



# Conservation education at the zoo

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## Abstract

Historically, the first existence of zoological gardens (zoos) goes back as long as 4 500 years ago. At that time, keeping animals in captivity was a way to show high societal status with money and power. Much has happened since then, and the modern zoos of today have a main focus on conservation, education, research and animal welfare. The aim of this master's thesis is to examine how four Swedish modern zoos communicate and educate their visitors about conservation. Further, the effect of these efforts was investigated in terms of potential behaviour changes among visitors. The methods I used consisted of interviews with five employees who work at the zoos, as well as reading reports and scientific articles. My results show that there is continuous work being done at the zoos to develop their work with conservation education and how they communicate about conservation. Many different ways are used to educate visitors, for example viewings, signs, guided tours and theme days. I also concluded that it can be difficult for visitors to change their behaviours after a zoo visit, despite the information they get. I looked through the lens of "The theory of planned behaviour" since that theory could help to explain the disconnection between information and behaviour change. Furthermore, my results suggest that it would be good to initiate systematic evaluations to optimize the communication methods to visitors. My results also show that there are ways to contribute to the conservation work at Swedish zoos, but that the suggestions to visitors are currently almost exclusively about donating money. Advising visitors on how they can take action in their daily lives in favour of conservation would probably be important to prevent further species extinction and habitat loss in the future.

*Keywords: Zoo, conservation education, communication, the theory of planned behaviour*

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## Abbreviations

AZA	The Association of Zoos and Aquariums
EAZA	European Association of Zoos and Aquaria
IZE	International Zoo Educators Association
SAZA	The Swedish Zoo Association
WAZA	World Association of Zoos and Aquariums

# 1. Introduction

Planet earth is today facing the sixth mass extinction. In the next centuries, 75% of all species on earth are at risk of being extinct (The Swedish Society for Nature Conservation 2021). To stop this trend, more natural habitats must be protected, and people in general need to be aware of and informed about this serious issue (ibid.) Modern zoological gardens, zoos, is one of many actors that have an intention to educate people about sustainability and nature (Godinez & Fernandez 2019). In addition, many modern zoos have conservation programs to prevent species extinction and protect natural habitats. However, critics often point out that the zoos are not doing enough in terms of conservation work, and that the animal welfare is questionable. It is therefore important to investigate both the zoo's education to visitors about conservation as well as the zoo's own work with conservation (ibid.). In other words, it would be of great value to understand whether or not modern zoos play a vital role in modern society, i.e. to justify their existence.

To provide visitors with conservation education is one of the most important purposes for modern zoos (AZA 2022). However, the effect of these efforts has not been systematically studied and evaluated in Sweden. The main aim of this master's thesis is therefore to investigate the conservation education and communication performed by Swedish zoos, and to study what ambitions zoos have with their educational efforts and how they work to fulfil these ambitions. In line with this, the current work is based on the following three research questions:

- How do Swedish zoos carry out their education to visitors?
- If and if so, what suggestions on conservation actions and behaviour change do Swedish zoos give their visitors?
- If and if so, how do Swedish zoos evaluate their education and communication to visitors?

In this master's thesis, I have conducted interviews with five persons employed at four Swedish zoos regarding how they communicate and educate their visitors about conservation in general as well as how they communicate their own work with conservation. The interviews were analysed by using thematic coding and the



results were compared with previous literature and research on this topic. Furthermore, I have used the “theory of planned behaviour” to interpret the interview responses and to problematise how Swedish zoos work with their communication and education to visitors, and what consequences that work has on the behavioural change of the visitors.

## 2. Background

A visit at a zoo is for many people associated with entertainment and a nice activity to do in their spare time (Godinez & Fernandez 2019). However, according to the Association of Zoos and Aquariums (AZA), there is a lot more to zoos than entertainment. The functions and goals that today's zoos have include research on animals kept at the zoos, education of the general public as well as conservation of species and habitats (AZA 2022). Studies have been made to examine if visitors at zoos are affected by their visit and learned something about conservation, and if these potential effects/knowledge could be seen in terms of a different sustainability behaviour and new views on conservation (Godinez & Fernandez 2019; Taylor & Duram 2021; Roe & McConney 2015). An international study conducted by Roe & McConney (2015), shows that 72% of zoo visitors go to zoos with an ambition to learn something. At the same time, zoo staff interviewed in the same study did not agree with this conclusion. In another study where participants were asked if they learned their sustainability behaviours when visiting a zoo as a child, 35% of the respondents indicated a positive answer (Taylor & Duram 2021).

When searching for research already done on this topic, I could not find any articles or material that have been produced by studying Swedish zoos. This seemed a bit surprising to me, since zoos today have an important role to fill when it comes to teaching people about sustainability and conservation. Further, many Swedish zoos profile themselves as excursion destinations with an educational purpose.

Conservation education can be seen as a part of environmental education (Ojalampi and Nygren 2018). The focus of conservation education is “conservation of nature, endangered species and biodiversity” (Ojalampi & Nygren 2018:235). I am using this as a definition of conservation education in this master's thesis report since I consider it a clear and distinct way of defining this complex term.

### 2.1 Zoo associations

There are a number of associations, from national to worldwide, that bring together zoos and aquariums. The organisations guide and support their members regarding

for example education and conservation. Some of the most relevant associations for my study are described below.

The Swedish Zoo Association, SAZA, is a membership organisation for zoos and aquariums in Sweden and Norway (SAZA 1 n.d.). The organisation's 21 members work together to preserve endangered species and their habitats. To be a SAZA-member, the zoo or aquarium must have certain basic permissions (SAZA 2 n.d.). These permissions can for example be found in The Swedish Animal Welfare Regulation (Swe: Djurskyddsförordningen) and The Swedish Species Protection Regulation (Swe: Artskyddsförordningen), but it depends a lot on the zoo or aquarium and which species that are kept there. Regular inspections of the zoos are carried out to ensure the members' animal husbandry, safety and contribution to conservation, research and education. These regular inspections often occur every fifth year and consist of visits from the SAZA's board and experts in the area (ibid.).

EAZA is short for the "European Association of Zoos and Aquaria" (EAZA 2022). The organisation works with questions regarding education, research and conservation in connection to zoos and aquariums in Europe and West Asia. The membership organisation EAZA has different types of documents regarding rules and regulations. For example, it has a document called "Conservation Education Standards" that consists of a list with 20 points divided into five categories (EAZA 2016). The categories are organisation, facilities and infrastructure, programming and content, professional development, and evaluation (ibid). The complete list of "Conservation Education Standards" can be found in Appendix 1 (page 44) along with an explanation on how to interpret them. Below follow three examples from the list:

2. The zoo must have a written conservation education plan. This plan must outline the zoo's conservation education activities, how they apply to different types of audiences and the strategic thinking behind the plan's design.
14. The zoo should educate their audiences about their own conservation work by demonstrating how their zoo makes direct and indirect contributions to conservation.
18. The zoo must evaluate its conservation education programmes using appropriate methods.

