

Dutch Zoos: From animals in cages to leaders in nature conservation?

Bachelor thesis by Lotte Gijzen

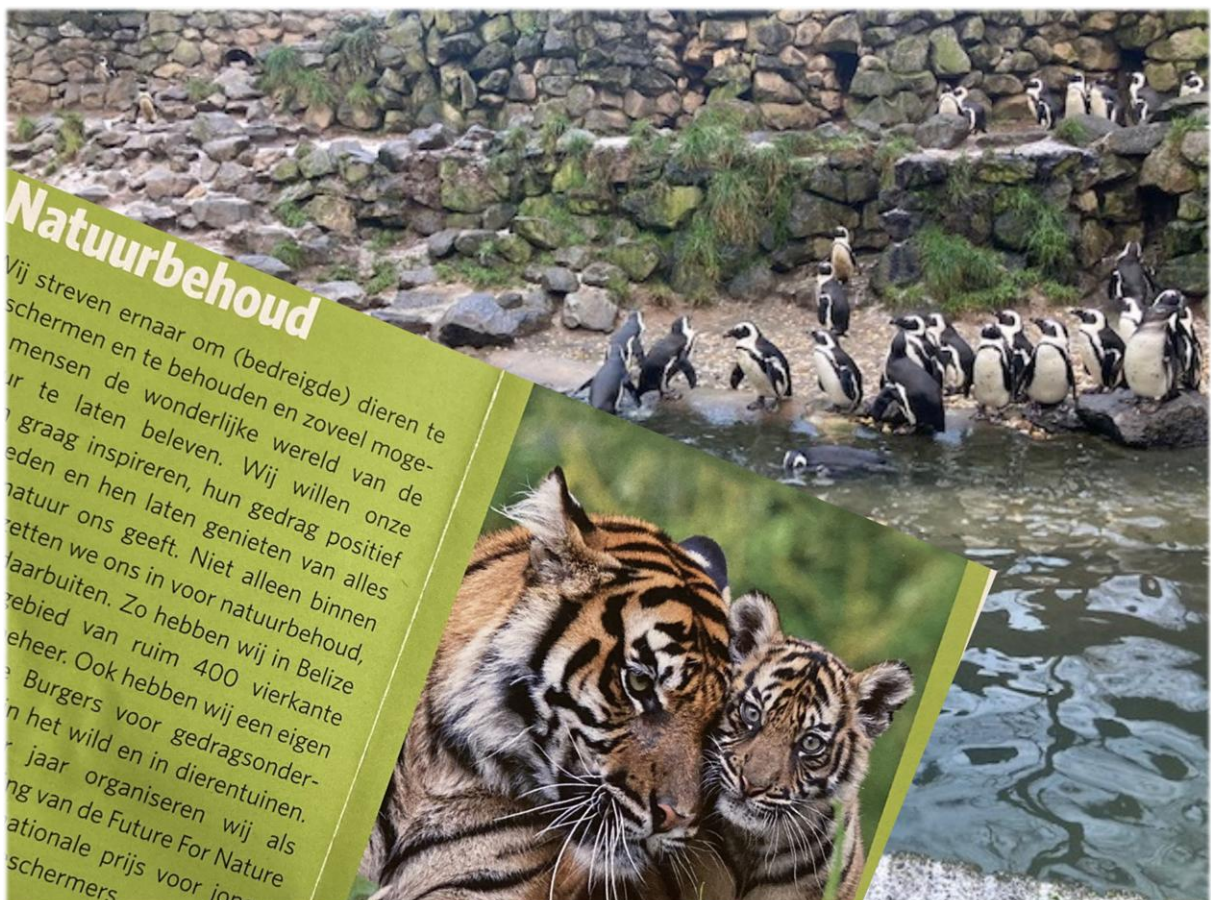


Figure 1: Collage brochure Burgers' Zoo and photo. Own work.

Bachelor thesis Geography, Planning and Environment (GPE)

Nijmegen School of Management

Radboud University Nijmegen

June, 2025

Dutch Zoos: From animals in cages to leaders in nature conservation?

Bachelor Thesis by Lotte Gijzen



Figure 2: Wikipedia, 2024

Bachelor thesis Geography, Planning and Environment (GPE)

Nijmegen School of Management

Radboud University Nijmegen

June, 2025

Cristina Aoki Inoue

Paschalina Garidou

S1099407

Word count: 21.088

Table of contents

Summary	VI
1. Introduction	1
1.1 Background	1
1.2 Research problem	2
1.3 Research goal	2
1.4 Reading guide	3
2. Relevance.....	4
2.1 Societal relevance	4
2.2 Scientific relevance	4
3. Literature	6
3.1 Theoretical framework	6
3.1.1 Biodiversity conservation	6
3.1.2 Social sciences of nature conservation	7
3.1.3 Corporate social responsibility	8
3.1.4 Greenwashing.....	8
3.1.5 SDG-washing.....	9
3.2 Government-mandated rules for Dutch zoos	10
3.3 Conceptual model	11
4. Methods.....	12
4.1 Research method	12
4.1.1 Content analysis	12
4.1.2 Observation	13
4.1.3 Interviews.....	14
4.2 Research cases.....	15
4.3 Operationalization	16
4.4 Data collection.....	17
4.5 Research plan	17
5. Content analysis	19
5.1 The history of zoos (1950 – 2000)	19
5.2 The modern zoo (2000 – present)	21
5.2.1 New goals of the modern zoo.....	21
5.3 The future of the 21 st century modern zoo	24
6. Research results Ouwehands and WILDLANDS.....	26
6.1 Ouwehands Dierenpark.....	26
6.1.1 Nature conservation initiatives Ouwehands Dierenpark	26

6.1.2 Sustainability initiatives Ouwehands Dierenpark	29
6.1.3 Social and research initiatives Ouwehands Dierenpark.....	30
6.1.4 Annual financial report Ouwehands Dierenpark	30
6.2 WILDLANDS	31
6.2.1 Nature conservation initiatives WILDLANDS.....	31
6.2.2 Sustainability initiatives WILDLANDS.....	32
6.2.3 Social and research initiatives WILDLANDS	34
6.2.4 Annual financial report WILDLANDS	34
6.3 Conclusion WILDLANDS and Ouwehands Dierenpark	35
7. Research results Koninklijke Burgers' Zoo	36
7.1 Nature conservation initiatives Koninklijke Burgers' Zoo.....	36
7.2 Sustainability initiatives Burgers' Zoo.....	41
7.3 Social initiatives Koninklijke Burgers' Zoo.....	44
7.3.1 Annual social report Koninklijke Burgers' Zoo.....	46
7.4 Motivations for initiatives of Koninklijke Burgers' Zoo.....	47
7.5 Volunteer interviews	47
8. Conclusion.....	49
8.1 Conclusion	49
8.1.1 Conclusion Ouwehands, WILDLANDS, Koninklijke Burgers' Zoo.....	49
8.1.2 Conclusion government-mandated policy guidelines.....	50
8.1.3 Conclusion Corporate Social Responsibility Koninklijke Burgers' Zoo	50
8.1.4 Conclusion Koninklijke Burgers' Zoo	51
8.2 Discussion.....	53
9. Reflection.....	55
9.1 Recommendations	55
9.2 Future research	55
9.3 Reflection	56
References	58
Image reference list.....	66
Attachments.....	68
1. Interviewguides	68
1.1 Interviewguide – semi-structured interviews (Nederlands)	68
1.2 Interviewguide – semi-structured interviews (English).....	74
1.3 Interviewguide – gestructureerde korte interviews (Nederlands)	80
1.4 Interviewguide – structured short interviews (English).....	80
2. Notes.....	81

2.1 Notes evening lecture: 'En het resultaat is...'	81
2.2 Notes structured short interviews with volunteers	82
3. Observations	84
3.1 Observation protocol (example)	84
3.2 Maps of observations in zoos	85
3.3 Observation protocols	88
4. Codebook Atlas.ti – interview(s) and observations	184
5. Types of animals in nature conservation projects of the zoos	190

Summary

Anthropogenic climate change and human behavior, such as agriculture and deforestation, are destroying the natural world. As a result, animal species are losing their natural habitat, ecosystem functions and services upon which humans rely are becoming increasingly unstable, human mental and physical health decreases with fewer interactions with nature, and there is an increased risk of disease and mass mortality of plants and animals. Which is why it is essential to protect Earth's biodiversity.

Important actors in nature conservation are zoos. Through their in-situ, nature conservation in the natural habitat of animals, and ex-situ, nature conservation outside the natural habitat of animals, projects zoos are sustaining nature in the wild and improving animal welfare for animals in captivity. In this research, Koninklijke Burgers' Zoo (from here on mentioned as: Koninklijke Burgers' Zoo, or Burgers' Zoo) is the main case study, in addition to Ouwehands Dierenpark and WILDLANDS Emmen, which are used as exemplary cases. Burgers' Zoo is being researched for its nature conservation and sustainability efforts, analyzed with the concepts of corporate social responsibility (CSR) and greenwashing. The main research question is:

“To what extent can Koninklijke Burgers' Zoo be considered a socially responsible actor based on its sustainability and nature conservation initiatives, or is Koninklijke Burgers' Zoo greenwashing by only stating they are undertaking socially responsible actions?”

A business, according to maatschappelijke verantwoord ondernemen (MVO; the Dutch version of CSR), is socially responsible when they take into account the effects they have on society, the environment and humans, they take efforts to decrease their environmental impact, increase their inclusivity and equity in their business and their whole chain, and have a positive effect on the environment and society as a whole. When a business only states they are doing socially responsible actions, but in reality, they are not, they are greenwashing. Furthermore, in this research, it was investigated what the Dutch government-mandated policy guidelines about nature conservation are for Dutch zoos, and how the function of zoos has changed, from leisure activity to educational research centers, in the last 75 years.

In order to answer the main research question, the following research methods were used: content analysis, observations, and interviews. First, a content analysis has been carried out to research how the function of zoos has changed in the last 75 years. For the content analysis, multiple research articles and documents have been analyzed to gain insight into the short history of zoos, the past and current function of zoos, the goals of the modern zoo, and the critiques of the modern zoo. Historically, zoos have been places of entertainment and leisure, but this changed when societal standards rose for captive animals and people became more aware of the destruction of the natural world. Zoos had to change to keep attracting visitors and preserve the natural world they came to represent. Nowadays, the modern zoo has 4 goals, which are: recreation, nature conservation, education, and research.

The second method was observation. In Ouwehands Dierenpark, WILDLANDS, and Burgers' Zoo, their advertised and visible sustainability and nature conservation initiatives were observed using an observation protocol. Observed initiatives were, for

example, solar panels, green roof, ex-situ animal reproduction and reintroduction programs, and financing international in-situ nature conservation projects. These observations were analyzed using Atlas.ti with a codebook. Ouwehands Dierenpark and WILDLANDS were used as exemplary cases to illustrate what sustainability and nature conservation initiatives other modern zoos, besides Burgers' Zoo, implement; this highlighted the similarities as well as the differences between the zoos.

The third method was interviews. Two types of interviews were held in this research. Firstly, a semi-structured interview with an (expert) employee of Burgers' Zoo. In the semi-structured interview, an interview guide was utilized, but also spontaneous questions. The topics of the interview were the history, nature conservation, social, and sustainability initiatives of Burgers' Zoo, as well as the organizations that Burgers' Zoo is part of and contributes to. The interview was transcribed in Word and then analyzed in Atlas.ti using a codebook. Secondly, several structured interviews were conducted with volunteers working in Burgers' Zoo. The random volunteers, at work at the time of the interview, were asked a structured set of questions related to their view of the sustainability of Burgers' Zoo and how they are involved with the sustainability of Burgers' Zoo.

Burgers' Zoo is the owner of the golden rank of the Duurzaam Gastvrij certificate, which is the highest rank possible. That means they hold sustainability in the highest regard, and that Burgers' Zoo is a sustainable day attraction. But despite already being the best regarding sustainability, Burgers' Zoo has four sustainability goals for 2040. Which are: 100% renewable energy, zero gas, 50% (tap)water reduction, and zero waste. Together with their green team, which consists of employees from every department of Burgers' Zoo, they are striving to become more sustainable every day.

Moreover, Burgers' Zoo has been contributing to nature conservation ever since the 1980s with the Lucie Burgers' Stichting, which contributes to nature conservation research, and the Belize project since the 1990s. The Belize project, for which Burgers' Zoo is known, is an in-situ nature conservation project in Central America that protects the mangrove ecosystem located in Belize. Burgers' Zoo, to this day, together in cooperation with the Swiss butterfly park Papiliorama Zoo, financially supports the ever-growing Belize project. In addition to the Belize project, Burgers' Zoo is part of several EEP programs that protect endangered species in zoos, for example, the spotted eagle ray, manatees, and many more.

Burgers' Zoo has several social initiatives that contribute to society. Burgers' Zoo employs people who cannot get a job easily, for example, people who are disabled. Children of the Presikhaaf University, who are children who need extra attention, are also supported by Burgers' Zoo. Furthermore, Burgers' Zoo receives school trips regularly, intending to educate schoolchildren about the natural world.

The motivation of Burgers' Zoo for all its sustainability, nature conservation, and social initiatives is internal. The management and employees in key positions of Burgers' Zoo are all internally motivated to become as sustainable as possible and to contribute to nature conservation, and research as much as possible. This shines through to the rest of the employees.

In this research, it has become clear that Burgers' Zoo is a socially responsible actor. Burgers' Zoo takes into account the effects they have on society, the environment, and humans, because they try to help society through their social and nature conservation initiatives and educate humans about nature and the environment, and they try to decrease their environmental impact by becoming as sustainable as possible. Furthermore, they increase their inclusivity and equity in their business by employing people who cannot get a job easily, and they include every department of Burgers' Zoo in the green team. However, there remain some mixed messages between how much Burgers' Zoo involves its volunteers in its sustainability and the perceived involvement of the volunteers themselves. Nonetheless, Burgers' Zoo is not greenwashing, because their actions speak louder than their words.

In conclusion, zoos have become not only educational centers for their visitors, but also places where people can connect to nature, can enjoy a leisurely day out, but most importantly, zoos are in fact leaders in nature conservation. Burgers' Zoo, together with Ouwehands Dierenpark and WILDLANDS, are supporting in-situ nature conservation projects all over the globe, striving to protect nature and its wildlife. It is a sustainable day attraction, but strives to become even more sustainable. Burgers' Zoo is the modern zoo it is today through sheer internal motivation. Koninklijke Burgers' Zoo truly is a socially responsible zoo and a leader in nature conservation.

1. Introduction

1.1 Background

Anthropogenic climate change and human behavior are destroying the natural world. Human activities, such as deforestation and agriculture, are causing animal and plant species to lose their natural habitats (IFAW, 2024). Climate change, caused by greenhouse gas (GHG) emissions and the most significant driver of biodiversity loss, is affecting species and ecosystems globally, and especially the most vulnerable ecosystems such as mountains, polar regions, and coral reefs. Furthermore, climate change causes the loss of species, an increased risk of vector-borne diseases, and mass mortality of plants and animals. Biodiversity and ecosystems not only have an intrinsic value, but they also increase resilience and reduce risks that are a result of climate change. Biodiversity and ecosystems serve as a natural buffer against extreme climate change-driven events, such as changing rainfall patterns, droughts, and storms (CBD, 2018). To save Earth's biodiversity, the need for action is more urgent than ever.

In an effort to conserve biodiversity, several (inter-)national initiatives were created. The Convention on Biological Diversity (CBD) is the first global agreement, signed by 150 government leaders at the Rio Earth Summit in 1992, that is committed to conserving biodiversity and promoting sustainable development (CBD, 2009). The objective of the CBD is to 'conserve biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those technologies, and by appropriate funding' (CBD, 2006a). CBD assists national governments in developing strategies, programs, and plans for the conservation and sustainable use of biodiversity (CBD, 2006b).

Furthermore, biodiversity has been integrated into the Sustainable Development Goals (SDGs) of the United Nations (UN) (United Nations, n.d.b). The Sustainable Development Goals are a global plan of action created by the UN. The 17 goals, with 167 targets, aim to end poverty and hunger, to combat inequalities, build just, inclusive and peaceful societies worldwide, to protect human rights, promote gender equality, and to ensure the lasting protection of planet Earth and its natural resources (Van der Waal & Thijssens, 2020). The most important SDGs for biodiversity are Sustainable Development Goals 14 and 15, which are dedicated to life on land and below water (United Nations, n.d.a). SDG 15 wants to halt biodiversity loss and the extinction of species on land, whilst SDG 14 wants to protect marine life, for example, from overfishing and pollution (United Nations, n.d.a).

With the aim of protecting the dwindling biodiversity of wildlife and to conserve endangered species, zoos have become key players. Modern zoos are at the forefront of nature conservation, going from "the image of family entertainment to conservationists in action" (Lee Odinsky-Zec, 2010). After the Earth Summit in Rio in 1992, the first World Zoo Conservation Strategy was launched; this meant that "the modern zoo must commit to the goal of promoting species conservation and nature preservation at a time when

species, habitats and ecosystems are threatened with extinction worldwide” (Keulartz, n.d.).

Furthermore, in 1992, the European Association of Zoos and Aquariums (EAZA) was established. EAZA is the world's largest regional zoo and aquarium organization, which supports in-situ and ex-situ conservation (EAZA, n.d.a). Every member of the EAZA supports the belief that zoos and aquariums should be important centers of animal species conservation. Members share knowledge and research to help each other improve their animal welfare, animal management, public engagement, education, and scientific research. The goal of the EAZA is to contribute to the wider effort in a sustainable and lasting way whilst making a better future for (wild) animal species (EAZA, n.d.a).

However, modern zoos have not always had the same function as they have today. Historically, zoos have been there to entertain, to showcase wild animals, to connect and immerse visitors in the natural world (Lee Odinsky-Zec, 2010; De Jong, 2021). Zoos wanted to showcase as many animals as possible, without regard to the well-being of their animals (Halbertsma, 1995). Nevertheless, this has changed in the last four decades as societies and zoos became more aware of the deterioration of the natural world (Miller et al., 2004). In time, zoos have changed to become much more than places of leisure. Zoos have shifted from places of entertainment to conservation-oriented facilities (Escribano et al, 2021). Modern zoos now have a mission of nature conservation and to protect biodiversity through in-situ and ex-situ programs, but also to educate visitors about nature and the environment, to stimulate curiosity about wildlife, and to conduct scientific research about topics such as breeding, conservation and genetic issues (Miller et al, 2004; Moss et al, 2014; Escribano et al, 2021).

But, how has the function of Dutch zoos changed from a family leisure activity to actors in nature conservation, and does this also apply to Koninklijke Burgers' Zoo (KBZ)? And, how does Burgers' Zoo implement the government-mandated policy guidelines? Is Burgers' Zoo following these guidelines and positively impacting with their nature conservation and sustainability initiatives, or are they greenwashing to attract more visitors?

1.2 Research problem

The problem of the research was to discern if Koninklijke Burgers' Zoo is a socially responsible actor, or if they are only stating that they are participating in nature conservation and sustainability initiatives to attract more visitors. In short, is Burgers' Zoo contributing to nature conservation and sustainability initiatives, how are they contributing, and to what extent are they contributing? Or are they greenwashing?

1.3 Research goal

The goal of this research was to gain an understanding of how the function of Dutch Zoos has changed over the past 75 years, since the implementation of several international initiatives related to zoos. Furthermore, to gain insight into national government-mandated rules and how nature conservation and sustainability initiatives are implemented in mainly

Koninklijke Burgers' Zoo, and additionally, Ouwehands Dierenpark, and Wildlands. This research is based on the main research question:

“To what extent can Koninklijke Burgers' Zoo be considered a socially responsible actor based on its sustainability and nature conservation initiatives, or is Koninklijke Burgers' Zoo greenwashing by only stating they are undertaking socially responsible actions?”

In addition to the main research question, this research has six sub-questions with which the main question will be answered:

- What are the mandated Dutch government policy guidelines for Dutch zoos?
- How has the role of Dutch zoos changed in the past 75 years regarding nature conservation and education?
- What are the nature conservation initiatives of the Dutch Zoos?
- What are the sustainability initiatives of the Dutch zoos?
- What are the drivers of Koninklijke Burgers' Zoo for the sustainability and nature conservation initiatives?
- On which aspects does Koninklijke Burgers' Zoo differ in their stated sustainability and nature conservation practices and their actual implemented sustainability and nature conservation practices?

1.4 Reading guide

The following chapter, chapter two, will be about the social relevance and scientific relevance of this research. It will discuss why this research is important for society as a whole and how it contributes to the broader scientific field. In the third chapter of this research, the theoretical framework and the key concepts, converted into the conceptual model of this research will be discussed, which are biodiversity theories, the social sciences of nature conservation, corporate social responsibility (CSR), greenwashing, SDG-washing, and the government-mandated policy guidelines on nature conservation. After the theoretical framework, the method of this research will be discussed; it will include which cases will be researched, how this research will be conducted, the operationalization, and the plan of the research.

Chapter five will be about the content analysis, in which a desktop study was done about the changing function of zoos over the past 75 years. The content analysis will be about the history of zoos, the modern zoo and its goals, and the future of the modern zoo, including some critiques of the modern zoo.

Following the content analysis, the research results will be discussed regarding the results of the observations and the interviews. To end this research, a conclusion will be drawn about the research results, followed by a discussion. Finally, future research options and recommendations will be given, as well as final reflections about the research.

2. Relevance

2.1 Societal relevance

The societal relevance of this research cannot be underestimated. If biodiversity loss is not reduced worldwide through nature conservation efforts, there will be planet-wide consequences. Biodiversity increases the stability of ecosystem functions through time, so biodiversity loss would cause the ecosystem functions to become unstable (Cardinale et al., 2012). Furthermore, biodiversity loss reduces the efficiency with which ecological communities capture biologically essential resources, produce biomass, and recycle biological nutrients (Cardinale et al., 2012). So, decreases in biodiversity will lead to reductions in ecosystem services and provisioning services, on which humans and nature depend (Dobson et al., 2006). But biodiversity loss doesn't only affect nature itself; when people have fewer interactions with nature, caused by the loss of natural habitat and biodiversity, it will harm human health and (mental) wellbeing (Cox & Gaston, 2018). When people are more in contact with nature, it reduces stress, improves sleep, decreases depression, aggression, obesity, and anxiety, brings greater happiness, well-being, and life satisfaction, increases prosocial behavior and social connectedness, lowers blood pressure, and more (Frumkin et al., 2017). In order to conserve wildlife, ex-situ and in-situ, nature conservation is key. Or else there will be enormous consequences on human health, economic welfare, and nature itself (Dobson et al., 2006). For nature conservation, zoos play an important role.

Furthermore, this research could raise environmental awareness about the current state of nature, nature conservation, and sustainability initiatives, which could affect people's behavior to become more sustainable. Moreover, it could create awareness of the goals of zoos, which are to educate and inform visitors about nature conservation, information about the animals, animal behavior, and the origin country of the animals. Zoos inform people not only to educate visitors, but also to influence their behavior and to change their mentalities to become more sustainable and aware of nature around them (Halbertsma, 1995).

This research can give an insight into the nature conservation and sustainability efforts of modern zoos, which could make creating future measures and policies more effective. The efforts of the researched Dutch zoos could serve as an important example for other zoos in the Netherlands, but also worldwide. Moreover, it could set an example for other institutions, firms, and individuals who would like to become more sustainable in their behavior. Lastly, it is relevant to uncover if these zoos are actually contributing to nature conservation and are being more sustainable, or if they are greenwashing to attract more visitors and investors.

2.2 Scientific relevance

This research about the nature conservation and sustainable initiatives of Dutch zoos has great scientific relevance. This research can fill the knowledge gap of how the Dutch Zoos in this research, the main case Burgers' Zoo, and for context Ouwehands Dierenpark and Wildlands, initiate nature conservation and sustainability initiatives. It brings insight into

what these Dutch zoos are doing regarding nature conservation. Furthermore, it gives information regarding their sustainability efforts; what they are doing to make the zoos more sustainable and how they are decreasing their overall environmental impact. In the past, numerous researches have been done about conserving wildlife through zoos (Lees & Wilcken, 2009), the internal sustainability initiatives of zoos and their efforts to influence visitor behavior through sustainability-focused messaging (Gill & Warrington, 2017), the role of zoos in wildlife conservation through in-situ conservation like captive breeding and management of wildlife (Tribe & Booth, 2006), and how zoos can become successful conservation centers if they reach their target audience and help them care about and for nature (Rabb & Saunders, 2006). However, all these studies are not specific to the cases that have been studied in this research.

In addition, research has been done about Dutch zoos regarding their transitions of nature commodification and nature conservation practices (Kuenen, 2021). Kuenen (2021) has done research about the historical shift of zoos in terms of nature commodification and nature conservation, whilst taking into account their commercial objectives, strategies, and the context of power and knowledge in the external governance practices of Dutch zoos. Whilst the research of Kuenen is similar to this research regarding nature conservation and the historical change of Dutch zoos, Kuenen's work analyzed Dutch zoos from a Foucauldian perspective, which argues that discourses are social constructions that change over time and that depend on power and knowledge relations. Furthermore, Kuenen's research was about ARTIS. The findings of Kuenen are that zoos justify their commodification of animals by re-establishing their version of truth by producing and spreading knowledge to visitors that supports their claims. And that zoos' justifications are supported by the contemporary power dynamics in zoos' external governance regimes (Kuenen, 2021). However, this research was about nature conservation and sustainability initiatives of Burgers' Zoo; and additionally, the nature conservation and sustainability initiatives of Ouwehands Dierenpark and Wildlands Emmen. Which has not been researched in this combination yet.

Another research has been done in the past about the role of zoos as sustainability mediators and how zoos function as centers for conservation education (Mennen et al., 2016). The research by Mennen and colleagues (2016) was about the institutional relations and educational techniques employed by their case study of GaiaZOO, and they used the free choice learning theory as their main theoretical framework. So, this research also differs from this research because it used another case study, focused on nature conservation initiatives besides sustainability initiatives, and lastly, used a different theoretical framework.

Finally, in 2009, Landman and Visscher conducted research about the sustainability initiatives of the, then new, zoo of Emmen and how it would achieve reducing its environmental impact. First, since 2009, the zoo in Emmen has been completed, and this research can investigate if these sustainability initiatives have come to fruition. This research differs from the Landman and Visscher research, because the main case study was Burgers' Zoo and also includes nature conservation initiatives of Burgers' Zoo, Wildlands and Ouwehands Dierenpark, besides sustainability initiatives. In short, these specific cases have not been researched yet in the context of both sustainability initiatives and nature conservation efforts, making it a unique case.

3. Literature

In this research, multiple important concepts will be discussed in the theoretical framework, which were biodiversity conservation theories, the social sciences of nature conservation, corporate social responsibility (CSR), greenwashing, and SDG-washing. Each key concept will be discussed and related to the other. Following the theoretical framework, the Dutch government-mandated policy guidelines for zoos are listed, and lastly, the conceptual model.

3.1 Theoretical framework

3.1.1 Biodiversity conservation

Biological diversity is “the variability among living organisms from all sources, such as terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems” (Tamale, n.d.). Biodiversity has three levels (Rawat & Agarwal, 2015):

- Genetic diversity: the variation of genes within species and populations
- Species diversity: the variety of species of living organisms
- Ecosystem diversity: the variety of biotic communities, ecological processes, and habitats

Earth’s biodiversity, the result of billions of years of evolution, is the very web of life on which humans fully depend (Rawat & Agarwal, 2015). So, to protect the biological diversity of the planet, biodiversity conservation is paramount. Biodiversity conservation is “the protection and sustainable exploitation of natural resources and the management of the genetic diversity of both wild and domesticated species” (Tamale, n.d.). In which sustainable use means “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological resources, thereby maintaining its potential to meet the needs and aspirations of the present and future generations” (Tamale, n.d.). To be able to meet the needs of the present and future generations calls for intra- and intergenerational equity (Rawat & Agarwal, 2015).

There are two types of biodiversity and nature conservation (Tamale, n.d.):

1. **In-situ biodiversity conservation:** the conservation of a species and ecosystem in their natural habitat. In-situ conservation is the management and recovery of species in their natural surroundings.
2. **Ex-situ biodiversity conservation:** the conservation of a species and ecosystem outside their natural environment, for example, zoos. Ex-situ conservation offers certainty in situations in which in-situ conservation is uncertain, such as through climate change. The downside of ex-situ conservation is a loss of genetic diversity and a higher probability of inbreeding (Swingland, 2001). And ex-situ conservation through seed-banking, preserving seeds through extreme drying and low temperatures to safeguard them for a longer period of time, is not an option for every species (Reed et al., 2011; Walters & Pence, 2020).

It is important to protect Earth's biodiversity because it provides a lot of ecosystem services, such as: (Rands et al., 2010; Rawat & Agarwal, 2015):

- Material goods, for example: food and timber
- Non-material benefits, for example: recreation and aesthetics
- Underpinning functions, for example: flood control, climate regulation, pollination, pest control, carbon storage, and sequestration

However, biodiversity has more value than the services it offers. Biodiversity also has intrinsic value; this is the non-human value of biodiversity. Intrinsic value is: "life should be conserved simply because they exist: they are the product of a long history of continuing evolution using ecological processes, and so they have the right to continued existence" (Biol, 2008). So, whether in-situ or ex-situ conservation, biodiversity conservation is essential for the maintenance of ecosystem processes and services, to preserve its intrinsic value, and for the continued survival of humanity (Rands et al., 2010).

3.1.2 Social sciences of nature conservation

Whilst the term 'nature conservation' would suggest that nature plays a central role in conservation, human society plays an even larger role, displaying that nature and society are irreversibly linked. "Conservation is primarily not about biology, but about people and the choices they make" (Sanborn & Jung, 2021). According to Kareiva and Marvier (2012), conservation is an expression of human values, meaning that people's actions and views of nature are key.

Successful nature conservation is dependent on human knowledge of nature conservation, social processes, and human behavior (Blicharska et al., 2016). Anthropogenic climate change, pollution, invasion of alien species, ocean acidification, and global poverty are social problems, created by human behavior, that are in the way of successful nature conservation (Blicharska et al., 2016; Sanborn & Jung, 2016; Schultz, 2011; Rands et al., 2010).

Often, nature conservation initiatives have gone wrong because of a failure to consider the social dimensions and realities of local communities (Sanborn & Jung, 2021). Nature conservation projects are not a 'one-size-fits-all'. Nature conservation projects need to be community-based projects that recognize the social, political, and cultural contexts and the heterogeneity of the communities that are part of the nature conservation project. By taking into account the social dimensions, it can increase the effectiveness of conservation measures; additionally, it can create a sustainable and socially just conservation (Sanborn & Jung, 2021). The successful implementation of biodiversity management policies needs the acceptance of the public and requires changes in societal structures (Artner-Nehls & Siebert, 2006). So, to achieve the goal of sustaining species and habitats, the human and societal dimensions and human-wildlife connections should be taken into account when implementing nature conservation activities and policies (Artner-Nehls & Siebert, 2006; Sanborn & Jung, 2021). Only a balance between development, society, and the environment will result in sustainable development, which will ensure biodiversity conservation (Rawat & Agarwal, 2015).

Lastly, to successfully conserve nature, conservationists and corporations must work together. Because many corporations have a big influence on societies, for example, on consumers, and the environment (Kareiva & Marvier, 2012). Corporations must improve their practices to become more sustainable and to have a positive impact on nature conservation and the environment. "The actions of the private sector are central to the future of biodiversity" (Rands et al., 2010). This shows that to achieve nature conservation, human society is very important. Humans need to act responsibly in every aspect of society, but especially in businesses and organizations. That is where corporate social responsibility becomes relevant.

For this research, the concepts of corporate social responsibility and greenwashing were chosen because they showcase what measures businesses could take to have a positive impact on nature, the environment, and society; which would be key to conserving nature. Greenwashing would indicate that businesses do not undertake measures to increase their positive impact on the environment, which would not be beneficial to nature conservation.

3.1.3 Corporate social responsibility

Corporate Social Responsibility (CSR) is "a process with the aim to embrace responsibility for the company's actions and encourage a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere who may be considered stakeholders" (Tai & Chuang, 2014). Moreover, corporate social responsibility means that companies should be held accountable towards all the stakeholders and that a company's operations and decisions should be in accordance with the expectations of the stakeholders (Aggarwal & Kadayn, 2014). Companies need to account for their sustainability and social impacts, regarding their CSR impacts, performance, practices, and outcomes. Furthermore, companies are required to report their social and environmental impacts (Costa et al., 2025; European Commission, n.d.). For companies to be socially responsible and sustainable, they must meet commitments related to partnerships, people, planet, prosperity, peace, and poverty (del Río et al., 2023). Key principles of CSR are (Moir, 2001):

- To treat all employees fairly and equally
- To operate with integrity and ethically
- To respect basic human rights
- To take care of the environment for future generations
- To care for (local) communities

3.1.4 Greenwashing

Whilst CSR is about creating improvements for company strategies regarding social, economic, and environmental initiatives, greenwashing is about the opposite. Greenwashing is the practice of green marketing (or green communication) that is being misused by companies in order to build their false green image, or better eco-friendly image, for their stakeholders, for example, consumers and investors (Aggarwal & Kadayn, 2014). Greenwashing happens when companies over-communicate their actual level of CSR (Bazillier & Vauday, 2013). Greenwashing is done to mislead stakeholders regarding

environmental practices involving deceptive sustainable claims (Aggarwal & Kadayn, 2014; del Río et al, 2023). A company that is greenwashing chooses to report only the good news whilst hiding the bad news regarding CSR (Bazillier & Vauday, 2013). There are two types of greenwashing (Aggarwal & Kadayn, 2014; Bazillier & Vauday, 2013):

1. Hard greenwashing: “green” communication without CSR efforts (no investment towards CSR practices)
2. Light greenwashing: occurs when a company reduces its CSR efforts and focuses more on advertising green claims

Greenwashing can have negative effects on stakeholders' confidence in green services, green products, and environmentally and eco-friendly firms. Furthermore, it is eroding the consumer market for green products and services, meaning people are less likely to buy and use the green products and services, and the socially responsible investing capital market (Delmas & Burbano, 2011).

There are several drivers for greenwashing (del Río et al., 2023):

1. **External drivers:** regulatory or social pressures that compel companies to present better sustainability practices, regardless of their real performance regarding CSR and sustainability initiatives
2. **Organizational drivers:** company characteristics, organization incentives, communications within the company, and possible inertia, which could lead to a miscommunication between managers' intent and the actual implementation of CSR and sustainability initiatives
3. **Internal drivers:** behavioral biases within company management

Aggarwal and Kadayn (2014) conclude that a relationship exists between CSR and greenwashing. Because the higher the investment made by companies towards CSR activities, the lower the probability of greenwashing or green communication by that company (Aggarwal & Kadayn, 2014). CSR and greenwashing are further connected because greenwashing can lead to skepticism towards the ability of CSR to bring effective changes (Bazillier & Vauday, 2013).

