was less confident that this increased knowledge impacted visitor’s actions though. Being a scientist Andy would not give me an answer based on his personal beliefs, he stated that he did not have enough evidence to say whether visitors were more likely to act or to support pro-environmental legislation. Unless there were numbers to back his point up Andy refused to give direct answers in his interview.

Lewin believed that all visitors left more environmentally conscious but the degree of this change was dependent on what the person encountered on their visit at the zoo. The most obvious change, for him, was to “young people”, this group was more likely to get more of an understanding and was the group he most often heard talk about changing their personal behaviors. The engagement at the zoo, according to Lewin, provides visitors with awareness on how to enact conservation change and so he believes that as a result of the visit, patrons are more likely to support pro-environmental legislation. The ability to make visitors receptive to pro-environmental legislation is created by giving them more understanding and making them emotionally care for the taxa in the enclosures.

For Dora it was difficult for her to say that the everyday visitors of her aquarium left more environmentally conscious than they arrived. She spoke to them giving positive
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feedback and decreasing their fear of sharks, something she believes is key to the support of pro-environmental legislation regarding this animal. She believed a participant’s likelihood to become active in legislation was determined by whether they were a politically inclined individual to begin with. In the South African community where Dora works, there was a successful public campaign to prevent a desalination plant being built so clearly the people in the area do value their marine life but whether the aquarium have an influence or not cannot be known. Dora is very clear on the fact that her interns leave their month long placements greatly changed with regards environmental consciousness. She gives accounts of some of them arriving with little to no marine knowledge and leaving to become “shark advocates in their home countries”. She believes the program that the interns are a part of changes their lives and is long lasting.

Training in Teaching Methods

If zoological institutions are aiming to affect change through educating the public, one would assume that the staff they have are trained on how best to educate their visitors. Training staff on how to effectively educate the public would heavily increase the impact the zoological talks and programs have on participants. Surprisingly, currently none of my participants receive educational training in their current role. Andy received training when he previously worked as an Education Officer but in his current role he is left to his own knowledge. Both Dora and Lewin have never received formal training on educating the visitors they see on a daily basis.

Lewin believes that educational training would be valuable and acknowledges that if he pushed for it, he could request training as part of professional development but this
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is not a mandatory part of his job. The reason behind this lack of training, Lewin believes, is budgeting restraints. Lewin thinks, “it would probably be impractical” to provide all staff at the zoo with a thorough level of education training. The talks Lewin delivers do get sent through staff members in the education department and so although he himself has not been trained, it is my understanding that those members in education have been.

Dora believes that her passion for the animals and the scientific knowledge she possesses gives her adequate knowledge to be able to educate her visitors. As a small-scale company, all individuals who work there have strong zoological backgrounds and are highly informed and, more importantly, passionate about conservation. The company director sees the educational materials that Dora creates before she presents them, but she says that modifications to her work are rare. Dora does not believe that she needs formal training on what to say to individuals that visit the aquarium; she dislikes the idea of standardized talking points. Having a team that thinks on their feet and delivers a personal touch to their information is what Dora believes makes the aquarium effective at educating its patrons.

4.4 Conservation Learning

To determine the efficacy and value of zoological institutions in affecting real conservational change in their visitors it is necessary to understand whether visitors leave having increased their knowledge on conservation. It is my belief that a person's understanding can lead directly to conservational action. In the case of animal and habitat
conservation if the plight of the area or animal is unknown to the visitor than the chance of action being taken, positive or negative, is very unlikely. People must understand an issue to be able to adequately affect its outcome. With regards conservation knowledge it is important to know how each of my interviewees views the term “conservation knowledge” and then consequently whether they believe visitor’s knowledge is improved post-visit.

Defining Conservation Knowledge

For all my participants conservation knowledge involved two key aspects. The first part of knowledge was understanding the wealth of animals on the planet. They spoke of being informed on the species and biodiversity we have. A key component of understanding biodiversity in their opinion was the factors that might put that biodiversity at risk either currently or in the future. It was of great importance that factors affecting populations were clear and well understood. The second part of conservation knowledge concerned action. Conservation knowledge involved understanding the steps being taken and the solutions proposed for any issues that biodiversity or a particular species was facing. This involved understanding on a macro level through government policies and international treaties as well as on a micro level through knowledge of personal actions that could have an impact. For Andy personal contributions not only meant what an individual could do to help a species but also if they were to utilize an animal or plant, how to do so in a sustainable manner.