Since 1935, the World Association of Zoos and Aquariums, WAZA, has a goal to support member organisations in their work with conservation, environmental education and animal welfare (WAZA 2022). WAZA gave out a strategy document in 2020 called "Social Change for Conservation: The World Zoo and Aquarium Conservation Education Strategy" in collaboration with the International Zoo Educators Association, IZE (IZE & WAZA 2020). This is the first unified global

strategy regarding conservation education. The strategy is a guideline for zoos and aquariums, and it provides support and recommendations on how to work with conservation education to visitors (ibid.).

The Association of zoos and aquariums, AZA, is an organisation that represents zoos and aquariums in the United States and abroad (AZA 2022). The organisation has more than 235 accredited “members” (ibid.) AZA:s vision is “a world where all people respect, value and conserve wildlife and wild places” (AZA n.d.).

## 2.2 Contested zoos

In the 20<sup>th</sup> century, both the public and the science community started to question the existence of zoos and their purpose. This was the start of more conservation-oriented zoos (Roe et al. 2014). Despite this, critics still argue that zoos are not doing enough to conserve species and habitats (Milstein 2009). One argument is that zoos do not breed the animals that are most endangered, but rather the animals that they are interested in showing to their visitors. Another argument is that most of the animals kept at the zoos not are endangered or threatened at all. Critical voices also question how the animals are treated, and that the picture of nature and animals that zoos provide give the impression that humans are the superior species. The impression that zoos save the worlds endangered species can also give visitors a false sense of security (ibid.).

One counter argument from the zoos is according to Milstein (2009) that the animals kept there help conservation efforts as they give important and practical information that may not be possible to get from wild animals. One role of modern zoos is also to give urbanized people without any clear connection to nature an experience with animals they never otherwise should get (Roe et al. 2014). This last argument is in line with a citation from Sir David Attenborough that The Swedish Zoo Association, SAZA, has on their website:

*”No one will protect what they don’t care about, and no one will care about what they have never experienced.”*

This master’s thesis does not take a stand for or against zoos per se, but instead investigates the role of Swedish zoos as conservation educators. By choosing the theme of this thesis I wanted to understand how modern Swedish zoos work with education of visitors about nature conservation. Studies like this one are, from my point of view, important since they hopefully can indicate if the educational work performed by zoos makes any concrete difference on visitors’ understanding of the need for conservation actions and on their concrete behaviour in favour of nature

conservation. Further, I hope it can contribute to the improvement of the educational work that is performed by the zoos.

### 3. Literature review

Every year, more than 700 million visits are made to zoos and aquariums worldwide (Pavitt & Moss 2019). With this comes a great opportunity to educate visitors about conservation as well as to support and advise visitors to change their behaviours in favour of conservation (ibid.).

In this literature review, I look at how adults and children are affected and influenced by zoo visits. The reason why I include children in my literature review is that they probably are the largest group of visitors since they can visit both with their school and with their family. Jensen (2014) has further identified that zoo studies often look at adults and how they are impacted by their visit, but that children often are excluded.

The first study investigated how visits to zoos as a child could potentially affect how adult persons act in terms of sustainability (Taylor & Duram 2021). The study, in the form of a survey, showed that 76% of 136 participating university students thought that they behaved in a sustainable way in their everyday life. Despite this, there were only 35% that believed that they had learned their sustainability behaviours at zoo visits earlier in life. 65% of the participants were, however, pointing out that zoos have an impact on their general environmental thoughts. These thoughts were first and foremost about animal welfare and about species that are at risk of extinction. This suggest that there is a great potential for zoos to be an educational site for environmental learning, with an emphasis on a fun and hands on experience.

Another study examined whether children learned something about conservation from an educational activity during their visit to a zoo (Collins et al. 2021). The result was that children who participated in a learning activity gave more positive comments in general than children in the control groups that visited a zoo without having an educational activity. This result thus indicates, according to Collins et al. (2021), that the children learned something from the intervention, but that the experience of learning were depending on the educational activity and the animals viewed (in this study lemurs and penguins). Other factors that seemed to be important were the design of the enclosures for the animals and the animals' degree of activity. The study was based on overheard conversations between the children,

but further studies need to be done in order to know if conversations is a reliable way to investigate the tendency of conservation behaviour.

Jensen (2014) made a study where he looked at children's (ages 7-15) thoughts and understanding of nature conservation when visiting the London Zoo with their schools. The study also examined the difference between school visits with an educational guide and those without a guide, and how this difference affected children's learning. The study consisted of surveys where the children were asked questions before and after their visit. The children were also asked to draw a picture of their favourite animal in a natural habitat. The results from the drawings before and after a zoo visit showed that the children made more detailed drawings after the visit with more written information on it. Regarding the overall study, the general conclusion was that a child who experienced a visit with a guide learned more about conservation than a child who went on an unguided visit.

The researchers Smith et al. (2008) investigated whether a zoo visit can have an impact on conservation learning and behaviour not only immediately after a visit but also six months later. They decided to design their study with an inclusion of five steps that haven't been used in previous research in this area. These steps included that the zoo's employees were trained in communication theory and how to make an interactive presentation that included two specific conservation actions. Visitors were then asked if they had heard of any conservation actions in the presentation, if they intended to change behaviour as a consequence of the presentation, or if they already were practicing the described conservation behaviour but would increase it as a reaction to the presentation. After six months, a telephone survey was conducted to find out if the presentation had led to any behaviour change. The study took place in Australia and the presentation included birds of prey and their behaviours presented by employees at the zoo. The conservation actions in focus of the presentation were "recycle paper and buy recycled paper" to prevent deforestation and thus save bird habitats and "remove roadkill from the road", leading to fewer cadaver-feeding birds being run-over. The results from the study showed that 81% of the interviewees said that they perceived information on conservation actions to perform during the bird presentation, and 54% had an intention to make or to increase these actions. However, in the 38 follow-up interviews that followed six month after the zoo visit, 26 interviewees said that they "had started or increased their commitment to an action", and only three persons said that they had begun a new action and that this action was already known to them.

As a summary, the most important piece of information I found in my literature review was that only 35% of asked university students believed that they had learned their sustainability behaviours at zoo visits earlier in life. 65% of the

participants were, however, pointing out that zoos have an impact on their thoughts about animal welfare and about species that are at risk of extinction (Taylor and Duram 2021). Further, children who participated in an educational activity during a zoo visit seemed to learn more than children who did not participate in a learning activity when visiting a zoo (Collins et al. 2021). Children who went on a guided tour also learned more about conservation from their zoo visit compared to children who were not offered a guided tour (Jensen 2014). A study by Smith et al. 2008, indicated that it is rare that a zoo visit leads to behaviour changes in the long term, even if a zoo educates visitors on conservation behaviours and if the visitors take up that message.