3.1.5 SDG-washing

Another form of greenwashing is Sustainable Development Goals-washing (SDG-washing). If companies integrate the SDGs into their environmental and social strategies, it could help achieve equitable and safe businesses, future social development, and improve sustainable economic growth (García-Meca & Martínez-Ferrero, 2021). In addition, implementing the SDGs in companies can create value through innovation for the common good and to help solve sustainable development challenges, for example by protecting biodiversity, reducing poverty, and eradicating hunger (van der Waal & Thijssens, 2020).

Incorporating the SDGs in companies helps to promote corporate social responsibility and sustainable development (Heras-Saizarbitoria et al., 2021). To integrate the SDGs into a company, it must commit to adopting environmental and social strategies while still maintaining economic growth. This requires the design of different management tools to meet the requirements of the SDGs and report on them, which is SDG-reporting (Costa et al., 2025; del Río et al., 2023; Awuah et al., 2023).

However, SDG-washing is the symbolic rather than actual commitment to SDGs of companies; “it hides the business-as-usual by disguising it as SDG-related sustainability rhetoric” (Heras-Saizarbitoria et al., 2021). SDG-washing involves downplaying or even hiding negative social and environmental actions, while magnifying positive ones to appease the stakeholders of the company (Costa et al., 2025; Lashitew, 2021). Another downside of SDG-washing is when companies selectively pick which of the SDGs they want to implement and where they emphasize the positive effects on a particular SDG without considering the possible negative consequences on the other SDGs (del Río et al., 2023; Heras-Saizarbitoria et al., 2021).

Companies that are SDG-washing use the SDGs as a way to strengthen their social legitimacy and to link their current activities to the SDGs as a way to impress and enhance the positive aspects of a company’s achievements (Heras-Saizarbitoria et al., 2021). The SDGs are then misused for greenwashing, or SDG-washing (Lashitew, 2021). SDG-washing, much like greenwashing, erodes the trust of the stakeholders, undermines the transparency of sustainability efforts, misleads investors into believing they are investing in a green company, and undermines the credibility and strategic benefits of sustainability in companies and the SDGs (Costa et al., 2025).

Companies can avoid SDG-washing when they use the SDGs as guides to company actions in their sustainability and social strategies. The SDGs should be implemented in a company’s strategies so that it is measurable, accountable, and assessable with monitoring and with assessment systems in place (Heras-Saizarbitoria et al., 2021). Instead of SDG-washing, companies should integrate sustainability in their core activities and aim for long-term changes in management and operations to help achieve the goals of the SDGs (Costa et al., 2025). Lastly, for companies to be avoid green- and SDG-washing, and to improve their CSR, they should be transparent and honest, ethical, and communicate correctly about environmental achievements, disclose both the positive and negative environmental impacts, back-up all claims with relevant data and by using true eco-labels (Aggarwal & Kadayn, 2014).

3.2 Government-mandated rules for Dutch zoos

In the Netherlands, according to Rijksoverheid (n.d.a), zoos are organizations that display wild animals to the public for at least 7 days per year, and are obligated to carry out several national policy guidelines related to nature conservation. The government-mandated policy guidelines regarding nature conservation for Dutch zoos are:

- Dutch zoos should become education centers; by providing education to visitors about their animals, their way of life, conservation of biodiversity, and the protection of wild animals (Rijksoverheid, n.d.a; RVO, 2023)
- Dutch zoos must have a plan for nature conservation and plans to prevent animal species from extinction (Rijksoverheid, n.d.a)
- Dutch zoos must contribute to conservation through scientific research and breeding programs; to exchange information with other zoos, find ways to recover (wild) animal populations, to reintroduce species in their natural habitat and to create genetically healthy animal populations of endangered animals outside their natural habitat (RVO, 2023; Wettenbank, 2018)
- Dutch zoos are asylum centers for lost and seized animals (Wettenbank, 2018)

Furthermore, Dutch zoos have to fulfill several guidelines regarding animal welfare in zoos (Rijksoverheid, n.d.a):

- Animals need to be able to display their natural behavior, for example, swim and dig, and live in their natural social setting, for example, alone or in groups
- Animals need to be able to take care of themselves and get the right food
- Zoos have to safeguard the life of the animals and humans, by taking measures to prevent animals from escaping and taking measures to prevent risks, such as fires

In short, zoos' nature conservation, such as breeding programs, can positively contribute to fulfilling the UN development goals 14 and 15, by halting biodiversity loss and protecting marine life.

3.3 Conceptual model

The key concepts of the conceptual framework are the government-mandated policy guidelines, nature conservation and sustainability initiatives, corporate social responsibility (CSR), and greenwashing.

Government-mandated policy guidelines influence the Dutch zoos in this case study. To determine whether Burgers' Zoo is a socially responsible actor, by reducing their climate impact and positively influencing the environment and society, it is important to understand what the nature conservation and sustainability initiatives of Burgers' Zoo are, such as supporting in-situ conservation projects, reducing their energy usage, and reducing waste. Lastly, it is important to know what the drivers are for Burgers' Zoo to implement these initiatives. Do they implement these measures to become more sustainable, to conserve nature, and to be socially responsible, or are they greenwashing to attract more visitors.

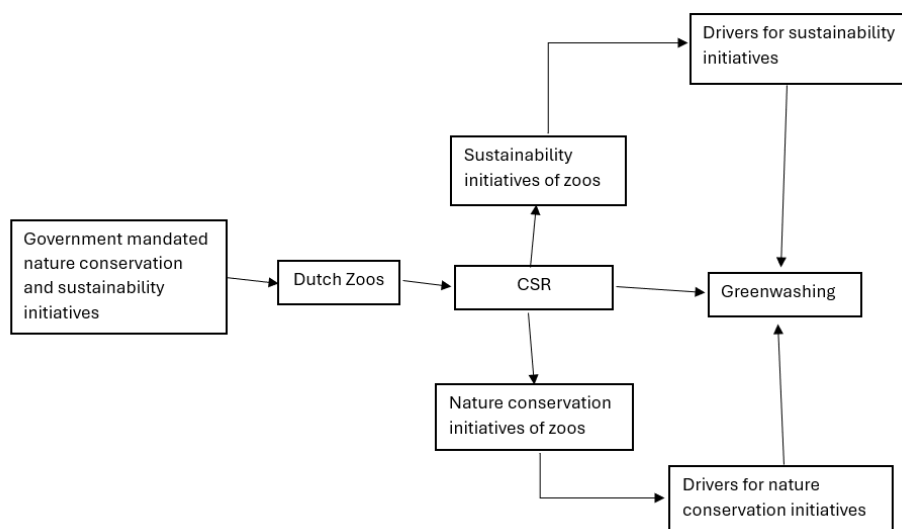


Figure 45 Conceptual model

4. Methods

4.1 Research method

For this research, a qualitative research approach was used. Qualitative research helps to better understand social realities, meanings of patterns, draws attention to processes, and structural features of the social world (Flick et al, 2004). Qualitative research is a good approach when the phenomenon under investigation is more “open”, than with other research strategies, for example, quantitative methods, that work with large quantities and standardized data (Flick et al, 2004). When using a qualitative research method, it can yield a more concrete image of everyday life or processes in institutions than can be achieved by using a quantitative method, like a questionnaire or survey. Furthermore, it can deliver precise and substantial descriptions of the views of those involved. Qualitative research is more subjective and aims to discern the social constructs of the world (Flick et al., 2014).

In this research, three different qualitative research methods were implemented, which are content analysis, observation, and interviews (Table 1).

Research sub-question	Method used
What are the mandated Dutch government policy guidelines for Dutch zoos?	Content analysis
How has the role of Dutch zoos changed in the past 75 years regarding nature conservation and education?	Content analysis
What are the nature conservation initiatives of the Dutch Zoos?	Observation and interviews
What are the sustainability initiatives of the Dutch zoos?	Observation and interviews
What are the drivers of Burgers' Zoo for the sustainability and nature conservation initiatives?	Interviews
On which aspects does Burgers' Zoo differ in their stated sustainability and nature conservation practices and their actual implemented sustainability and nature conservation practices?	Observation and interviews

Table 1 Method used per research question

The benefit of using multiple different research methods, also known as triangulation, is that it increases the reliability and the validity of the research, because the topic is researched from multiple sources, places, and people (Flick et al., 2004). Furthermore, triangulation deepens the scope of the research (Flick et al., 2004).

4.1.1 Content analysis

The first research method was a content analysis. Content analysis is a way to analyze data and interpret its meaning (Elo et al., 2014). During the content analysis, data from existing sources, such as articles, books, and documents, will be collected to gain insight in what information is already available. Moreover, content analysis allows researchers to sift through large volumes of secondary data in a systematic fashion (Stemler, 2001; Elo et al., 2014). This method seeks to reduce large amounts of data in such a way that the researched contents are still preserved but are put in a manageable short text (Flick et al.,

2004). Content analysis is useful for monitoring shifts in public opinion and for analyzing patterns and trends in society as a whole (Stemler, 2001).

In this research, a content analysis was conducted to gain information about the history of Dutch zoos and how the function of zoos has changed in the past 75 years. In the content analysis, articles and chapters of books about the evolution of (Dutch) zoos were analyzed.

4.1.2 Observation

The second research method was observation. Observation is a systematic and planned way of data collection (Farid, 2022). It can be used to directly observe and record a phenomenon, instead of relying on secondary data (Morgan & Harmon, 2001). There are two separate methods of observation. The first being participant observation, where the researcher actively participates in the group or with the phenomena being studied. Second, non-participant observation where the researcher is detached from the group or phenomenon that is being studied (Farid, 2022; Morgan & Harmon, 2001). Observations can be flexible, meaning that the observation is unprepared beforehand or prepared in advance by using an observation protocol during the observation itself (Farid, 2022). Observations can be held in natural environments, more controlled settings (for example, a laboratory), or in artificial settings, but qualitative research is mostly done in natural settings (Morgan & Harmon, 2001). However, a critique of observation is that the obtained data is not always objective because the observed data is filtered through the lens of the researcher; therefore, the data can be biased and could lead to ethical problems (Farid, 2022; Baker, 2006).

In this research, the semi-structured, non-participant observations were conducted using an observation protocol (Tabel 1, attachment 3.1). The observations were held in the zoos that are being researched. During the observations, the goal was to observe which nature conservation and sustainability initiatives the zoos are displaying on their signs and what they are implementing in the park. To check if zoos are implementing the nature conservation and sustainability initiatives they are displaying on the signs, interviews were held for the main case, Burgers' Zoo, and reports from Wildlands and Ouwehands Dierenpark themselves were analyzed.

Zoo:	
Location in zoo:	
Date:	
Observation	Nature conservation initiative/ sustainability initiative
What kind of initiative?	

(i.e. financing of in situ project, reproduction program. Green roof or solar panels)	
Description	
Notes:	
Photo(s):	

Tabel 1 Example observation protocol

As part of the observation of Burgers' Zoo an evening lecture about research initiatives of Burgers' Zoo was attended. In this evening lecture, past and future research that have happened and will happen in the future were discussed (attachment 2.1).

4.1.3 Interviews

The third research method was interviews. In qualitative research, there are multiple interview methods, such as structured interviews, unstructured interviews, semi-structured interviews, and focus group interviews (Alsaawi, 2014; Flick et al., 2004). In structured interviews, the interviews are pre-planned. This type of interviewing is effective because it is easier to stay focused on the target topic, and it makes interviews more comparable; however, it lacks richness and limits the ability to gain in-depth information from the respondent (Flick et al., 2004; Alsaawi, 2014). Unstructured interviews are not planned beforehand; they are very flexible and wide open, which can lead to a wealth of data. However, this is also the downside of unstructured interviews, because that leaves huge amounts of data to be analyzed, and not all of it is useful. In semi-structured interviews, the questions are pre-planned before the interview; however, there is room for spontaneous questions and detailed elaborations (Alsaawi, 2014; Flick et al., 2004). Focus groups can be structured, unstructured, or semi-structured, and the interviews have multiple interviewees at once. In focus groups, the interviewees can argue and debate with each other, which leads to high-quality, in-depth data. However, the critique of focus groups is that they need to be set up beforehand, it can be difficult to transcribe, and in general, fewer questions can be asked (Alsaawi, 2014).

In this research, a semi-structured interview was conducted because it has the benefits of being structured and pre-planned, but it also leaves open the possibility to deviate from the pre-planned questions to get a chance to elaborate on particular questions and issues (Alsaawi, 2014). Furthermore, the interview was recorded, if the respondent consented, and transcribed so that it could be analyzed and coded in Atlas.ti. The semi-structured interviews were held with an interview guide; however, it will serve as a guide, which means that spontaneous or further questions could be asked to deepen the scope of the interview (attachment 1.1, 1.2). The semi-structured interviews were held

with an (expert) employee of Burgers' Zoo, since they have the most knowledge about the park's sustainability and nature conservation initiatives.

Additionally, short, informal, structured interviews were held with random volunteers of Burgers' Zoo. The respondents were volunteers who were walking around in the zoos to answer questions from visitors. The volunteers were each asked the same set of questions about the sustainability of Burgers' Zoo and how they, as volunteers, are involved (attachment 1.3, 1.4).

4.2 Research cases

In this research, three different Dutch zoos will be researched (see map 1):

The main case study:

- Koninklijke Burgers' Zoo (KBZ), Arnhem, Gelderland (located in the east of the Netherlands)

And for context:

- WILDLANDS Adventure Zoo, Emmen, Drenthe (located in the north of the Netherlands)
- Ouwehands Dierenpark, Rhenen, Utrecht (located in the middle of the Netherlands)



Map 1: Map of cases of Dutch Zoos (google maps)

The zoos were selected for this research because they have similar yearly visitor counts of around 1 million visitors and have a similar entrance fee (Table 2). This means that they will likely have similar (monetary) resources for nature conservation, research, and to implement sustainability initiatives.

Zoo	Visitor count of 2024	Entrance price (for an adult)
WILDLANDS Emmen	951.000 (Wildlands, 2025)	€28,50 (Wildlands, n.d.a)
Ouwehands Dierenpark	1.100.000 (ZooFlits, 2025)	€29,50 (Ouwehands Dierenpark, n.d.)
Koninklijke Burgers' Zoo	1.075.000 (Loopings, 2025)	€28,00 (Burgers' Zoo, n.d.a)

Table 2: Table information zoos

In addition, Burgers' Zoo, Ouwehands Dierenpark, and WILDLANDS are all members of the European Association of Zoos and Aquaria (EAZA) (EAZA, n.d.b). Members of the EAZA meet all the EAZA standards by employing leading specialists in animal care, conservation, education, and research. They have the highest standards of care and population management for their species in their care (EAZA, n.d.b).

Furthermore, all three zoos have the Green Key sustainability certificate, which means that they are all sustainable day recreation parks (Green Key, n.d.). The zoos of this case study all have the gold certificate, which means that they have the highest degree of the Green Key certificate possible (Green Key, n.d.a). To gain a Green Key certificate, multiple standards and norms have to be met regarding management, communication, social involvement, water (management), cleaning, waste, energy,

building, greenery, mobility, food and drinks, sustainable purchasing, and textiles. Several norms are optional, but a lot are obligatory in order to get a Green Key sustainability certificate (Green Key, n.d.b).

However, there are some important differences between the zoos. Regarding size, Burgers' zoo is about 45 ha, WILDLANDS is 24 ha, and Ouwehands Dierenpark is 22 ha (Dierennieuws, 2023). Furthermore, Ouwehands Dierenpark houses about 125 animal species (Maljaars, 2025). Whilst in WILDLANDS there are more than 250 animal species, and Burgers' Zoo houses about 500 animal species (WILDLANDS, n.d.b; Burgers' Zoo, n.d.b). Making Burgers' Zoo the biggest zoo in surface area and in the number of animal species that are housed.

4.3 Operationalization

In this research, the concepts of the social sciences of nature conservation, which are knowledge and cooperation, corporate social responsibility (CSR), and greenwashing, were used to analyze the CSR of Burgers' Zoo, based on their sustainability and nature conservation initiatives. The key principles of CSR are (Moir, 2001):

- To treat all employees fairly and equally
- To operate with integrity and ethically
- To respect basic human rights
- To take care of the environment for future generations
- To care for (local) communities

To further clarify the CSR principles, Burgers' Zoos' initiatives were analyzed using the 'maatschappelijk verantwoord ondernemen' (MVO) principle (which stands for socially responsible entrepreneurship) (MVO Nederland, n.d.). Whilst CSR is largely a concept and process, MVO is a fleshed-out vision that businesses can adhere to and gain a certificate for. MVO is a Dutch integral vision for the main activities of a business. These activities should be climate-neutral, circular, inclusive, and equal (Rijksoverheid, n.d.b). MVO businesses take the effects their business has on humans, society, and the environment into account and ensure that the business has no negative effects on the environment (Rijksoverheid, n.d.b; Ondernemersplein, 2023a). MVO principles should be integrated into all activities of a business, such as marketing, production, and maintenance. MVO activities are, for example, saving energy, sustainable purchasing, creating sustainable products, waste separation, and employing disabled people (Rijksoverheid, n.d.b). Other examples of MVO are (Ondernemersplein, 2023a):

- Pay extra attention to green working conditions of employees and help employees make their homes more sustainable
- Only make socially responsible purchases
- Evolve the entire business and business chain with MVO

Businesses that meet the MVO criteria receive an MVO certificate that indicates that the business's products, employees, services, processes, and working conditions meet the required norms, for example, quality, environmental and sustainability norms (Ondernemersplein, 2023b). MVO is good for the business itself, but also for society (MVO Nederland, n.d.).

In short, to assess whether Burgers' Zoo is a socially responsible actor, it was analyzed whether they take the effect they have on the environment, society, and humans into account. And whether they take efforts to decrease their environmental impact, increase inclusivity and equity in their business and their whole chain, and have a positive effect on the environment and society as a whole. However, if Burgers' Zoo is only stating they are undertaking socially responsible actions whilst in reality they are not, this will mean that they are greenwashing.

4.4 Data collection

During the content analysis, documents and articles, and other useful literature were analyzed to research how the function of zoos has changed during the last 75 years. As part of the observation in the zoos, the information signs were analyzed, which inform visitors about nature conservation or sustainability initiatives of the zoo. Furthermore, generally implemented sustainable and nature conservation initiatives were observed using the observation protocol. And the observed initiatives were photographed, making it easier to analyze them after they had taken place. Afterwards, the observations were documented using Word and analyzed using Atlas.ti with a codebook (attachment 4).

Additionally, to gather information about research projects of Burgers' Zoo, an evening lecture was attended. During this lecture, notes were taken about the past, present and future research projects of Burgers' Zoo. Lastly, semi-structured interviews and structured informal interviews were held with employees of the zoo. For the semi-structured interview, the employee that Burgers' Zoo itself put forward was asked in-depth and open questions regarding which nature conservation and sustainability initiatives Burgers' Zoo implements and what the impacts of these initiatives are on wildlife, the environment, and society. In the short, informal structured interviews, random volunteers were asked questions regarding the zoo's sustainability initiatives. The interviews were held in Dutch. After the semi-structured interview, it was transcribed using Word and analyzed with Atlas.ti using a codebook (attachment 4). In Atlas.ti codes were created for important and recurring themes and words in the interview and observations. The more the code reoccurred, the more important that theme or initiative was. The analysis of the interviews and observations was done in English, translated from Dutch to English by the researcher.

4.5 Research plan

In order to successfully complete the research the planning was followed as closely as possible. Furthermore, to help everything go as planned, a good preparation and an outline of the research process was necessary.

To start the thesis research, the content analysis was held along with creating the interview guide and the observation protocols. So, when Burgers' Zoo was contacted, there would be enough preparation and background knowledge to carry out the interview and observations well-prepared.

During and after the period of interviews with Burgers' Zoo the recording of the interview was transcribed in Word, as well as the observation protocols. The goal was to transcribe the interview as soon as possible, so it would still be fresh in mind. When the transcription

of the interview was finished, it was analyzed using the program Atlas.ti. Based on the analysis in Atlas.ti and the results of the observations in the zoos, the results, conclusion, and discussion chapters were written.

To conclude the thesis, the reflection on the research, future research options, recommendations, the discussion, and the summary were written.

5. Content analysis

In this chapter a content analysis was held to research how the function of Dutch zoos have changed in the past 75 years, what influences caused the function of Dutch zoos to change, what the modern zoo looks like today, what the goals are of the modern zoo, and lastly, the future of the modern zoo.

5.1 The history of zoos (1950 – 2000)

Historically, the concept of zoos can be traced back to the time of the Egyptians, the Romans, and even the Chinese civilizations, but zoos were then in the form of menageries (Miranda et al, 2022; Kooij, 2010). Menageries were “aristocratic or royal animal collections that exhibited the power and wealth of the ruler rather than scientific or educational agendas, forming an ‘establishment of luxury and curiosity’” (Braverman, 2011). Since those times long ago, zoos have evolved in three stages: the menagerie, the “living museum” (or zoological garden; created for the promotion of a scientific agenda and education of the general public), and the conservation center/ zoological park (Lee Odinsky-Zec, 2010; Braverman, 2011). In menageries, where live animals replaced dead animals, the wild animals were the focus of the exhibition. Menageries of animals were put on display behind bars and in cages (Braverman, 2014). However, because the animals of the menageries were not being kept well and cared for, the mortality rates of the animals were very high (Kooij, 2010).

In the 20th century, menageries and living museums slowly became zoological parks, or zoos (Westervelt, 2010). The purpose of the zoos was to connect people with far-flung places around the world, without even having to travel very far (Lee Odinsky-Zec, 2010). People came to zoos to get away from daily life and to be immersed in the world of wild animals and their natural habitat (De Jong, 2021). However, at the beginning of the 20th century still not a lot of importance was placed on the well-being and care of the animals in the zoos. Zoos wanted to keep showing off a broad variety of animals to the visitors, resulting in less space for the animals. Moreover, the cages of the animals were created to reflect the country of origin of the animals, but they were not suited to the needs of the animal itself (Halbertsma, 1995).

However, this changed when people's opinions regarding captive animals became increasingly sympathetic toward the well-being of the animals, as well as the public's perception of standards of acceptable animal keeping. People began placing increasingly more value on the welfare of the animals and contributions to conservation as standards of what a good zoo should be (Zimmermann, n.d.). Furthermore, from the 1960s onward, voices about the environmental crisis were gaining momentum, which also reached zoos (Miranda, 2022). This all resulted in zoos, in the 1960s and 1970s, beginning to attract less and less visitors because they increasingly disagreed with the fact that the animals were being held in small cages. Adding to the decrease in zoo visitors was the fact that people were increasingly more able to travel to foreign countries to see wildlife in their natural habitat. And because people were able to travel more to wildlife in foreign countries, this underscored the fact that holding wild animals in cages was unethical and cruel. This caused big financial problems for the Dutch zoos (Halbertsma, 1995).

As the number of zoo visitors decreased, in 1973 the Law of Foreign Animal Species (*Wet op Uitheemse Dierensoorten*) was adopted in the Netherlands. This prohibited Dutch zoos from buying and selling (endangered) wildlife and forced them to shrink their species catalog, which they were able to display in zoos, because not every animal was allowed to be in zoos any longer (Halbertsma, 1995). This law resulted in zoos needing to breed their own animals and trade them with other zoos to sustain themselves and their animal population (Halbertsma, 1995; Braverman, 2014).

Because of the stagnating number of visitors to zoos, the growing public distaste for traditional zoos, and the implementation of the Law of Foreign Animal species, existing zoos had to adapt or they were doomed to disappear (Kooij, 2010; Lee Odinsky-Zec, 2010). The zoos were prepared to change their whole concept, from animals in cages to more ethical and crowd-pleasing displays. Zoos began to invest in several new initiatives: investing in their animal displays, longer opening times year-round, creating indoor animal displays to visit even when the weather was bad, scaling up attractions and temporary displays, and events (Halbertsma, 1995). Around the 1970s, Dutch zoos, inspired by the Hagenbeck-concept of barless zoos and the US, began to limit the number of species that were being kept in zoos and use this space instead to display larger numbers of certain animal species; because then the animals would behave more like when they are in the wild (Halbertsma, 1995; Braverman, 2011). This was one of the first steps of zoos to integrate more animal welfare. The zoos began to slowly revisit their roles and change their promotional message by changing their main purpose from entertainment to education and conservation (Lee Odinsky-Zec, 2010; Miranda et al, 2010). They began behaving more socially responsibly to keep attracting visitors and began to instruct rather than only entertain visitors (Lee Odinsky-Zec, 2010; Braverman, 2011).

In the late 1980s and early 1990s, a storm of policy changes, foundations, and strategies were launched that affected the Dutch zoos. In 1988, the Foundation Research Zoos (*Stichting Onderzoek Dierentuinen*) was founded to prevent the extinction of animal species with the help of zoos. To prevent extinction, zoos would be part of breeding programs, research data, and trade data about animals with the use of computer systems (Halbertsma, 1995). In 1991, a policy was created by the zoos of the Dutch association of Zoos that stated that nature and environmental education, research, and maintenance of the animals should be one of the most important tasks of Dutch zoos (Halbertsma, 1995). Furthermore, in 1992, the biodiversity treaty was created at the Earth Summit in Rio de Janeiro (Keulartz, n.d.). The Earth Summit stated that zoos should be at the forefront of nature conservation (Lee Odinsky-Zec, 2010). Lastly, in 1993, the first World Zoo conservation Strategy was launched, which stated that the reintroduction of species should be the ultimate goal of the ex-situ conservation of zoos (Keulartz, n.d.).

As zoos changed in the late 20th century following the new policies and strategies, the welfare of animals within zoos became more important (Westervelt, 2010). With the knowledge gained from scientific research by the zoos, the animal displays were beginning to improve (de Jong, 2021). Slowly but surely, the circus aspect of zoos disappeared, and architecture, ecology, science, and nature became more important to zoos (De Jong, 2021). The landscape of zoos changed to improve animal displays that recognize the intrinsic value of the animals, their interests, norms, and values (De Jong, 2021). The displays of the animals became more focused on the animal itself, with immersive designs that reflect the original habitat of the animal, which can even include

sounds and sights from the wild (Braverman, 2014). Because zoos began to invest more in appropriate environments for their animals, it resulted in more natural behavior of their animals, improved breeding among animals, increased longevity, and improved visitor satisfaction (Lee Odinsky-Zec, 2010). As zoos made the transition from cages to showing animals in their natural habitat, the cages transformed into architectural monuments to display the animals. According to De Jong (2021), the animal displays “aim at a reconstruction of the already existing land, in the form of an animal enclosure, with a natural habitat of the animal as a basis”. This creates an artificial landscape with animal enclosures and is called the ecosystem approach, or “ecosysteem benadering”(De Jong, 2021). Because of the changed function of the Dutch zoos in the last 75 years, the zoos have been able to sustain themselves through adapting to socially acceptable norms created by visitors and stakeholder values (Lee Odinsky-Zec, 2010). And the function change and investments of zoos have paid off, because in the period between the 1970s and 2000s, there was an increase in visitor counts for Dutch zoos (Halbertsma, 1995).

5.2 The modern zoo (2000 – present)

At the start of the 21st century, once again, several zoo-related policies and strategies were launched. In 2003, an “educative note” (in Dutch: educatieve nota) was drawn up that stated that zoos needed to educate visitors more than just by information signs. Zoos needed to set up exhibitions, use multiple forms of media, and animal caregivers should provide more insider information to visitors. This note has the goal to promote more animal- and nature-friendly behavior of visitors (Westervelt, 2010). Furthermore, in 2005, the new (second) World Zoo and Aquarium Conservation strategy was launched. This document acknowledges the importance of zoos as instruments for nature conservation; however, it is not as efficient as was predicted by the first World Zoo conservation Strategy in 1993. The 2005 document broadens the role of zoos towards nature conservation, research, training, education, awareness campaigns for visitors, and fundraising for in-situ conservation projects. This changes the “ultimate” goals for zoos from reintroduction of species towards the conservation of endangered species and conservation of healthy ecosystems/ natural habitats (Keulartz, n.d.).

Because of the changing function of zoos in the last 50 years and the new policies created by international organizations, national governments, and institutions, the functions of zoos have changed from solely entertainment to much more. The concept of zoos has changed in the last century from places of simple entertainment by the displaying of animals, to nowadays where zoos are places of learning, creating awareness, research, and nature conservation (Miranda et al, 2022). To summarize, the functions and goals of the modern zoo have become: recreation, education, nature conservation (in-situ and ex-situ), and research (Westervelt, 2010; Rose & Riley, 2022).

5.2.1 New goals of the modern zoo

Nature conservation

Because of the attitude change of people surrounding zoos, the adoption of multiple policies relating to zoos and because of the changing function of zoos one of the main

goals of zoos has become to reproduce and conserve (endangered) animal species (Halbertsma, 1995; Rose & Riley, 2022; Westervelt, 2010). Conserving animal species can be done by captive breeding programs to reintroduce animals to their natural habitat. The goal of the breeding programs is to return the (endangered) animals to their natural habitat to possibly sustain (endangered) animal populations; this is called reintroduction of animals (Halbertsma, 1995).

Captive breeding, among other conservation methods, can contribute to halting biodiversity loss and species survival, and it may be the only short-term practical observation option for species that are confined to dwindling habitats (Miranda et al, 2022; Conde et al, 2011). Furthermore, captive breeding has the potential to maintain certain animal species populations as an 'insurance' against threats, for example, diseases (Conde et al, 2011).

Zoos can contribute to nature conservation with two approaches (Westervelt, 2010; Miranda et al, 2022; Lees & Wilcken, 2009):

- In-situ nature conservation: actions of nature conservation inside the natural habitat of the animal, for example, animal reintroductions, provide manpower and expertise, and by (financially) supporting foreign projects of nature conservation (for example, fundraising)
- Ex-situ nature conservation: actions of nature conservation outside of the natural habitat of the animal, for example by captive breeding programs, maintaining genetic diversity, and preserving a healthy/ viable captive population

One of the in-situ conservation strategies is the reintroduction of animals in their natural habitat after ex-situ captive breeding. But to be able to reintroduce species into the wild, it relies on the presence of living animal collections in zoos. These animals must be demographically robust, genetically representative of animals in the wild, and should be able to sustain the species in the future. In short, the animals that are being reintroduced should be a representative "snapshot" of the species (Lees & Wilcken, 2009).

According to Miranda and colleagues (2022): "zoos might be crucial in maintaining viable captive populations through ex-situ programs, acting as Noah's arks while waiting for a better future in which environmental conditions allow returning these species to their native range".

To maintain the well-being of the animal captive population, zoos should strive to make continued improvements to husbandry and species management and continue to assess the needs of the individual animals that they house (Rose & Riley, 2022).

However, nature conservation with the goal of conserving biodiversity is complex goal that requires cooperation between many stakeholders. Such as: government institutions, nongovernmental organizations (NGOs), researchers, and other actors (Miranda et al, 2022). Zoos can be part of global, multi-stakeholder conservation projects and networks (Rose & Riley, 2022; Conde et al, 2011). Zoos strive together to ensure that endangered species can survive in the long term (Conde et al, 2011).

Education

Education of visitors is another main goal of the modern zoo (Westervelt, 2010; Rose & Riley, 2022). Zoos are places where people gain knowledge, have new experiences that

are connected to animals, animal displays, and recreational activities (De Jong, 2021). Around 600 million people visit zoos annually worldwide, and millions of people visit zoos in the Netherlands annually, so the potential and responsibility of zoos to educate and influence visitors is enormous (Zimmermann, n.d.; Miranda et al, 2022; Rose & Riley, 2022; De Jong, 2021).

Zoos educate their visitors on the environment, nature, animal species (including their behavior, country of origin, and natural habitats), and actively let them participate in the conservation of natural habitats and animal species (Halbertsma, 1995; Westervelt, 2010). The goal of zoos has been to provide knowledge-oriented education, generate widespread awareness about conservation and the environment, and to inspire people to make fundamental changes in their behavior and mentality/ attitude for the betterment of the environment and nature (Keulartz, n.d.; Zimmermann, n.d.). Zoos are important in developing planet-friendly behavior through education, ensuring biodiversity conservation, and crafting a deeper connection with the natural world, which supports the UN SDGs (Rose & Riley, 2022). The education by zoos emphasizes the relationship between animals and their natural habitat (Halbertsma, 1995).

Zoos can design environmental education programs to enlighten visitors (Lees & Wilcken, 2009). The educational function of zoos can be realized through educative signs, lectures, guided visits by animal caregivers, animal shows, (naturalistic) exhibitions, information technologies (for example interactive screens and games), and immersive spaces (Miranda et al, 2022).

Recreation

Another goal of zoos is recreation (Westervelt, 2010; Rose & Riley, 2022). Zoos offer education, entertainment, and relaxation to their visitors (Halbertsma, 1995; De Jong, 2021). The recreation part of zoos, such as shops and restaurants, creates the income of zoos (Westervelt, 2010). According to Westervelt (2010), recreation is the central goal of zoos, as it provides the income for zoos. Without recreation, a zoo has no means to realize its other goals of research, nature conservation, and education (Westervelt, 2010). This presents a dilemma for zoos; on the one hand, zoos have the academic ambition to preserve and study animal species and to contribute to nature conservation. But on the other hand, they want and need to appease and entertain the general public (Kooij, 2010).

The downside of being a recreational park for visitors is that zoos will have to keep revisiting the way they operate to be entertaining for their visitors, whilst also responding to their nature conservation and social obligations. Moreover, zoos must be able to guarantee the welfare of the animals they house and be able to face ever-growing social and environmental expectations of society (Miranda et al, 2022)

Research

Another goal of zoos is to increase scientific knowledge about nature conservation (in-situ and ex-situ), translocation of animals, animal species, and how to care for animals in captivity (Halbertsma, 1995; Westervelt, 2010; Rose & Riley, 2022; Keulartz, n.d.). Research in zoos is carried out to improve animal welfare, husbandry, veterinary knowledge, and population management. This all contributes to the success of ex-situ

breeding programs (Zimmermann, n.d.; Halbertsma, 1995). This research is normally carried out by zoos themselves. However, there is international cooperation in the scientific field regarding animal welfare, chromosomes, animal behavior, animal nutrition, and breeding techniques. Zoos often conduct research in cooperation with universities (Halbertsma, 1995).