Visitors' Conservation Knowledge Post-Visit
All my participants claimed that their zoological institution increased conservation knowledge of visitors but when asked for what anecdotal evidence they had to back up their conclusion, the answers were sometimes not as clear as the personal opinions staff had on the matter.

*Andy*

The clearest evidence for improved conservation knowledge came from Andy. Like in previous questions, Andy refused to give a more personal anecdotal account on what he felt was having an effect on visitors’ knowledge. Sticking to his scientific background Andy spoke of two different studies that had been done at his institution. Both of these studies had conducted empirical research on visitors and their conservation knowledge pre and post-visit and according to Andy it was found that, statistically, a visit improved visitors’ knowledge on biodiversity. He failed to comment on whether this included knowledge of actions that an individual or government was or could be taking to assist in conservation.

*Dora*

Dora was sure that the aquarium she works at has an impact on conservation knowledge. She was specific with her evidence for believing this to be true. In the aquarium there is a large painted wall when you enter and it graphically show the international threats to shark population in an eye catching visual display. Dora believes that this image would certainly be a lasting one for visitors and it along with the information located around the aquarium would impact a visitor’s knowledge. Even without speaking to a single staff member Dora feels visitors leave with improved
knowledge. Through her interactions with visitors, especially those who come multiple
times to the aquarium, Dora has witnessed a shift in attitudes. Dora spoke of people
commenting on their reduction of fear toward sharks during even a single visit to the
aquarium. The most marked difference Dora witnessed was in children, whom she says
become much more positive towards sharks after interacting with them, they are less
afraid to handle the animals and they come back more inquisitive. Dora believes that “if
you have a positive attitude toward an animal, you are more likely to want to conserve
it.”

Lewin

Lewin was similarly confident that visitors left with an increased personal
conservation knowledge. The amount of knowledge gained was dependent on visit
frequency as well as duration at the institution. The more opportunities visitors had to
speak with or listen to staff, the more knowledge Lewin believed they would leave with.
Speaking with visitors lead Lewin to believe that their knowledge on conservation had
been improved markedly and he, like Andy, spoke of studies his institution had conducted
with regards visitor knowledge that had statistically show a difference in visitors’
understanding and knowledge of conservation. It is Lewin’s belief that increasing the
amount of interactions between visitors and staff could increase conservation knowledge
further. This, along with interaction programs would, in his opinion, deepen the
knowledge visitors obtain.

4.5 Value Weighed Against Cost
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After discovering whether my participants believed their institutions were making a marked difference in the lives of their visitors and in conservation efforts I was interested to know if these institutions subsequently had great value in our lives. Housing animals in captivity can be a contentious topic and one people can be very divided upon in my experience. I was interested to understand this from the perspective of staff members of zoological institutions. What kind of value do they believe their institutions have in society and does this value warrant housing animals in captivity?

Value of the Institution

It was interesting to see the difference my participants had when asked the motivation of visitors and the inherent value of the institution. There was a clear difference in their views on why people are going to their institutions and what the value of the institution was. All of my participants said that they believed visitors came to their institution for the societal aspect of spending time with friends and family. The primary motivations of patrons were recreation and leisure. Dora also stated that because her institution is small and near a busy restaurant, visitors do come in out of curiosity to see what is going on but she also believed their primary motivation for visiting was entertaining themselves. Although these institutions clearly have societal value in recreational activities this was not the primary value my participants felt the institution they worked for had to offer.

All three of my participants had a different focus for what value their particular institution had. Andy was unclear about the value his institution had, he believed they had positive value but was unsure on the specific of this positive value. He stated that
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zoological institutions pull in "700 million" visits a year and he believed this in itself had inherent value, whether that is positive or negative.

Lewin and Dora had a similar theme to the value of their institutions, one of education/connection to nature. Lewin believes his institution creates a connection with and understanding of environmental issues, which make it extremely important with regards conservation. Dora believed her institution also played a crucial role in educating the public to value their ecosystem and conserve their world. This educational value was not only achieved in visits but in the outreach programs the aquarium runs to educate those who cannot afford to attend the aquarium. There was huge value for Dora in her institutions methods as a model for visitors to see regarding zoos and aquariums. The animals in the aquarium are housed for a few months and then re-released into the wild and Dora believed this was sending a clear message to visitors about the inherent value of the animals themselves, teaching visitors to value the life of the animal and that it was not simply there for our entertainment. This message was something she stressed was very important to portray to visitors and that it was of great value.