## 4. The theory of planned behaviour

Modern zoos has an ambition to teach visitors about conservation, but new knowledge does not automatically lead to a behavioural change (Nordström Källström & Ljung 2002). One theory that can explain why it is difficult for people to change or modify their behaviour is “The theory of planned behaviour” that was first described by Icek Ajzen in 1985 (Ajzen 1985; Ajzen 1991). The theory, that is an improvement of “The theory of reasoned action”, is explained by Ajzen as “a theory designed to predict and explain human behaviour in specific contexts” (ibid.). The theory has been widely used to study individual behaviour in a number of various areas (Yuriev et al. 2020). Further, it is also frequently used to evaluate if the desired outcome of conservation education efforts are reached (Buckley et al. 2020). The theory of planned behaviour influenced how I interpreted the interviewed persons answers and guided the way I gave my recommendations.

According to the theory, behaviour is based on intentions, which in turn is based on three other parameters: 1) attitude towards the behaviour, 2) subjective norms, and 3) perceived behaviour control (Ajzen 1991). The attitude towards the behaviour describes positive and negative things that a person associates to when considering a certain behaviour. Subjective norms are social factors that determine how a person considers how other people he/she identifies him/herself with view the behaviour. Perceived behaviour control means to what extent a person considers how easy or difficult a behaviour is to perform, which is based on previous experiences and obstacles that may occur (ibid.).

An example of a potential behaviour change that a zoo may suggest to a visitor is to buy less products that contain unsustainably produced palm oil. The attitude towards this behaviour could be that the visitor wants to help preserving the rainforest in Borneo and specifically the orangutans who live there. This visitor had been watching the orangutans at the zoo, became fascinated by them and wanted to do something concrete to preserve their habitat (“positive attitude”). However, the visitor had noticed that products that are not containing palm oil often are more expensive to buy in the local store (“negative attitude”). In this conceivable example the social life of the visitor involves other people with an interest in preserving the environment in general and the Borneo rainforest in particular, so

the subjective norms are not a holdback. This specific visitor has however experienced a difficulty to change this kind of behaviour since before because of the time it takes to read through a products table of contents that often is unclearly written, sometimes with incomplete information (“perceived control”).

The theory of planned behaviour have been criticised, even suggested to “retire”, but also defended by people arguing that the theory is reliable and can be used in studying a broad spectrum of behaviours with only a few parameters (Conner 2015). Critics of the theory have argued that there often is a gap between the intention and the behaviour. This is recognised by Conner (2015), but he argues that we cannot always expect a correlation between these two for several reasons. There can for example happen unexpected things between the intention and the behaviour that is difficult to foresee, and other parameters can also affect us, such as the weather. These things can most likely explain uncommon variance in behaviour (ibid.)

Of the three parameters that form an intention to a behaviour, it is probably the one called perceived behaviour control that is likely for a zoo to affect by giving information, advice and suggestions to visitors on changes in behaviour and concrete actions declaring what to do as an individual. Attitudes towards the behaviour can possibly be affected by recurring zoo visits over a longer period of time, while subjective norms can be difficult for a zoo to change since norms are affected by much more than what a zoo can accomplish. However, a zoo must take both parameter one and two into account when they create a communicative message and provide information and advice to visitors about possible behaviour changes.

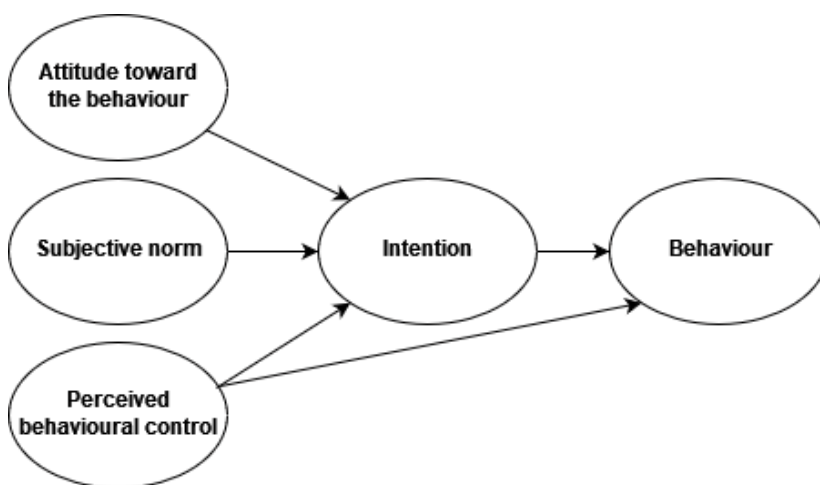


Figure 1. The theory of planned behaviour (Ajzen 1985).

## 5. Methodology

### 5.1 Research design

I began the work with my master's thesis by contacting Swedish zoos and ask if there were employees at the zoos who were willing to become interviewed. Interviews are, according to Robson (2002), a flexible and adaptive way to collect data. The unique advantage of interviews is that the questions can be adjusted at the moment of the interview, and that follow-up questions can be asked to clarify and to give interesting new views and insights (ibid.). The interview as a method has great potential to provide answers that are informative, explanatory and descriptive.

Further, I read reports and scientific articles to build up my knowledge about the thesis topic, both to see what angels that have been explored and which conclusions that have been drawn in previous research. Conducting interviews and reading reports and articles is included as part of performing qualitative research, i.e. research containing data that is open-ended and that the researcher himself/herself collects (Creswell & Creswell 2018).

Once the interviews were completed, they were transcribed, translated into English and anonymised. The interview data was then analysed using thematic coding.

### 5.2 Data collection

I contacted six well established Swedish zoos that are well known for their work with conservation and education. To get a broad sample, I chose zoos that have different specialisation regarding animal species and size in terms of number of visitors. The selection was based on the information I found about the zoos' work on their websites.

In the e-mails I sent to the zoos, I gave a short explanation of the purpose with my thesis and asked if someone working at the zoo was willing to participate in an interview. If I got a positive answer, I sent another e-mail were I also attached tree

appendices containing information about the interview, a consent form and my interview questions. The document with information about the interview explained how I planned to use the data from the interview and that I was going to record and translate the interview to English. Furthermore, I informed that the interviews should take place electronically using the Zoom video conferencing platform, take approximately one hour and were going to be anonymised. Of the six zoos contacted, four zoos represented by five persons was interested in participating. They accepted the terms in the information sheet and returned the signed consent forms to me.