5.3 The future of the 21st century modern zoo

Whilst the modern zoo has made enormous changes in the past 75 years, there are still critiques of the zoos of today. Critiques by Miranda and colleagues (2022):

- Zoos typically house more non-threatened species than threatened ones, which is contradictory to their function of conservation
- Zoos house and exhibit typical charismatic species, such as lions, giraffes, and elephants, which help fulfill their role of recreation and entertainment, and to generate enough income to keep operating, but contribute less to nature conservation than other types of animals
- Zoos favor housing mammals and birds over fish, invertebrates, reptiles, and amphibians, which could be key animal species to help species in the wild

According to Conway, the 21st century zoo should be: "a redesigned buffer against biotic impoverishment, a powerful time machine buying continuance for faltering wildlife populations, a corridor of care between parks and nature reserves, humanity's primary introduction to wildlife, a promoter of environmental literacy and a recruitment center for conservationists. It should be a conservation park" (Conway, 2003). To achieve this 21st-century vision, zoos must manage closed populations to sustain long-term viable populations. Second, zoos must focus on specialization with animals having compatible requirements and on international collaboration. Lastly, zoos will have to make commitments to assisted reproduction, population management, and the sciences of applied ecology (Conway, 2003). The zoos of the 21st century should be wildlife conservationists, caregivers, and intellectual resources; they should aid parks and reserves, they should sustain animals that have lost their habitats, and conduct campaigns to restore them. Lastly, they should provide as many key species as possible to be stimuli and centerpieces of conservation efforts around the globe (Conway, 2003).

For zoos to become true conservation organizations, they need to: (Zimmermann, n.d.; Miranda et al, 2022)

- Balance ex-situ and in-situ priorities for a species with its exhibition value
- Contribute a significant proportion of their incomes and technical skills to good in-situ conservation work and projects
- Attract conservation scientists into their employment
- Communicate their conservation work to their visitors and non-zoo conservation peer organizations; in short, be transparent and create awareness

Rose and Riley (2022) critique the current goals of the modern zoo, which are nature conservation, education, recreation, and research. According to them, zoos should have a fifth goal. This goal should be about the well-being of animals and the well-being of humans who engage with the zoo's mission by visiting the zoo. Zoos should engage more

with the concept of 'green prescribing', which is nature-based interventions and activities to restore positive mental health states and can help treat mental health conditions, such as anxiety, loneliness, and depression. Zoos could become accessible places for green prescribing, places where people can reconnect with nature (Rose & Riley, 2022).

Whilst there are still critiques left on the modern zoo, there is no denying that zoos have changed tremendously in the past 75 years. In the words of Miranda and colleagues (2022): "Zoos have become essential to meet the urgent needs that biodiversity demands of us" and that the ultimate goal of zoos is "helping humanity and the biodiversity we are part of".

6. Research results Ouwehands and WILDLANDS

6.1 Ouwehands Dierenpark

6.1.1 Nature conservation initiatives Ouwehands Dierenpark

Ouwehands Dierenpark financially supports a great number of in situ-nature conservation projects abroad. Which in-situ nature conservation projects Ouwehands supports are showcased throughout the park with signs nearby relevant animal enclosures (attachment 3.2.3). The in-situ nature conservation projects Ouwehands supports are (Tabel 3Tabel 3):

In-situ nature conservation projects	Protected (endangered) animals	Activities project
<u>The Wanicare Foundation</u> (observation protocol 3.6, figure 5)	Hornbills Visaya warthogs	<ul style="list-style-type: none"> - Protect hornbills and visaya warthogs - Reintroduction programs of (captured) animals - Reproduction programs for (endangered) animals - Raise awareness among locals about (local) nature conservation - Building rehabilitation and care facilities for the animals
<u>China Conservation and Research Center for Conservation of the Giant Panda (CCRCGP)</u> (observation protocol 3.9, figure 4)	The giant panda	<ul style="list-style-type: none"> - Protect giant pandas - Creating green corridors - Help locals create (sustainable) alternative incomes - Reintroduction programs of (captured) animals - Restoration and protection of natural habitat - Research
<u>The Red Panda Network</u> (observation protocol 3.10)	Red panda	<ul style="list-style-type: none"> - Protect red pandas -Research and monitoring of animal populations - Protection of natural habitat - Combat poaching - Educate and raise awareness among locals about (local) nature conservation - Help locals create (sustainable) alternative incomes
<u>Kukang Rescue Program</u> (observation protocol 3.11)	Lorises	<ul style="list-style-type: none"> - Protect and monitor lorises and other endangered animals - Reintroduction programs of (captured) animals - Help locals create (sustainable) alternative incomes and support the local community in livelihood - Educate locals and local children
<u>Pro Natura</u> (observation protocol 3.13)	Bears	<ul style="list-style-type: none"> - Combating wildfires in Sungai Wain Protection Forest - Combat poaching - Monitoring animal populations - Educate locals and rangers - Finance research

		<ul style="list-style-type: none"> - Buying camera traps and education materials
<u>Polar Bears International</u> (observation protocol 3.14)	Polar bears	<ul style="list-style-type: none"> - Finance research about the effects of climate change on polar bears and the behaviors of polar bears - Educate and raise awareness about the threats to polar bears
<u>Sphenisco</u> (observation protocol 3.15, figure 3)	Humboldt penguins	<ul style="list-style-type: none"> - Raise awareness about the threats to Humboldt penguins through education and lobbying - Support and finance research - Protection of natural habitat - Educate the local community - Create education materials
<u>Big Life Foundation</u> (observation protocol 3.16)	Elephants	<ul style="list-style-type: none"> - Protection of natural habitat - Combat poaching, human-animal conflicts, and destruction of natural habitat - Educate and pay for local rangers
<u>Bonobo Alive</u> (observation protocol 3.17)	Bonobo's	<ul style="list-style-type: none"> - Combat poaching - Support the local community in livelihood, care, and education - Create awareness and education local community about nature conservation - Finance and support research - Finance negotiations in local villages to enlarge protected natural habitats

Tabel 3 Nature conservation initiatives Ouwehands Dierenpark

Because of these foundations and programs, wild animals and natural habitats are protected. Moreover, because of the financial support given by Ouwehands Dierenpark (local) ecosystems and communities in West Java, Sichuan, Sumatra, Nepal, Sungai Wain Protection Forest on Borneo, Svalbard, Ambosell-Tsavo Kilimanjaro in Kenia and Tanzania, Salonga National Park in Congo are supported and protected.



Figure 5 Wanicare Foundation (3.6)



Figure 4 CCRCGP Foundation (3.9)



Figure 3 Sphenisco Foundation (3.15)

Besides the numerous in situ nature conservation projects, Ouwehands has several ex-situ nature conservation initiatives. The first one is Berenbos (in English: Bear Forest). This is a large-scale initiative, started in the late 20th century, of Ouwehands Dierenpark to save, protect, and house mistreated bears that were used for street entertainment, breeding, and the circus. Ouwehands Dierenpark, together with their foundation Bears in Mind, has become a shelter for mistreated bears and a global leader in bear nature conservation because of its extensive network and knowledge. Working together with several other international and local organizations, such as IUCN, EAZA, EARS, IBA, GG, governments, and universities, Bears in Mind and Ouwehands Dierenpark are striving to (observation protocol 3.12):

- Improve bear welfare (in captivity)
 - o Advise about the bear shelters for locals
 - o Supporting the building of new shelters
- Protect bears worldwide
 - o Support and initiate (international) nature conservation projects for bears
 - o Support research projects
- Give education about bears



Figure 6 Berenbos donation point (3.12)

People are incentivized by donation pillars and signs to donate to the above-mentioned foundations of Ouwehands Dierenpark to raise money to support the foundations (figures 6,7,8).



Figure 9 CCRCGP donation pillar (3.9)



Figure 8 Berenbos donation pillar (3.12)



Figure 7 Ouwehands adoption program (3.7)

The second ex-situ nature conservation initiative of Ouwehands Dierenpark is the animal Adoption Program (observation protocol 3.7, figure 9). People, organizations, and businesses can adopt an animal of Ouwehands Dierenpark, and this supports animal welfare in the zoo, education, conservation of endangered species, and the Ouwehands Zoo Foundation.

Third, is the vulture reproduction program of Ouwehands Dierenpark, called: "Dating in Ouwehands Dierenpark". In Ouwehands, vultures are kept that are looking for

a partner. The goals of this program are to produce young that in the future will be set out in the wild. Thus, this program supports vultures in the wild (observation protocol 3.8)

Lastly, Ouwehands has over 40 (endangered) animals in-house that are part of the EAZA ex-situ management programs (observation protocol 3.18)

6.1.2 Sustainability initiatives Ouwehands Dierenpark

Ouwehands Dierenpark has several sustainability initiatives that are visible in the park, such as (Tabel 4, attachment 3.2.3):

Sustainability initiative	Implementation
Sustainable waste management (observation protocols 3.1, 3.4)	- Waste separation for recycling (figure 11) - Use recycled park maps to reduce paper waste (figure 10)



Figure 11 Waste separation (3.1)



Figure 10 Recycled park map (3.4)

Sustainable retail (observation protocol 3.2, figure 12)	- Biodegradable ponchos (figure 12) - Sustainably made and recycled goods, for example, tote bags, plushies (figure 12)
---	--



Figure 12 Sustainable retail (3.2)

By buying a (sustainable) souvenir in Ouwehands, several foundations are supported, such as Ouwehands Zoo Foundation, Nature Planet, Plan International, CCRCGP, and Bears in Mind (observation protocol 3.2).

<p>Sustainable purchasing (observation protocol 3.3)</p>	<p>- Use sustainably sourced, climate-positive coffee beans that are organically grown and fairly priced. By buying these coffee beans, Ouwehands supports local farmers and creates green coffee plantations that enhance biodiversity and create awareness for nature conservation</p>
---	--

Tabel 4 Sustainability initiatives Ouwehands Dierenpark

Furthermore, WILDLANDS wants to raise awareness about e-waste (electronic waste) to improve e-waste recycling (observation protocol 3.5).

6.1.3 Social and research initiatives Ouwehands Dierenpark

Ouwehands educates its visitors with signs about the animals nearby every enclosure (attachment 3.2.3). Informing visitors about animal behavior, natural habitat, characteristics, threats to their natural environment, and their level of endangerment. Moreover, Ouwehands has several interactive signs, games, and educational displays that are entertaining and informative at the same time, adding another dimension to learning (observation protocols 3.20 to 3.26, figure 13).



Figure 14 Interactive information sign (3.22)



Figure 13 Research Ouwehands Dierenpark (3.19)

Lastly, in the park, a research of Ouwehands with the University of Leiden was showcased with orangutans (observation protocol 3.19). This research was set up to stimulate the reproduction of orangutans, as part of population management (figure 14).

6.1.4 Annual financial report Ouwehands Dierenpark

Every year, Ouwehands Dierenpark releases a financial report that states, among others, how much money went to the foundations through the Ouwehand Zoo Foundation. This report serves as a check to see whether they actually sent money to the foundations they claim to support. The most recent report of Ouwehands Dierenpark was for 2023, which outlines the money spent on their foundations in 2023 and 2022 (Tabel 5Tabel 5).

(Crowe, 2024)

Foundation	2023	2022
Polar Bear	€16.643	€18.565
Red Panda Network, USA	€1.000	€1.000
Pro Natura	€50.000	-
Big Life Foundation	€5.000	€5.000
CCRCGP	€937.708	€939.246
Wanicare Foundation	-	€8.753
Bears in Mind	€33.275	€33.275
Kukang Rescue Program	€5.000	-
Bonobo Alive	€50.000	-
Sphenisco	€1.000	-

Tabel 5 Expenses Ouwehands Dierenpark foundations

Although Ouwehands Dierenpark does not make annual donations to every foundation they promote in the park, they have contributed to each foundation in either 2022 or 2023.

6.2 WILDLANDS

6.2.1 Nature conservation initiatives WILDLANDS

WILDLANDS has several in-situ nature conservation projects which are showcased in the park (attachment 3.2.2). These are (Tabel 6):

In-situ nature conservation projects	Protected (endangered) animals	Activities project
Polar Bears International, WILDLANDS is Artic Ambassador (observation protocol 2.7, figure 15)	Polar bears	- Research about the impact of climate change on polar bears and the Arctic - Research how to protect polar bears against climate change
Save the Rhino International (observation protocol 2.8, figure 16)	Rhinoceros	- Donated €50.000 to uMkhuze Game Reserve in South-Africa to mitigate poaching

Tabel 6 Nature conservation initiatives WILDLANDS



Figure 15 WILDLANDS Artic Ambassador (2.7)



Figure 16 Save the Rhino International (2.8)

Other projects of WILDLANDS to support (ex-situ) nature conservation are:

- The reproduction program of the mountain tortoise. WILDLANDS is part of a reproduction program of mountain tortoises to save them from becoming extinct (observation protocol 2.10, figure 17).
- Insect hotel. In WILDLANDS, there is an insect hotel that supports local insect biodiversity and the ecosystem (observation protocol 2.11, figure 18).



Figure 17 Reproduction program tortoise (2.10)



Figure 18 Insect hotel WILDLANDS (2.11)

People are incentivized by donation pillars and signs to donate to the above-mentioned foundations and organizations to raise money to support them.

6.2.2 Sustainability initiatives WILDLANDS

WILDLANDS has several sustainability initiatives that are visible in the park, such as (Tabel 7, attachment 3.2.2):

Sustainability initiative	Implementation
Sustainable energy management (observation protocol 2.5)	- Solar panels (figure 19)
Sustainable water management (observation protocol 2.1)	- Green roof (figure 20)



Figure 19 Solar panels WILDLANDS (2.5)

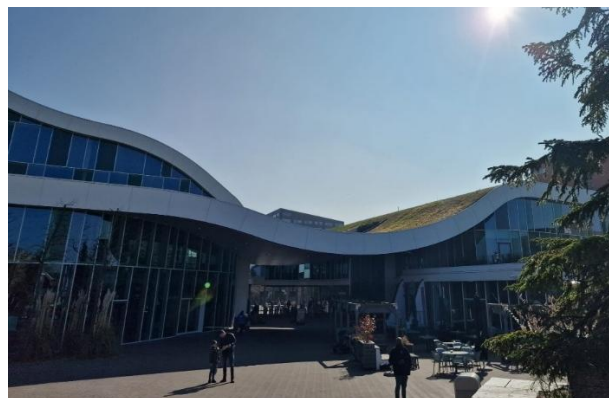


Figure 20 Green roof WILDLANDS (2.1)

Sustainable waste management (observation protocols 2.3, 2.6)	<ul style="list-style-type: none"> - Recycling plastic bottles - Reusable plastic cups (figure 21)
Sustainable retail (observation protocol 2.4)	<ul style="list-style-type: none"> - Plushies from recycled materials (figure 22) - Reusable (water) bottles - Notebooks from recycled and sustainable materials, like wheat and paper - Eco-pens made of degradable materials - Soapstone souvenirs created by local people in Kenya, who are fairly compensated to support their school and hospital bills

By buying a (sustainable) souvenir in WILDLANDS, several foundations are supported, such as Stichting WNEF, Waste Free Oceans, Plan International (figure 23).



Figure 21 Reusable plastic cup WILDLANDS (2.6)



Figure 22 Sustainable retail WILDLANDS (2.4)



Figure 23 WNEF (2.4)

Sustainable purchasing (observation protocol 2.2)	<ul style="list-style-type: none"> - Purchasing fish for animals in WILDLANDS with MSC and ASC certificates, which indicate that the fish are not endangered, overfished, farmed responsibly, and fished in a way that prevents by-catch (figure 24)
---	---

Tabel 7 Sustainability initiatives WILDLANDS

Furthermore, WILDLANDS tries to stimulate behaviour and create awareness about consumer behavior by stating which fish to buy and avoid (observation protocol 2.2).



Figure 24 Stimulate MSC and ASC purchasing (2.2)

6.2.3 Social and research initiatives WILDLANDS

Furthermore, WILDLANDS educates its visitors with signs about the animals. Informing visitors about animal behavior and characteristics, threats to their natural environment, and their level of endangerment and natural habitat (attachment 3.2.2). Moreover, WILDLANDS has several interactive signs, games, and educational displays that are entertaining and informative at the same time (observation protocols 2.12 to 2.18, figures 25, 26).



Figure 25 Information sign WILDLANDS (2.13)



Figure 26 Interactive game WILDLANDS (2.16)



Figure 27 Research elephants WILDLANDS (2.18)

Besides research about polar bears, WILDLANDS also showcases its research about elephant herpes. WILDLANDS both finances and conducts research about elephant herpes, in cooperation with EAZA, NVD, and Utrecht University. This research is done to prevent wild and captive elephants from dying from herpes (observation protocol 2.18, figure 27).

6.2.4 Annual financial report WILDLANDS

Every year, WILDLANDS releases a financial report which states, among others, how much money went to the objectives of the Foundation WNEF. This report serves as a check to see whether WNEF actually sent donated money to the foundations they claim to support. The most recent report of WILDLANDS was for 2023, which outlines the money spent on the objectives of WNEF in 2023 and 2022 (Tabel 8).

(WNEF, n.d.)

Foundation WNEF	2023	2022
Expenses for the foundation's objectives	€251.406	€375.093

Tabel 8 Expenses WILDLANDS WNEF Foundations

Whilst WILDLANDS doesn't state exactly how much money goes to which foundation, it does prove that they sent money to the WNEF objectives every year.

6.3 Conclusion WILDLANDS and Ouwehands Dierenpark

In this research, Ouwehands Dierenpark and WILDLANDS were used as the context for the main case, Burgers' Zoo. Because Ouwehands Dierenpark and WILDLANDS are similar in yearly visitors and entrance price, they were analyzed to gain insight into how other modern zoos fulfill the government-mandated policy guidelines and how they implement nature conservation and sustainability initiatives.

Through the observations, it became clear that both parks fulfill the government-mandated policy guidelines by being educational centers through educating their visitors about their animals, nature conservation, and much more. Furthermore, WILDLANDS and Ouwehands both support and donate money to several international in-situ nature conservation projects to prevent animals from extinction and natural habitats from being destroyed. They both have ex-situ nature conservation projects, for example, breeding programs and reintroduction programs. As well, both zoos conduct scientific research, often in cooperation with other institutions, such as polar bear research and elephant herpes research. Moreover, WILDLANDS and Ouwehands have several sustainability initiatives that help reduce their environmental impact. Such as recycling waste, using reusable plastic cups, solar panels, green roof, and so on.

By comparing these two zoos to Burgers' Zoo, it shows that the modern zoos of today are quite similar, with similar nature conservation and sustainability initiatives. But how these initiatives are advertised in the park and where the focus of each zoo lies differs per park. For example, Ouwehands Dierenpark is the only zoo in the Netherlands that houses giant pandas, so naturally, the focus of the nature conservation projects of Ouwehands is related to pandas. Another example, the signs in WILDLANDS are very different from those in Ouwehands. The signs in WILDLANDS are more playful and fun to look at, whilst in Ouwehands, the signs are straight to the point and more formal. So, by comparing WILDLANDS and Ouwehands Dierenpark to Burgers' Zoo, it showcases the similarities, but it also highlights the differences (observation protocols 2.15, 3.25, figures 28,29).



Figure 28 Example sign Ouwehands (3.25)



Figure 29 Example sign WILDLANDS (2.15)

7. Research results Koninklijke Burgers' Zoo

In 1913, Koninklijke Burgers' Zoo began as a pheasantry. Then, in 1923, Burgers' Zoo moved to its current location in Arnhem. In that time, Burgers' Zoo consisted of two parks, Burgers' Dierenpark and Safaripark. Also, at that time, wild animals were still captured and displayed in zoos. But that has changed since then; now zoo animals are bred and brought up in captivity. Furthermore, the requirements for animal enclosures have risen significantly, regarding space, facilities, and living with other animals. Burgers' Zoo has integrated these requirements into ecodisplays, for which Burgers' Zoo is most known. The Bush, Burgers' first ecodisplay, was built in 1988; this was a trendsetter worldwide. Then came the Desert in 1994. In 2000, the Ocean was built, home to the largest coral reef in Europe and the third largest in the world. In 2008, the Rimba was opened. Lastly, the Mangrove was built in 2017, the largest mangrove in the world.

As previously mentioned in the methods chapter, Burgers' zoo is about 45 hectares in size, making it the second biggest zoo in the Netherlands, and houses about 500 animal species in their different ecodisplays (Mag World, 2024). Annually, Burgers' Zoo is visited by around 1 million people, with 1.075.000 visitors in 2024 (Loopings, 2025). Burgers' Zoo employs approximately 250 volunteers, in addition to other paid employees, who are there to educate visitors about the animals at Burgers' Zoo (Burgers' Zoo, n.d.d). Lastly, Burgers' Zoo is part of the EAZA and WAZA, and has achieved the golden certificate of Duurzaam Gastvrij (EAZA, n.d.b; Green Key, n.d.).

Nature conservation and sustainability were important for Burgers' Zoo in the past, are important today, and will be important in the future. These are integrated values in Burgers' Zoo's park, its management, and employees; striving to *"become a bit better every day"*, as said by the employee of Burgers' Zoo (interview employee Burgers' Zoo, 51:00 – 52:00). Burgers' Zoo has been leading in the past, but wants to remain a leader in the future to help other zoos become better.

7.1 Nature conservation initiatives Koninklijke Burgers' Zoo

Burgers' Zoo is part of several nature conservation organizations, such as the EAZA and the WAZA (World Association of Zoos and Aquaria). Since the establishment of the EAZA, Burgers' Zoo has been involved with the EAZA. Furthermore, Max, the curator of Ocean in Burgers' Zoo, is the chairman of the aquarium part of the EAZA. The advantage of the EAZA is that zoos have a shared database with information about different species, and the EAZA provides support with animal transportation and other related topics.

Besides the EAZA, Burgers' Zoo is part of the EEP programs (European Endangered Species Program), because when a zoo joins the EAZA, the zoo automatically joins the EEP programs. The EEP programs, through studbook holders who are specialists in that species, decide which animals are kept in which zoos to sustain the endangered species. So in general, Burgers' Zoo is very involved with the EAZA and the EEP programs.

The disadvantages of the EEP programs are that European zoos are becoming more homogenous. Because European zoos are allowed to keep only certain species,

meaning that slowly zoos will have the same species. Zoos have less freedom in their collection of animals than they had 75 years ago, but this is necessary for the welfare of (endangered) species.

Other organizations that Burgers' Zoo supports are Future for Nature and Globe Guards. First, Globe Guards is a foundation that auctions artefacts, and the revenue goes to nature conservation projects. Burgers' Zoo facilitates a lot for the Globe Guards foundation.

Secondly, Future for Nature is a foundation that financially supports small-scale nature conservation projects through a competition in which the winners receive €50.000 to realize their nature conservation initiative. *"Because WNF etc., are doing very big things, but there are a lot of small initiatives that are just as important."* (interview employee Burgers' Zoo, 23:00 – 24:00).

In 1980, Burgers' Zoo founded the Lucie Burgers' Stichting. This foundation, named after the daughter of the founder of Burgers' Zoo and former director, centers around research about animals and their natural habitats.

Burgers' Zoo has several in-situ and ex-situ nature conservation projects that are showcased in the park (attachment 3.2.1). The largest in-situ nature conservation project of Burgers' Zoo is in Belize, which started in the 1990s in cooperation with the Swiss butterfly park Papiliorama Zoo. The Belize nature conservation project protects the mangrove forest in Belize, a country in Central America. The protected area is 400 square kilometers and growing. The goal is to create the world's first connected protected nature area. Burgers' Zoo financially supports the Belize project to protect the area and to pay the rangers. The main activities of the Belize project are (observation protocol 1.11, figure 31):

- Protecting flora and fauna
- Protecting against illegal poaching and logging
- Replanting mahonietrees
- Education of locals
- Small-scale ecotourism to generate income

Throughout the park, Burgers' Zoo has several initiatives to support the Belize project, for example, money collected from deposit bottles from visitors, selling Vriendenlotterij tickets in the park, selling (sustainable) souvenirs related to Belize, and donations, of which the money goes to Belize (observation protocol 1.11, figures 30, 31).



Figure 30 Donation pillar Belize project Burgers' Zoo (1.11)



Figure 31 In-situ Belize project Burgers' Zoo (1.11)

Ex-situ nature conservation projects of Burgers' Zoo are (Tabel 9):

Reproduction project Burgers' Zoo	Characteristics
Manatees (observation protocol 1.12, figure 32)	As manatees are an endangered species, Burgers' Zoo is part of their reproduction program
Deer (observation protocol 1.13)	As many deer species are endangered, Burgers' Zoo is part of their reproduction program
Fish (observation protocol 1.15)	To avoid catching fish in the wild, Burgers' Zoo and other European zoos are attempting to create a fish reproduction program to feed animals more sustainably
Corals (observation protocol 1.16, figure 34)	Corals are endangered in the wild, so Burgers' Zoo is creating a coral reef to serve as a reserve population. Currently, Burgers' Zoo is home to the biggest tropical coral reef in Europe. It often donates corals to other zoos and has become a shelter for orphaned corals.
Spotted eagle ray (observation protocol 1.17, figure 33)	The spotted eagle ray is an endangered animal, so Burgers' Zoo is part of their reproduction program, where it is a frontrunner worldwide.
Rhinos (observation protocol 1.19)	Rhinos are threatened in the wild, so Burgers' Zoo is part of their reproduction program to try and restore rhinos in the wild.
Rothschilds giraffe (observation protocol 1.20)	This species of giraffe is rare, so to protect them, Burgers' Zoo is part of their reproduction program
Population management program	Characteristics
Elephants (observation protocol 1.7)	Burgers' Zoo is a shelter for elderly female elephants that need a home
Deer (observation protocol 1.13)	
Spotted eagle ray (observation protocol 1.17)	Burgers' Zoo is part of their population management
Reintroduction program	Characteristics
Cinereous vultures (observation protocol 1.8)	Reintroducing young vultures in France

Tabel 9 Ex-situ nature conservation projects of Burgers' Zoo

Furthermore, Burgers' Zoo is the EEP coordinator of the anteater and a specialist in manatees and cartilaginous fish (observation protocol 1.18).



Figure 32 Reproduction program manatees Burgers' Zoo (1.12)



Figure 33 Reproduction program rays (1.17)



Figure 34 Reproduction program corals (1.16)

Another example of a nature conservation project of Burgers' Zoo is their coral reef project. Together with 3 other big aquaria, they are creating a reserve population of corals to put them back in the wild when conditions in the wild are better for corals.

Lastly, Burgers' Zoo uses its ecodisplays to conduct research for nature conservation in order to improve conditions in the wild and to create a healthy reserve population of several species. A good example is:

"We have an example here in the Desert, the Socorro dove [...] but it is extinct in the wild. And we still have them here. And we are actively working to build a reserve population that is as healthy as possible. And if that reserve population is big enough, then you can look again, hey, can we reintroduce into the wild" (interview employee Burgers' Zoo, 34:00 – 36:00).

"That (meaning nature conservation) is a major driving force behind every modern zoo" (interview employee Burgers' Zoo, 36:00 – 37:00).

Furthermore, as part of the observation in Burgers' Zoo an evening lecture was attended about research projects of Burgers' Zoo (attachment 2.1). Burgers' Zoo annually provides multiple differently themed lectures as part of their educational initiatives. This evening lecture, named: "En het resultaat is..." (meaning: "And the result is...", figure 35), is given every few years by Constanze (employee of Burgers' Zoo) about notable past, present, and future research projects of Burgers' Zoo. The goal of research for Burgers' zoo is to improve animal welfare, both wild animals and captive animals.

Additionally, the nine research priorities of Burgers' Zoo were discussed, which are:

1. Research to improve animal welfare
2. Nature conservation-related research

3. EAZA-approved multi-institutional research
4. Burgers' Ocean research (most often researched)
5. Research about apes (long-lasting and continued research)
6. Ecodisplay level research (i.e., insect or fungal level)
7. Botanical research
8. Donating (dead) matter and artifacts for (genetic/ medical) research (i.e., water samples from Ocean, and for the EAZA database)
9. Visitor research (i.e., visitor flows, usefulness of education)

Research in Burgers' Zoo is often focused on animal behavior and apes. Importantly, research has very important implications for the EEP programs. The research mentioned in this evening lecture was (Tabel 10):

Research	Characteristics of research
Research behavioral change of Asian Elephants during an interrupted introduction (of other elephants)	<ul style="list-style-type: none"> - Past student research - Result: interrupted introductions have a negative influence on elephants, and can cause stress and negative stereotypical behavior - Advice: no interrupted introductions between elephants - Emphasis on differences between individual animals
Research behavioral change of sharks in the Ocean after a change in water currents	<ul style="list-style-type: none"> - Past student research - Fluctuating currents are more natural, but is it better? - Emphasis on differences between individual animals
Research mapping mangrove trees with TLS lasers	<ul style="list-style-type: none"> - Past student research - Mapping mangrove trees with lasers to get insight into their biomass and CO2 carrying capacity to save mangrove trees
Research chimpanzees:	Several past student researches: <ul style="list-style-type: none"> - Behavioral change - Social bonds between chimpanzees - Innovation behavior
<u>Future researches</u>	<ul style="list-style-type: none"> - Research the usage of Safari by ungulates, which could have implications for the design of the Safari - Why are morpho butterflies blue? - Do Burgers' Zoos kids' clubs work? - Behavior of the visitor: provides information on how to better run the zoo

Tabel 10 Research initiatives Burgers' Zoo

In the words of Constanze, manager of conservation, research, and education in Burgers' Zoo: '*Research helps to understand and predict animal and visitors' behavior*' (Evening lecture, 23-4).



Figure 35 Evening lecture Burgers' Zoo: 'En het resultaat is...'

Thanks to the nature conservation initiatives and research of Burgers' Zoo, a growing body of knowledge about animals and their behavior is obtained, which could make nature conservation more successful and help protect animals in the wild, but also improve the well-being of captive animals. Furthermore, the in-situ nature conservation projects that zoos have in cooperation with local nature conservation foundations support the local communities that live in or near the natural habitats of animals.

7.2 Sustainability initiatives Burgers' Zoo

That sustainability is important for Burgers' Zoo is evident because they have been GreenKey gold certified since 2004, when the GreenKey certification was established.

"The path to sustainability has been taken for a long time. It is not something of the last months or years [...]" (interview employee Burgers' Zoo, 3:00 – 4:00).

"We were always working on it, and then in 2004 the certificate was created, and we thought, hey, that might be a good way to translate our values into a certificate that people can compare and contrast with other parks and attractions" (interview employee Burgers' Zoo, 33:00 – 34:00).

However, last year the European GreenKey certificate was cancelled, but the Dutch GreenKey organization created another organization that is essentially the same as the European GreenKey with the same sustainability demands. Which is the certificate Duurzaam Gastvrij, of which Burgers' Zoo also has a gold certificate, which is the highest ranking. Part of the demands for a Duurzaam Gastvrij certificate is that the organization should have a greenteam, which will discuss all topics and initiatives regarding sustainability in the organization. In Burgers' Zoo, the greenteam consists of several employees from different departments of Burgers' Zoo, incorporating every part of the organization of Burgers' Zoo in their goal of becoming more sustainable.

Burgers' Zoo has a great number of sustainability initiatives that are visible and showcased throughout the park. Burgers' Zoo Duurzaam Gastvrij sustainability initiatives are (Tabel 11, attachment 3.2.1):

Sustainability initiative	Implementation
Sustainable catering	- Vegetarian and vegan options

(observation protocol 1.2)	- Palm oil and soy free - Biologically and locally produced produce
Sustainable energy management (observation protocols 1.1, 1.2)	- Solar panels (2240 in total) (figure 36) - Use LED lights - Warmte-koude-opslag (WKO)
Sustainable water management (observation protocol 1.2)	- Use rainwater for toilets, plants, and ponds
Sustainable waste management (observation protocols 1.2, 1.6)	- No disposable items - Refillable dispensers - Waste separation - Decrease amounts of waste - Reusable buckets - Reusable plastic cups (figure 37)
Sustainable purchasing (observation protocols 1.2, 1.5)	- Sustainable work clothing and recycling them after use - Sustainable paper use - FSC-wood for building - Only selling souvenirs with a sustainable certificate (observation protocol 1.4, figure 39) - Cleaning supplies with a sustainability certificate - Using sustainable climate-compensated (with carbon credits) coffee with the Fairtrade certificate. Biologically made and roasted locally in Arnhem. By buying these beans, Burgers' Zoo supports local farmers, local nature conservation projects, and enhances biodiversity (observation protocol 1.3) - Using the Viswijzer app to buy fish that are sustainably caught or farmed responsibly (figure 38)



Figure 36 Solar panels Burgers' Zoo (1.1)



Figure 37 Reusable plastic cup Burgers' Zoo (1.6)



Figure 38 Raise awareness fish consumption Viswijzer (1.5)

Sustainable transportation (observation protocol 1.2)	- Stimulate use of public transport - Electric vehicle charging points
Sustainable retail (all with sustainability certificate) (observation protocol 1.4, figure 39)	- Sustainably-made, reusable, and recyclable custom Burgers' Zoo water bottles (2% revenue goes to Water.org) - Beach towels made of plastic bottles - Reusable notebooks - Plushies made of recycled materials - Reusable water bottles made from recycled and sustainable materials

	<ul style="list-style-type: none"> - Sustainable jewelry made from sustainable cherry wood - Shampoo bars
--	---

Tabel 11 Sustainability initiatives Burgers' Zoo

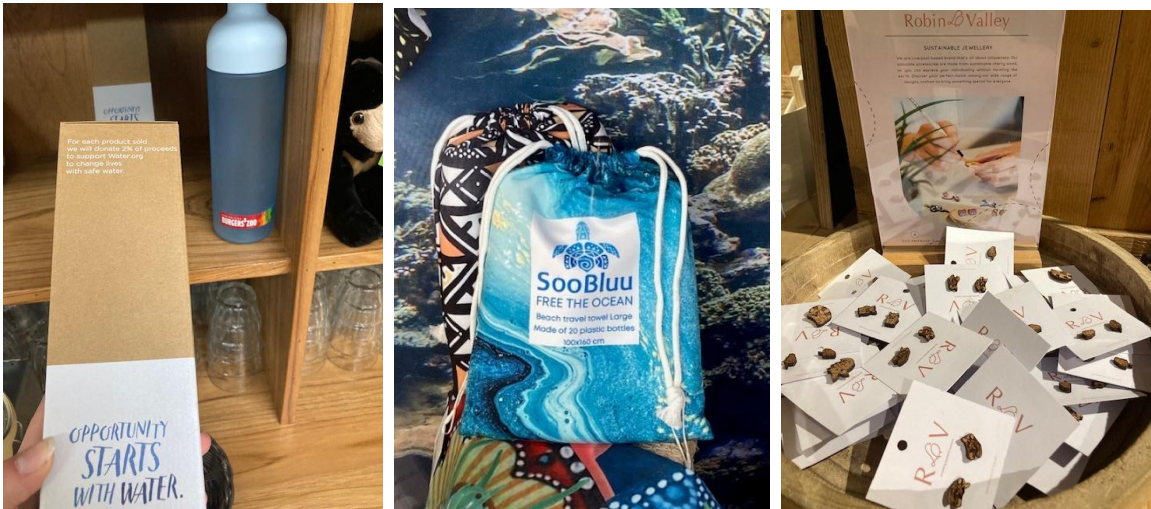


Figure 39 Sustainable retail Burgers' Zoo (1.4)

Lastly, Burgers' Zoo has 4 sustainability goals for 2040. These are:

- 100% renewable energy
- Zero gas
- 50% (tap) water reduction
- Zero waste

To achieve these goals, Burgers' Zoo has several sustainability initiatives (as seen above). Moreover, when building, build gas-free and reuse as many materials as possible.