All my participants agreed that the demographic that got the most out of zoological institutions were children or young adults. They were apparently more engaged in the displays and material and were more likely to take part in the activities provided. Andy qualified this by saying that zoos were well suited to the “scaffolding” approach to learning so they were most suited to children and families.

Value vs. Cost
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It was of huge importance to me to get an insiders perspective on whether the value of these zoological institutions negated the controversial practice of housing wild animals in captivity. I wanted to know how my participants felt about housing animals and whether their view was held for their institution in particular or zoological institutions as a whole.

On a personal level, Andy said he was “comfortable” with animals in captive settings and was “particularly” comfortable with animals housed in the institution he works at. He was quick to say that there was a huge disparity in animal welfare between institutions on a global level, an issue he believes needs to be addressed. Andy did admit that he has some “irrational” objections to some taxa being housed in captivity but was reluctant to mention which taxa specifically. Interestingly in this part of the interview Andy made it explicit that these were his own personal opinions and not those of his employer, even though the questions were worded as personal accounts. The value of the visit far outweighed the means of the operation for Andy. Again, he spoke of statistical evidence that zoological institutions have a positive effect on their visitors (educational, emotional and attitudinal). There was a case for the value to not outweigh the means at other institutions. The important factor for Andy was animal welfare; he believed that the legal requirements for animal welfare were “set quite low” and that in many institutions the standard of care was not good enough to warrant housing animals in captivity.

Lewin was clear and confident that he personally had no issues surrounding the ethics of housing animals at his institution. Being involved with the daily care of the animals, Lewin spoke of the compassion and care the staff, at his institution, have for the
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animals in their care. The quality of other zoos did not come into question in Lewin’s responses; he believed that zoos were “well managed” and had “stringent regulatory measures” so he could not see “anything detrimental with the running of these institutions.” For the reasons previously stated, Lewin believed the value of a visit to completely justify the means by which it was created. The “animal ambassadors” at his zoo, according to Lewin, have enormous potential to conserve their wild conspecifics. The only situation that Lewin could perceive where zoos were not needed was in a society where conservation threats were properly addressed and rectified, a situation he believed to be impossible.

For Dora, the focus of whether to house animals in captivity or not comes down to the process and how long the animals are housed. She personally felt “completely comfortable” housing animals in the institution she works at as this is done in a “sustainable manner” that utilizes natural resources but does not harm them. The release program at her institution was what made her so confident in her program. The animals get released to the wild after a few months of observational experiments and are tagged prior to release. She believed even without the institution educating the public using the animals the housing would be justified as it “directly contributes” to the conservation of species’ populations. Dora was equally as clear that if animals were not housed in a sustainable manner, such as her aquarium does, than she could not be a part of that institution. Strong opinion was stressed on housing large aquatic mammals like cetaceans, Dora believed their tanks “robbed” the animals of their necessities and believed these conditions were harmful to the animals. She did not think that in cases
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where animals were used purely as disposable agents of entertainment and money making, that the value in any way outweighed the means.

Having reviewed my participants’ beliefs on zoological institutions and their efficacy at creating conservation action or attitudinal change in visitors I have garnered insights into the validity and value of zoological education programs. Some insights are new and contrasting with the literature, while others are strongly in accordance with it.

Chapter 5: DISCUSSION

I began this research project in the hopes of discovering how participants’ environmental attitudes are affected by zoological institution’s educational programming and the beliefs that the staff had surrounding the impact they were making. Throughout my interviews and findings I uncovered four themes that loosely reflected my initial research questions as well as uncovering some information I was not explicitly in search of. In this chapter I will discuss the implications of my findings and connect them to the current applicable literature.
5.1 Staff Perceptions of Attitudinal Changes in Visitors

All three of my participants conveyed personal accounts, beliefs and anecdotes of increased conservation and biodiversity knowledge within their respective zoological institutions. It was clear that visitors did engage the institution in an educational manner and interestingly two of my participants believed young people to garner more information than other age groups. Personal accounts by Lewin and Dora expressed their belief that attitudes of the visitor had shifted due to this increase in conservation knowledge to become more environmentally conscious. This correlated well with their own personal beliefs that being an environmentally conscious individual was a responsibility they had and was of importance for all people to have. Andy self-identified as a less environmentally conscious individual simply “doing his bit”. It is interesting that he also did not belief that an increase in knowledge necessarily changed the visitor’s environmental consciousness. Perhaps it is the lack of personal practice that is reflected on to his beliefs that visitation doesn’t change attitudes or conversely perhaps it is Dora and Lewin’s strong impetus on environmental consciousness that results in their belief that attitudes in visitors they encounter have changed.