The participants in the interviews were two zoo educators, one zoologist, one animal keeper and a person working with conservation projects related to the specific zoo. All of them have an educational background in biology, animal care or ethology.

The interviews were conducted in Swedish. The interview questions were mainly about how Swedish zoos communicate and educate visitors about nature conservation. Secondly, the questions were about how the different zoos' communicate their own work with conservation. The reason that I sent my questions in advance to the participants was that a couple of zoos wanted to see the questions before the interview so that they had the possibility to look up information that was unclear.

## 5.3 Analysing the data

I used thematic coding when analysing the interviews. Thematic coding is a way of analysing qualitative data (Robson 2002). It is sometimes called constant comparison analysis since new data is compared with previous codes to see if there are similarities between them. If similarities can be seen, both data get the same code. The codes are then grouped in smaller themes, and the themes then build one or a few networks. These networks will consist of themes with similarities in for example content or on theory basis. The last thing to do is to understand and interpret the data in the network(s) by looking at patterns and trends (ibid.).

Since I had not used thematic coding analysis before, I followed five phases of thematic coding established by Robson (2002) as a guideline. The first thing I did was to get to know the data from the interviews by reading the transcripts of the interviews carefully and writing down ideas that came up at this early stage (Robson 2002). The second step was the process of coding, where I gave similarities in the data the same code. To make this step as easy as possible, I printed out the transcripts of the interviews and manually (using colours, different pencils and

signs) marked words and sentences that I found relevant or interesting. It could for example be repetitive words, surprising answers, things that the respondents themselves described as important or something else that stood out.

After I had coded the transcripts followed the step of finding themes among the codes. Some of the themes were quite obvious since there were similarities or repetitions in the answers from the interview questions, while others were more difficult to recognise. I therefore chose to write down every code from each interview question in a list and then create themes or sub-themes based on the answers. Thereafter, I named the themes and summarised my findings from the thematic coding analysis in a text. The sections 5.1-5.9 in this thesis are based on the themes that were identified in the analysis of the interviews. The themes I found were named as following:

- Information to visitors
- Website focus
- Visitors' commitment and how it is created
- Communication strategy
- Target groups
- Pedagogic competence
- Cooperation between zoos
- Suggestions on conservation actions
- Evaluations and surveys

## 5.4 Benefits and limitations with thematic coding

There are both benefits and limitations to consider when using thematic coding analysis. According to Robson (2002), advantages are that it is flexible to use and fits most qualitative data, independent of the research field. The method is considered simple, both in terms of understanding and using, if compared to other ways of analysing qualitative data. Further, the outcome of the analysis can be explained in a way that is quite easy to follow.

The flexibility of thematic coding analysis is (as stated above) an advantage, but also a limitation. The reason for this is that the researchers probably have a lot of

data that could be analysed, and due to the flexibility of thematic coding a lot can be said from the data and, as a consequence, clear and stringent conclusions may thus be difficult to draw (Robson 2002). This also means that it potentially could be difficult to decide what to focus on when analysing the data.

My view is that thematic coding is an appropriate choice of analysis for my study since it is described as a method that is easy to use even for those who are not familiar with doing research (Robson 2002). Robson (2002) further suggests thematic coding analysis to be generally useful when analysing qualitative data.

## 5.5 Reflexivity and ethics

According to Creswell & Creswell (2018), reflexivity in research has to do with the researcher's previous experiences and how these experiences shape interpretations during the study. Previous experiences include what connects the researcher to the study, and can for example be education, work, culture or ethnicity. The "interpretation" part includes how the researcher interprets findings in the study. It can for example be specific thoughts that the researcher wants to prove right or wrong or a conclusion that the researcher wants to draw based on things that he/she have experienced in the past.

It is important to reflect about the process when doing research as well as how the study develops (Creswell & Creswell 2018). I am aware of that things I have seen when visiting zoos in the past and articles I read about the topic could have influenced how I interpret my findings. I will do my best to acknowledge this and try to reflect about it.

There may be ethical concerns in relation to my research. An important factor for me is that the participants in the interviews understood that I will strive to be unbiased in my research and not to take a stand for or against zoos. The purpose of my study is instead to understand how modern zoos work with conservation education and communication to visitors. Further, I want to investigate the eventual effects that this work has on zoo visitors in the form of changed behaviours in favour of conservation. This is vital so that everyone who participated in my study felt that they could speak freely about the topic.

I have had the opportunity to interview five employees located at four different Swedish zoos. The interviews were recorded, transcribed and anonymised. However, it was a bit difficult to decide if and how I could describe the four different zoos without revealing them or the participants in the interviews. Since the zoos have different approaches and themes, it can be good to write out some information about each of them, but without saying "too much". This was a difficult

question to decide upon, but in the end I came to the conclusion that the best way to keep the anonymisation was to rename the zoos and not write out any additional information.

## 6. Results

During the work with this master thesis, five persons working at four different zoos in Sweden were interviewed. The questions I asked were about how the zoos educate visitors about conservation, and how they communicate their “own” work with conservation to the visitors who are coming to the zoo. The zoos are in this thesis anonymised and named A, B, C and D. The sections 5.1-5.9 are based on the themes that were identified in the analysis of the interviews.

### 6.1 Information to visitors

Zoological gardens (zoos) have many ways of giving information to their visitors. Common to all four zoos are the use of signs with information about the animals living in the enclosures. Further, all zoos have some kind of viewings. During a viewing, a person working at the zoos informs about a specific species and sometimes also feed it. The feeding part can be a way to activate the animals or to get the animals closer to the audience.

Another thing that is similar among these four zoos is that they have visitor information on their websites and on their social media channels. Furthermore, all four of the zoos have dedicated programs for schools, from preschool to high school, and some are also teaching university students. The school programs are adapted to each age category and are often connected to the curriculum.

Both zoo A and B have produced their own booklet for children visiting with their families, which include small tasks and activities connected to their visit. Some examples of tasks in zoo A:s booklet is to hug a tree, guess which animal who made a trace and tick in which animal you seen, smelled or heard. Further, zoo A has an explanation of biodiversity specifically for children in their booklet and a possibility to cut out a small medal. Zoo B:s booklet has tasks like guess the poop, follow a trace and compare yourself with the size of an animal. The focus in the booklet from zoo B is conservation.

Theme days, where a specific species and its conservation efforts are in focus, is something that is regularly arranged at zoo B and C. An example from zoo C is the



annual day of the primates. Another activity that visitors can take part of in zoo A and B is guided tours.