"A good example is Panter Plaza, which is being renovated. In the past, it was a coffee corner where you could buy ice cream and fries. Now it will be a building for permanent exhibitions about pieces of history or sustainability or nature. [...] And Panter Plaza is being rebuilt with old materials. For example, the wood on the outside is being cleaned and refurbished and put back. And, this way we try to be sustainable with everything in the park [...]" (interview employee Burgers' Zoo, 4:00 – 6:00).

Furthermore, Burgers' Zoo is moving towards seasonal vegetables and fruits to feed their animals, to reduce transportation costs and CO2 emissions. To reduce the use of tap water, Burgers' Zoo collects rainwater to use for toilets, watering, and other uses.

Burgers' Zoo has already reduced tap water usage by 88,5% in comparison to 20 years ago, they have reduced their gas usage by 300.000 Kub and, and lastly, they create about 1 million kilowatt-hour of renewable electricity themselves.

Despite the disadvantageous investment costs that are needed to become more sustainable, Burgers' Zoo still wants to become even more sustainable. *"Every day a bit more sustainable"* (interview employee Burgers' Zoo, 40:00 – 41:00).

"[...] the disadvantage is that it costs money and time and people. Time, money and energy that you cannot put into the animals, but it does result in a better park, and if the

park becomes better, the animals will benefit from it” (interview employee Burgers’ Zoo, 41:00 – 42:00).

Thanks to the sustainability initiatives of Burgers’ Zoo, the park has a positive impact on the environment and reduces its climate impact. By reducing their CO2 emissions with renewable energy, reducing waste with reusable plastic cups, by using rainwater to flush toilets and fill ponds, and by using sustainable and locally produced foods. Moreover, by being as sustainable as possible, they take care of the environment for future generations.

7.3 Social initiatives Koninklijke Burgers’ Zoo

Burgers’ Zoo is part of the NVD, the Nederlandse Vereniging van Dierentuinen (Dutch organisations of zoos). Together, zoo members have meetings about several themes, such as sustainability, public transport, working conditions, waste management, and these zoos help each other with these topics in their parks. By working together through the NVD, these zoos stand stronger together towards other organizations in realizing their objectives.

“[...] These are all areas where zoos say, we are not competitors, let’s just learn from each other, share and work together in this” (interview employee Burgers’ Zoo, 28:00 – 29:00).

A likewise organization that Burgers’ Zoo is also part of is the Club van Elf (in English: Club of Eleven), which is an organization for the biggest day attractions in the Netherlands. Similarly, they have meetings between members to discuss similar topics to help each other realize their objectives.

Burgers’ Zoo has several other educational and societal initiatives. One of those is Presikhaaf University. This is an organization, supported by Burgers’ Zoo, for local children from less fortunate neighborhoods who need extra guidance and attention. Another social initiative of Burgers’ Zoo is that they employ people who get a job less easily, for example, disabled people. Furthermore, schools and colleges come to Burgers’ Zoo on daytrips to get information and to become more educated about the natural world.

Other Duurzaam Gastvrij initiatives of Burgers’ Zoo are (observation protocol 1.2, figure 40):

- MVO-certificate (maatschappelijk verantwoord ondernemen)
 - o MVO policy-making
 - o Employees working/ thinking together to make the zoo more sustainable
- Having transparent communication
- Being socially responsible through cooperation, nature conservation projects, Lucie Burgers’ Stichting, and Future for Nature
- Building flower meadows and insect hotels (observation protocol 1.9, figure 41)



Figure 40 Burgers' Zoo Duurzaam Gastvrij (1.2)



Figure 41 Burgers' Zoo insect hotel (1.9)

Burgers' Zoo is also investing in a new (sustainably built) multi-purpose building. This means that Burgers' Zoo is investing in future nature conservation, research, and educational purposes (observation protocol 1.14, figure 42).

Burgers' Zoo has changed in the past, but so have their visitors. While some people still visit zoos only to see the animals, others are increasingly interested in other animal-related topics, such as nature, climate, wildlife, and other natural processes. Because of this Burgers' Zoo educates its visitors with signs about their animals and more. Informing visitors about animal behavior, species characteristics, threats to their natural environment, level of endangerment. Moreover, Burgers' Zoo has several interactive signs, games, and educational displays that are entertaining and informative at the same time (observation protocols 1.21 to 1.28, figure 43).



Figure 42 Burgers' Zoo new building (1.14)



Figure 43 example interactive information sign Burgers' Zoo (1.22)

Thanks to the social initiatives of Burgers' Zoo, they care for the local community by hosting school trips, providing education and creating awareness for its visitors, buying locally produced food, and supporting children of the Presikhaaf University.

7.3.1 Annual social report Koninklijke Burgers' Zoo

Every year, Burgers' Zoo releases a social report, the most recent being of 2024, that states the current status of the socially responsible entrepreneurship and sustainability initiatives of Burgers' Zoo. In addition, the annual report states the most important norms and values of Burgers' Zoo, which are: (Burgers' Zoo, n.d.c)

1. Animal welfare comes first
2. As safe, natural, and sustainable as possible
3. Every visitor and employee is important
4. Wonder is important
5. Innovation is fun and of vital importance

Furthermore, the mission of Burgers' Zoo is stated in the annual report, which is: 'We see it as our mission to protect and conserve (endangered) animals and to let as many people as possible experience the wonderful world of nature to inspire them, to give something with them, where possible to change their behavior and to let them enjoy everything to do with nature together.'(Burgers' Zoo, n.d.c)

In 2024, Burgers' Zoo achieved several goals regarding socially responsible entrepreneurship and sustainability, which are: (Burgers' Zoo, n.d.c)

- Having a Green Team consisting of 7 employees from different departments working together to invent new ways of becoming more sustainable
- Communication in the press, on their website, in their magazine, and posts on social media about sustainability
- Have their own Zoo Connect App for employees, in which Burgers' Zoo reports to their employees their monthly energy and water consumption and their savings on packaging. This increases transparent communication
- Working together with Presikhaaf University, Wensenambulance, and other foundations to increase social involvement
- Save 6% of drinking water in 2024 by using rainwater to flush toilets, fill the penguin and elephant pond, and water the Bush with rainwater and unfiltered spring water
- Using cleaning supplies with an environmental quality mark, and chlorine-free cleaning supplies for the dishwasher
- Reducing waste by getting rid of unnecessary packaging, for example, by having their Peeze coffee beans delivered in reusable buckets instead of bags
- Expansion of their solar panel park
- Reuse wood for the Panter Plaza building project and use FSC-certified wood
- Having 48 charging points of electric cars, using new electric carts and e-bikes for the technical staff to get around the park
- Only serving food to visitors and animals that are vegetarian or have an ASC or MSC certificate. And using reusable cups for visitors, and using less mono-packaging
- Sustainable retail and working with sustainable suppliers, such as Hanos and Peeze, for the restaurants
- Having sustainably made work clothing, and after they've had their use, they are being recycled for other uses

7.4 Motivations for initiatives of Koninklijke Burgers' Zoo

The main motivation of Burgers' Zoo for all its nature conservation and sustainability initiatives is internal. As said by the employee of Burgers' Zoo: *"it stands or falls with internal motivation"* (interview employee Burgers' Zoo, 43:00 – 44:00).

Whilst Burgers' Zoo joined the EAZA because of the advantages it gives the zoo, such as the shared database. The biggest motivation was their internal motivation to be part of the EAZA and to be part of the EEP programs.

Whilst access to the business market is an important motivator for Burgers' Zoo to have the Duurzaam Gastvrij certificate, because it attracts businesses to use the facilities of Burgers' Zoo; it is not the most important motivator for Burgers' Zoo to have the Duurzaam Gastvrij certificate.

"It is a big advantage for the business market, it is very important that we have the certificate [...] Especially government agencies that come here a lot, they find it very important that they go to a location that is GreenKey certified. Otherwise, they just will not come. [...] But that is not the main reason; we do it because we find it important, and we want to be as sustainable a park as possible. And as a side effect, it is very good for the business market" (interview employee Burgers' Zoo, 32:00 – 34:00).

Sustainability is integrated in Burgers' Zoo, it is very important for employees in key positions of Burgers' Zoo, and their motivation and determination to sustainability shine through to the rest of the organization.

Burgers' Zoo built ecodisplays not mainly for the increase of visitors it brings, but to conduct further nature conservation and animal welfare research, and to continue educating people.

"It is an added benefit that you get more visitors, it generates more income, more income means that you can invest money in Lucie Burgers' research and that you can upgrade and maintain the rest of the park [...] Then you are still there to offer people a nice day out. So visitors are super important, but not the main motivation to build a new ecodisplay" (interview employee Burgers' Zoo, 47:00 – 49:00).

The reason why Burgers' Zoo has several educational and societal initiatives is because: *"[...] find it really important to be part of the community and to help people"* (interview employee Burgers' Zoo, 11:00 – 12:00).

When asked what the most important goal of Burgers' Zoo was, the answer was: *"Become even better. Every day a bit better"* (interview employee Burgers' Zoo, 51:00 – 52:00). To become even more sustainable and to reach their sustainability goals. To keep supporting the wild through research, and keep supporting the ever-growing Belize project.

7.5 Volunteer interviews

Short, structured interviews were held with three volunteers working in Burgers' Zoo. Burgers' Zoo employs about 250 volunteers who serve as guides for the visitors of

Burgers' Zoo. Guides, as was also explained by the second volunteer and mentioned in the semi-structured interview, get lessons before they start working at Burgers' Zoo. Lessons about its history, its projects, its animals, and also about sustainability. These lessons give the volunteers a baseline of knowledge about the sustainability efforts of Burgers' Zoo, to convey to its visitors. Moreover, some guides receive extra courses to be allowed to stand at a 'theme table' or to give a specific guided tour. These 'theme tables', spread through the park, and themed guided tours are about a specific theme that is related to Burgers' Zoo. To be permitted to inform visitors about those themes requires extra courses and examinations. Meaning that guides need extensive knowledge about the workings of Burgers' Zoo (Burgers' Zoo, personal communication, June 17, 2025).

Second, as was mentioned in the annual social report of Burgers' Zoo, employees and volunteers of Burgers' Zoo have their own Zoo connect App in which they receive monthly reports about gas, energy, and water. This is further communicated in the break rooms for employees to have transparent communication about the sustainability of Burgers' Zoo. Thirdly, employees and volunteers are encouraged to share potential improvements in the sustainability of Burgers' Zoo with higher-ups, as was also mentioned by the third volunteer. Giving voice to everyone employed by Burgers' Zoo (Burgers' Zoo, personal communication, June 17, 2025).

Controversially, of the three volunteers, the first volunteer noted that whilst Burgers' Zoo does very well regarding sustainability and that they take efforts to reuse as much as possible, such as plant waste being reused for their animals and filtering (rain-) water to use as pond water, the volunteer noted that they are not very much involved with the sustainability of Burgers' Zoo. That there are people higher up, 'specialists', who are busy with the sustainability of Burgers' Zoo (annex 2.2).

The second volunteer answered much of the same. She noted that for Burgers' Zoo, sustainability is a top priority and that they are trying to be as sustainable on all levels, such as water management, energy, but also food. By having vegetarian options in the restaurants, but also having reusable plastic cups for visitors. When asked how volunteers are involved with the sustainability of Burgers' Zoo, she mentioned that all the employees and volunteers of Burgers' Zoo wear work clothing that have been worn before by other employees. Also that she tries to go to Burgers' Zoo by bike as much as possible, as do many other volunteers, and she uses a reusable Burgers' Zoo water bottle (observation protocol 1.4). But besides their personal choices to be more sustainable, their lessons about the sustainability of Burgers' Zoo and the reused work clothing, the volunteers aren't very much involved with the sustainability of Burgers' Zoo (annex 2.2).

The last volunteer interviewed also echoed much of what the previous volunteers had said. He noted that sustainability is very important for Burgers' Zoo, and very important in this day and age, which is why Burgers' is very active regarding sustainability. Importantly, he mentioned that volunteers are allowed to give suggestions about sustainability to employees higher up (annex 2.2). The perspective of Burgers' Zoo itself and of the volunteers results in mixed messages.

8. Conclusion

8.1 Conclusion

8.1.1 Conclusion Ouwehands, WILDLANDS, Koninklijke Burgers' Zoo

Burgers' Zoo, Ouwehands Dierenpark, and WILDLANDS all have different in-situ and ex-situ nature conservation projects. Through these in-situ nature conservation projects, animals in the wild and (local) ecosystems are protected. Important for the in-situ nature conservation projects is cooperation between different organizations, as was mentioned in the literature review. All three zoos are working together with local foundations and other zoos, such as the Swiss butterfly park Papiliorama, to realize their nature conservation objectives. Ouwehands Dierenpark, WILDLANDS, and Burgers' Zoo are financially supporting multiple in-situ nature conservation projects abroad, such as Belize or Pro Natura, which are protecting their local ecosystems and wildlife, educating the local people and rangers, and helping locals find other sustainable jobs. In this manner, in-situ nature conservation projects are community-based, suited to help and sustain the local community, nature, and wildlife.

The ex-situ nature conservation projects and research of zoos are contributing to the increasing animal welfare of captive animals. Furthermore, ex-situ nature conservation projects in zoos are important for the population management and reproduction of (endangered) animal species from which healthy reserve populations are maintained, should the species ever be reintroduced in the wild. Moreover, research in zoos is very important, as was mentioned in the literature review and the evening lecture, because only by gaining knowledge about animals and by understanding the behaviour of animals can nature conservation be successfully implemented. Thus, because of the in-situ and ex-situ nature conservation projects of zoos, they are major contributors to the support of SDG 14 and SDG 15, protecting life on land and life below water.

Burgers' Zoo, Ouwehands Dierenpark, and WILDLANDS all have numerous sustainability initiatives that reduce their climate impact and also have a positive impact on the environment. Such as, only buying sustainable seafood or seafood that is responsibly farmed helps protect fish biodiversity and prevent overfishing, which is also contributing to the support of SDG 14. Green initiatives, for example, green roofs, flower meadows, and insect hotels, are also better for the environment because they support (local) biodiversity and some absorb rainwater. Zoos have increasingly more sustainable retail products, like sustainably-made souvenirs, for example, reusable water bottles and recycled plushies, which reduce and reuse waste. By recycling and separating waste and by using reusable plastic cups, it prevents waste from ending up in a landfill and harming the environment and wildlife within. Sustainable sourcing of food, for example by buying locally grown food or climate-compensated food, is better for the entire food and production chain, it reduces CO₂ emissions, and it supports and improves the lives of local farmers. Sustainable energy management, like solar panels, warmte-koud-opslag, and LED lighting, is a sustainable way to create renewable energy, to save energy, and to emit less CO₂ emissions. This has less negative impact on the environment.

The zoos all display interactive, educational signs about their animals, but also other topics like palm oil, e-waste, poaching, wood, ecotourism, and other important topics. The goal of these signs and displays is to educate visitors but also create awareness, change, and impact their behavior. Signs could influence people, for example: to become more aware as consumers what to buy, to support nature conservation organizations, to become more knowledgeable about the world around us, and to become more sustainable and environmentally friendly.

8.1.2 Conclusion government-mandated policy guidelines

As a Dutch zoo, Burgers' Zoo is obligated to conform to Dutch government-mandated policy guidelines regarding nature conservation. According to the Dutch government, Dutch zoos should be educational centers and inform visitors about their animals and much more. Burgers' Zoo provides (interactive) signs about their animals and many other topics, such as The Red List, EAZA, Fairtrade, at all the animal enclosures, and provides knowledge quizzes for visitors to test their knowledge about several topics. Furthermore, Burgers' Zoo gives multiple (evening) lectures and extra activities, such as evening and morning walks through their ecodisplays, per year to entertain and educate visitors.

Dutch Zoos must also have a plan for nature conservation and plans to prevent animal species from extinction. Burgers' Zoo and several other Dutch zoos, are part of the EAZA and EEP programs, which are important organizations that work together with European zoos to save endangered species through ex-situ nature conservation programs. Besides being part of the EAZA and EEP programs, Burgers' Zoo is a very important actor for the conservation of coral, rays, anteaters, and manatees, which are animal species endangered in the wild.

Furthermore, Dutch zoos must contribute to conservation through scientific research and breeding programs. Because Burgers' Zoo is part of the EEP programs, they are also part of the European ex-situ breeding programs with the goal of creating a healthy reserve population of a species in zoos. Moreover, Burgers' Zoo is part of many scientific researches, conducted either by students in Burgers' Zoo or by Burgers' Zoo itself. For example, research about animal behavior or behavioral change, ape research, botanical research, and visitor research.

Lastly, Dutch zoos should be asylum centers for lost and seized animals. In the case of Burgers' Zoo, they are an asylum for elderly female elephants that need a home, and for corals and other aquatic animals that need shelter. In short, Burgers' Zoo exceeds the Dutch government-mandated guidelines regarding nature conservation.

8.1.3 Conclusion Corporate Social Responsibility Koninklijke Burgers' Zoo

According to the MVO criteria, discussed in the operationalization chapter, businesses are socially responsible when they take into account the effects they have on the environment, societies and humans, whether they take efforts to decrease their

environmental impact, increase inclusivity and equity in their business and their whole chain, and have a positive effect on the environment and society as a whole.

Burgers' Zoo succeeds in the MVO criteria and therefore is a socially responsible business. Burgers' Zoo takes into account the effects they have on the environment, society, and humans. Burgers' Zoo affects and cares for the local community by involving itself in local social projects, such as Presikhaaf University, Stichting Wens ambulance, school trips for local schools, and buying locally produced goods. Furthermore, Burgers' Zoo affects the environment and societies worldwide. Through the Belize project in Central America, which affects the nature area, wildlife, and communities living there, and by buying coffee beans produced in Peru, which support the local communities in Peru.

Burgers' Zoo takes efforts to decrease its environmental impact by becoming more sustainable regarding energy, waste, water, food, and gas usage. They take care to purchase more sustainably by only buying certified meat, fish, seasonal vegetables and fruits, and lastly, souvenirs with sustainability labels. Furthermore, Burgers' Zoo tries to reuse as many materials and resources as possible by reusing wood for building, reusing plant waste and filtering rainwater for other uses. In this manner, Burgers' Zoo takes care of the environment for future generations.

To increase inclusivity in Burgers' Zoo, they employ people that get a job less easily, for example, disabled people. To increase equity in Burgers' Zoo, they include an employee from every department in the Burgers' Zoo greenteam to discuss sustainability initiatives. Controversially, through the interviews with Burgers' Zoo volunteers, it would seem that volunteers are not very much involved with the sustainability of Burgers' Zoo. But, from the perspective of Burgers' Zoo, it would seem that they take every effort to include their employees and volunteers in the sustainability and CSR of Burgers' Zoo. They receive pre-used work clothing, lessons and courses about Burgers' Zoo, including its sustainability and other specific themes, and are encouraged to give feedback to other employees to improve the sustainability of Burgers' Zoo. Resulting in some mixed messages between how much Burgers' Zoo involves its volunteers in its sustainability and the perceived involvement of the volunteers themselves. This leaves the question of how these messages got mixed up. Nonetheless, it can be concluded that Burgers' Zoo incorporates its volunteers in its sustainability and CSR to a certain extent.

Lastly, socially responsible businesses have a positive effect on the environment and society as a whole. Burgers' Zoo, through its educational initiatives, wants to educate and positively influence the behavior of people regarding the environment. To encourage people to behave more sustainably and to become more environmentally friendly. This can have a positive effect on the environment and society as a whole.

8.1.4 Conclusion Koninklijke Burgers' Zoo

A business is greenwashing when it states they are undertaking socially responsible actions, whilst in reality it is not taking socially responsible actions and is in the practice of green marketing. In the case of Burgers' Zoo, they are not greenwashing.

Burgers' Zoo has changed from a pheasantry at the beginning of the 20th century to multiple world-leading ecodisplays, which not only take into account the needs of the animal but also function as places of research and places of wonderment for the visitor. Burgers' Zoo fulfills all the government-mandated policies and more. They are part of the

EAZA and other organizations, which all strive for the same goal: to protect wildlife through nature conservation. Burgers' Zoo has the highest ranking in the Duurzaam Gastvrij sustainability certificate, but strives to become more sustainable every day. Burgers' Zoo has become the zoo it is today because of sheer internal motivation. To become more sustainable every day and to strive to improve the welfare of animals in captivity and the wild.

Koninklijke Burgers' Zoo is a socially responsible actor because its actions speak louder than its words. They take care to decrease their impact on the environment, they take into account the effects they have on the environment, society, and humans, they increase inclusivity and equity, and have a positive effect on the environment and society as a whole. But, despite the mixed messages about the involvement of Burgers' Zoos volunteers in its sustainability, and the perceived involvement of the volunteers themselves, it can be concluded that:

Koninklijke Burgers' Zoo is without a doubt a leader in nature conservation.

8.2 Discussion

It has become apparent that zoos, namely Burgers' Zoo, are leaders in nature conservation. They have nature conservation projects worldwide, which contribute to the safeguarding of many (endangered) species. The nature conservation projects of zoos support SDG 14, Life Below Water, and SDG 15, Life on Land, which are important parts of the Sustainable Development Goals of the UN. By conserving (endangered) species, and thereby biodiversity, they continue to stabilize ecosystem functions and deliver important ecosystem and provisioning services to the environment and society, such as contributing to the better physical and mental health of people by interacting with nature.

In this research, Ouwehands Dierenpark and WILDLANDS were used as exemplary cases to compare against Burgers' Zoo, how other modern zoos implement nature conservation and sustainability initiatives. Through the comparison, the similarities between the zoos were showcased as well as the differences. Moreover, it makes the research more generalizable, as the initiatives of Dutch zoos are quite similar regarding reducing their climate impact, through their sustainability initiatives, and having positive effects on society, environment, and humans through their social and nature conservation initiatives. However, Burgers' Zoo showcases their CSR efforts more clearly than WILDLANDS and Ouwehands through their Duurzaam Gastvrij and MVO signs in the park. So, whilst it could be assumed that WILDLANDS and Ouwehands Dierenpark are also socially responsible actors, further in-depth research would be necessary to fact-check this.

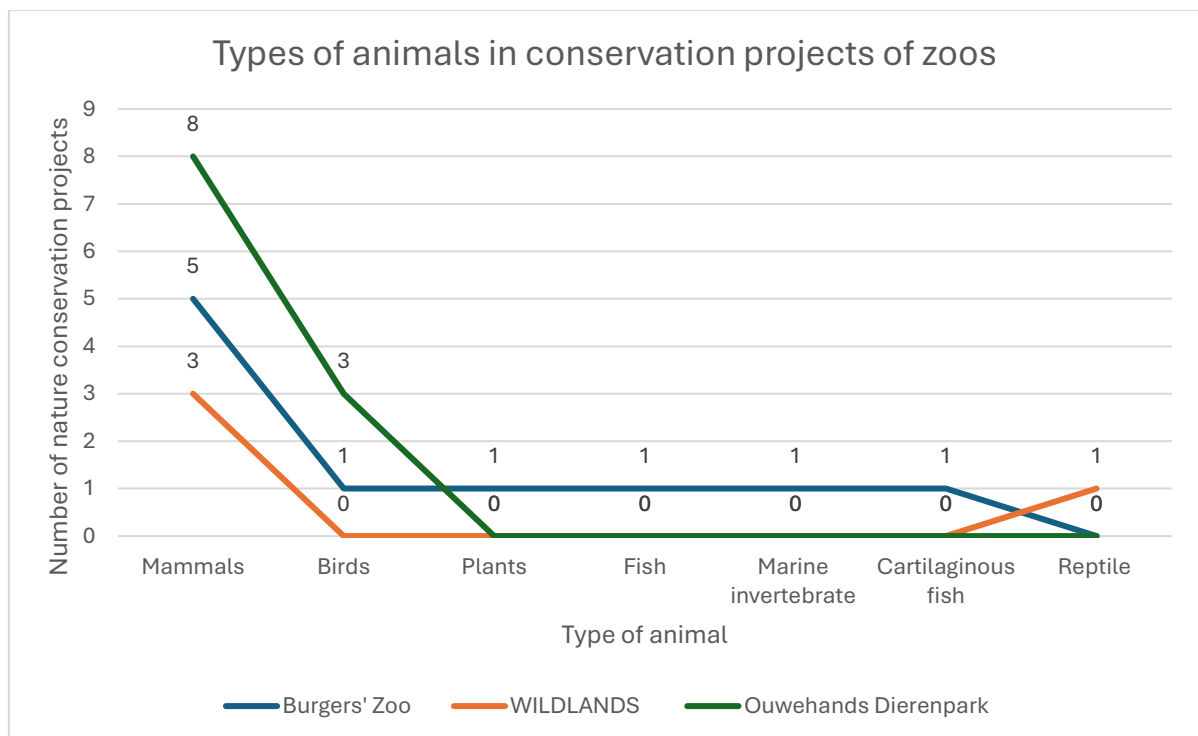


Table 12 Ratio types of animals in nature conservation projects

As was critiqued by Miranda and colleagues (2022), zoos favor housing mammals and birds over fish, invertebrates, reptiles, and amphibians, which could be key animal

species to help species survive in the wild. Mammals are more popular animals to display in zoos because they help fulfill the role of recreation and entertainment (Miranda et al, 2022). This is the same for Ouwehands Dierenpark, WILDLANDS and Burgers' Zoo. When looking at the different in-situ and ex-situ nature conservation projects of the three zoos, it shows that they favor mammals over other types of animals in their nature conservation projects (annex 5, table 12). This confirms the critique of Miranda and colleagues on the modern zoo. This could be improved upon by the modern zoo to further improve its nature conservation efforts.

Whilst Burgers' Zoo has a positive impact on society through its social initiatives and nature conservation, and decreases its environmental impact through its sustainability initiatives, the exact, quantitative effects on society and the environment are unknown. Despite Burgers' Zoo doing research related to visitors and use tools, such as the milieu barometer, it is unclear, even for Burgers' Zoo itself, how and in what capacity Burgers' Zoo influences society exactly to become more sustainable and how much do Burgers' Zoo's sustainability initiatives contribute to reduce the climate crisis and mitigate the effect of human behavior on the environment. To gain an insight into exactly how much Burgers' Zoo, or other zoos, impact visitors and the environment, future research might be needed with more quantitative tools than this research had available. This was outside of the scope of this research.

9. Reflection

9.1 Recommendations

The problem of the research was to discern if Burgers' Zoo is a socially responsible actor, or if they are only stating that they are participating in nature conservation and sustainability initiatives to attract more visitors and investors. The results of this research indicate that this is definitely not the case. Burgers' Zoo is implementing nature conservation initiatives according to the Dutch government-mandated rules, and they are not greenwashing. Meaning they are not only stating that they have nature conservation and sustainability initiatives, but they are implementing them.

During the observations, it became clear that the three observed zoos all have different styles of communication about their initiatives towards visitors. Burgers' Zoo was very open about their sustainability initiatives through their information signs, whilst their nature conservation efforts, besides the Belize project, were less easy to observe in the park. In Ouwehands, they were very open about their nature conservation efforts, whilst their sustainability efforts were hardly advertised or visible in the park. WILDLANDS was the most difficult of all to observe. Their nature conservation and sustainability initiatives were hardly advertised and visible in the park. Whilst it is not necessarily bad, it does hide a lot of the sustainability and nature conservation initiatives from the visitors that the zoo is implementing. Making visitors less aware of their nature conservation and sustainability initiatives, which could reduce the impact that zoos have on their visitors. My recommendation to zoos is to become even more transparent about their sustainability and nature conservation initiatives by advertising them more and consistently throughout the park. This gives visitors the best chance to become more educated, more aware, and have the greatest impact. However, whether visitors read these signs is up to them.

Furthermore, there are several recommendations for future research. In the future, it is recommended to assess beforehand whether the zoos are willing to participate in an interview. Because in my case, two out of the three zoos weren't willing to be part of an interview, this resulted in having to change my research concept midway through the research. So, before starting the research, approach zoos or other pre-chosen respondents, if they are willing to be part of your research; this way, it results in fewer problems along the way. Furthermore, another recommendation is to lower the number of sub-questions. In my research were six sub-questions, whilst they were manageable in the data collection stage, it became hard to answer them all concisely in the concluding phase of the research and create one coherent conclusion out of all of them, whilst drawing connections between theory and my research.

9.2 Future research

To further conclude this research, several future research topics will be given. To begin, in this research, only Dutch zoos have been researched. Future research regarding the nature conservation and sustainability initiatives of zoos could be about the comparison of Dutch zoos to international zoos. Future research could compare a Dutch zoo, such as

Burgers' Zoo, with a Belgian zoo, for example Pairi Daiza, which was voted the best Zoo in Europe.

Moreover, in this research, the zoos that were researched had relatively the same visitor counts and entrance prices. Future research could be about comparing zoos that have a difference in visitor counts and entrance prices, comparing a big zoo versus a small (local) zoo. It would be relevant to research how these zoos differ in their sustainability and nature conservation initiatives.

Furthermore, as stated in the research, the goal of zoos is to create awareness and influence the behavior of visitors. It would be interesting to research how zoos, or a single zoo, create awareness and impact visitors after they have visited the zoo. What, for example, a sign, animal enclosure, or interactive game, influences visitors the most? It could be relevant to discover which educational method works the best for zoos in creating awareness and having an impact, and how this changes the perspective and behavior of visitors.

This ties into a future research topic related to the quantitative impact that zoos have on society and the environment. Future research could investigate in what capacity Burgers' Zoo, or other zoos, influence society to be more sustainable, reduce the climate crisis, and mitigate the effects of human behavior on the environment. For this a quantitative research is needed with environmental measuring tools.

Another interesting future research topic could be green prescribing of zoos, as stated in the content analysis. Green prescribing is when people engage in nature-based activities and reconnect with nature to improve their mental and physical health. It could be interesting to research how zoos could contribute to green prescribing and whether people improve mentally and/ or physically after visiting a zoo.

To conclude, I am interested in the topic of rights to nature and ecodeмокracy. In the future, I would like to research more about how nature can be integrated into government and decision-making. This could also relate to animals in zoos; how are their opinions, wants, and needs taken into account? Do zoo animals have a voice in zoos?

9.3 Reflection

During my research, I felt well prepared for almost every step in my research. Before my observations, I had a clear plan of what I needed to observe, how I would record my observations during the observation itself, and how I would analyze and use the observations to conclude. As well, I felt well-prepared for my interview with Burgers' Zoo. During the analysis phase of my research, I knew what I was doing because of my previous experiences with Atlas.ti, so analyzing the observations and interview went smoothly. Furthermore, when writing the result and conclusion chapters, I had a clear view of how the answer the research questions.

However, there are some points of improvement. During the beginning phase, in which I contacted Ouwehands Dierenpark and WILDLANDS, it became clear that they weren't willing to participate in my research, and in hindsight, I should have made a better plan for this occasion. Furthermore, a limitation of this research was the use of the observation method. As discussed in the methods chapter, data obtained through

observations can be biased because it is gathered through the lens of the researcher. In the future, I could rely less on observations, which were a big part of the research.

Another point of improvement could be made on the volunteer interviews. For the interviews with the volunteers of Burgers' Zoo, I wanted to interview volunteers who at work in the park at the time, and since I'd seen relatively a lot of volunteers during my observation in Burgers' Zoo, I thought it would be easy to find volunteers to interview. However, during my attempts to interview volunteers, it was very hard to find volunteers to ask questions to. Most of the volunteers I was able to find were busy giving tours to other visitors, taking their break, or otherwise occupied. This made it harder to find volunteers who were available to ask some questions to. To improve this in the future, I would have to set out more time to do these volunteer interviews than I gave myself, and thus better prepare beforehand.

However, I am very happy with the result of my research. In my view, I was able to create a complete picture of how zoos have changed over the past 75 years and what the guidelines are for Dutch zoos regarding nature conservation. Moreover, by observing and researching not only Burgers' Zoo, but also Ouwehands and WILDLANDS, I was able to demonstrate what these three modern zoos do regarding nature conservation and sustainability, which makes it more generalizable to other zoos. Furthermore, I am glad that Burgers' Zoo was a willing participant in my research. I had a very good experience with Burgers' Zoo, during the interview, observation, and the evening lecture, and they have inspired me to want to learn more about nature conservation in the future.

To conclude, this research about Koninklijke Burgers' Zoo's sustainability and nature conservation initiatives could inspire other zoos and businesses to become even more socially responsible. Koninklijke Burgers' Zoo could set an example for many, as they have done in the past, on how to become more sustainable and positively impact the environment and society. I hope that my future research recommendations can inspire other (student) researchers to research and learn more about zoos, because there is more to zoos than just animals.