Certainly the literature does point to an increase in conservation knowledge in visitors of zoos and aquariums (Miller et al. 2013). However unlike the beliefs of Dora and Lewin, the literature does not point to a strong shift in personal attitude post-visit with only 5% of individuals studied by Packer and Ballantyne (2010) believing they had experienced a personal attitude change. None of my participants had received formal training in educating the public or in methods that may results in deeper connections for
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visitors, a fact I found astounding. Lewin suggested it might be due to budget restraints
that they do not receive this training. If these zoological institutions are not utilizing their
budget to train their staff on educating the public than it seems worrying that they are
promoting themselves as centers for education and conservation as that is clearly not
where their funding is being prioritized.

5.2 Staff Perceptions of Visitors Likelihood to Support Pro-environmental
Legislation.

The literature presents a rather disenchanting view of the real practical impact visitation
has on pro-environmental legislation and it’s likelihood to be supported. Although, as
previously stated above, conservation knowledge is believed to increase in visitors; that
is, visitors are educated on the plight of various species in need of conserving as well as
measures being taken to ensure their sustainability and survival. It does not appear that
this knowledge is converted directly into action on the part of the visitor. Packer and
Ballantyne (2010) found that 7% of people surveyed in their study had taken direct
conservation action to support pro-environmental legislation post-visit. Visitors that do go
on to take direct conservation action, according to Swanagan (2010), are more likely to
be participants of interaction programs or hands-on experiences with and emphasis on the
sensory and emotional connection. In accordance with this literature Dora found that she
could not accurately demonstrate direct action in visitors that only viewed the educational
and conservation information, she did however see an extremely strong shift towards
action in her interns whom spend a number of days at the aquarium in their month long
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stay. These interns also interacted with and handled the animals, giving them that
sensory experience that Swanagan (2010) believes is the key to emotionally connecting to
the species. Lewin believed that because visitors were informed on how to enact
conservation change that this would be reflected in their actions. However, as we can see
the literature states that this is not always the case.

Andy did not believe he could be sure that direct conservation action was being
created as a result of visitation. It could be that as Dora pointed out in her interview, you
are simply more likely to take direct action post-visit if you are more inclined to political
of societal action in the first place. Perhaps it is an individual’s pre-conceived ideas that
determine the impact zoological institutions have on them. Again it is shocking that staff
members are not informed on their impact on the public or indeed educated on how to
increase this impact. This only deepens my concern that although conservation is touted
as being at the core of these institutions, as in all companies, the most important factor is
profit margin; although Dora’s sustainable institution flies in the face of this belief due to
it’s non-profit nature and sustainable methodology.

5.3 Staff Perceptions of the Role of Their Zoological Institution

The literature states that visitors attend zoological institutions primarily for social and
recreational reasons (Ballantyne, 2010). People attend these institutions with their family
and friends and for the visitors their purpose is one of engagement and entertainment.
Hutchins (2003) believed there was a shift occurring where zoological institutions were
becoming increasingly focused on being centers for education and conservation, no
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longer citing entertainment as their primary goals. Twelve years on this shift only seems to have occurred within the attitudes of those working in these institutions. My participants all believed that their respective institutions’ role was one of conservation and education in some way. Whether it be through conservation research, such as at Dora’s aquarium or through engagement of the public through natural history interpretation and facilitation, none of my participants believed their institution to be simply a place for entertainment and leisure.