Some things stand out when it comes to informing visitors. Zoo D has for example an app with information about what they do to conserve different species as well as a map over the zoo. Zoo A has a centre for predators where they inform about the Swedish predators in an interactive way. Furthermore, zoo B has cooperation with the local municipality as well as with the Swedish church as they teach confirmation groups about evolution. Zoo B also has “conservation stations” where visitors are informed about specific conservation projects as well as an education project where school children in the municipality get education about sustainable development, including a visit in the park with specially composed lessons.

## 6.2 Website focus

The representatives from zoo A and B said that they were displeased with what the website could offer at the moment, but for different reasons. Zoo A:s representative said that the website had been taken care of by an external company, and that the website is not up to date. Information that is missing on zoo A:s website involves zoos work in general, the zoo’s conservation programs as well as information about the research that they conduct. However, a marketing communicator hired by zoo A itself will take care of the website from now on, and until it is fixed it is nothing that the park highlight.

Zoo B:s representative expressed that they do not make use of their website in the right way from an educational perspective. *“The idea with our current website was that it should be easy to navigate on and have species information adapted to children, but the website is not there yet”*, the person said. Furthermore, the person said that the park also must inform the public about what a zoo today is and what requirements the zoo have to fulfil. *“Many people think that we just collect animals without any control. We have a responsibility to inform the public about how a modern zoo work”*. According to zoo B:s representative, an organisation as a zoo can have many different kind of information they want to mediate on their websites depending on which unit of the park you talk to. *“Every different part in an organisation has their focus, for example the marketing unit that has another perspective on what we should inform about on our website. The education section will though get a bit more access to the website starting from now on”*, the person said.

A person working at zoo C said that the primary focus of their website front page is about booking. However, it is not difficult to find information about conservation,

the person explained. Zoo D:s representative told me that their website has three focuses; information about the zoo's conservation projects, visitor information and facts about the species at the zoo and how to donate money to the zoo.

### 6.3 Visitors' commitment and how it is created

There are several ways in which the visitor commitment could be recognised by the zoo representatives. The most common way is that visitor's want to know more and ask questions. Zoo A:s representative said that commitment also could be recognised in visitors body language and "aha-moments" that visitors get. The representatives from zoo C said that people booking guided tours could be seen as a sign of commitment as well as when visitors choose to recycle their bottles in the park because they know that the money goes to conservation projects. The person from zoo D said that it can be difficult to see the animals at their zoo because they have quite large enclosures, but that people accept that since they know that the entrance money goes to a good cause. *"We could see more commitment from visitors coming to the zoo in the low season then in the peak season. In the peak season more families with children visit. They are there on vacation and just want a cosy day at the zoo"*, explained the representative for zoo D.

Visitor commitment can be created in many ways, but "doomsday talk" does not work, according to the person from zoo A. Instead, the zoos must increase the fascination and the experience of the animals. Further, zoo A:s representative said that the staff working at the zoo can answer visitors question, but also tell the visitors what we want them to know.

Park B:s representative said that they use a lot of props like cuddly toys, things from conservation projects, skeletons, skulls and furs that children can get a chance to explore, touch and smell. The people working with education at zoo B also work a lot with the support of pictures since many of the pupils visiting cannot understand Swedish at all or only partly. However, long lectures with PowerPoint slide after PowerPoint slide does not work when it comes to educating.

A representative from zoo C said that telling people about the animals and the purpose of a modern zoo works best. To only talk about conservation is not working because not many visitors is interested in listening to it. The education staff at zoo C therefor try to include conservation information in their talk's so that the audience have heard that part too and have it in mind.

In a personal meeting with a small group of people, for example five families, commitment can be both seen and created, according to zoo D:s representative. Bigger groups of people, 500-600, instead gets very anonymous. Furthermore, the

person from zoo D said that conservation can be a little complicated, and that the zoo staff therefore try to make it as easy and understandable as possible to create commitment among the broad public.

## 6.4 Communication strategy

None of the four zoos have any communication strategy or theory that they base their education to visitors on. However, the person from zoo A said that they look at SAZA:s and WAZA:s communication strategies while the person from zoo B said that they look at SAZA and EAZA and their strategies for education. Further, zoo B also has their own education strategy. *“This strategy does not say specifically how we should teach, but it tells us what we at least should achieve regarding education to visitors”*, the person from park B said.

When having viewings or meeting visitors and answering their questions, the staff from zoo C has a script with things they want to highlight in their talks. They changed this script a couple of years ago so that the part about conservation came first. The reason for this change was that when this part was mentioned in the end of the presentation, many people had already left the viewing. *“Now, when the conservation part comes first, we kind of force people to listen to this part as well”*, the person from park C said. The representative from zoo D explained that though they do not have any communication strategy, their education staff try to involve visitors and students listening to a lecture as much as possible, with discussions and interactions.

## 6.5 Target groups

The common denominator for all parks is visitors consisting of families with children. This is the main target group for zoo A and B, while zoo C:s and D:s representatives said that they address themselves to all kinds of people. However, families with children are their most common type of visitor and for park D this is especially in the peak season in summer.

## 6.6 Pedagogic competence

All four parks have employees with some kind of pedagogic competence. Park A have experienced animal keepers that take care of guided tours and viewings. In addition, they hope to have a zoo educator in place shortly. Park B and C have zoo educators working with guiding and education of school children. Park D has an

education unit that works very targeted to schools and their own preschool inside the zoo area.

## 6.7 Cooperation between zoos

There is cooperation between zoos, both within Sweden but also internationally. The representative from zoo A said that they are in a close contact with other Swedish zoos. *“I talk to other zoos every day”*, the person from zoo A said. Further, zoo A:s representative sees other Swedish zoos as colleagues, not competitors, and the different zoos cooperate. The person from park A continued: *“SAZA has working groups with focus on for example education, conservation and communication. We just had a research- and education conference”*.

Park B:s representative told me that SAZA has a research- and education group and that EAZA has a conservation- and education group and that these associations support the zoos work. *“SAZA had a research- and education conference a couple of weeks ago and representatives from quite many Swedish zoos were there. It is maybe the easiest area for us as zoos to exchange experiences and check what has happened since last year”*, the person from zoo B said. However, should a Swedish zoo wonder anything about another Swedish zoo, they just pick up the phone or e-mail. The representative from zoo B continued: *“We work for the same thing. There is no competition between the zoos, we help each other”*.

According to the representative from zoo C, there is absolutely a cooperation between zoos, both within Sweden but also within Europe. For example, EAZA has both a big, yearly conference as well as a conference only about conservation. Zoo D:s representative explained how EAZA has a conservation- and education group that works with different species and how to convey things in the best way. EAZA also have collective information campaigns for all member zoos and for example provide material to use in the campaigns. However, Park D is not a member of the Swedish Zoo Association.