References

- Aggarwal, P. & Kadyan, A. (2014). Green washing: The Darker Side of CSR. *International Journal of Innovative Research and Practices*, 2 (5).
https://www.forum4researchers.com/cw_admin/docs/IJIRP-MAY-14-03.pdf
- Alsaawi, A. (2014). A critical review of qualitative interviews. *European Journal of Business and Social Sciences*, 3 (4), 149 – 156.
<http://dx.doi.org/10.2139/ssrn.2819536>
- Artner-Nehls, A. & Siebert, R. (2006). The role of the social sciences for biodiversity and ecosystem management. *Jahrbuch der Österreichischen Gesellschaft für Agrarökonomie*, 15, 129-141.
https://www.researchgate.net/publication/251786705_The_role_of_the_social_sciences_for_biodiversity_and_ecosystem_management
- Awuah, B., Yazdifar, H. Elbardan, H. (2023). Corporate reporting on the Sustainable Development Goals: a structured literature review and research agenda. *Journal of Accounting & Organizational Change*. <https://doi.org/10.1108/JAOC-10-2022-0155>
- Baker, L. (2006). Observation: A Complex Research Method. *Johns Hopkins University Press*, 55 (1), 171 – 189. **10.1353/lib.2006.0045**
- Bazillier, R. & Vauday, J. (2013). The Greenwashing Machine: Is CSR More Than Communication?. *HAL Open Science*.
https://hal.science/file/index/docid/829509/filename/GW_NV.pdf
- Biol, B.J. (2008). The value of biodiversity. *Brazilian Journal of Biology*.
<https://doi.org/10.1590/S1519-69842008000500018>
- Blicharska, M, Orlikowska, E.H., Roberge, J. & Grodzinska-Jurczak, M. (2016). Contributing of social science to large scale biodiversity conservation: A review of research about the Natura 2000 network. *Biological Conservation*, 199, 110-122.
<https://doi.org/10.1016/j.biocon.2016.05.007>
- Braverman, I. (2011). Looking at zoos. *Cultural Studies*, 25 (6), 809- 842.
<https://doi.org/10.1080/09502386.2011.578250>
- Braverman, I. (2014). Conservation without nature: the trouble with in situ versus ex situ conservation. *Geoforum*, 51, 47 -57.
<https://doi.org/10.1016/j.geoforum.2013.09.018>
- Burgers' Zoo. (n.d.a). Prijzen. *Burgers' Zoo*. <https://www.burgerszoo.nl/plan-uw-bezoek/prijzen>
- Burgers' Zoo. (n.d.b). Spreekbeurt over Burgers' Zoo. *Burgers' Zoo*.
<https://www.burgerszoo.nl/media/yx1lhee4/spreekbeurt-over-burgers-zoo.pdf>
- Burgers' Zoo. (n.d.c). MVO-jaarverslag 2024. *Safari Meeting Centre*.
<https://www.safarimeetingcentre.nl/media/g5xjmgju/mvo-jaarverslag-over-2024-cm.docx>
- Burgers' Zoo. (n.d.d). Vrijwilligers. *Burgers' Zoo*.
<https://www.burgerszoo.nl/werkenbij/vrijwilligers>

- Cardinale, B.J., Duffy, J.E., Gonzalez, A., Hooper, D.U., Perrings, C., Venail, P., Narwani, A., Mace, G.M., Tilman, D., Wardle, D.A., Kinzig, A.P., Daily, G.C., Loreau, M., Grace, J.B., Larigauderie, A., Srivastava, D.S. & Naeem, S. (2012, June 1). Biodiversity loss and its impact on humanity. *Nature*, 486, 59 – 67. [10.1038/nature11148](https://doi.org/10.1038/nature11148)
- Conde, D.A., Flesness, N., Colchero, F., Jones, O.R. & Scheuerlein, A. (2011). An Emerging Role of Zoos to Conserve Biodiversity. *Science*, 331. [10.1126/science.1200674](https://doi.org/10.1126/science.1200674)
- Convention on Biological Diversity. (2006a). Article 1. Objectives. *Convention on Biological Diversity*. <https://www.cbd.int/convention/articles/default.shtml?a=cbd-01>
- Convention on Biological Diversity. (2006b). Article 6. General Measures for Conservation and Sustainable Use. *Convention on Biological Diversity*. <https://www.cbd.int/convention/articles/default.shtml?a=cbd-06>
- Convention on Biological Diversity. (2009). How the Convention on Biological Diversity promotes nature and human well-being. *Convention on Biological Diversity*. <https://www.cbd.int/convention/guide/default.shtml>
- Convention on Biological Diversity. (2018). Climate change is a major and growing driver of biodiversity loss. *Convention on Biological Diversity*. <https://www.cbd.int/article/biodiversityloss-climatechange>
- Conway, W. (2003). The role of zoos in the 21st century. *International Zoo Yearbook*, 38, 7 – 13. <https://doi.org/10.1111/j.1748-1090.2003.tb02059.x>
- Costa, R., Tiburzi, L, Morales – Alonso, G., Calabrese, A. & Rosati, F. (2025). SDG walking or washing? A cross-sectoral analysis of business contribution to the SDGs. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.4045>
- Cox, D.T. & Gaston, K.J. (2018). Human-nature interactions and the consequences and drivers of provisioning wildlife. *The Royal Society publishing, Biological Sciences*. <https://doi.org/10.1098/rstb.2017.0092>
- Crowe. (2024). Financieel verslag 2023 Ouweland Zoo Foundation. *Ouwelands Dierenpark*. https://www.ouwehand.nl/uploads/OZF_documenten/A240502_Jaarrekening_2023_Ouwehand_Zoo_Foundation.pdf
- De Jong, F. (2021). Dierentuinen en het cultuurlandschap: een verkenning van de positie van dierentuinen in het cultuurlandschap waarin zij gevestigd zijn. *Rijksuniversiteit Groningen*. <https://www.rug.nl/research/kenniscentrum-landschap/voorstudenten/masterscripties/2021-mascr-dierentuinen-cultuurlandschap-f-de-jong.pdf>
- Delmas, M.A. & Burbano, V.C. (2011). The Drivers of Greenwashing. *University of California, Berkeley*, 54 (1). <https://journals-sagepub-com.ru.idm.oclc.org/doi/epdf/10.1525/cmr.2011.54.1.64>
- Del Rio, C., González-Álvarez, K. & López – Arceiz, F.J. (2023). Examining greenwashing and SDG-washing: an analysis of corporate engagement with the SDGs. *Sustainability Accounting, Management and Policy Journal*, 15 (2), 412 – 456. <https://doi.org/10.1108/SAMPJ-02-2023-0080>

- Dierennieuws. (2023). De grootste dierentuin van Nederland. *Dierennieuws*.
<https://www.dierennieuws.nl/dierentuinen-en-dierenparken/grootste-dierentuin-van-nederland/>
- Dobson, A., Lodge, D., Alder, J., Cumming, G.S., Keymer, J., McGlade, J., Mooney, H., Rusak, J.A., Sala, O., Wolters, V., Wall, D., Winfree, R. & Xenopoulos, M.A. (2006). Habitat loss, trophic collapse, and the decline of ecosystem services. *Ecology*, 87 (8), 1915 – 1924. [https://doi-org.ru.idm.oclc.org/10.1890/0012-9658\(2006\)87\[1915:HLTCAT\]2.0.CO;2](https://doi-org.ru.idm.oclc.org/10.1890/0012-9658(2006)87[1915:HLTCAT]2.0.CO;2)
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K. & Kyngäs, H. (2014). Qualitative Content Analysis: A Focus of Trustworthiness. *Sage Open*, 4 (1).
<https://doi.org/10.1177/2158244014522633>
- Escribano, N., Ariño, A.H., Pino-del-Carpio, A., Galicia, D. & Miranda, R. (2021). Global trends in research output by zoos and aquariums. *Conservation Biology*, 35 (6), 1894 – 1902. <https://doi.org/10.1111/cobi.13757>
- European Association of Zoos and Aquaria. (n.d.a). Welcome to EAZA. *European Association of Zoos and Aquaria*. <https://www.eaza.net/home/>
- European Association of Zoos and Aquaria. (n.d.b). EAZA Members. *European Association of Zoos and Aquaria*. <https://www.eaza.net/membership/>
- European Commission. (n.d.). Corporate Sustainability Reporting. *Business, Economy, Euro*. https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en
- Farid, S. (2022). Observation. *Principles of Social Research Methodology*, 365 – 375.
https://doi.org/10.1007/978-981-19-5441-2_25
- Flick, U., von Kardorff, E. & Steinke, I. (2004). A companion to qualitative research. *Sage Publications*. <https://ebookcentral-proquest-com.ru.idm.oclc.org/lib/ubnru-ebooks/detail.action?docID=354934>
- Frumkin, H., Bratman, G.N., Breslow, S.J., Cochran, B., Kahn, P.H., Lawler, J.J., Levin, P.S., Tandon, P.S., Varanasi, U., Wolf, K.L. & Wood, S.A. (2017). Nature Contact and Human Health: A Research Agenda. *Environmental Health Perspectives*, 125 (7). <https://doi.org/10.1289/EHP1663>
- García-Meca, E. & Martínez-Ferrero, J. (2021). Is SDG reporting substantial or symbolic? An examination of controversial and environmentally sensitive industries. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2021.126781>
- Gill, S.R. & Warrington, W. (2017). Sustainability initiatives in zoos and aquariums: looking in to reach out. *Leisure/Loisir*, 41 (3), 443 – 465.
<https://doi.org/10.1080/14927713.2017.1366277>
- Green Key. (n.d.a). Duurzame dagrecreatie in Nederland. *Green Key*.
<https://www.greenkey.nl/bedrijfsgroepen/duurzame-dagrecreatie>
- Green Key. (n.d.b). Dagattractie en Bezoekerscentrum, Normen 20022/ 2026. *Green Key*.
https://www.greenkey.nl/assets/uploads/Green-Key/Documenten/Normenhandleidingen/2022-2026/Handleiding_DRB_Dagattractie-en-bezoekerscentrum_2022-2026.pdf

- Halbertsma, M. (1995). Themaparken, dierentuinen en musea. *Erasmus Centrum voor Kunst- en Cultuurwetenschappen*.
<https://repub.eur.nl/pub/1392/Themaparken,%20dierentuinen%20en%20musea.pdf>
- International Fund for Animal Welfare. (2024). What is deforestation and how does it impact wildlife?. *IFAW*. <https://www.ifaw.org/international/journal/what-is-deforestation-impact-wildlife>
- Keulartz, J. (n.d.). Voorbij de Ark? Consequenties voor de kernactiviteiten en het collectiebeleid van dierentuinen. *Wageningen University & Research eDepot*.
<https://edepot.wur.nl/159094>
- Heras-Saizarbitoria, I., Urbeita, L. & Boiral, O. (2021). Organizations' engagement with sustainable development goals: From cherry-picking to SDG-washing?. *Corporate Social Responsibility and Environmental Management*, 29 (2), 316 – 328.
<https://doi.org/10.1002/csr.2202>
- Kareiva, P. & Marvier, M. (2012). What is Conservation Science? *BioScience*, 62 (11), 962 – 969. <https://doi.org/10.1525/bio.2012.62.11.5>
- Keulartz, J. (n.d.). Voorbij de Ark? Consequenties voor de kernactiviteiten en het collectiebeleid van dierentuinen. *Wageningen University & Research eDepot*.
<https://edepot.wur.nl/159094>
- Kuenen, L. (2021). The Zoological Park As Two-Piece Institution: Nature Conservationist and Entrepreneur. *University of Wageningen*. <https://edepot.wur.nl/561119>
- Kooij, P. (2010). Town and countryside in a Dutch perspective: the tiger and the tram. Zoos as an urban wilderness. *Nederlands Agronomisch Historisch Instituut*, 221 – 245. <https://books.ugp.rug.nl/ugp/catalog/view/32/31/147>
- Landman, W. & Visscher, D. (2009). Planning for a sustainable Emmen Zoo. *Sustainability of Activities in Zoos and Aquariums*, 43, 64 – 70. Doi: [10.1111/j.1748-1090.2008.00078.x](https://doi.org/10.1111/j.1748-1090.2008.00078.x)
- Lashitwe, A. (2021). Corporate uptake of the Sustainable Development Goals: Mere greenwashing or an advent of institutional change?. *Journal of International Business Policy*, 4, 184 – 200. <https://doi.org/10.1057/s42214-020-00092-4>
- Lee Odinsky-Zec, T. (2010). Chapter 9 Sustainability and the modern zoo. *NGOs and Social Responsibility*, 1, 191-208. [https://doi.org/10.1108/S2043-0523\(2010\)0000001016](https://doi.org/10.1108/S2043-0523(2010)0000001016)
- Lees, C.M. & Wilcken, J. (2009). Sustaining the Ark: the challenges faced by zoos in maintaining viable populations. *Activities in Zoos and Aquariums*, 43, 6 – 18. Doi: [10.1111/j.1748-1090.2008.00066.x](https://doi.org/10.1111/j.1748-1090.2008.00066.x)
- Loopings. (2025). Bezoekersaantal Burgers' Zoo licht gestegen in 2024. *Loopings*.
<https://www.loopings.nl/weblog/27712/Bezoekersaantal-Burgers-Zoo-licht-gestegen-in-2024.html>
- Mag World. (2024). Wat is de grootste dierentuin van Nederland? *Mag World*.
<https://magworld.nl/wat-is-de-grootste-dierentuin-van-nederland/>
- Maljaars, G. (2025). Dierengarde Blijddorp of Ouwehands? Dit zijn de verschillen. *Dierentuinacties*. <https://dierentuinacties.nl/diergaarde-blijddorp-of->

- Raad voor Dierenaangelegenheden. (2023). Startdocument RDA: De Dierentuin van de Toekomst. *Raad voor Dierenaangelegenheden*.
<https://www.rda.nl/publicaties/publicaties/2023/06/22/startdocument-dierentuinen>
- Rabb, G.B. & Saunders, C.D. (2006). The future of zoos and aquariums: conservation and caring. *International Zoo Yearbook*, 39 (1), 1 – 26. <https://doi.org/10.1111/j.1748-1090.2005.tb00001.x>
- Rands, M.R.W., Adams, W.M., Bennun, L., Butchart, S.H.M., Clements, A., Coomes, D., Entwisle, A., Hodge, I., Kapos, V., Scharlemann, J.P.W., Sutherland, W.J. & Vira, B. (2010). Biodiversity conservation: challenges beyond 2010. *Science*, 339, 5997, 1298- 303. <https://doi.org/10.1126/science.1189138>
- Rawat, U.S. & Agarwal, N.K. (2015). Biodiversity: Concept, threats an conservation. *Environmental Conservation Journal*, 16 (3), 19 – 28.
<https://doi.org/10.36953/ECJ.2015.16303>
- Reed, B.M., Sarasan, V., Kane, M., Bunn, E. & Pence, V.C. (2011). Biodiversity conservaiton and conservation biotechnology tools. *The Society for In Vitro Biology*, 47, 1 -4. [10.1007/s11627-010-9337-0](https://doi.org/10.1007/s11627-010-9337-0)
- Rijksdienst voor Ondernemend Nederland. (2023). Richtlijnen voor het beleidsprotocol, artikel 4.12 van het Besluit houders van dieren. *Rijksdienst voor Ondernemend Nederland*. <https://www.rvo.nl/sites/default/files/2021/09/Richtlijnen-voor-beleidsprotocol-versie-1.0.pdf>
- Rijksoverheid. (n.d.a). Dierenwelzijn dierentuin- en circusdieren. *Rijksoverheid*.
<https://www.rijksoverheid.nl/onderwerpen/dierenwelzijn/dierenwelzijn-in-dierentuin>
- Rijksoverheid. (n.d.b). Rijksoverheid stimuleert maatschappelijk verantwoord ondernemen. *Rijksoverheid*.
<https://www.rijksoverheid.nl/onderwerpen/duurzame-economie/maatschappelijk-verantwoord-ondernemen>
- Rose, P. E. & Riley, L.M. (2022). Expanding the role of the future zoo: Wellbeing should become the fifth aim for modern zoos. *Frontiers in Psychology*, 13.
<https://doi.org/10.3389/fpsyg.2022.1018722>
- Sanborn, T. & Jung, J. (2021). Intersecting Social Science and Conservation. *Marine Conservation and Sustainability*, 8. <https://doi.org/10.3389/fmars.2021.676394>
- Schultz, P.W. (2011). Conservation Means Behavior. *Conservation Biology*, 25 (6), 1080 – 1083. <https://doi-org.ru.idm.oclc.org/10.1111/j.1523-1739.2011.01766.x>
- Secretariat of the Convention on Biological Diversity. (2000). How the Convention on Biological Diversity promotes nature and well-being. *Convention on Biological Diversity*. <https://www.cbd.int/doc/publications/cbd-sustain-en.pdf>
- Stemler, S. (2001). An Overview of Content Analysis. *Practical Assessment, Research & Evaluation*, 7 (17).
<https://openpublishing.library.umass.edu/pare/article/1376/galley/1327/view/>

- Stichting WNEF. (n.d.). Jaarverslag 2023. *Wildlands*.
https://www.wildlands.nl/uploads/download_widget/Stichting_Wildlands_Natuur_en_Educatie_Fonds_Jaarverslag_2023.pdf
- Swingland, I.R. (2001). Biodiversity, Definition of. *Encyclopedia of Biodiversity*, 1.
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=ef96393393b3a4c9517db3b78cdafbb5349fbf0e>
- Tai, F.M. & Chuang, S.H. (2014). Corporate Social Responsibility. *iBusiness*.
Doi:10.4236/ib.2014.63013
- Tamale, E.S. (n.d.). Chapter 3: Introduction to Biodiversity: Definitions and Concepts. *World Wide Fund for Nature*. <https://www.thecommonwealth-ilibrary.org/index.php/comsec/catalog/download/928/928/7983?inline=1#:~:text=Biodiversity%20conservation%20includes%20the%20protection,living%20and%20non%2D%20living%20nature>.
- Tribe, A. & Booth, R. (2006). Assessing the Role of Zoos in Wildlife Conservation. *Human Dimensions of Wildlife*, 8 (1), 65 – 74.
<https://doi.org/10.1080/10871200390180163>
- United Nations. (n.d.a). The 17 goals. *United Nations*. <https://sdgs.un.org/goals>
- United Nations. (n.d.b). Convention on Biological Diversity, key international instrument for sustainable development. *United Nations*.
<https://www.un.org/en/observances/biological-diversity-day/convention#:~:text=The%20Convention%20on%20Biological%20Diversity,been%20ratified%20by%20196%20nations>.
- Van der Waal, J.W. & Thijssens, T. (2020). Corporate involvement in Sustainable Development Goals: Exploring the territory. *Journal of Cleaner Production*, 252.
<https://doi.org/10.1016/j.jclepro.2019.119625>
- Walters, C. & Pence, V.C. (2020). The unique role of seed banking and cryobiotechnologies in plant conservation. *Plants, People, Planet*, 3 (1), 83 – 91.
<https://doi.org/10.1002/ppp3.10121>
- Westervelt, J. (2010). Dierentuinbeelden: Een onderzoek naar de beelden van dierentuinbezoekers en de mening over de doelen van de moderne Nederlandse dierentuin. *Wageningen Universiteit*. <https://edepot.wur.nl/136172>
- Wettenbank. (2018). Besluit houders van dieren. *Overheid.nl*.
<https://wetten.overheid.nl/BWBR0035217/2024-07-01>
- Wildlands. (2025). Bezoekersaantallen Wildlands blijven groeien. *Wildlands*.
<https://www.wildlands.nl/bezoekersaantallen-wildlands-blijven-groeien#:~:text=WILDLANDS%20Adventure%20Zoo%20Emmen%20blijkt,een%20bezoekersaantal%20van%20926.000%20genoteerd>.
- Wildlands. (n.d.a). Prijzen. *Wildlands*. <https://www.wildlands.nl/plan-je-bezoek/prijzen>
- Wildlands. (n.d.b). Spreekbeurtpakketten. *Wildlands*.
<https://www.wildlands.nl/spreekbeurtpakketten#:~:text=In%20WILDLANDS%20kun%20je%20meer,imposante%20leeuwen%20tot%20kleurrijke%20vlinders>.

Zimmermann, A. (n.d.). The Role of Zoos in Contributing to In Situ Conservation.
Academia.

https://www.academia.edu/6680433/The_Role_of_Zoos_in_Contributing_to_In_Situ_Conservation

ZooFlits. (2025). Ouwehands Dierenpark en Wildlands delen bezoekersaantallen:
'bijzonder jaar'. *Zooflits*. <https://zooflits.nl/ouwehands-dierenpark-en-wildlands-delen-bezoekersaantallen-bijzonder-jaar/#:~:text=De%20nieuwe%20buideldieren%20blijken%20een,de%201%2C06%20miljoen%20steken>.

Image reference list

Map 1: Google Maps. (2024). Map of cases of Dutch zoos. *Google Maps*.

Figure 1: Burgers' Zoo. Collage/ photo with Burgers' Zoo brochure. *Burgers' Zoo*. [Brochure]. Own work.

Figure 2: Wikipedia. (2024). Logo Radboud University. *Wikipedia*. [File]. https://nl.m.wikipedia.org/wiki/Bestand:Logo_Radboud_University.svg

Figure 3: Sphenisco Foundation. Own photo.

Figure 4: CCRCGP Foundation. Own photo.

Figure 5: Wanicare Foundation. Own photo.

Figure 6: Berenbos donation pillar. Own photo.

Figure 7: Berenbos donation point. Own photo.

Figure 8: CCRCGP donation pillar. Own photo.

Figure 9: Ouwehands adoption program. Own photo.

Figure 10: Recycled park map of Ouwehands Dierenpark. Own photo.

Figure 11: Waste separation of Ouwehands Dierenpark. Own photo.

Figure 12: Sustainable retail Ouwehands Dierenpark. Own photo.

Figure 13: Interactive sign Ouwehands Dierenpark. Own photo.

Figure 14: Research orang-oetans Ouwehands Dierenpark. Own photo.

Figure 15: WILDLANDS Artic Ambassador/ Polar Bears International. Own photo.

Figure 16: WILDLANDS Save the Rhino International. Own photo.

Figure 17: WILDLANDS reproduction program tortoise. Own photo.

Figure 18: Insect hotel WILDLANDS. Own photo.

Figure 19: Solar panels WILDLANDS. Own photo.

Figure 20: Green roof WILDLANDS entrance. Own photo.

Figure 21: Reusable plastic cup WILDLANDS. Own photo.

Figure 22: Sustainable retail WILDLANDS. Own photo.

Figure 23: Supporting WNEF foundation by purchase. Own photo.

Figure 24: Stimulate MSC and ASC purchasing. Own photo.

Figure 25: Information sign WILDLANDS. Own photo.

Figure 26: Interactive sign WILDLANDS. Own photo.

Figure 27: Research elephant herpes WILDLANDS. Own photo.

Figure 28: Example sign Ouwehands Dierenpark. Own photo.

Figure 29: Example sign WILDLANDS. Own photo.

Figure 30: Donation pillar Belize project Burgers' Zoo. Own photo.

Figure 31: In-situ nature conservation project Belize Burgers' Zoo. Own photo.

Figure 32: Reproduction program manatees Burgers' Zoo. Own photo.

Figure 33: Reproduction program rays Burgers' Zoo. Own photo.

Figure 34: Reproduction program corals Burgers' Zoo. Own photo.

Figure 35: Evening lecture Burgers' Zoo. Own photo.

Figure 36: Solar panels Burgers' Zoo. Own photo.

Figure 37: Reusable plastic cup Burgers' Zoo. Own photo.

Figure 38: Raise awareness fish consumption Viswijzer. Own photo.

Figure 39: Sustainable retail Burgers' Zoo. Own photo.

Figure 40: Burgers' Zoo Duurzaam Gastvrij. Own photo.

Figure 41: Burgers' Zoo insect hotel. Own photo.

Figure 42: Burgers' Zoo new multi-functional building. Own photo.

Figure 43: Example interactive information sign Burgers' Zoo. Own photo.

Attachments

1. Interviewguides

1.1 Interviewguide – semi-structured interviews (Nederlands)

Welkom (meneer of mevrouw),

Ten eerste, hartstikke bedankt dat U mee wou doen aan dit onderzoek, het word enorm gewaardeerd.

Maar voordat wij gaan beginnen wil ik mezelf graag even voorstellen en een introductie geven over mijn onderzoek. Mijn naam is Lotte Gijzen en ik ben een 3^{de} jaar student van Geografie, Planologie en Milieu op de Radboud in Nijmegen. Ik ben momenteel bezig met afstuderen en ben ik een thesis aan het schrijven. Mijn thesis gaat over hoe de functie van Nederlandse dierentuinen de afgelopen 75 jaar veranderd is en de natuurbehoud en duurzaamheidsinitiatieven van een aantal Nederlandse dierentuinen, waarvan U er 1 bent. Het interview van vandaag zal gaan over de natuurbehoud en duurzaamheidsinitiatieven van dierentuin X .

Vind U het goed als het interview opgenomen word zodat ik het later terug kan luisteren zodat ik het kan analyseren? **(Bedank de persoon als deze ja zegt)**

Ik verwacht dat het interview 30 tot 60 minuten gaat duren, is dat goed voor U?

Mocht U willen dat het interview anoniem gemaakt word dan is dat ook zeker mogelijk. Zou U dat willen?

Voordat we beginnen wil ik aangeven dat het interview gestopt kan worden op elk moment. En mocht U zich achteraf het interview toch niet prettig voelen met het onderzoek kan dit altijd aangeven worden en zal de verzamelde data verwijderd worden.

Als U nog vragen voor of tijdens het interview mag U deze altijd stellen, dat is geen probleem. Heeft U toevallig nu nog een vraag?

(Zo niet, dan kan het interview beginnen)

Introducerende vragen:

- Kunt u zichzelf voorstellen?
 - o Voor welke dierentuin werkt U?
 - o Wat is U functie binnen deze dierentuin?
 - o Hoelang bent u al werkzaam binnen bij deze dierentuin/ deze functie?
- Hoe is dierentuin X in de afgelopen jaren veranderd?
 - o Zijn er veel nieuwe natuurbehoud initiatieven, educatie initiatieven en onderzoeken begonnen?

- Zijn er grote stappen genomen richting duurzaamheid?
 - Kan je voorbeelden geven?
- Hoe is de dierenzorg en het dierenwelzijn beter verbeterd vergeleken met 75 jaar geleden
 - (of vergeleken met het verleden, of sinds u hier werkt)
- Zijn, bij jullie weten, mensen anders gaan kijken naar dierentuinen ten opzichte van vroeger?
 - Kan je voorbeelden geven? (hoe het beeld van mensen over dierentuinen is veranderd)

Oke, dankjewel ! Ik zal nu vragen gaan stellen over het lidmaatschap bij de EAZA en het GreenKey certificaat.

Vragen over EAZA lidmaatschap:

Dierentuin X is een volledig lid van de EAZA (European Association of Zoos and Aquaria)....

- Kunt U me uitleggen wat dit inhoud voor deze dierentuin?
 - Hoelang is dierentuin X al lid van de EAZA?
- Wat zijn de eisen waarvan dierentuin X moet voldoen om lid te kunnen zijn van de EAZA?
 - Wat zijn de natuurbehoud eisen?
 - Wat zijn de duurzaamheidseisen?
 - Hoe verloopt het process om lid te worden van de EAZA?
- Zijn er bepaalde voor- of nadelen bij het zijn van lid van het de EAZA?
- Wat was de motivatie van dierentuin X om lid te worden bij de EAZA?
 - Was het vereist van de overheid?
 - Of, eigen initiatief?
- Zijn er nog andere duurzaamheid of natuur behoud organisaties waar dierentuin X lid van is?
 - Zo ja?
 - Wat houdt dit lidmaatschap in?

- Wat moet dierentuin X hiervoor doen om lid te zijn?
- Hoelang is dierentuin X al lid van deze organisatie?

Vragen over GreenKey certificaat:

Dierentuin X is in bezit van een gouden GreenKey duurzaamheidcertificaat...

- Kunt U me uitleggen wat dit inhoud voor deze dierentuin?
 - Hoelang is deze dierentuin al in bezit van het GreenKey duurzaamheidscertificaat?
- Wat zijn de eisen waarvan dierentuin X moet voldoen om het GreenKey gouden certificaat te kunnen hebben?
 - Wat zijn de eisen om dit duurzaamheidscertificaat te hebben?
 - Hoe verloopt het process om een GreenKey certificaat te krijgen?
- Zijn er bepaalde voor- of nadelen bij het bezitten van het GreenKey certificaat?
- Wat was de motivatie van dierentuin X om het GreenKey certificaat te behalen?
 - Vereist vanuit de overheid?
 - Eigen initiatief?
- Zijn er nog andere duurzaamheid of natuur behoud certificaten waarvan dierentuin X in bezit is? (Bijvoorbeeld, Duurzaam Gastvrij, MVO- certificaat)
 - Zo ja?
 - Wat houdt dit certificaat in?
 - Wat moet dierentuin X doen om dit certificaat te krijgen/ behouden?
 - Hoelang heeft dierentuin X het certificaat al?

Bedankt voor de duidelijke antwoorden. Nu wil ik graag doorgaan over de natuurbehoud initiatieven van deze dierentuin.

Vragen over natuurbehoud initiatieven van dierentuin

- Wat zijn de huidige natuur behoud initiatieven van dierentuin X?
 - Wat voor effect hebben deze initiatieven op de dieren in de dierentuin?

- Wat voor effect hebben deze initiatieven op de dieren in het wild?
- Waarom heeft de dierentuin besloten om deze natuurbehoud initiatieven te doen?
 - Waarom zijn deze initiatieven toegepast?
 - Goedkoop?
 - Efficiënt?
 - Makkelijk te verwezenlijken?
 - Eigen passie?
- Wat was de motivatie van dierentuin X om de natuurbehoud initiatieven te gaan doen?
 - Verplicht vanuit de overheid?
 - Biodiversiteit behouden?
 - (Pure) passie voor dieren?
 - Beter in het publieke oog te komen staan?
 - Om bezoekers te trekken?

Oké. Nu zullen we verder ingaan op de duurzaamheidsinitiatieven van de dierentuin.

Vragen over duurzaamheid initiatieven van dierentuin

- Wat zijn de huidige duurzaamheid initiatieven van dierentuin X?
 - Wat zijn de gevolgen van deze duurzaamheid toepassing in het park?
 - Minder stroom gebruik?
 - Minder afval?
 - Meer kosten? (een negatief gevolg)
 - Wat zijn de gevolgen van deze duurzaamheid toepassing voor de maatschappij?
 - Minder impact op het klimaat?
 - Duurzamer inkopen doen? (bv. alleen vis kopen dat niet bedreigd word)
- Hoe heeft de dierentuin besloten om deze duurzaamheidsinitiatieven toe te passen?

- Waarom zijn deze initiatieven toegepast?
 - Goedkoop?
 - Efficiënt?
 - Makkelijk te verwezenlijken?
- Wat was de motivatie van dierentuin X om duurzaamheidsinitiatieven toe te gaan passen?
 - Verplicht vanuit de overheid?
 - Om de klimaat impact van de dierentuin te verminderen?
 - Beter in het publieke oog te komen staan?
 - Om bezoekers te trekken?

Gevolgen van duurzaamheid en natuur behoud initiatieven

- Hebben de duurzaamheids- en natuurbehoud initiatieven voor andere positieve of negatieve gevolgen gezorgd voor de dierentuin?
 - Minder of meer bezoekers?
 - Minder of meer investeerders?
 - Meer enthousiasme voor de dierentuin van de bezoekers?
 - Als het voor meer bezoekers heeft geleid; was dit een van de drijfveren voor de dierentuin om deze initiatieven toe te passen?
 - Of heeft de bezoekersgroei hier geen invloed op?
- Heeft dierentuin X een manier om de gevolgen van de duurzaamheids- en natuurbehoud initiatieven te meten?
 - Zo ja, wat zijn de resultaten van de duurzaamheids- en natuurbehoud initiatieven?
 - Hoe meet de dierentuin de gevolgen van de duurzaamheids- en natuurbehoud initiatieven? (op sociaal/ maatschappelijk en milieu niveau)
 - Door onderzoek? (over impact op klimaat/ maatschappij)
 - Surveys? (bij bezoekers)

Toekomst van het park in natuurbehoud en duurzaamheid

Als laatst ben ik benieuwd naar de toekomst van dierentuin X.

- Wat is voor dierentuin X het belangrijkste doel? (bv. recreatie, natuurbehoud, onderzoek, educatie)
 - o En waarom?

(Meerdere doelen als belangrijkst is ook goed als deze allemaal even belangrijk zijn; hoeft niet perse 1 te kiezen)

- Wat zijn de toekomst plannen met betrekking tot natuurbehoud en duurzaamheid initiatieven?
 - o Op welke manieren wil dierentuin X nog duurzamer worden in de toekomst?
 - o Op welke manieren zal dierentuin X meer aan natuurbehoud gaan doen?
 - o Wil de dierentuin meer duurzaamheidscertificaten behalen?
 - o Wil de dierentuin van meer organisaties lid worden?
- Laatste vraag, zou U het leuk vinden om het eindresultaat van mijn onderzoek te ontvangen?

Dit is het einde van het interview. Nogmaals bedankt voor uw tijd en bijdrage aan het onderzoek. Heeft U nog vragen? Of is er iets wat ik zeker niet moet vergeten om te benoemen in mijn onderzoek?

(Overhandig het bedankje)

1.2 Interviewguide – semi-structured interviews (English)

Welcome (Mr. of Mrs.),

First of all, thank you very much for participating in my research, it is greatly appreciated.

Before we start, I would like to introduce myself and give an introduction to my research. My name is Lotte Gijzen and I am a 3rd year student of Geography, Planning and Environment at Radboud University Nijmegen. I am currently graduating and writing my thesis. My thesis is about how the function of Dutch zoos has changed in the past 75 years and the nature conservation and sustainability initiatives of several Dutch zoos, of which you are one. Today's interview will be about the sustainability and nature conservation initiatives of zoo X.

Would you mind if I record the interview so that I can listen it back later so that I can analyze it? **(Thank the person if they say yes)**

I expected the interview to last 30 to 60 minutes, is that okay with you?

If you want the interview to be made anonymous, that is certainly possible. Would you like that?

Before we start, I would like to point out that the interview can be stopped at any time. And if you do not feel comfortable with participating in this research afterwards, you can always contact me about it and the collected data will be deleted from my research.

If you have any questions before or during the interview, you can always ask them, that is no problem. Do you have any questions before we start?

(If not, the interview can begin)

Introduction questions:

- Can you introduce yourself?
 - o Which zoo do you work for?
 - o What is your position within the zoo?
 - o How long have you been working in this zoo/ in this position at the zoo?
- How has zoo X changed in recent years?
 - o Have many new nature conservation initiatives, education and research projects been started in recent years?
 - Could you give examples?
 - o Have there been major steps toward sustainability in the zoo?
 - Could you give examples?
- How has animal care and welfare in general become better/ improved compared to 75 years ago?

- (Compared to the past/ or since you have been working here)
- Has there been a notable change in the way people view zoos nowadays compared to the past?
 - Could you give an example of how people's view has changed?

Okay, thank you! I will now ask questions about the EAZA membership and the GreenKey certificate.

Questions about EAZA membership:

Zoo X is a full member of the EAZA (European Association of Zoos and Aquaria)....