When asked about the motivation of their visitors, all the participants spoke to people visiting for social purposes and recreational enjoyment, not once mentioning people visiting for education. It is clear that the staff in these zoos and aquariums believe strongly in their responsibility to educate the public and conserve the environment but it is no surprise that visitors are not engaging in direct conservation action as they arrive at these zoological centers with the motivation to have an enjoyable social occasion, not to educate themselves. I am not naïve enough to believe that zoos and aquariums should purely be centers for education in order to truly impact their visitors, the concept of entertainment and social relaxation will draw more people with a wider diversity of interests in initially. There does however need to be a focus in marketing on the combination of entertainment and education. The motivations that visitors arrive with directly impact the outcomes the institution has on people’s attitudes and beliefs post-visit due to these institutions being areas of free-choice learning, where the individual decides how much education to be a part of and the degree to which they participate in the learning experience (Miller et al. 2013)
5.4 Staff Belief in Zoological Institution Value

Something not investigated in the literature at present is perception of the conservation value of zoological institutions when weighed against the ethical dilemma of keeping large social animals in confined spaces. This was something of particular interest to me and to get staff perceptions on this was extremely eye opening as these individuals are directly involved with the animals and are responsible for the education happening within their institution. I expected to see a positive outlook on zoo and aquarium value as the individuals I interviewed work in the zoological sector and surely would not be in their current profession if they did not believe it worthwhile but interestingly the views and perceptions were not completely positive.

Only one out of my three participants could see absolutely nothing ethically questionable about housing animals in captivity, believing that their worth as animal ambassadors and their impact on the conservation of conspecifics as well as the excellence of care the animals received resulted in no issues with the practice. The other two participants stated that some zoos and aquariums were extremely ethically questionable and that the standards of care at governmental outlined levels were not enough to justify housing the animals. Andy stated that legal requirements for animal husbandry and enclosure conditions were set “quite low” and only because his institution worked well above these levels was he confident that the value of education outweighed any potential harm.
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Interestingly my final participant believed that nearly all zoos and aquariums were causing high levels of pain and suffering to their animal inhabitants as they were denied their right to a free-living existence. Only because her institution houses wild animals for short periods of time and then re-releases them was she comfortable working at the institution. It was openly stated that she would “never” work in zoos and aquariums that housed large social mammals in confined spaces for their entire lives. Perhaps this methodological shift to housing animals for short periods is the key to maintaining the dignity of the animals themselves not merely being seen as agents of entertainment for humans to what they will with them. It could be that this is the future of zoological institutions given the current negative public image.

5.5 Limitations

The limitations of this study include the small sample size as well as the homogenized sample of professionals interviewed. A large sample size may have gained more insights into different zoological operations and their impact, perhaps revealing methods for best practice to apply to other institutions. My participants were homogenized in their profession, they all worked within zoological institutions to educate and engage the public in some manner. Interviewing individuals that may not have personal perception biases on the information being absorbed by visitors as well as the value the institution has as a whole may have gleaned a more diverse opinion base. Finally, due to the qualitative nature of the study, the information is presented through the lens of
individuals passionate about environmental conservation, quantitative measures would result in less personal biases influencing the research and impacting the results.

5.6 Implications and Recommendations

Moving forward, this study has highlighted the intense passion that staff at these institutions have for the species they are trying to conserve, the depth of belief by staff of their necessity and conservation impact as well as how the natural competition conservation has with profit margins. As a future conservation educator, I will endeavor to educate visitors about the dignity the animal has in the institution and to make a conscious effort to research the impact I personally have on the conservation action of others so as to truly understand the value and worth of whichever zoological institution I become a part of. I will support steps towards more sustainable aquarium and zoo methods as well as push for a stronger emphasis on the education that can be achieved through visitation.

On a more personal note I will be more aware of the power I can have as a role model for others for sustainable practices. I will take this responsibility more seriously, as some of my interviewees do, and truly commit to an environmentally friendly life and not one that simply appears sustainable on the surface. As someone trying to instill belief in conservation efforts in others I will put my own personal conservation action to as much positive use as I possibly can.

5.7 Further Study
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I think there are a number of areas for future study that have come from my research. With conservation education being at the core of so many zoological institutions I think it is of great importance to investigate whether any zoological institutions train their staff in education techniques to improve conservation action in visitors post-visit. If other zoological institutions do train their staff, how does their educational impact compare to those institutions that do not train their staff. This would inform zoo and aquarium budget allocation and possibly result in greater conservation action for the future.

The other large question that my research has led me to is the perception visitors have of animal rights within the institution. Dora spoke in her interview about how her aquarium’s methodology, she believed, influenced peoples’ perceptions of animal rights. The aquarium she works at releases its animals back in to the wild and they live free lives outside of the 3-5 months they spend in the aquarium. Does housing animals in captivity for their entire lives create the perception that animal welfare is not of great importance; that animals are merely there for our own consumption and entertainment? Perhaps zoological institutions can only truly impact visitor’s perceptions of animals and their conservation if their methodology fits within their mission.