## 6.8 Suggestions on conservation actions

Zoo A:s representative said that they do not have any specific advice on conservation actions except to donate money, but that they also want to try to change visitors' conservation behaviours. Further, Park B have different ways that visitors could donate money, from a donation directly to a specific species to different ways of giving money to the parks fundraising foundation. These different ways include buying a cuddly toy (10 SEK goes to the foundation), recycle bottles

in the park (all money goes to the foundation) and rounding-up money when buying food. The person from zoo B also mentioned that exceeding your knowledge as a visitor also is important and that the zoo hope to affect the visitors more permanent, in a broader context.

Zoo C:s representatives only mentioned donation of money as a contribution to conservation. This could be done via recycling of bottles, QR-codes and purchase of cuddly toys in the giftshop where part of the money goes to conservation projects. The person from zoo D said that visitors donation of money as well as visitors spreading of knowledge about species is important.

## 6.9 Evaluations and surveys

None of the zoos I talked to have any evaluation regarding their communication to visitors. Zoo A:s representative stated that they are unsatisfied with the communication, that they are changing everything at the moment and that they want to evaluate the result when the change has been finalized. The person from zoo B said that they could collect data, but that no one working at the zoo have time to analyse it. However, sometimes the staff at zoo B get direct feedback from teachers or students, but nothing more. Further, zoo C:s representative said that they base their communication on their own experience of what works best.

Two of the zoos, B and C, has surveys to visitors about their perception of the hole zoo experience. These surveys include all things in the zoo area, from food and funfair to the animal experience. These evaluations are digital. Zoo C for example send out an evaluation-link to all visitors who book an entrance ticket.

In addition, I asked the zoos if they have done any surveys for visitors about the zoo's own conservation work. None of the zoos had done that. The person from zoo A said that they go on their instincts and on their spontaneous, oral communication with visitors. Further, the representative from zoo D said that visitors should not be able to leave the park area without knowing that the park work with threatened species and how to preserve them. *"We want to know if a visitor that has only read signs in the park is more prone to preserve for example beetles or turtles? We have thought about doing a study around this, but it is not done so far"*, the person from zoo D said.

### 6.9.1 Survey material

Zoo B:s representative sent me the answers to four questions from the zoo's guest survey the year 2021. The guest survey involve the hole zoo experience and is not directly about the park's conservation work, but close enough. The result show that

a third of the visitors were aware about the fundraising foundation that belong to the zoo and that half of the respondents had awareness about the zoo's work with sustainability. Further, almost 80% of the visitors were satisfied that their visit gave an increased understanding of the zoo's sustainability work and almost all visitors were satisfied that their visit gave an opportunity to experience animals that are endangered in the wild.

## 7. Discussion

In this master's thesis, five persons working at four Swedish zoos were interviewed about their communicative and educational work concerning nature conservation. I found that all the four zoos have high ambitions and strive to improve their efforts with educating and informing their visitors about conservation and threatened species. The interviews also made clear to me that education and information not automatically lead to change in visitor behaviour. When looking closer into the literature, many examples can be found that illustrate this complication. Further, there is a lot of scientific literature about how zoos in different countries address their efforts to work with visitor education and how to improve the impact of the efforts. In this master's thesis work I have chosen the theory of planned behaviour to explain the reason behind the absence of behaviour change despite concrete and pedagogic information about nature and species conservation. Below follow some interesting literature examples in relation to my study.

### 7.1 Zoo education and visitors' contribution to conservation

A study made at Helsinki Zoo investigated the extent to which the visitors understood the zoo's communication about conservation (Ojalampi & Nygren 2018). The result showed that the understanding was limited and that the visitors did not get any concrete advice on how to contribute to conservation other than donating money. There was for example no suggestions of individual or collective actions in favour of conservation, and nothing was said about changes in lifestyle, consumption, diet or political impact. Further, a study made by Roe et al. (2014) showed that over 80% of zoo visitors around the world consider it important to learn how they can take action at home to contribute to conservation. It is therefore of great benefit if a zoo can give advice on how visitors can live a more sustainable life by connecting the visitor's own life choices to the threat that the animals at the zoo are facing in their natural habitats. One example of this is to buy less products with unsustainably produced palm-oil that leads to habitat loss for orangutans. Another example is that zoos can suggest visitors to create a garden with native

plants that can give animals a place to live, as well as reducing the use of water and pest control when cultivating in their gardens (ibid.).

During the interviews I held with the four Swedish zoos, I noticed that donation of money was a commonly used recommendation and that other suggestions on conservation actions were absent. My suggestion would therefore be to provide visitors with more examples of what they as individuals can do in their everyday lives to support conservation, preferably in connection to a specific species. To connect a conservation action to a specific species seems to give a greater effect than to promote actions to protect biodiversity in general (Godinez and Fernandez 2019). This is probably because biodiversity is such a large and abstract concept, while conservation of a specific species provides a concrete and more tangible commitment (Nordström Källström & Ljung 2002). Another study showed that active education with animals is to prefer, either physical or emotional, to get a better result in giving visitors conservation messages (Carr & Cohen 2011). Active education can for example be viewings, talks from animal keepers or touch tables, while passive education is when visitors just look at the animals or view boards with text (ibid.) The four zoos in my study have lots of ways of giving active education to visitors, including for example guided tours, viewings and theme days.

It is also important for zoo visitors to be able to support conservation when they are at the zoo (Godinez & Fernandez 2019). Ways to encourage conservation behaviour may be to sell sustainably produced items where a part of the incomes goes to support conservation, or that a part of the entrance money goes to a conservation project that the visitor themselves can choose (ibid.). Some of the zoos I interviewed in my study have similar ways to encourage conservation behaviour when being in the zoo area, for example by rounding-up money when buying food and recycle bottles in the park.

## 7.2 Visitor behaviour change and the theory of planned behaviour

It is important to remember that a change of behaviour among zoo visitors is a very difficult and complex task, and that there is no automatic correlation that says that knowledge automatically leads to a change in behaviour (Nordström Källström & Ljung 2002). The theory of planned behaviour can help to explain the difficulty with behaviour changes (Ajzen 1985). Of the three parameters in the theory that lead to an intention and then to a behaviour change, I think that the one called perceived behaviour control is the parameter that is the most likely one for a zoo to focus on to have an effect on a visitor. However, to have an effect, the suggested



actions or behaviours should be concrete, clear and realistic (Nordström Källstöm & Ljung 2002). If the actions are complicated, time consuming or diffuse, they will probably have less effect. Further, a risk is that visitors may perceive that their individual and collective actions do not make any difference if zoo's does not give any clear advice or suggestions on conservation actions. To talk about environmental problems without giving suggestions and advice on actions may even lead to anxiety and frustration among people (ibid.).