- Can you explain to me what this means for this zoo?
 - How long has zoo X been a member of the EAZA?
- What are the requirements that zoo X must meet to be a full member of the EAZA?
 - What are the nature conservation requirements?
 - What are the sustainability requirements?
 - What is the process for becoming a member of the EAZA?
- Are there any advantages or disadvantages to being a member of the EAZA?
- What was the motivation of zoo X to become a member of the EAZA?
 - Was it required by the government?
 - Or, own initiative?
- Are there other sustainability or nature conservation organizations that zoo X is a member of?
 - If so?
 - What does this membership entail?
 - What did zoo X have to do to become a member?
 - How long has zoo X been a member of this organization?

Questions about GreenKey certificate:

Zoo X has a gold GreenKey sustainability certificate...

- Can you explain to me what this means for this zoo?
- How long has this zoo been in possession of the GreenKey sustainability certificate?
 - o What are the requirements that zoo X must meet in order to have the gold GreenKey certificate?
 - o What is the process for obtaining a GreenKey certificate?
- Are there any advantages or disadvantages to having the GreenKey certificate?
- What was the motivation of zoo X to obtain the GreenKey certificate?
 - o Required by the government?
 - o Own initiative?
- Are there any other sustainability or nature conservation certificates that zoo X has? (For example: Duurzaam Gastvrij, OR MVO- certificate)
 - o If so?
 - What does this certificate entail?
 - What are the requirements that zoo X must do to obtain this certificate?
 - How long has zoo X had the certificate?

Thanks for the answers so far. Now I would like to continue about the nature conservation initiatives of this zoo.

Questions about nature conservation initiatives of zoo

- What are the current nature conservation initiatives of zoo X?
 - o What effect do these initiatives have on the animals in the zoo?
 - o What effect do these initiatives have on the animals in the wild?
- Why did the zoo decide to do nature conservation in this way?
 - o Why were these initiatives implemented?
 - Cheap?
 - Efficient?
 - Easy to implement?
 - Own passion?
- What was the motivation of zoo X to start doing the nature conservation initiatives?

- Mandatory by the government?
- Preserving biodiversity?
- (Pure) passion for animals?
- To get a better public profile?
- To attract visitors?

Okay, thanks! Now we will go further into the sustainability initiatives of the zoo.

Questions about sustainability initiatives of zoo

- What are the current sustainability initiatives of zoo X?
 - What are the consequences of these sustainability initiatives on the park?
 - Less electricity consumption?
 - Less waste?
 - More costs? (a negative consequence)
- What are the consequences of these sustainability initiatives for society and the environment?
 - Less impact on the climate?
 - More sustainable purchasing? (e.g. only buy fish that are not endangered)
- How did the zoo decide to apply these sustainability initiatives?
 - Why were these initiatives implemented?
 - Cheap?
 - Efficient?
 - Easy to implement?
 - Own passion?
- What was the motivation of zoo X to apply sustainability initiatives?
 - Mandatory by the government?
 - To reduce the zoo's climate impact?
 - To gain a better public profile?
 - To attract visitors?

Consequences of sustainability and nature conservation initiatives

- Have the sustainability and nature conservation initiatives led to other positive or negative consequences for the zoo?
 - Fewer or more visitors?
 - Fewer or more investors?
 - More enthusiasm for the zoo from visitors?
 - If it has led to more visitors; was this one of the drivers for the zoo to implement these initiatives?
 - Or does the growth in visitors not influence this?
- Does the zoo measure the consequences of the sustainability and nature conservation initiatives? (on social/ societal and environmental level)
 - If yes, could you tell me what the results are?
 - How does the zoo measure the consequences of the sustainability and nature conservation initiatives?
 - Through research? (on impact on climate/ society)
 - Surveys? (for visitors)

Future of the park in nature conservation and sustainability

Finally, I am curious about the future of zoo X.

- What is the most important goal of zoo X? (i.e. nature conservation, education, research, recreation).
 - And why?

(multiple answers is also correct if goals are evenly important; don't have to choose just one)

- What are the future plans regarding nature conservation and sustainability initiatives?
 - In what ways does zoo X want to become even more sustainable in the future?
 - In what ways will zoo X do more in nature conservation?

- Does the zoo want to obtain more sustainability certificates?
 - Does the zoo want to become a member of more organizations?
- One last question, would you like to receive my end report of my thesis?

This is the end of the interview. Thank you again for your time and contribution to the research. Do you have any questions? Or, something that I must not forget in my research?

(Hand over “thank you” gift)

1.3 Interviewguide – gestructureerde korte interviews (Nederlands)

Hallo, ik ben bezig met een onderzoek voor mijn opleiding over de duurzaamheid en natuurbehoud initiatieven van verschillende Nederlandse dierentuinen. Zou ik u een paar korte vragen mogen stellen voor mijn onderzoek?

- Wat is u functie binnen Burgers' Zoo?
- Hoe word u als medewerker/ vrijwilliger betrokken bij de duurzaamheid initiatieven van Burgers' Zoo?
 - o Word u mening gevraagd?
 - o Word u geholpen om zelf duurzamer te worden?
 - o Word u ingelicht over nieuwe duurzaamheidsinitiatieven?
- Als medewerker hoe kijkt u naar de natuurbehouds- en duurzaamheidsinitiatieven van Burgers' Zoo?

Oke, bedankt voor u antwoorden. Fijne dag nog verder!

1.4 Interviewguide – structured short interviews (English)

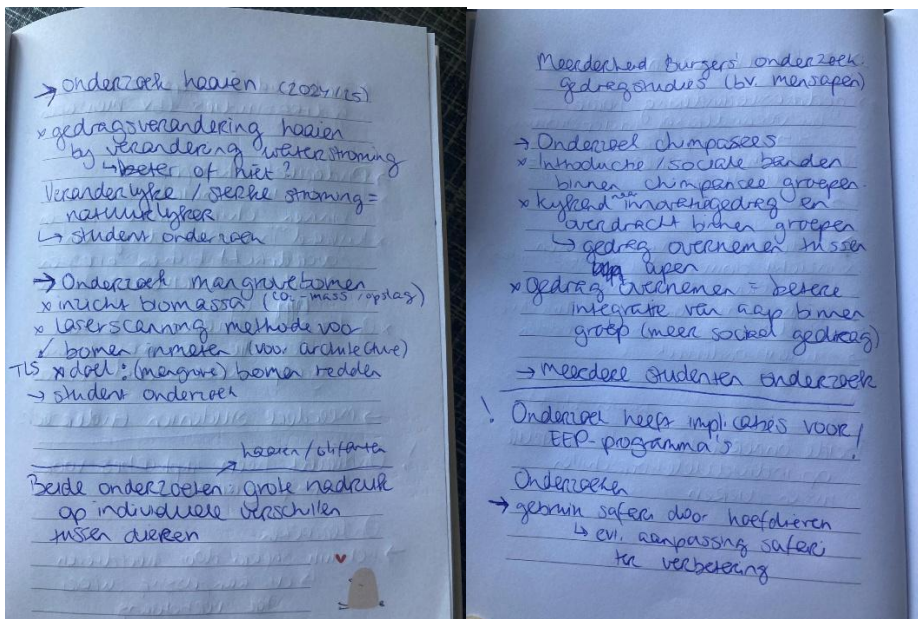
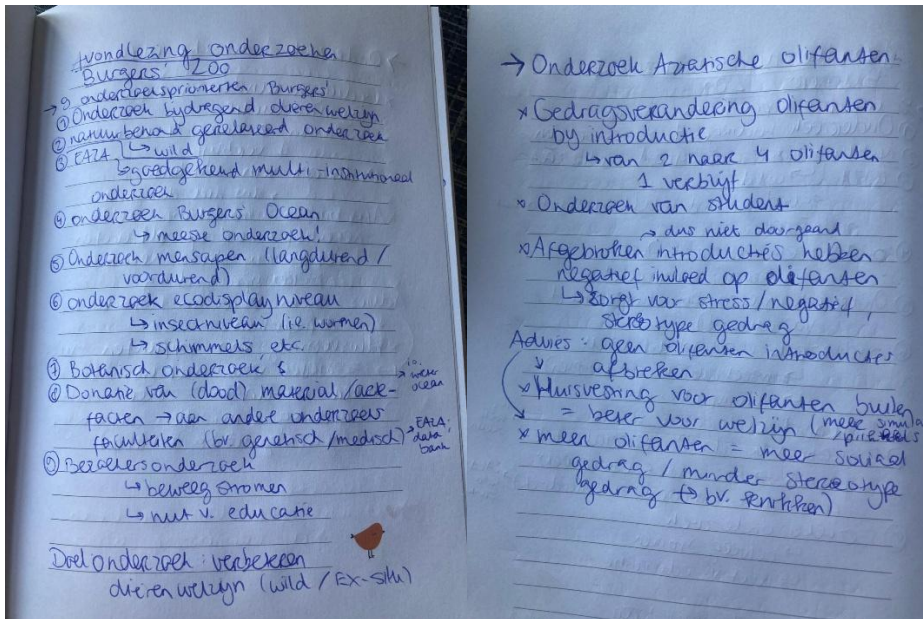
Hello, I am currently doing research for my study about the sustainability and nature conservation initiatives of several Dutch zoos. Would you be willing to answer some short questions for my research?

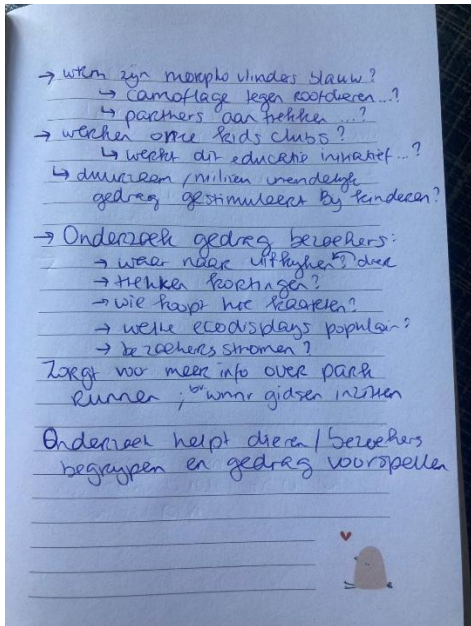
- What is your job within Burgers' Zoo?
- How are you as an employee involved in the sustainability initiatives of Burgers' Zoo?
 - o Is your opinion taken into account?
 - o Do you get support to become more sustainable yourself?
 - o Are you informed about the new sustainability initiatives of Burgers' Zoo?
- As an employee, what is your view of the nature conservation and sustainability initiatives of Burgers' Zoo?

Okay, thank you for your answers. Have a nice day!

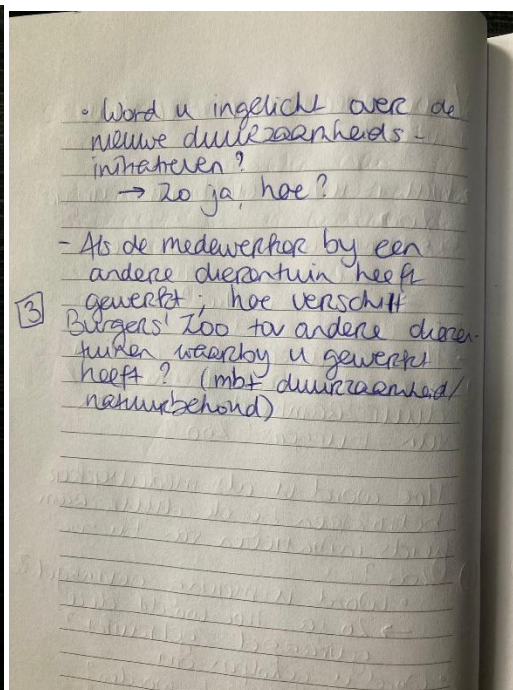
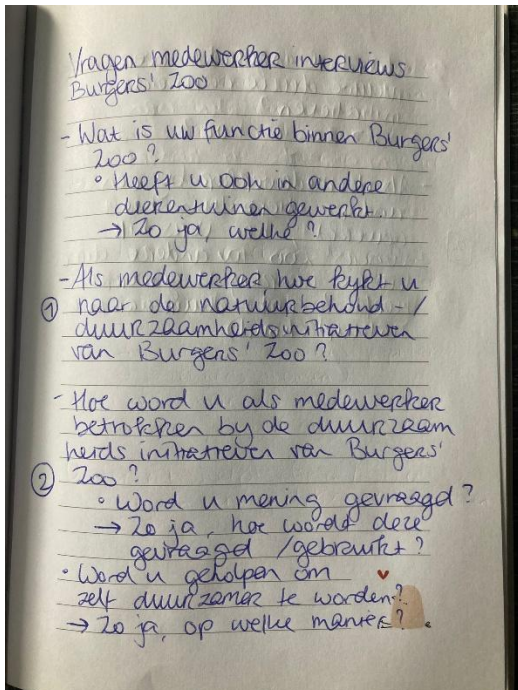
2. Notes

2.1 Notes evening lecture: 'En het resultaat is...'





2.2 Notes structured short interviews with volunteers



Antwoorden medewerker interviews

Medewerker 1: (23/5)

- functie: vrijwilliger
- Andere dierenkliniek gewerkt: ja / nee

1. Burgers zoo is er heel erg mee bezig en ook goed. Bij alles wordt nagedacht of het hergebruikt kan worden, bv. Gladstof voor verschillende dieren maar ook zonnepanelen enzo in water wordt gefiltreerd en hergebruikt (regenwater)

2. Nee, vrijwilligers worden er niet bij betrokken. Dat wordt over gelaten aan speciaalisten. Vrijwilligers hebben een manager en 4 andere die zijn daarmee bezig. De mening v. vrijwilligers wordt niet gevraagd.

3. Bij ja antwoord

Medewerker 2 (3/5)

- functie: gids / vrijwilliger
- Andere dierenkliniek gewerkt: ja / nee

1. Duurzaamheid hoog in v.a. er is erg mee bezig op alle vlakken water, energie, maar ook eten in restaurants vegetarisch. Maar ook hergebruik van plastic → streefgeldbakkers
→ Gidsen krijgen lessen over Burgers o.a. over de duurzaamheid

2. Medewerker leiding overgeen om van een ander. Zelf probeer met de pers, vele andere doen dit ook. Plastic drinkfles v. burgers

Medewerker 3

- functie: gids / vrijwilliger
- Andere dierenkliniek gewerkt: ja / nee

1. Is erg belangrijk in deze tijd en wordt ook veel mee gedaan en overnagedacht

2. Als vrijwilliger worden ze niet echt betrokken, maar ze kunnen altijd suggesties doen → bij manager

3. Observations

3.1 Observation protocol (example)

Zoo:	(number observation protocol)
Location in zoo:	(number on the map)
Date:	
Observation	Nature conservation initiative/ sustainability initiative
What kind of initiative? (i.e. financing of in situ project, reproduction program. Green roof or solar panels)	
Description	
Notes:	
Photo(s):	

3.2 Maps of observations in zoos

3.2.1 Burgers' Zoo



https://www.burgerszoo.nl/media/2izmaxjn2024_grote_plattegrond-a3.jpg

3.2.2 WILDLANDS



3.2.3 Ouwehands Dierenpark



Parkeerplaats voor o.a. bussen

- Eten & Drinken**
- 1 Koffiehuis
 - 2 Monkey Bites
 - 3 Jungle restaurant
 - 4 Pandasia restaurant
 - 5 Kioski Karpatica
 - 6 Karlu Karlu Corner
 - 7 RavotAapia restaurant
 - 8 Kalahari (zakelijk)
 - 9 Maki Lounge

- A Theater
- B Academie
- C Jungleplein
- D Pandasia Giftshop
- E Karpatica
- F Observatiepost
- G 't Kraalenest
- H Blue Lagoon
- I Stichting Fonkel
- J Zooshop

- WC Binnenspeeltuin
- FF Speeltuin
- EH Eerste hulp mekpunt & AED
- WC Toiletten
- WC Invakden toiletten
- ED Educatiepunt
- DR Drinkwaterpunt
- RO Rookzone

Rookvrij
Roken in het park is enkel toegestaan in een aantal specifieke rookzones.



Tiel/Utrecht

Wageningen/Arnhem

- 1 Kolkarpers
- 2 Ringstaarmaki's
- 3 Goudfazanten
- 4 Neushoornvogels
- 5 Amoerrijgers
- 6 Umkhosi - giraffen, kroonkraanvogels, en struivogels
- 7 Umkhosi - wrattenzwijnen, stokstaartjes
- 8 Umkhosi - addaxen
- 9 Umkhosi - Grévy zebra's
- 10 Umkhosi - Afrikaanse leeuwen
- 11 Umkhosi - mandrillen en bongo's
- 12 Aquarium
- 13 Monniksgieren, witnekkraanvogels, koningsgieren en rode wouw
- 14 Nevelpanters

- 15 Bonte mariers
- 16 Withandgibbons
- 17 Pandasia - reuzenpanda's
- 18 Nachtdierenverblijf - kleine plumpe lorfs, doerbeccell's
- 19 Rode panda's
- 20 Yaks
- 21 Wolvarkens
- 22 Expeditie Berenbos - bruine beren, wolven en Maleise beren
- 23 Afrikaanse olifanten en penseetzwijnen
- 24 Hyacinth ara's, batelours, zadelbekeoelvaars en Molukken kakietoes
- 25 Koala - koala's en pama wattaby's
- 26 Blue Lagoon (zeeleeuwentheater)
- 27 Californische zeeleeuwen
- 28 Pelikanen
- 29 Cubaanse flamingo's
- 30 Lisberen

- 31 Humboldt pingvins
- 32 Salonga, Rijk van de bonobo's
- 33 Kinderboerderij
- 34 RavotAapia, overdekte speeljungle - o.a. doodshoofdgaapjes, weervogels, vleemonden, prairiehondjes en Von der Deckens toek
- 35 Het Wad - zeehonden en zuidelijke hoornraven
- 36 Berberapen
- 37 Sneeuwulken
- 38 Gorilla Adventure - o.a. Westelijke laaglandgorilla's, en West-Afrikaanse franjeapen
- 39 Toekans
- 40 Aldabra reuzenschildpadden
- 41 Orang-oetans
- 42 Apen op Stelten - orang-oetans (buitenverblijf)
- 43 Rendieren
- 44 Urucu - o.a. ara's, rode lissen, roodbuiltamarins, goudkopleeuwaapjes, pijlflisskers en groene leguanen




DAGPROGRAMMA

Deze kaart is onderdeel van het EEP EASA Ex situ Program: Een Europees managementprogramma voor bedreigde diersoorten.

3.3 Observation protocols

3.3.1 Burgers' Zoo


Zoo:	Burgers' Zoo (1.1)
Location in zoo:	Ocean (on the roof) (2)
Date:	22-3-2025
Observation	Sustainability initiative
What kind of initiative?	Solar panels
Description	Solar panels on the roof of the "Ocean" building of one of the Burgers' Zoo big buildings as a way to get renewable energy.
Photo(s):	

Zoo:	Burgers' Zoo (1.2)
Location in zoo:	Nearby Park Restaurant (16) and nearby elephant enclosure (19)
Date:	22-3-2025
Observation	Sustainability initiative
What kind of initiative?	Sustainable initiatives of Burgers' Zoo and 'Burgers' Duurzaam Gastvrij' (meaning: Burgers' Sustainable hospitable)
Description	<p>On these signs are displayed what all the sustainable initiatives of Burgers' Zoo are. Burgers' Zoo wants to be sustainable and socially responsible entrepreneurs (<u>MVO-verklaring</u>). Furthermore, they have the gold certificate for sustainable hospitable of the Stichting Keurmerk Milieu Veiligheid en Kwaliteit (KMVK); going a step further than the mandated laws of the Netherlands. Because of the sustainability initiatives, Burgers decreases their impact on the environment.</p> <p>Burgers' Zoo sustainable initiatives are:</p> <ul style="list-style-type: none"> - Having vegetarian and vegan options in restaurants, palm oil and soy free food, and use as much biological and locally produced produce as possible - Have 2240 solar panels, use LED lights, having a "warmte- koude-opslag" (WKO) - Use rain- and springwater for toilets, plants and ponds - Sustainable work clothing and recycling them when they've had their use - Simulate the use of public transport and have electric charging points - Sustainable paper-use, FSC-paper, no disposable items and only selling souvenirs with a sustainability certificate (for example, plushies being made of recycled material) - MVO-certificate, having transparent communication - Building with natural and recycled materials (using responsible wood), insect hotels and flower meadows - Cleaning supplies with sustainable certificate and refillable dispensers - Being socially responsible through collaboration, nature conservation projects, Lucie Burgers Stichting and Future for Nature - Waste separation, decrease amounts of waste, reusable buckets - <u>MVO policy-making</u>, and employees working/ thinking together to make the zoo more sustainable

Photo(s):



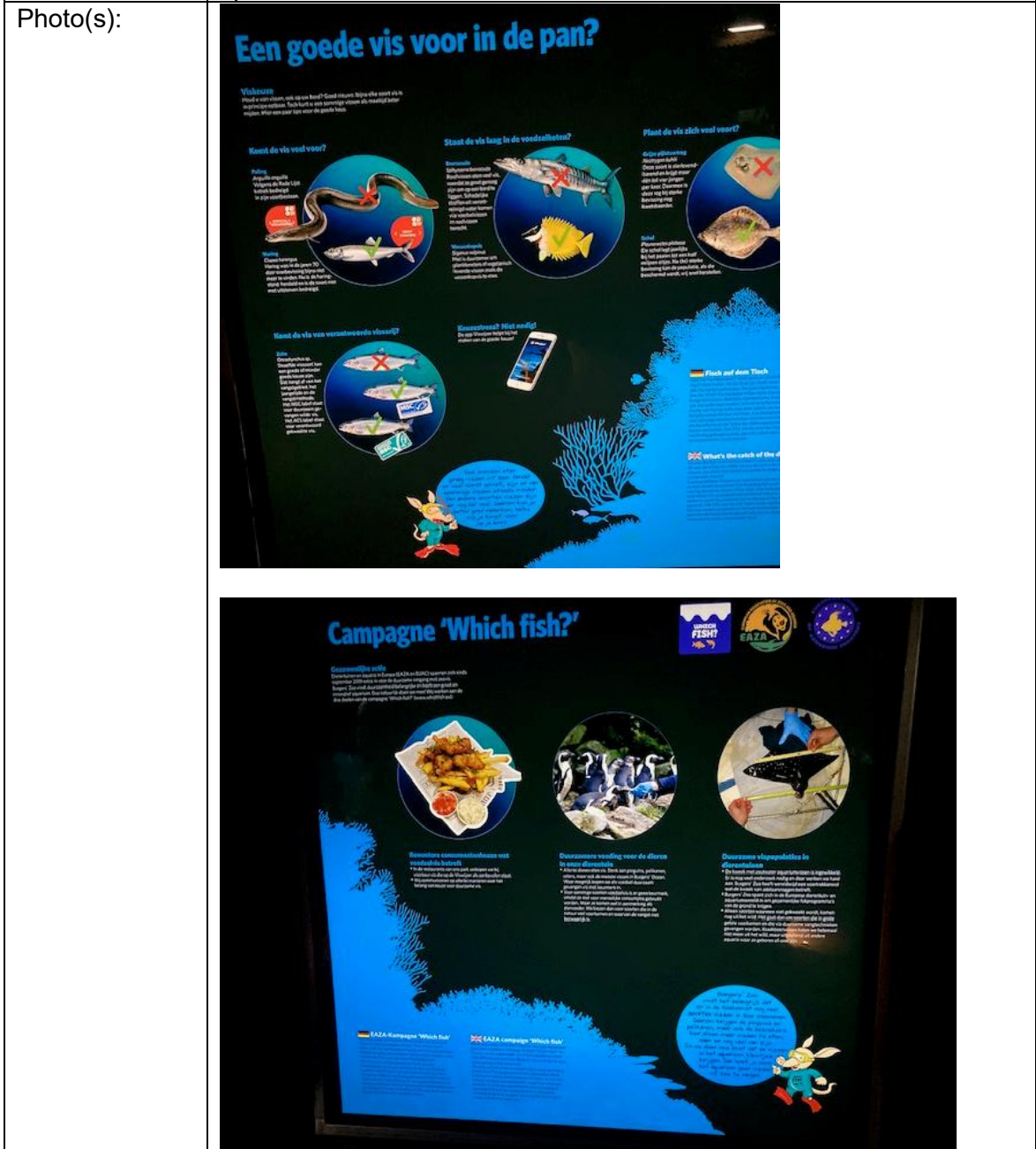
Zoo:	Burgers' Zoo (1.3)
Location in zoo:	Park restaurant (17)
Date:	22-3-2025
Observation	Sustainability initiative
What kind of initiative?	Sourcing of sustainable climate compensated coffee
Description	The coffee beans used to make coffee in Burgers' zoo are sustainably sourced and the CO2 emissions of the coffee bean production are in part compensated with carbon credits and the Fairtrade certificate. The coffee beans are biologically made and the coffee beans are roasted locally in Arnhem. Furthermore, every coffee bought contributes to a bee project on the coffee plantations in Peru, this supports biodiversity and adds an extra source of income for coffee farmers in Peru.
Photo(s):	<p>The display board is titled "BIJ BURGERS' ZOO GENIET JE VAN ECHT GOEDE KOFFIE". It features a world map with a coffee cup in the center. Text panels include:</p> <ul style="list-style-type: none"> KOFFIE VAN GROTE HOOGTE: Premium kwaliteit Arabica koffie verbouwd op 1800m hoogte. AGROFORESTRY: Biologisch verbouwd in een door lipica eiland natuurestivaal onderaan van het Amazonegebied. KLIMATGECOMPENSEERD: De CO2 uitstoot van plantage tot en met consumptie worden wees met duurzame methoden gecompenseerd. De consumenten kunnen kiezen voor een koffie met een Carbon Credits. VERBOUW DOOR YANESHA INDIANEN IN PERU: (Accompanied by a photo of a person in traditional attire). LOKAAL GEBOEND BIJ KOFFIEBRANDERIJ PEERCE IN ARNHEM: (Accompanied by a photo of coffee beans). ELK KOPJE KOFFIE DRAAGT BIJ AAN EEN BIENPROJECT OP DE KOFFIEPLANTAGES IN PERU: Goed voor de biodiversiteit en extra inkomsten voor de koffieboeren.


Zoo:	Burgers' Zoo (1.4)
Location in zoo:	Park restaurant (18) and giftshop (20)
Date:	22-3-2025
Observation	Sustainability/ Nature Conservation initiative
What kind of initiative?	Examples of sustainable retail/ souvenirs of Burgers' Zoo
Description	<p>One of the sustainable initiatives of Burgers' Zoo is sustainable retail. Burgers' Zoo sells souvenirs with a sustainable certificate. Examples are: (see photos)</p> <ul style="list-style-type: none"> - Sustainably made custom Burgers' Zoo water bottle. The bottle is reusable and recyclable. For each bottle sold 2% of the revenue will go to Water.org - Beach towels made of plastic bottles - Reusable notebooks - Plushies made of recycled materials - Reusable water bottles made from recycled and sustainable materials - Sustainable jewelry made from sustainable cherry wood - Shampoo bars, which limit the need for plastic packaging
Photo(s):	 <p>The photo collage consists of four images:</p> <ul style="list-style-type: none"> Top-left: A hand holding a certificate that says "OPPORTUNITY STARTS WITH WATER." next to a blue water bottle on a wooden shelf. Top-right: A blue and white patterned beach towel with a tag that says "SooBluu FREE THE OCEAN" and "Batch: Brown towel Large Made of 20 plastic bottles 100plastic.com". Bottom-left: A spiral notebook with a green cover and a tag that says "GOES SAFARI COLLECTIE" and "MAAK SCHRIJVEN". Bottom-right: A brown plushie with a tag that says "PLAN" and features a child's face.



Zoo:	Burgers' Zoo (1.5)
Location in zoo:	Ocean (30)
Date:	22-3-2025

Observation	Sustainability initiative
What kind of initiative?	Methods and guidelines to buying sustainable fish.
Description	Burgers' Zoo only buys fish for their animals that are caught sustainably or farmed responsibly. To help with buying the most sustainable fish Burgers' Zoo uses Viswijzer; an app that tells you how the fish was caught/ farmed. Threatened and overfished fish species should be avoided.



Zoo:	Burgers' Zoo (1.6)
Location in zoo:	Coffee corner (36)
Date:	22-3-2025
Observation	Sustainability/ Nature Conservation initiative
What kind of initiative?	Recycling plastic cups
Description	To limit the use of plastic and paper cups Burgers' Zoo uses reusable (coffee) cups. People buy these plastic cups with the hot drink and afterwards they can return the plastic cup to get their deposit back.
Photo(s):	

Zoo:	Burgers' Zoo (1.7)
Location in zoo:	Elephant enclosure (1)
Date:	22-3-2025
Observation	Nature conservation initiative
What kind of initiative?	Population management.
Description	Burgers' Zoo is part of the European population and nature conservation programs for Asian elephants. In Burgers' Zoo they only keep older female Asian elephants as they are a shelter for elderly elephants and other elephants (for example circus elephants) that need a home quickly.
Photo(s):	

Bejaardentehuis voor Aziatische olifanten

Meedoen aan een fokprogramma, ook zonder fokken

De Europese olifanten hebben voor veel dierensoorten een uniek fokprogramma. In het leven geboren. Zo ook voor de bedreigde Aziatische olifant. Dat betekent echter niet, dat in alle dierensoorten fokprogramma's met succes zijn, namelijk en jonge olifanten leven.

Binnen het fokprogramma moet er ook ruimte zijn voor groepen met een andere samenstelling. Bijvoorbeeld voor een verpleeggroep, waarin jonge olifanten tijdens hun verblijf in het park, sommige dierensoorten hebben ruimte om voor oude olifanten die niet in een andere groep passen.

Het olifantverhaal van Burgers' Zoo

De Aziatische olifant heeft vaak een langere levensduur dan de Europese olifant. In de dierentuin met de meeste olifanten ter wereld, Burgers' Zoo, zijn er nu twee olifanten. Deze zijn de laatste van de laatste generatie. Deze laatste olifanten zijn verplaatst naar de Houttuin van Burgers' Zoo, om hun laatste levensdagen te doorbrengen.


Bejaardengroepen


Bejaardengroepen hebben ook andere functies. Ze kunnen ook een andere functie hebben. De meeste bejaardengroepen hebben een andere functie. Ze kunnen ook een andere functie hebben. De meeste bejaardengroepen hebben een andere functie.

Opmerkingen

De bejaardengroepen hebben ook andere functies. Ze kunnen ook een andere functie hebben. De meeste bejaardengroepen hebben een andere functie. Ze kunnen ook een andere functie hebben. De meeste bejaardengroepen hebben een andere functie.



Zoo:	Burgers' Zoo (1.8)
Location in zoo:	Cinereous vulture enclosure (7)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reintroduction program.
Description	The cinereous vultures are a sensitive species, meaning that they are not endangered but are still at risk of becoming endangered. Burgers' Zoo is reintroducing young vultures in the Mediterranean, specifically France.
Photo(s):	

Zoo:	Burgers' Zoo (1.9)
Location in zoo:	Nearby wallaby enclosure (8)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Insect hotel
Description	The building is a service building of Burgers' Zoo, however, the outside has been utilized as an insect "hotel" where all sorts of insects can live. This insect hotel supports the local ecosystem.
Notes:	Although it is not some grand nature conservation project it does help sustain the local ecosystem and insect biodiversity.
Photo(s):	

Zoo:	Burgers' Zoo (1.10)
Location in zoo:	Besides the Mangrove building (9)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Flower meadow
Description	The flower meadow is there to support the local and native animal species, such as insects.
Notes:	Whilst the flower meadow is not a grand nature conservation project, it does help sustain the local ecosystem and the insect biodiversity.
Photo(s):	

Zoo:	Burgers' Zoo (1.11)
Location in zoo:	Mangrove (10) (Mainly mangrove, but also other advertisements and signs throughout the park)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Financing in-situ nature conservation project
Description	<p>The Belize project (a nature reserves in Belize Central America) has been Burgers' Zoo nature conservation project since 1989 (together with Swiss butterfly park Papiliorama). The Belize nature reserve is home to mangrove trees which are important for a number of species. The main activities of the in-situ project are:</p> <ul style="list-style-type: none"> - Protection of flora and fauna of the Belize area - Protect against illegal poaching and logging - Replanting mahonietrees that are endangered - Education for schoolchildren and rangers of other nature reserves - Small-scale ecotourism to generate an income <p>Burger's zoo has multiple initiatives to help sustain the Belize project. For example by asking for donations in multiple locations in the park and by selling socks from which €1 euro of the revenue will go to the Belize project.</p>
Photo(s):	<p>The photograph shows an informational display board for the '10 Het Belizeproject van Koninklijke Burgers' Zoo'. The board is divided into several sections. On the left, there is a map of Belize and its surrounding regions (Mexico, Guatemala, Yucatan Peninsula). The main title is '10 Het Belizeproject van Koninklijke Burgers' Zoo'. Below the title, there are several paragraphs of text in Dutch, along with three photographs: one showing a group of people, one showing a person working in a field, and one showing a group of people. At the bottom right, there is a photograph of a wooden sign that reads 'Welcome to Shipstern Nature Reserve Eastern Survye line NO: Hunting NO: Logging Road Included'.</p>

Mangrovebomen

10



Mijn, daar en mangroven
Mangroven zijn het thuisgebied van talloze soorten vogels en reptielen. Tussen de wortels van mangrovebomen vinden zich veel vissen verblijven. De bodemplanten van mangroven zijn een belangrijke bescherming voor jonge vissen. Ook mensen profiteren van mangrovebomen langs de kust: de bomen geven houtsoorten tegen en bieden tropische stromen.

Mangrovebomen in België
Wettelijk beschermd mangrove. Gelukkig gaat het in België nog goed met mangrovebomen. Van alle landen in Centraal-Amerika gaat in België relatief de meest mangroven. Voor het aanleggen van een zandstrand of een bebouwing is het niet duur in België toch mangrove gekocht. Vaak hebben mensen daar achteraf spijt van. Ook in België zijn er inmiddels initiatieven voor herbeplanting van mangroven. Dat kan ook voor mangrovebomen groeien langzaam en herbeplanting is moeilijker. Het is dus zeker gunstiger om mangroven te beschermen dan te kappen en later weer aan te planten.

Drie typen mangrovebomen in België
Er zijn drie typen mangrovebomen in België. De rode mangrove met haar stamwortels (zoals bij de Koko-korfbomen) groeit direct aan de kust en leeft in de zee. De zwarte mangrove heet ook de Koko-korfbomen, dat zijn adembomen die wortels uit de grond omhoog komen. De zwarte mangrove groeit iets verder weg van de kustlijn. De witte mangrove heet ook de Koko-korfbomen, dat zijn adembomen die wortels uit de grond omhoog komen en vaak geen adembomen zijn.