Finally, further research must be done into how to convert conservation knowledge into conservation action. What best practices can be found in other institutions other than interacting in a hands-on way with the animals? Perhaps utilizing technology to remain in contact with visitor’s post-visit might impact the speed at which their attitudes return to pre-visit levels. I think it is of great importance to investigate how zoos and aquariums can have a continual impact on visitors long after they have left the
institution and resumed their daily lives. It is this connection in the everyday context that
will truly impact visitor’s attitudes and actions for the long-term.

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APPENDICES

Appendix A: Letter of Consent for Interview

Dear ___________________,

I am a graduate student at OISE, University of Toronto, and am currently enrolled as a Master of Teaching candidate. I am studying the value and benefits of aquariums and zoos from the perspective of their visitors and staff as well as the motivations behind visiting these institutions for the purposes of a investigating an educational topic as a major assignment for our program. I think that your knowledge and experience will provide insights into this topic.

I am writing a report on this study as a requirement of the Master of Teaching Program. My research supervisor is Dr. Erminia Pedretti. The purpose of this requirement is to allow us to become familiar with a variety of ways to do research. My data collection consists of a 40-60 minute interview that will be tape-recorded. I would be grateful if you would allow me to interview you at a place and time convenient to you. I can conduct the interview at your office or workplace, in a public place, or anywhere else that you might prefer.

The contents of this interview will be used for my assignment, which will include a final paper, as well as informal presentations to my classmates and/or potentially at a conference or publication. I will not use your name or anything else that might identify you in my written work, oral presentations, or publications. This information remains confidential. The only people who will have access to my assignment work will be my research supervisor and my course instructor. You are free to change your mind at any time, and to withdraw even after you have consented to participate. You may decline to answer any specific questions. I will destroy the tape recording after the paper has been presented and/or published which may take up to five years after the data has been
collected. There are no known risks or benefits to you for assisting in the project, and I will share with you a copy of my notes to ensure accuracy.

Please sign the attached form, if you agree to be interviewed. The second copy is for your records. Thank you very much for your help.

Yours sincerely,

Researcher: Nathalie Louise Mary Graham

Phone number, email: 001-647-869-5685

Instructor’s Name: Dr Antoinette Gagne
Phone number: _________________ Email: ___________________

Research Supervisor’s Name: Katherine Bellomo
Phone #: _________________ Email: ___________________

Consent Form

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw at any time without penalty.

I have read the letter provided to me by ________________________(name of researcher) and agree to participate in an interview for the purposes described.

Signature: ______________________________________

Name (printed): ___________________________________

Date: ____________________
Appendix B: Interview Questions

Staff Questions

General Questions:

1. How long have you been working in this setting (zoo/aquarium)?

2. Have you worked in this setting in other countries? If so, where?

3. In your own words describe what your role here in the institution is?

4. What do you think the purpose of this institution is?

Questions Related to Conservation Effort/Knowledge of Participants

1. Do you believe it is important to lead an environmentally conscious life?

2. If yes, through what actions are you environmentally conscious?

3. Do you think visiting this institution creates more environmentally conscious individuals? If so how?

4. Do you get trained in presenting information to influence the environmental attitudes of visitors?

5. If yes please describe the training, if no do you think that you should (what would that training look like)?

6. How would you define the term conservation knowledge?
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7. Do you think visitors leave here having more conservation knowledge? What evidence do you have to support your answer?

8. Post-visit do you think visitors are more likely to support pro-environmental legislation? Why or why not?

9. What avenues do you have available for visitors to exercise positive environmental action at your institution?

Questions to do with motivation and value of the institution?

1. Why do you think people visit the institution?

2. Why do you think institutions like these are valuable?

3. Do you personally see anything detrimental with the running of these institutions?

4. What demographic do you think would get the most value from this institution (explain your answer)?

5. How do you personally feel about the ethics surrounding keeping animals in this institution? (Explain)

6. Do you feel the value of the visit warrants housing animals in captivity? (Explain)

7. Could you see a case where housing animals in captivity would not be warranted?

Future Steps/ Extras
1. What could be done to increase the impact your institution has on the environmental actions of its visitors?

2. Are there any exemplary ideas you have seen at other institutions that would have a large impact on visitor’s environmental attitudes?

3. Are there any further points you think are worth sharing for this study?