The large tooth sawfish is a critically endangered species that was the focus in a study by Buckley et al. (2020). The authors examined if an exhibit of the sawfish in four aquariums in Australia had any effect on visitors' conservation behaviours. They saw a positive change in attitudes among the aquarium visitors, but no clear difference in behavioural intentions (ibid.). To understand the reason behind this observation they turned to the theory of planned behaviour, and the theory helped them to recognise the importance of trying to change all three parameters leading to an intention to change behaviour. They saw that there was a lack of an educational message directed towards these parameters, and they suggested that a model for behaviour change should be used by zoos and aquariums in the future for a more effective implementation. The model could be the planned behaviour theory or a similar theory directed towards behaviour change. Further, the educational messages in the study were broad and not targeted. Recommendations would therefore be to give a more direct and targeted educational message, and to evaluate the results of these messages frequently for further development for even more efficient communication (ibid.).

Clifford-Clarke et al. (2022) investigated the impact on conservation education from animal ambassadors at zoos. Animal ambassadors, in this specific case Humboldt penguins, are animals that appeal interesting and charming among visitors, and the visiting audience can interact with them in supervision of the zoo staff. To use animal ambassadors showed positive impact on visitors when it came to conservation knowledge, promoting behaviours in favour of conservation as well as increased empathy for animals. In addition, the visitors came in closer contact with the zoo staff which affected their learning in a positive way. The result of the study showed that the zoo visitors learned about conservation, and that they increased the intention to change behaviours due to their zoo visit. However, the authors could not prove that the animal ambassadors specifically made any improvements to conservation education (ibid.). This study thus revealed the difficulty to change behaviours as a consequence of zoo visits. This conclusion can be explained by the theory of planned behaviour since several parameters must be fulfilled if a behaviour change will become a reality.

### 7.3 Evaluations and surveys regarding conservation education

When looking at my result section regarding evaluations and surveys, it was clear to me that the four zoos could improve their work in terms of evaluating their communicative and educational work. Today, none of the parks have any evaluations or surveys regarding these two parts. According to Mellish et al. (2018), it is for example important to evaluate the education done at the zoo, both to see if a desired outcome is given but also to recognize if for example the use of signs or presentations are increasing the desired outcome or not.

In the study by Ojalammi & Nygren (2018), the authors mention a WAZA visitor survey in collaboration with researchers that took place 2012 to 2015. The survey evaluated the understanding of biodiversity and the actions that existed to help protect biodiversity among visitors at zoos and aquariums. The result of the survey showed that a zoo or aquarium visit increased the “biodiversity knowledge”. However, it was pointed out in the study that it can be difficult to conclude whether or not the increased knowledge automatically leads to actions in favour of biodiversity, i.e. a behaviour change (ibid.).

### 7.4 My study and future research

I can see both strengths and weaknesses of my study when reflecting on the process of this master thesis. Strengths of this study are for example the results from my interviews that really made explicit how modern Swedish zoos educate and communicate visitors about conservation. I have also been able to highlight that there are areas within the zoos conservation education efforts that could be improved. These areas for example involve evaluation and suggestions/advice on conservation actions and behaviours. On the other hand, one weakness is that I have not been able to talk to any zoo visitors about conservation education due to the zoos opening hours and the corona pandemic. Another weakness is that “the theory of planned behaviour” not is applicable directly to my interview data since I have not been studying visitor behaviours. However, I believe that it is an interesting theory to use for understanding the difficulty of changing behaviours among zoo visitors.

A thing I realized when writing my master’s thesis was the difficulties that can occur in a large organisation when a number of aspects must be considered for the organisation to function. For example, a modern zoo must be able to be accepted by the public and to manage financially, and it must therefore take on an entertaining role alongside conservation, education and research efforts (Carr &

Cohen 2011). Entertainment needs to be included since many zoos need an income to be able to survive, and this income often comes from visitors paying an entrance fee and spending money at the zoo. Visitors must thus be attracted by what the zoo offers. A consequence may well be that education and conservation comes in “second place”. The zoos’ need for paying visitors can for example be seen in advertisement to tourists and that many zoos have a funfair with attractions within the zoo area (ibid.). It would be interesting to study the balance between entertainment and utility at different zoos, and if that balance could be changed in favour of nature conservation.

In future research, it would also be good to make more comparisons of zoo visitors and non-zoo visitors to figure out if and how zoo visits can contribute to conservation awareness and actions (Godinez & Fernandez 2019). Further, more research could also be done regarding how a conservation message best can be given to a visitor and how children perceive a zoo visit. It is clear that zoos have a great potential to influence and advice their visitors to live more conservation friendly lives.

## 8. Conclusion

As stated in section 1 (Introduction), the aim of this master's thesis has been to investigate the conservation education and communication performed by Swedish zoos, and to study what ambitions zoos have with their educational efforts and how they work to fulfil these ambitions. Below follow my research questions:

- How do Swedish zoos carry out their education to visitors?
- If and if so, what suggestions on conservation actions and behaviour change do Swedish zoos give their visitors?
- If and if so, how do Swedish zoos evaluate their education and communication to visitors?

The conclusions that can be drawn from the interviews is that Swedish zoos have several ways to perform education to visitors. Signs, viewings, guided tours and school programs are some examples. However, in order to educate and communicate more effectively, it would be of great benefit to evaluate the education efforts that is being done as well as the way the zoos communicate to visitors about conservation. Evaluation can show if a desired outcome is given, but also make it clear what activities, programs or tools that is best to use when educating visitors (Mellish et al. 2018). Furthermore, Swedish zoos could give their visitors more suggestions and advice on actions as well as behaviours that could be done in favour of conservation. Today, the suggestions are focused on donating money in one way or another. It is also important to remember that even though visitors often gain new knowledge from a zoo visit, this new knowledge does not automatically lead to a behaviour change or actions in favour of conservation. The theory of planned behaviour can help us understanding the complex task of trying to change a zoo visitor's behaviour by explaining how attitudes, norms and perceived control affect a person's intention to start a new behaviour. To strive for behaviour change among visitors as an explicit goal when teaching about conservation and to give visitors clear and realistic advice on how to take action in their everyday life are steps in the right direction of protecting nature and biodiversity.

I would like to end this master's thesis by giving some inspiration to all zoo educators out there. Below, I listed five points that hopefully can give some ideas on how to make education and communication even better in the future. Good luck!