- | | | |
|---|---|--|
| <p>Rode mangrove (<i>Rhizophora mangle</i>)</p> <ul style="list-style-type: none"> • Stamwortels • Bomen tot 25 meter hoog • Blad groen, heel breed • Stambomen tot 15 cm lang | <p>Zwarte mangrove (<i>Avicennia nitida</i>)</p> <ul style="list-style-type: none"> • Adembomen • Bomen tot 20 meter hoog • Blad eiförmig • Stamwortels tot 30 cm lang, rechtop naar • Overhangt naar water via kleefvoet | <p>Witte mangrove (<i>Xylocarpus</i>)</p> <ul style="list-style-type: none"> • Bomen tot 20 meter hoog • Lichte boom • Stambomen tot 25 cm, gaat naar boven • Overhangt naar water door kleefvoet |
|---|---|--|



10

Help ons helpen!

Wetland (natuurlijk of aangelegd gebied dat door water overspoeld wordt of overvloedig water heeft). Wetlands zijn van groot belang voor de biodiversiteit en de waterhuishouding. Ze spelen een belangrijke rol in het vasthouden van sedimenten en het filteren van vervuiling. Wetlands zijn ook belangrijk voor de waterhuishouding en de bescherming van de kustlijn tegen de gevolgen van de zeespiegelstijging.

Wetland (natuurlijk of aangelegd gebied dat door water overspoeld wordt of overvloedig water heeft). Wetlands zijn van groot belang voor de biodiversiteit en de waterhuishouding. Ze spelen een belangrijke rol in het vasthouden van sedimenten en het filteren van vervuiling. Wetlands zijn ook belangrijk voor de waterhuishouding en de bescherming van de kustlijn tegen de gevolgen van de zeespiegelstijging.

10

Keerpunten van het natuurbehoudsproject in Belize

De keerpunten zijn:

- Bescherming van het bos tegen de gasholten
- Populatie van oropendouze vogels (Vireo flavifrons) tegen de gasholten
- Bescherming van de biodiversiteit van de omliggende landbouwgebieden van landbouw, de natuur en het bos
- Bescherming van de biodiversiteit en gezondheid van andere natuurgebieden
- Bescherming van de biodiversiteit van de gasholten



Keerpunten
Biosphere Reserve Management Area
100,000 ha
Punta Camp
10,000 ha
Tropical Forest
10,000 ha

Doelstellingen
Bescherming van de biodiversiteit van de gasholten
Bescherming van de biodiversiteit van de omliggende landbouwgebieden van landbouw, de natuur en het bos
Bescherming van de biodiversiteit en gezondheid van andere natuurgebieden



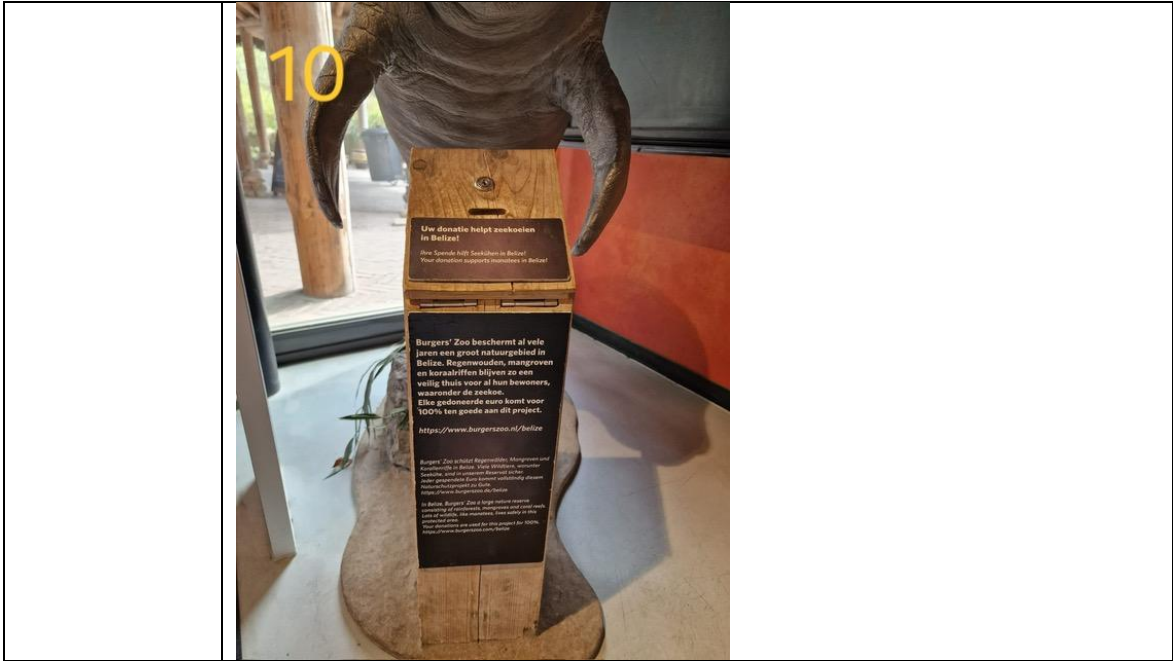
ZEEKOEIEN HELPEN BESCHERMEN?
Bij aanschaf van deze sokken gaat €1,- naar ons natuurbeschermingsproject in Belize.




Scan de QR-code voor meer informatie.





Beim Kauf dieser Socken geht 1,- € an unser Naturschutzprojekt in Belize. Scannen Sie den QR-Code für weitere Informationen.
€1 from each sale of these socks will be donated to our nature conservation project in Belize. Scan the QR code for more information.



Zoo:	Burgers' Zoo (1.12)
Location in zoo:	Mangrove, manatee enclosure (11)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reproduction program.
Description	Manatees are an endangered species and they are rarely kept in European zoos; so to sustain the manatee species they are part of reproduction programs. In Burgers' Zoo a manatee was born in 2023.
Photo(s):	<p>Met blijdschap In Europese dierenhuizen worden weinig zeezoeken gehouden. In het fokprogramma voor deze bedreigde diersoort is daarom elke geboorte zeer welkom. In de natuur zijn er helaas nog slechts enkele duizenden zeezoeken over. Ook daar is inmiddels het overleven van elk jong cruciaal, want de populaties stinken.</p> <p>Veel geduld nodig. Zeezoeken planten zich langzaam voort, ze krijgen slechts eens per twee tot vijf jaar een jong. De draagtijd duurt lang, ongeveer één jaar. Een pasgeborene weegt zo'n 20 kilo en is 1,2 meter lang. Het vrouwtje voedt het jong alleen op. Moeder en jong blijven twee jaar bij elkaar, zo lang duurt het kleinste ook moedermelk.</p> <p>Onderwaterbevalling Zeezoeken brengen heel hun leven onder water door en bevallen dus ook onder water. Na de geboorte moet het jong meteen naar het oppervlak zwemmen om te ademen. In de eerste dagen is zo'n kleintje nog geen volwaardige zwemmer. Het moederdier duwt haar jong in de periode met haar rug of de flippers richting het wateroppervlak.</p> <p>Hurra, eine junge Seekuh! In den Naturpark Ameland werden 2023 in Burgers' Zoo wieder die nur selten gegebene, jede Seekuh-Geboort ist davon ein Grund für große Freude. Seekühe gebären im Wasser nach einer Tragezeit von ungefähr einem Jahr. Das Jungtier muss – oft unter Aufsicht von dem Muttertier – gleich nach der Geburt zur Wasseroberfläche schwimmen um zu atmen. Eine neugeborene Seekuh ist ca. 20 kg schwer und rund 1,2 m lang. Die Mutter säugt das Jung zwei Jahre lang alleine auf, so lange dauert die Muttermilch.</p> <p>It mother should support her auf diesem Schild, wenn die kleine Jungkuh geboren werden.</p> <p>Hurray, a young manatee! Manatees are endangered in Europe and never kept in zoos. Every manatee birth is therefore a reason for great joy.</p> <p>Manatees give birth in the water, after a gestation period of about a year. Immediately after birth the young must breathe by its mother, must swim to the water surface to breathe.</p> <p>A newborn manatee is about 20 kg in weight and 1.2 m in length. The mother rears the youngster on her own for about two years, just as long as her young suckles milk.</p> <p>The white letters on this sign show you, when the latest young were born.</p> <p>AANTAL JONGEN: 1 vrouwtje GEBOREN OP: 20 september 2023</p>

Zoo:	Burgers' Zoo (1.13)																		
Location in zoo:	Deer enclosure (14)																		
Date:	22-3-2025																		
Observation	Nature Conservation initiative																		
What kind of initiative?	Reproduction program/ population management.																		
Description	Many deer species worldwide are endangered, so Burgers' Zoo, and other European zoos, are protecting deer species from extinction through reproduction programs and population management.																		
Photo(s):	 <p>Herten zeldzaam? Jazeker!</p> <p>Soortbehoud voor herten Herten zijn wereldwijd in aantal gedaald van langere tijd. Maar wereldwijd is meer dan de helft van de 140 hertensoorten niet uitgeroeid. Zo zijn er bijvoorbeeld in dit soort al een aantal herten. Maar zelfs 10 hertesoorten worden bedreigd. Voor deze soorten een gemeenschappelijk project (EEP) gericht om met gezamenlijk aan populatieverhoging de soorten voor uitsterven te behoeden.</p> <p>Geen publiekstellingen, maar toch Kijk u in een kooi? Het is een vraag die vaak wordt gesteld. Het is niet de bedoeling dat veel herten zo dichtbij zijn, houden het vaak weinig interessant. Doordat de zwaarherten onder stress dicht bij de kooi staan, wordt hun welzijn bedreigd. Daarom worden ze vaak niet toegelaten voor de kooi.</p> <p>Hertesoorten waarvoor in 2024 een soortbehoudsprogramma (EEP) bestaat</p> <table border="1"> <tr> <td>Alghem-oudhert</td> <td>Prinalliedhert</td> </tr> <tr> <td>Babir-oudhert</td> <td>Renn's moerjak</td> </tr> <tr> <td>Bengalshert</td> <td>Rothmannshert</td> </tr> <tr> <td>Boskoeckert</td> <td>Sambar</td> </tr> <tr> <td>Bontvach</td> <td>Siberisch moerkoeckert</td> </tr> <tr> <td>Javanese koeckert</td> <td>Sika</td> </tr> <tr> <td>Lindert</td> <td>Wolshert</td> </tr> <tr> <td>Mosopotamisch damhert</td> <td>Zuidelijke pondice</td> </tr> <tr> <td>Michal's koeckert</td> <td>Zwijnshert</td> </tr> </table> <p>Wat hertesoorten zijn er in de kooi? Het is de bedoeling dat u erachter komt!</p>	Alghem-oudhert	Prinalliedhert	Babir-oudhert	Renn's moerjak	Bengalshert	Rothmannshert	Boskoeckert	Sambar	Bontvach	Siberisch moerkoeckert	Javanese koeckert	Sika	Lindert	Wolshert	Mosopotamisch damhert	Zuidelijke pondice	Michal's koeckert	Zwijnshert
Alghem-oudhert	Prinalliedhert																		
Babir-oudhert	Renn's moerjak																		
Bengalshert	Rothmannshert																		
Boskoeckert	Sambar																		
Bontvach	Siberisch moerkoeckert																		
Javanese koeckert	Sika																		
Lindert	Wolshert																		
Mosopotamisch damhert	Zuidelijke pondice																		
Michal's koeckert	Zwijnshert																		

Zoo:	Burgers' Zoo (1.14)
Location in zoo:	Nearby deer enclosure (15)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	New building for multiple uses
Description	<p>A brand new building being built by Burgers' Zoo for the purpose of:</p> <ul style="list-style-type: none"> - Education of school children, students, volunteers, employees - Break room for volunteers - Work spaces for employees of the departments: conservation, research and education - Temporary exhibits
Notes:	Whilst this is not a grand nature conservation project it does show that Burgers' Zoo is investing in nature conservation, research and education for all sorts of people and visitors.
Photo(s):	


Zoo:	Burgers' Zoo (1.15)
Location in zoo:	Ocean (30)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reproduction program.
Description	In order to produce their own fish Burgers' Zoo is attempting to create a fish reproduction program with other European zoos so that wild fish don't have to be caught out of seas and oceans anymore to feed the animals of Burgers' Zoo and other zoos.
Photo(s):	 <p>The photograph shows an informational display board titled "Campagne 'Which fish?'". The board is divided into three main sections, each with a circular image and a block of text. The first section on the left features a plate of fish and chips. The middle section shows a group of people, likely zookeepers or visitors, interacting with a large fish. The right section shows a close-up of a fish. At the top right of the board are logos for "FISH", "EAZA", and the European Union flag. At the bottom right, there is a cartoon illustration of a rabbit-like character. The board is set against a dark background with a blue, wavy pattern at the bottom.</p>

Zoo:	Burgers' Zoo (1.16)
Location in zoo:	Ocean (31)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reproduction program.
Description	<p>Burgers' Zoo is home to the biggest tropical coral reef in Europe. In order to get the biggest tropical coral reef in Europe Burgers' Zoo first had to get corals from other zoos; but nowadays the coral reef in Burgers' Zoo has become so big that it regularly donates corals to other colleague zoos.</p> <p>Furthermore, the tropical reef of Burgers' Zoo has become a shelter for seized animals and coral reefs (for example at border control).</p>
Photo(s):	

Zoo:	Burgers' Zoo (1.17)
Location in zoo:	Ocean (30)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reproduction program.
Description	The spotted eagle ray is an endangered animal, but Burgers' Zoo is worldwide a frontrunner in the reproduction of spotted eagle rays! Burgers' Zoo helps the European management of the spotted eagle rays.
Photo(s):	

Zoo:	Burgers' Zoo (1.18)
Location in zoo:	Safari (33)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Expertise and advice on nature conservation
Description	<p>Burgers' Zoo is part of the EAZA, as are many other European zoos, however, Burgers' Zoo contributes to EAZA by:</p> <ul style="list-style-type: none"> - Delivering the EEP-coordinator of ant-eater (aardvark), the coordinator gives advice about the housing of ant-eaters - Burgers' Zoo is a specialist in manatees and cartilaginous fish
Photo(s):	

Zoo:	Burgers' Zoo (1.19)
Location in zoo:	Safari (33/ 34)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reproduction program.
Description	Burgers' Zoo contributes to the reproduction for the 'breedlipneushoorns' (rhinoceros). Because of poaching for the horn of a rhino the rhinos are threatened in the wild, and with the reproduction programs Burgers' Zoo, and other zoos are trying to restore rhinos in the wild.
Photo(s):	<p>The top poster, titled "Neushoorn als logodier", explains that European breeding programs for rhinos are successful because they focus on specific species. It mentions the EAZA (European Association of Zoos and Aquariums) and the IUCN (International Union for Conservation of Nature). It also notes that Burgers' Zoo is part of these programs.</p> <p>The bottom poster, titled "Neushoorns: succes en falen van natuurbescherming", provides a comprehensive overview of rhino conservation. It includes a bar chart showing the population of rhinos from 1970 to 2015. The chart shows a significant decline in the population of rhinos, particularly for the black rhino, which has nearly disappeared. The white rhino population has also declined, though it has shown some recovery in recent years. The poster also discusses the reasons for the decline, such as poaching for rhino horns, and the efforts being made to protect and breed rhinos in captivity.</p>


Zoo:	Burgers' Zoo (1.20)
Location in zoo:	Safari (35)
Date:	22-3-2025
Observation	Nature Conservation initiative
What kind of initiative?	Reproduction program.
Description	The Rothschild's giraffe is a very rare species, so in order to protect them Burgers' Zoo is part of the European reproduction program.
Photo(s):	

Zoo:	Burgers' Zoo (1.21)
Location in zoo:	Chimpanzee enclosure
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors of chimpanzees. Information about their behavior, habits, natural habitat, species characteristics and level of endangerment.
Photo(s):	

Zoo:	Burgers' Zoo (1.22)
Location in zoo:	Wallaby enclosure
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative (interactive) sign for visitors.
Description	An (interactive) educative sign to inform visitors of the wallaby. Information about their behavior, habits, natural habitat, species characteristics and level of endangerment. This sign is interactive because it quizzes visitors on their wallaby knowledge with the Q&A.
Notes:	Whilst Burgers' Zoo houses several species that are endangered in the wild, the wallaby is not an endangered species. This shows that zoos do house animals that are <u>not</u> endangered.
Photo(s):	<p>The top photograph shows an educational sign titled "Wallaby weetjes" (Wallaby facts). It features a Q&A section with three questions and answers about wallaby behavior, such as "Test je kennis over buidelieren!" (Test your knowledge about marsupials!). The sign includes illustrations of a wallaby, a kangaroo, and a rabbit. The bottom photograph shows a sign titled "Moeraswallaby" (Swamp wallaby) with detailed text in Dutch and English, a map of its distribution, and a small illustration of the wallaby. The sign also includes a scale bar and the word "Park" at the bottom.</p>

Zoo:	Burgers' Zoo (1.23)
Location in zoo:	Mangrove
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors of the fiddler crab. This educative sign informs visitors about the fiddler crab facts through an interactive quiz.
Photo(s):	

Zoo:	Burgers' Zoo (1.24)
Location in zoo:	Mangrove
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors of the process in which eggs become butterflies. This educative sign informs visitors about how different types of butterflies are formed.
Photo(s):	


Zoo:	Burgers' Zoo (1.25)
Location in zoo:	Rimba (26/ 27)
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors about the 'rode lijst' (red list). It informs visitors that animals that are on the red list are animals that are threatened with extinction.
Photo(s):	


Zoo:	Burgers' Zoo (1.26)
Location in zoo:	Rimba (28)
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors about the initiatives of the European Association of Zoos and Aquaria (EAZA) in to protect endangered Asian animal species. Initiatives were campagains to protect tigers, turtles, rhinos, monkeys, etc. Burgers' Zoo partakes in all the campaigns to protect Asian animal species in collaboration with other European zoos and the EAZA.
Photo(s):	

Zoo:	Burgers' Zoo (1.27)
Location in zoo:	Rimba (29)
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	<p>An educative sign to inform visitors about how they can behave more sustainably (during vacations and in everyday life). For example by:</p> <ul style="list-style-type: none"> - Choose vacation accommodations carefully; make sure they protect the local ecosystem and support the local community (financially) - Don't buy exotic plants and animals abroad; this threatens those species - Don't hunt wild animals or feed them - Don't eat or buy endangered species - Buy palm oil-free products - Buy products with environmental and ethical trademarks, such as: fairtrade.
Photo(s):	

Zoo:	Burgers' Zoo (1.28)
Location in zoo:	Near the entrance (37)
Date:	22-3-2025
Observation	Nature Conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors about black footed penguins. Information about their behavior, habits, natural habitat, species characteristics, and level of endangerment.
Photo(s):	

3.3.2 WILDLANDS


Zoo:	WILDLANDS (2.1)
Location in zoo:	Entrance (1)
Date:	28-3-2025
Observation	Sustainability initiative
What kind of initiative?	Green roof
Description	The entrance of WILDLANDS has a green roof, which is better for the environment and biodiversity and absorbs rainwater.
Photo(s):	

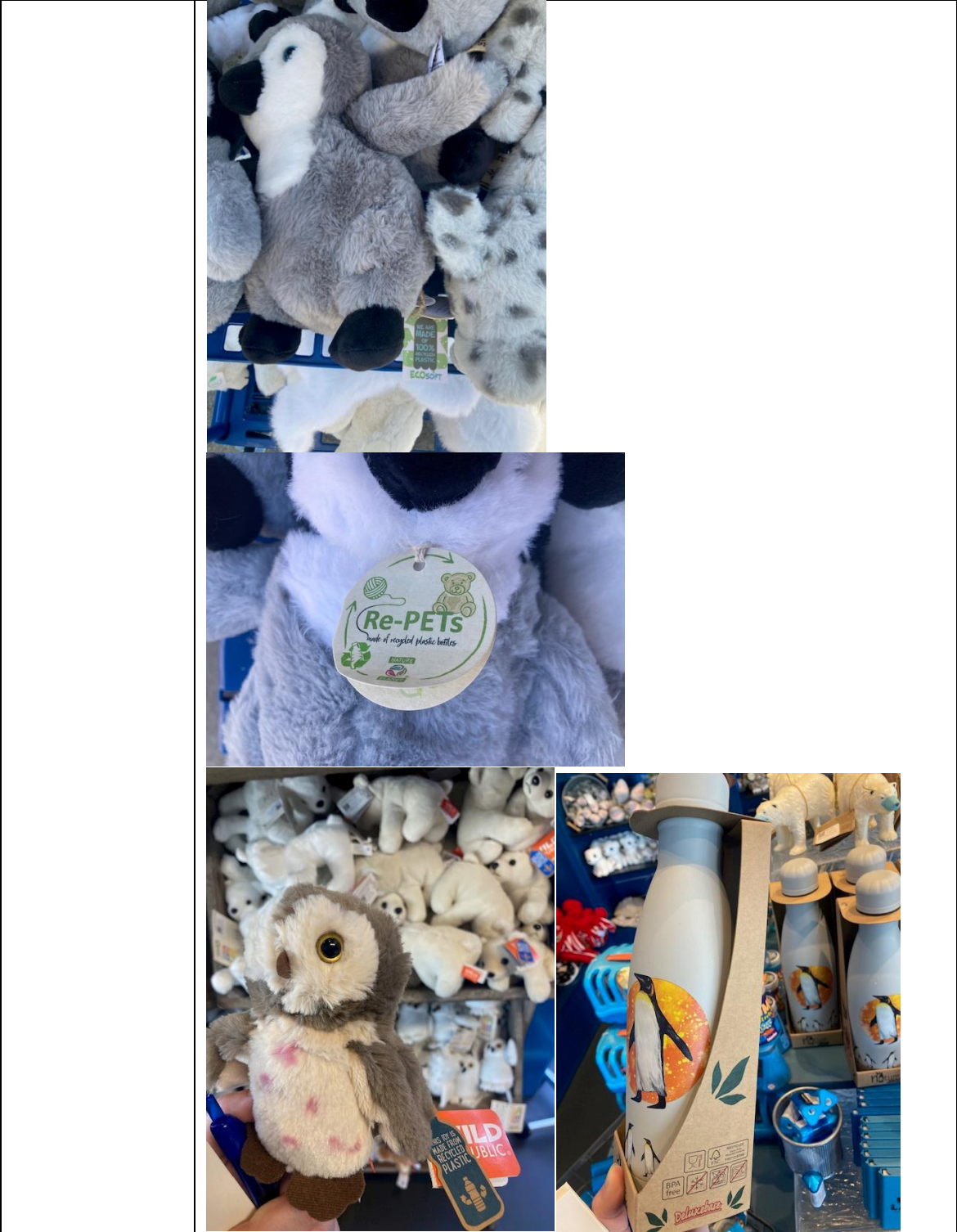
Zoo:	WILDLANDS (2.2)
Location in zoo:	Nearby seal enclosure (3)
Date:	28-3-2025
Observation	Sustainability initiative
What kind of initiative?	Sustainable fish purchasing of WILDLANDS
Description	<p>WILDLANDS only buys fish that have an MSC certificate and ASC certificate. This means that they only buy fish that are not endangered, that aren't overfished (meaning there is enough fish left in the oceans), prevent by-catch. Lastly, fish that are farmed responsibly. In general, this helps protect fish biodiversity and prevents overfishing.</p> <p>Furthermore, WILDLANDS informs visitors of their consumer behavior by stating which fish are the best to buy and which fish to avoid. By doing this WILDLANDS tries to influence the behavior of visitors with the goal of nature conservation and the protection of fish biodiversity.</p>
Photo(s):	

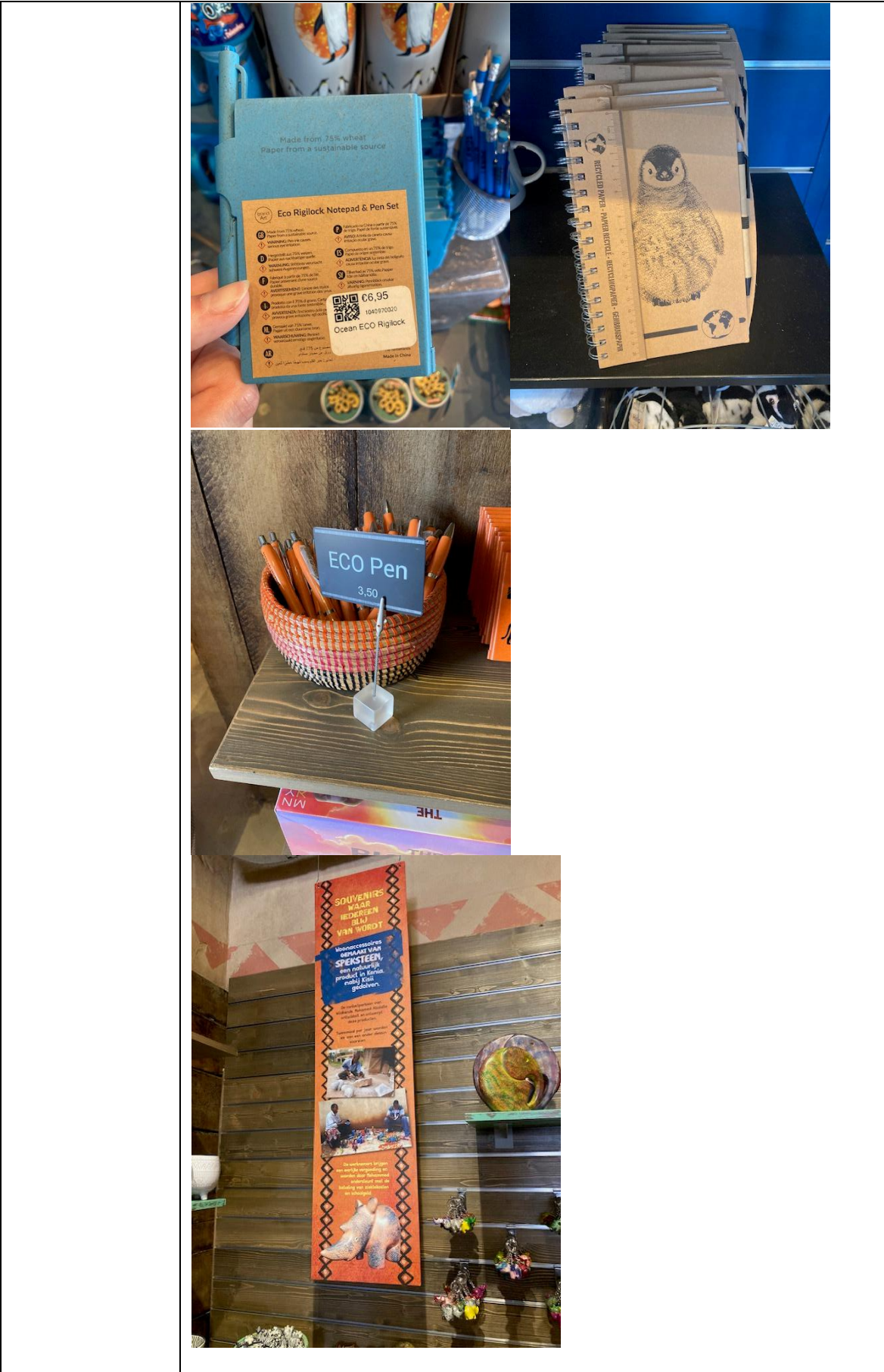
Zoo:	WILDLANDS (2.3)
Location in zoo:	Nortica Aquarium (9)
Date:	28-3-2025
Observation	Sustainability initiative
What kind of initiative?	Plastic (bottles) recycling
Description	WILDLANDS encourages visitors to donate their used plastic bottles to this machine. This way, the plastic can be recycled and used for something new and not wind up in the ordinary waste. This is better for the environment and more sustainable.

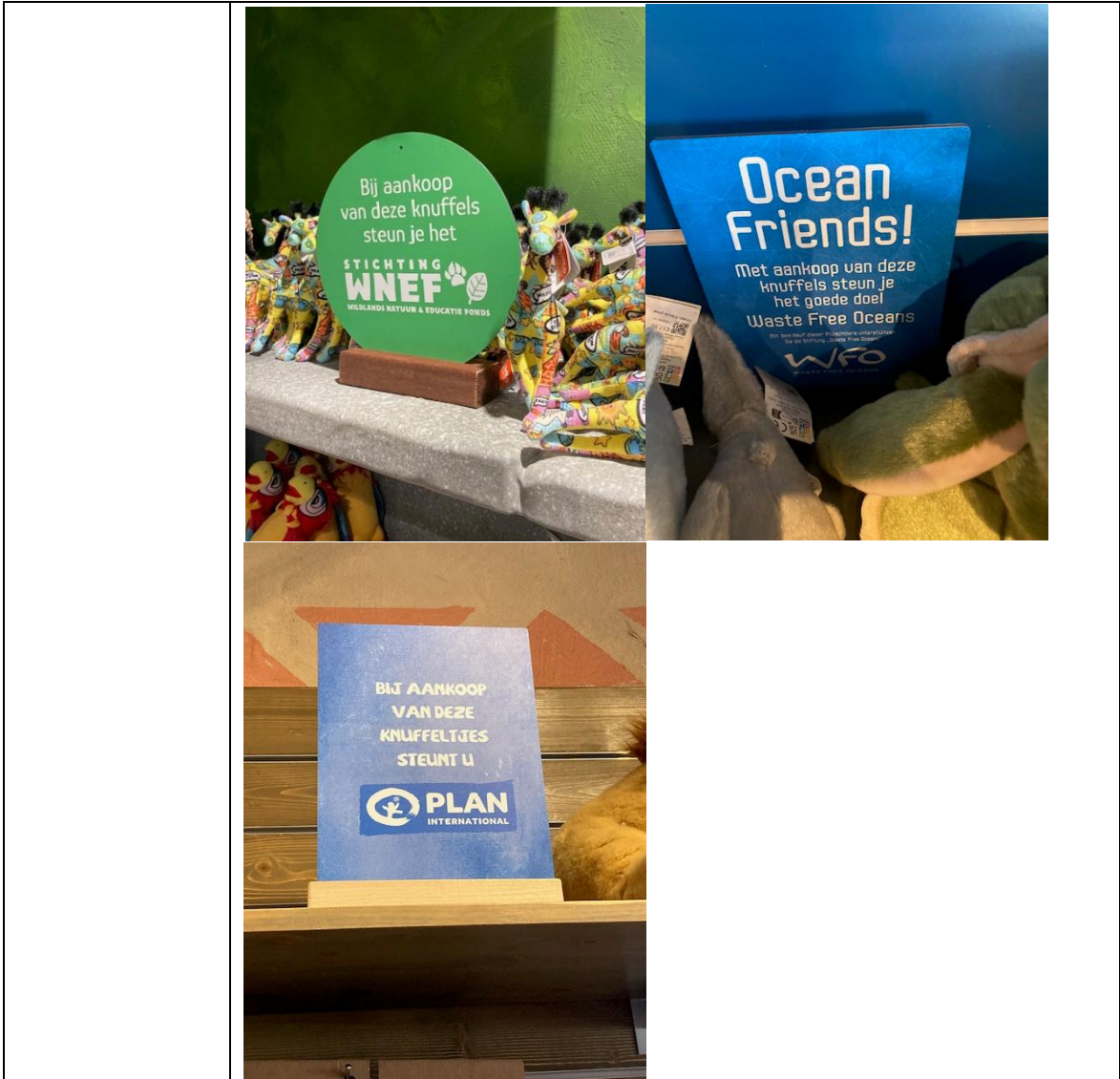
Photo(s):





Zoo:	WILDLANDS (2.4)
Location in zoo:	Various gift shop locations in the zoo
Date:	28-3-2025
Observation	Sustainability initiative
What kind of initiative?	Examples of sustainable retail/ souvenirs of WILDLANDS
Description	<p>One of the sustainable initiatives of WILDLANDS is sustainable retail. WILDLANDS sells souvenirs in their gift shops that are more sustainable. Examples are: (see photos)</p> <ul style="list-style-type: none"> - Sell plushies that are made of 100% recycled material, for example: plastic - Sell re-usable (water)bottles - Sell notebooks made from recycled and sustainable materials, for example: wheat and paper. - Sell eco-pens; which are sustainable pens made of degradable materials - Sell souvenirs made of soapstone. This is a material that is natural in Kenya. The workers creating the souvenirs are compensated fairly to support their school and hospital bills. <p>Furthermore, by buying WILDLANDS plushies you support Stichting WNEF (Wildlands natuur & educatie fonds; in English: Wildlands Nature & Education Fund), Waste Free Oceans (WFO) and Plan International. So, by buying more sustainably you simultaneously support good causes.</p>
Photo(s):	









Zoo:	WILDLANDS (2.5)
Location in zoo:	Nearby penguin and polar bear enclosure (12)
Date:	28-3-2025
Observation	Sustainability initiative
What kind of initiative?	Solar panels on the roof of a canopy.
Description	Solar panels on the roof of a canopy over a terras. Solar panels are used to get renewable energy.
Photo(s):	


Zoo:	WILDLANDS (2.6)
Location in zoo:	Zoo-wide
Date:	28-3-2025
Observation	Sustainability initiative
What kind of initiative?	Use of reusable plastic cups.
Description	WILDLANDS uses reusable plastic cups. After use, these plastic cups can be returned to the coffee shop/ restaurant to get part of your money back. The plastic cups are then cleaned and are ready to be used again. This way WILDLANDS has less plastic and paper waste.
Photo(s):	

Zoo:	WILDLANDS (2.7)
Location in zoo:	Polar bear enclosure (15)
Date:	28-3-2025
Observation	Nature conservation initiative
What kind of initiative?	WILDLANDS is an Arctic Ambassador and part of Polar Bears International.
Description	WILDLANDS is part of a network/ organization that protects polar bears and does research about them. Research about the impact of climate change on polar bears and the Arctic, how polar bears react to climate change, and how to protect polar bears from climate change. WILDLANDS tries to incentivize people to donate to Polar Bears International or Stichting WNEF to support polar bears.
Photo(s):	

Zoo:	WILDLANDS (2.8)
Location in zoo:	Savanne (17)
Date:	28-3-2025
Observation	Nature conservation initiative
What kind of initiative?	Supporting in-situ rhino conservation projects.
Description	<p>WILDLANDS is working together with the organization Save the Rhino International to fund in-situ conservation projects that protect rhinos. Together they have donated 50.000 euro to uMkhuze Game Reserve in South-Africa to mitigate poaching.</p> <p>Besides supporting the rhino in-situ project WILDLANDS also tries to influence the behavior of its visitors by giving them information about poaching, ecotourism and wildlife in South Africa. Examples of advice to influence behavior are:</p> <ul style="list-style-type: none"> - Don't buy souvenirs made of wildlife (i.e. ivory figurines, corals) - Support nature conservation organizations (i.e. WNEF)
Photo(s):	