- To create active education that offers physical and/or emotional interaction with animals gives a higher potential to get through with a conservation message (Carr & Cohen 2011).
- Give advice on how visitors can contribute to conservation in their everyday life (Roe et al. 2014).
- Make donation fun! At Helsinki Zoo, visitors could donate money to frog conservation by putting coins in a round box where the coins rolled around (Ojalampi & Nygren 2018). This activity was enjoyed by children, and I think that this is a good way of making donation fun.
- “My Environmental Education Evaluation Resource Assistant” (MEERA) is an online tool that can help to evaluate educational programs with focus on the environment. It can be found at: <https://meera.snre.umich.edu/>
- The International Zoo Educators Association, IZE, has a mission to “Engaging our members worldwide to achieve biodiversity conservation by encouraging sustainable behaviours in people that visit zoos and aquariums” (IZE n.d.) On their webpage, there are among many other things, a possibility to read the IZE journal.

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# Populärvetenskaplig sammanfattning

Historiskt sett går den första existensen av zoologiska trädgårdar (zoon) tillbaka så långt som för 4 500 år sedan (Carr & Cohen 2011). Att hålla djur i fångenskap var på den tiden ett sätt att visa hög samhällsstatus med pengar och makt (ibid.). Mycket har hänt sedan dess, och dagens moderna djurparker har ett tydligt fokus på bevarande, utbildning, forskning och djurvälstånd (AZA 2022). Syftet med denna mastersuppsats är att undersöka hur fyra svenska, moderna djurparker kommunicerar och utbildar sina besökare om bevarande. Jag undersökte även om den bevarandebildning som zoon utför har någon effekt på besökarens beteende. Metoderna jag använde bestod av intervjuer med fem anställda som arbetar på djurparkerna samt att läsa rapporter och artiklar. Jag analyserade min data från intervjuerna med hjälp av tematisk kodning samt försökte hitta skillnader och likheter med tidigare studier i ämnet. Mina resultat visar att det pågår ett kontinuerligt arbete på djurparkerna för att utveckla arbetet med bevarandebildning samt hur de kommunicerar om bevarande. Många olika typer av aktiviteter används för att utbilda besökarna, till exempel visningar, guidade turer och temadagar. Det skulle dock vara bra att införa löpande utvärderingar för att göra kommunikationsmetoderna till besökarna mer effektiva. Det finns visserligen sätt att bidra till bevarandearbetet på svenska djurparker, men förslagen till besökarna handlar för närvarande nästan uteslutande om att skänka pengar. Att ge besökare råd om hur de kan vidta åtgärder i sitt dagliga liv till förmån för bevarande skulle förmodligen vara viktigt för att förhindra ytterligare artutrotning och förlust av naturområden i framtiden.

Jag vill avsluta denna sammanfattning av mitt mastersarbete med att ge lite inspiration till alla djurparkspedagoger där ute. Nedan listar jag fem punkter som förhoppningsvis kan ge några idéer om hur man kan göra utbildning och kommunikation ännu bättre i framtiden. Lycka till!

- Att skapa aktiv utbildning som erbjuder fysisk och/eller emotionell interaktion med djur ger en högre potential att nå fram med ett bevarandebudskap (Carr & Cohen 2011).

- Ge besökare råd och tips om hur de kan bidra till bevarande i sin vardag (Roe et al. 2014).
- Gör det roligt att donera pengar! På Helsingfors zoo kunde besökarna skänka pengar till bevarande av grodor genom att lägga mynt i en rund låda där mynten rullade runt (Ojalampi & Nygren 2018). Den här aktiviteten uppskattades av barn, och jag tror att det här är ett bra sätt att göra donation roligt.
- "My Environmental Education Evaluation Resource Assistant" (MEERA) är ett online-verktyg som kan hjälpa till att utvärdera utbildningsprogram med fokus på miljöfrågor. Den finns att hitta på: <https://meera.snre.umich.edu/>
- International Zoo Educators Association, IZE, har ett uppdrag att "engagera sina medlemmar över hela världen att uppnå bevarande av biologisk mångfald genom att uppmuntra hållbart beteende hos människor som besöker djurparker och akvarier" (IZE n.d.) På deras webbsida finns det bland mycket annat en möjlighet att läsa deras tidskrift.

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# Appendix 1

Below follows the “Conservation education standards” from EAZA (2016). The full document with clarifications can be found at: [https://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA\\_Conservation\\_Education-Standards-2016-09.pdf](https://www.eaza.net/assets/Uploads/Standards-and-policies/EAZA_Conservation_Education-Standards-2016-09.pdf)

1. The conservation education role of the zoo must be reflected in its written mission statement.
2. The zoo must have a written conservation education plan. This plan must outline the zoo’s conservation education activities, how they apply to different types of audiences and the strategic thinking behind the plan’s design.
3. The zoo’s conservation education plan must make specific reference to how the zoo has integrated their mission and vision, as well as applicable national, regional and international policies into its conservation education programmes.
4. The zoo must have at least one member of staff with the necessary experience and qualifications that are responsible for leading and implementing the zoo’s conservation education plan.
5. The zoo must provide opportunities to learn about conservation within and outside the zoo site and online.
6. Conservation education in zoos should aim to raise awareness of biodiversity loss, connect people to nature and encourage sustainable behaviours
7. Conservation education in zoos should aspire to make conservation issues relevant to visitors’ own lives and experiences in order to inspire people to take action locally that can make a difference globally.
8. The zoo must have appropriate facilities to deliver its conservation educational programmes.
9. Conservation education must be an integral part of exhibit design.

10. In the conservation education plan, there must be specific reference to applying measurable learning outcomes to all aspects of a zoo's conservation education programmes.
11. The zoo should be able to demonstrate a range of delivery approaches in their conservation education programmes to cater for different zoo audiences and needs.
12. The zoo's conservation education messages must be based on scientific facts. Where cultural, religious or alternative ideas are represented they must be clearly indicated as such.
13. The zoo must present accurate and relevant information about the species exhibited.
14. The zoo should educate their audiences about their own conservation work by demonstrating how their zoo makes direct and indirect contributions to conservation.
15. Zoos should support staff involved in conservation education in zoos to be actively involved in local, national, regional and international conservation education networks and meetings.
16. Zoos should support staff involved in conservation education in zoos with the appropriate continuous professional development and training to be able to meet the aims of the zoo's conservation education plan.
17. The zoo must have a range of evidence to demonstrate how it is carrying out its conservation education plan.
18. The zoo must evaluate its conservation education programmes using appropriate methods.
19. The zoo should aspire to conduct a range of evidence based research to demonstrate the effects of conservation education in zoos has on people's knowledge, attitude and behaviour towards the natural world.
20. The zoo should aspire to engage in partnerships with external organisations and academic institutions to conduct social research and evaluation projects.

How to interpret the standard documents are explained below:

“The four Standards documents outline what EAZA Members are expected to do. These expectations are mandatory except where otherwise clearly indicated within such documents. The Standards are regularly reviewed and updated”.

*Source: An overview of EAZA governing documents (EAZA 2021).*

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