Zoo:	WILDLANDS (2.9)
Location in zoo:	Savanne (18)
Date:	28-3-2025
Observation	Nature conservation initiative
What kind of initiative?	Research about elephant herpes and financing elephant herpes research.
Description	To protect elephants against the potentially life-threatening disease herpes, WILDLANDS, in cooperation with EAZA, NVD, and Utrecht University, is doing research to prevent (wild and captive) elephants from dying to herpes.
Photo(s):	

Zoo:	WILDLANDS (2.11)
Location in zoo:	Seal enclosure (21)
Date:	28-3-2025
Observation	Nature conservation initiative
What kind of initiative?	Insect hotel
Description	In the insect hotel all sorts of insects can live. This insect hotel supports the local ecosystem.
Notes:	Whilst an insect hotel isn't a big nature conservation project, it does support the local insect biodiversity.
Photo(s):	


Zoo:	WILDLANDS (2.12)
Location in zoo:	Sea lion enclosure
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors
Description	An educative sign to inform visitors of sea lions vs. seals. Information about their behavior, habits and species characteristics.
Photo(s):	

Zoo:	WILDLANDS (2.13)
Location in zoo:	Nearby raccoon enclosure
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors
Description	An educative sign to inform visitors of raccoons. Information about their original habitat (USA), that they are an invasive species in Europe and their characteristics.
Photo(s):	

Zoo:	WILDLANDS (2.14)
Location in zoo:	Nearby beaver enclosure
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors
Description	<p>An educative sign to inform visitors of ways to conserve wood. Ways to conserve wood is by recycling of old paper, this saves a lot of trees from being cut. Furthermore, they give information about the process from which paper is created from trees. Lastly, they give a list why trees are important, and should be handled more carefully. Trees are important because they:</p> <ul style="list-style-type: none"> - Conserve biodiversity - Stabilize the climate - Take up CO2 - Protect the soil - Conserve drinking water - Produce "forest products", such as: nuts and oils - Protect against wind - Produce wood and wood products - Landscaping and recreation <p>This sign can influence the behavior of visitors to recycle their paper to protect trees, forest and indirectly the environment and biodiversity.</p>
Photo(s):	


Zoo:	WILDLANDS (2.15)
Location in zoo:	Beaver enclosure
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors about beavers and diamond sturgeons.
Description	An educative sign to inform visitors about beavers and diamond sturgeons. The sign informs visitors of the successful recovery of beavers because of reintroductions and legal protection. Moreover, it informs visitors about the habits of beavers, that they are natural landscape architects. It also informs visitors of the critically endangered diamond sturgeons, which are endangered because of water pollution, the construction of dams, and fishing.
Photo(s):	 <p>The photograph shows two educational signs mounted on a wooden wall. The sign on the left is titled 'EUROPESE BEVER' (European Beaver) and features an illustration of a beaver. It includes the text 'SUCCESSVOL HERSTEL' (Successful Recovery) and 'ERFOLGREICHE ERSTERUNG' (Successful Reintroduction). The sign on the right is titled 'DIAMANT STEUR' (Diamond Sturgeon) and features an illustration of a sturgeon. It includes the text 'ERNSTIG BEDREIGD' (Critically Endangered) and 'VOM AUSSTERBEN BEDROHT' (Threatened with Extinction).</p>



Zoo:	WILDLANDS (2.16)
Location in zoo:	Nortica (13 & 14)
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An interactive educational experience for visitors to inform them about the habits and characteristics of different kinds of whales through a quiz and an interactive game.
Photo(s):	

Zoo:	WILDLANDS (2.17)
Location in zoo:	Jungola (20)
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	A educative sign for visitors about palm oil. The good and the bads of palm oil. This sign can influence the behavior of visitors by stating why palm oil is bad for the environment and biodiversity.
Photo(s):	


Zoo:	WILDLANDS (2.18)
Location in zoo:	Entrance WILDLANDS (22)
Date:	28-3-2025
Observation	Nature conservation initiative/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	<p>An educative sign for visitors about nature conservation initiatives of WILDLANDS. It informs visitors about the main goal of WILDLANDS: to protect nature, to enlarge the love for nature, and to restore nature where possible.</p> <p>WILDLANDS has connections with other zoos and is part of Dutch, European, and global organizations that protect nature and wildlife, research wildlife and nature, and want to educate visitors.</p> <p>Furthermore, WILDLANDS wants to contribute to the population management of animals; that's why they are committed to restoring wild animals and animal populations through EEP programs.</p> <p>WNEF is an initiative created by WILDLANDS that protects endangered species and their natural habitats. WNEF supports nature conservation projects, education, research, and animal welfare.</p> <p>Lastly, WILDLANDS is part of the organizations:</p> <ul style="list-style-type: none"> - EAZA - NVD - IABES (International Association of Butterfly Exhibitors and Suppliers)
Photo(s):	


Zoo:	Ouwehands Dierenpark (3.2)
Location in zoo:	Various gift shop locations in the zoo
Date:	1-4-2025
Observation	Sustainability initiative
What kind of initiative?	Examples of sustainable retail/souvenirs of Ouwehands Dierenpark
Description	<p>One of the sustainable initiatives of Ouwehands Dierenpark is sustainable retail. Examples are: (see photos)</p> <ul style="list-style-type: none"> - Biodegradable ponchos - Sustainable-made tote bags - Plushies made of recycled plastic, for example plastic bottles <p>By buying certain plushies you support the Ouwehands Zoo Foundation and Nature Planet, which in turn support Plan International. Plan International support the future of children by building schools.</p>
Photo(s):	





Zoo:	Ouwehands Dierenpark (3.3)
Location in zoo:	Zoo-wide initiative
Date:	1-4-2025
Observation	Sustainability initiative
What kind of initiative?	Sourcing sustainable coffee beans
Description	Ouwehands Dierenpark uses coffee beans that are organically grown (by Yanesha Indians). The coffee beans are climate positive throughout the whole food chain. The coffee farmers get a fair price, and they create extra income by having a collective bee project. Furthermore, Ouwehands Dierenpark and Peeze are working together to “green” the coffee plantations in Peru by planting trees that enhance biodiversity and create awareness for nature conservation with the local community.
Photo(s):	


Zoo:	Ouwehands Dierenpark (3.4)
Location in zoo:	Zoo-wide initiative
Date:	1-4-2025
Observation	Sustainability initiative
What kind of initiative?	Recycled park maps
Description	The park maps of Ouwehands are made of recycled paper. This is a sustainable way of making these park maps, because new paper is not created to make them.
Photo(s):	

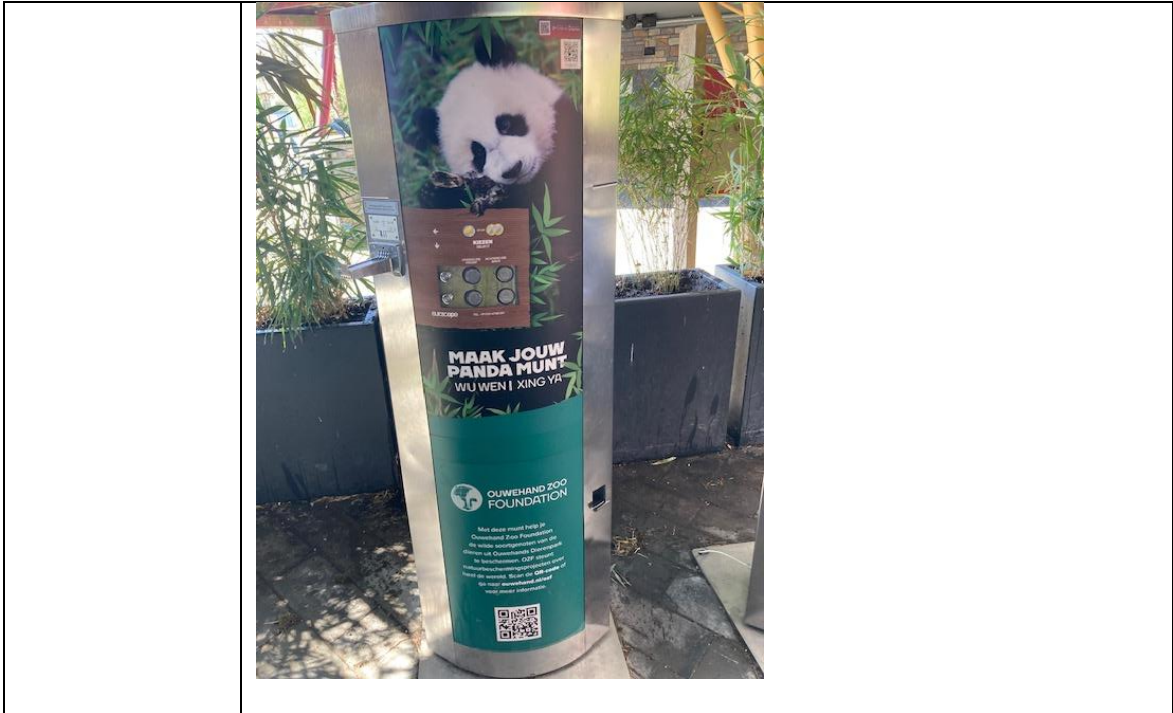
Zoo:	Ouwehands Dierenpark (3.5)
Location in zoo:	Zoo-wide initiative
Date:	1-4-2025
Observation	Sustainability initiative
What kind of initiative?	Raise awareness of e-waste
Description	This sign raises awareness to visitors about recycling their e-waste because if it is not recycled properly, it can harm the natural habitat of animals.
Photo(s):	


Zoo:	Ouwehands Dierenpark (3.6)
Location in zoo:	Hornbill enclosure (1)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ nature conservation project
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports the Wanicare Foundation. This foundation:</p> <ul style="list-style-type: none"> - Captures wild animals, like hornbills, and reintroduces them back into the wild - Reproduce endangered songbirds and Visaya warthogs and reintroduce them back into the wild - Create awareness for the locals about the importance of nature conservation <p>The money raised by the Ouwehand Zoo foundation goes to Wanicare Foundation and is used to:</p> <ul style="list-style-type: none"> - Take care of hornbills - The building of rehabilitation facilities - Observation of the animals to assess whether they are ready to be released back into the wild - Monitoring of released animals in the wild
Photo(s):	


Zoo:	Ouwehands Dierenpark (3.7)
Location in zoo:	Zoo-wide initiative
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Protecting endangered species
Description	<p>Ouwehands has an animal adoption program, in which people, businesses, and organizations can adopt an animal from Ouwehands Dierenpark. By adopting an animal you:</p> <ul style="list-style-type: none"> - Support the animal's daily necessities and care - Support the animal's enrichment - Support education - Support the conservation of endangered species - Support the Ouwehands Zoo Foundation (which in turn supports other nature conservation projects/ initiatives)
Photo(s):	 <p>The photograph shows a large, egg-shaped stone monument. At the top, it is engraved with 'Ouwehands Dierenpark Rhenen' and a drawing of a giraffe. Below this, the word 'ADOPTIEPROGRAMMA' is engraved in large letters. The central part of the monument is a recessed area containing a grid of approximately 40 small logos of various businesses and organizations. At the bottom of the monument, there is a small text block in Dutch that reads: 'Bovenstaande bedrijven hebben een dier geadopteerd. Met deze adoptie dragen zij bij aan de dagelijkse verzorging en verrijking van de dieren, educatie en het behoud van de biodiversiteit van bedragede diersoorten. Tevens ondersteunen zij Ouwehands Zoo Foundation. Interesse? Wil je ook een dier adopteren dan kom bij de receptie van het park voor meer informatie krijgen over het adoptieprogramma van Ouwehands Dierenpark Rhenen of kijk voor meer informatie op www.ouwehand.nl</p>

Zoo:	Ouwehands Dierenpark (3.8)
Location in zoo:	Vulture enclosure
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Reproduction program vultures
Description	Ouwehands has a reproduction program for vultures. In Ouwehands, vultures are being kept that are looking for a life-long partner; when the vultures have found their partner, they will be moved to another zoo (also with vulture reproduction programs) where the vultures will have young. The young vultures will then be released in France and Spain to look for "wild" partners themselves. The reproduction program of vultures sustains the wild vulture population.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.9)
Location in zoo:	Panda enclosure (9)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ nature conservation project.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports the China Conservation and Research Centre for Conservation of the Giant Panda (CCRCGP). The CCRCGP:</p> <ul style="list-style-type: none"> - Connects the natural habitats of pandas with green corridors; in this way, one big habitat will be created for pandas. - Help local inhabitants create alternative income in exchange for the protection of the natural habitat of pandas. - Research about the reintroduction of pandas in the wild. <p>The money raised by the Ouwehand Zoo Foundation goes to CCRCGP and is used to:</p> <ul style="list-style-type: none"> - Protect pandas - Restoration of their natural habitat - Research <p>Visitors of Ouwehands can support Ouwehand Zoo Foundation by donating or by buying a panda coin souvenir, from which the money goes to the Ouwehands Zoo Foundation and indirectly to CCRCGP and other foundations.</p>
Photo(s):	



Zoo:	Ouwehands Dierenpark (3.10)
Location in zoo:	Red panda enclosure (16)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports the Red Panda Network. The Red Panda Network:</p> <ul style="list-style-type: none"> - Does research about red pandas and monitors the red panda population - Protect the natural habitat of red pandas and combat poaching - Evolve the local inhabitants to protect the natural habitat of the red pandas and help the locals to get a sustainable way of income. <p>The money raised by the Ouwehand Zoo Foundation goes to the Red Panda Network and is used to:</p> <ul style="list-style-type: none"> - Educate and pay the wage of Forest Guardians (locals that work to protect animal species and give education on schools)
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.11)
Location in zoo:	Nocturnal animal enclosure (17)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports the Kukang Rescue Program. The Kukang Rescue Program:</p> <ul style="list-style-type: none"> - Protect slow lorises and other endangered species - Encourage local farmers to grow sustainable Kukang coffee - Educate local children about nature <p>The money raised by the Ouwehand Zoo Foundation goes to the Kukang Rescue Program, and is used to:</p> <ul style="list-style-type: none"> - Capture, rehabilitate, and release of illegally captured lorises - To reeducate former poachers to be field assistants, to monitor the natural habitat and lori population
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.12)
Location in zoo:	Berenbos (18)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Protection and nature conservation for bears.
Description	<p>The "Berenbos" (bear forest) is an initiative of Ouwehands that protects (brown) bears. The berenbos forms a shelter for bears that were mistreated, abused and traumatized. For example: bears that were used for street entertainment, breeding, circus bears, and so on.</p> <p>The berenbos was an initiative created in the late 20th century, and to become a shelter for abused bears, Ouwehands created the foundation: International Bear Foundations (now: Bears in Mind). Ouwehands became the first shelter for bears in Europe. Since its creation, Bears in Mind has rescued 34 bears and brought them to Berenbos. The goal of the Berenbos is to teach abused bears how to be bears again.</p> <p>Bears in mind is part of organizations, such as:</p> <ul style="list-style-type: none"> - IUCN (International Union for Conservation of Nature and Natural Resources) - EAZA (European Association of Zoos & Aquaria) - EARS (European Alliance of Rescue Centres & Sanctuaries) - IBA (Internal Association for Bear Rescue & Management) - GG (Globe Guards) <p>Bears in mind, because of its network and knowledge, is the bear protection initiative in Europe and has recognition worldwide.</p> <p>Bears in mind works together internationally with governments, local organizations and universities. The main goals of Bears in mind are:</p> <ul style="list-style-type: none"> - Bear welfare: give advice about bear shelter locations and support the building of new shelter locations for bears. Initiate and support international projects about the improvement of bear welfare in captivity. - Nature conservation: protect bears worldwide by financially supporting nature conservation and research projects - Ouwehands Dierenpark and Bears in Mind is an international knowledge center for bears. So they give advice and financial means to other organizations about bears. Furthermore, education about bears is given in schools and other groups (such as tourists). <p>Visitors can buy parts of berenbos in contribute to the protection of bears. Visitors can also adopt bears of the Berenbos. Furthermore, visitors can also donate to the Foundation of Bears in Mind to support the protection of bears.</p> <p>Another initiative to support Bears in Mind is "De Wildlife Run" (The Wildlife Run). A sponsor run through Ouwehands Dierenpark to raise money for bear welfare worldwide.</p>

Photo(s):









(List of names who have already bought a piece of land of the Berenbos)








Zoo:	Ouwehands Dierenpark (3.13)
Location in zoo:	Nearby Berenbos (20)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports Pro Natura. Pro Natura:</p> <ul style="list-style-type: none"> - Prevents and combats wildfires in the Sungai Wain Protection Forest - Combats poaching by patrolling - Monitors animal populations - Gives education to locals <p>The money raised by the Ouwehand Zoo Foundation goes to Pro Natura, and is used to:</p> <ul style="list-style-type: none"> - Educate rangers and pay their wages - Buy camera traps for research - Create education materials
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.14)
Location in zoo:	Polar bear enclosure (21)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports Polar Bears International. Polar Bears International:</p> <ul style="list-style-type: none"> - Researches the effect of climate change on polar bears - Research the behavior and development of polar bears and their young - Gives education and creates awareness about the threats for the polar bears <p>The money raised by the Ouwehand Zoo Foundation goes to Polar Bears International and is used to:</p> <ul style="list-style-type: none"> - Finance research, for example by paying the wages of researchers, buying and maintaining research materials/ tools
Photo(s):	



Zoo:	Ouwehands Dierenpark (3.15)
Location in zoo:	Penguin enclosure (23)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports Sphenisco. Sphenisco:</p> <ul style="list-style-type: none"> - Raise awareness for the threats to the Humboldt Penguin through education and lobbying - Supports research about Humboldt Penguins - Protects the natural environment of the penguins and prevents disruption of the breeding colonies <p>The money raised by the Ouwehand Zoo Foundation goes to Sphenisco and is used to:</p> <ul style="list-style-type: none"> - Finance research - Inform the local community - Create new educational material
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.16)
Location in zoo:	Elephant enclosure (24)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports Big Life Foundation. Big Life Foundation:</p> <ul style="list-style-type: none"> - Protects the Ambosell-Tsavo Kilimanjaro ecosystems - Prevent poaching, human-animal conflicts and destruction of natural habitat - Gives work to 350+ rangers that involve the local community in anti-poaching and preventing human-animal conflicts <p>The money raised by the Ouwehand Zoo Foundation goes to Big Life Foundation and is used to:</p> <ul style="list-style-type: none"> - Train local Masai to become rangers
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.17)
Location in zoo:	Bonobo enclosure (25)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Financing in-situ projects.
Description	<p>Through the Ouwehand Zoo Foundation Ouwehands Dierenpark financially supports Bonobo Alive. Bonobo Alive:</p> <ul style="list-style-type: none"> - Prevent poaching in the Salonga National Park - Support the local community in livelihood, nature conservation, education and care - Research the behavior and diet of wild bonobo's <p>The money raised by the Ouwehand Zoo Foundation goes to Bonobo Alive and is used to:</p> <ul style="list-style-type: none"> - Finance research - Finance negotiations in villages to enlarge the protected natural habitat of bonobo's
Photo(s):	

BEDREIGING EN BESCHERMING BONOBO'S

Draai het wiel en ontdek wat de bedreigingen en beschermingen van de bonobo's zijn.

Waarvoor wordt de bonobo bedreigd?

Hoe worden de bonobo's beschermd?

Scholen

Anti-Stroperij brigade

Natuur- en milieu educatie

Welke organisaties zijn er en wat doen zij?



Onderzoek naar medicinale planten.

Verbetering leefomstandigheden.



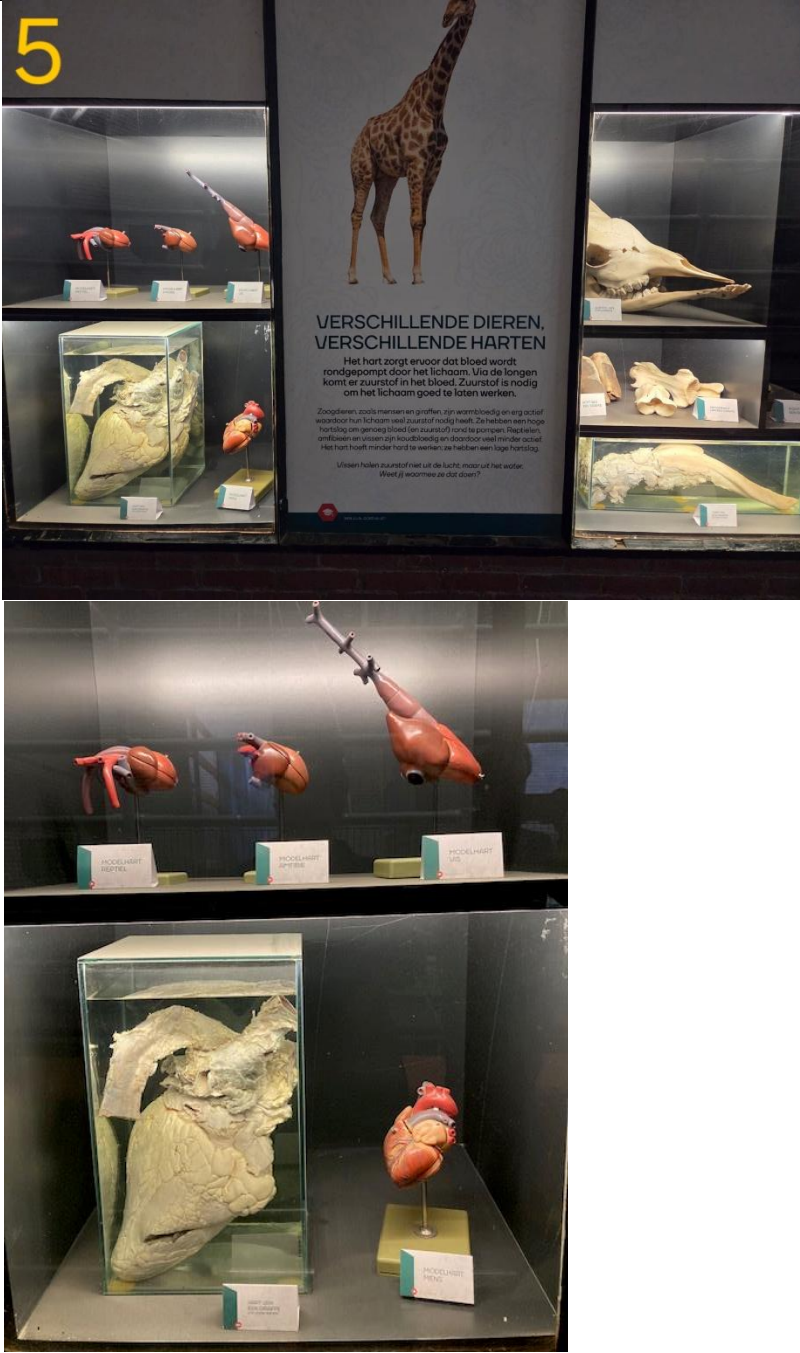
Zoo:	Ouwehands Dierenpark (3.18)
Location in zoo:	Zoo-wide
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	List of EAZA Ex-situ management program (endangered) animals
Description	<p>Ouwehands Dierenpark has many (endangered) animal that are part of EAZA ex-situ management programs. These are:</p> <ul style="list-style-type: none"> - Ring-tailed lemurs - Hornbills - Giraffes - Amur tigers - Warthogs - Meerkats - Addaxes - Grevy zebras - Mandrills - Bongos - Vultures - White-necked crane - Clouded leopard - Yellow-throated marten - White-handed gibbons - Slow lorises - Doroecoelis - Red pandas - Brown bears - Malay bear - African elephant - Brush hogs - Hyacinth macaws - Koalas - Parma wallabies - California sea lion - Cuban flamingos - Polar bears - Humbolds penguins - Bonobos - Doodshoofdaapjes - Von der Decken toks - Horn raven - Barbary macaques - Snow owls - Western lowland gorillas - West-African colobus monkeys - Toucans - Aldabra gaint tortoises - Orangutans - Red-bellied tamarins - Golden-headed lion tamarins - Two-toed sloth


Photo(s):




Zoo:	Ouwehands Dierenpark (3.19)
Location in zoo:	Orangutans' enclosure (31)
Date:	1-4-2025
Observation	Nature conservation initiative
What kind of initiative?	Research for reproduction orangutans
Description	An research done with the orangutans of Ouwehands Dierenpark that researches how to make a good match between orangutans. This can result in better matches and the orangutans having more young. This, in turn stimulates the reproduction of the animals.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.20)
Location in zoo:	Hornbills (2)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors of hornbills. Information about their behavior, habits, natural habitat, species characteristics, the threats to their natural environment, and level of endangerment.
Photo(s):	


Zoo:	Ouwehands Dierenpark (3.21)
Location in zoo:	Giraffe enclosure (5)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Example of an educative display for visitors.
Description	This educational display is about the differences giraffes and other animals. It shows several bones and the tongue of the giraffe. Furthermore, it shows the differences between the hearts of a giraffe, humans, fish, amphibians, and reptiles. This illustrates the significant difference between animals.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.22)
Location in zoo:	Aquarium (7)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Example of an interactive educative sign for visitors.
Description	An interactive educative sign to inform them about polluted water. Visitors can inform themselves about the consequences of polluted water in the form of a quiz. This way, visitors can learn about micro-plastics and polluted water and be entertained.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.23)
Location in zoo:	Red pandas enclosure (15)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors of red pandas. Information about their behavior, habits, natural habitat, species characteristics and level of endangerment.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.24)
Location in zoo:	Berenbos (19)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	This sign is located in the Berenbos, a forest of rescued bears. This sign tells the story of the rescued bear Dadon; how the bear was abused in the past and how it came to be in Ouwehands. Furthermore, it informs visitors of its characteristics, country of origin, habits, and its (potential) adopter.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.25)
Location in zoo:	Penguin enclosure (22)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Example of an educative sign for visitors.
Description	An educative sign to inform visitors of Humboldt Penguins. Information about their behavior, habits, natural habitat, species characteristics, the threats to their natural environment, and level of endangerment.
Photo(s):	

Zoo:	Ouwehands Dierenpark (3.26)
Location in zoo:	Nearby bonobo enclosure (26)
Date:	1-4-2025
Observation	Nature conservation/ education initiative
What kind of initiative?	Examples of an interactive educative sign for visitors.
Description	<p>(1). An interactive educative sign to inform them about useful, medicinal plants. Visitors can inform themselves about the usefulness of several plants in the form of a game of memory. This way, visitors can learn about different types of plants and be entertained</p> <p>(2). An interactive educative sign to inform visitors about the solutions for threats that endanger bonobo's (and other species). Visitors can inform themselves through this game of memory. This way visitors can learn and be entertained. Furthermore, this way visitors can become more aware about possible solutions to contribute to nature conservation, such recycle e-waste, buy FSC-certified wood, avoid palm oil products.</p>
Photo(s):	 <p>(1)</p>



(2)

4. Codebook Atlas.ti – interview(s) and observations

Code	Meaning(s)
Achievement	Goal(s) reached or status
Advantages	-
Advising	-
Ambosell-Tsavo Kilimanjaro	An ecosystem protected by Ouwehands Zoo Foundation and Big Life Foundation
Animal adoption program	Program created by Ouwehands for organization/ people to adopt animals of Ouwehands Dierenpark
Animal reduction	Lesser animal in a zoo
Animal welfare	-
Ark van Noah	Nature conservation initiative created by Burgers' Zoo to conserve corals
Artic Ambassador	-
ASC certificate	Sustainable farmed fish certificate
Asian elephants	-
Bears	-
Bears in mind	Nature conservation foundation created by Ouwehands Dierenpark to safe mistreated bears
Belize	Location in South America. Nature conservation project of Burgers' Zoo
Berenbos	Location in Ouwehands Dierenpark that houses mistreated bears
Big Life Foundation	A nature conservation foundation that is supported by Ouwehands Zoo Foundation
Biodiversity	-
Biological	Biologically produced goods, for example food
Bonobo Alive	A nature conservation foundation that is supported by Ouwehands Zoo Foundation
Building	A building, and the building of something
Bush	Ecodisplay of Burgers' Zoo
Carbon credits	-
CCRCGP	China Conservation and Research Center for Conservation of the Gaint Panda; a nature conservation foundation that is supported by Ouwehands Zoo Foundation
Central America	Location of Belize
Certificate	-
Cleaning	-
Climate compensated	-
Club van Elf	Dutch organization of day attractions that cooperate
CO2 emissions	-
Collaboration	-
Communication	-
Concentrated feed	-
Cooperation	-
Create awareness	-

CSR	Corporate social responsibility
Deer	-
Degradable materials	-
Demands	-
Disadvantage	-
Donations	-
Duurzaam Gastvrij	A Dutch organization that tests whether companies are sustainable; give out sustainability certificates
E-waste	Electric waste
EARS	European Alliance of Rescue Centres & Sanctuaries; part of a network of organizations that protect bears; a nature conservation foundation that is supported by Ouwehands Zoo Foundation
EAZA	European Association of Zoos and Aquaria
Ecodisplays	Animal enclosures of Burgers' Zoo
Ecosystem	-
Ecotourism	Sustainable way of tourism
Education	-
EEP programs	Programs for nature conservation regarding zoos
Electric cars	-
Enclosure	-
Energy management	-
Energy reduction	-
Entertainment	-
Environmental impact	-
Equity	Equal costs and benefits between humans and non-humans
Ethical	Fair and equal behavior
European	-
Ex-situ	Nature conservation in zoos
Expertise	-
Fairtrade	-
Financing projects	-
Fish	-
Fishing	-
Flower meadows	-
Food	-
Food chain	-
Food management	-
Foundations	-
FSC-certified wood	Sustainable wood
Function	Function of zoos
Future for Nature	Nature conservation organization supported by Burgers' Zoo
GG	Globe Guards
Giraffe	-
Global	Worldwide
Goals	Goals of zoos regarding nature conservation and sustainability;

	motivations of zoos regarding nature conservation and sustainability
Goud	Gold
Governments	-
Green roof	-
Greening	-
GreenKey	An European/ Dutch organization that tests whether companies are sustainable; give out sustainability certificates
Green Team	A team in Burgers' Zoo who assess the sustainability of Burgers' Zoo and future sustainability initiatives of Burgers' Zoo. Mandated by the Duurzaam Gastvrij certificate.
Guides	Guides and volunteers of zoos that educate and guide people through the zoo
History	Historical facts about zoos
Homogeneity	The same
Horeca	-
Human-animal conflict	-
IABES	International Association of Butterfly Exhibitors and Suppliers, an organization that is supported by WILDLANDS
IBA	Internal Association for Bear Rescue & Management; part of a network of organizations that protect bears; a nature conservation foundation that is supported by Ouwehands Zoo Foundation
Illegal activities	-
In-situ	Nature conservation in the wild
Information sign	-
Initiatives	Nature conservation, education or sustainability initiatives
Innovation	-
Insect hotel	-
Insects	-
Interactive	-
Internal motivation	International motivation of a zoo to do something, or in general, the motivation of a zoo
Investing	-
IUCN	International Union for Conservation of Nature and Natural Resources; a nature conservation foundation that is supported by Ouwehands Zoo Foundation; part of a network of organizations that protect bears
Key positions	Important employee positions within a zoo
KMVK	Stichting Keurmerk Milieu Veiligheid en Kwaliteit; a certificate that indicates whether an organization is a responsible entrepreneur
Kukang Rescue Program	a nature conservation foundation that is supported by Ouwehands Zoo Foundation

Leading	Being a leader in something; or others taking an example of them
LED	-
Level endangerment	How threatened a species or place/ ecosystem is
Lobbying	-
Local	Local people or ecosystems
Locally produced	Goods that are locally made
Lucie Burgers Stichting	Foundation created by Burgers' Zoo to support research
Management	-
Manatees	-
Mandated regulations	-
Mangrove	Ecodisplay of Burgers' Zoo
Mangrove trees	-
Meetings	-
Milieu barometer	An instrument to measure energy and water use to estimate the environmental impact/ CO2
Mistreatment	-
MSC-certificate	Certificate for sustainable fishing
MVO	Maatschappelijk verantwoord ondernemen
National	-
Native	-
Natural	-
Nature conservation	-
Nature conservation activities	-
Nature Planet	Nature Planet is an organization that is supported by Ouwehands Zoo Foundation
Network/ organization	-
NVD	Nederlandse Vereniging Dierentuinen; Dutch organizations of Dutch zoos
Ocean	Ecodisplay of Burgers' Zoo
Organic	Organic way of producing
Ouwehands Zoo Foundation	A foundation created by Ouwehands Zoo Foundation
Palm oil free	Palm oil free products
Panter Plaza	Building in Burgers' Zoo
Paper	-
Peeze	(sustainable) Coffee brand
Plan International	A foundation that is supported by Ouwehands Dierenpark and WILDLANDS
Plastic cups	-
Poaching	-
Polar Bears International	A foundation that is supported by Ouwehands Dierenpark and WILDLANDS
Population management	-
Presikhaaf University	An initiative of Burgers' Zoo to support local children
Prevent wildfires	-
Pro Natura	An organization that is supported by Ouwehands Zoo Foundation
Project location	-

Protection nature	Protecting of nature, including animals and ecosystems
Public transport	Public transport and transportation in general
Rays	-
Recycling	-
Refillable	-
Rehabilitation facilities	-
Reintroduction programs	-
Renewable energy	-
Reproduction program	-
Research	-
Responsible use	-
Retail	-
Re-usable	-
Rhino	-
Salonga National Park	An ecosystem protected by Ouwehands Zoo Foundation and Bonobo Alive
Save the Rhino International	An organization that is supported by WILDLANDS/ WNEF
SDG 14	Sustainable Development Goals about Life under Water
Self-sustaining	-
Sharing knowledge	-
Shelter	-
Social	Maatschappelijk; for the community/ country/ world
Solar panels	-
South Africa	Project location
Souvenirs	-
Soy free	Soy free goods
Sphenisco	An organization that is supported by Ouwehands Zoo Foundation
Stakeholders	-
Stimulate behavior	-
Sungai Wain Protection Forest	An ecosystem protected by Ouwehands Zoo Foundation and Pro Natura
Supporting	-
Sustainability	-
Sustainable materials	-
Sustainable sourcing	-
The Red Panda Network	An organization that is supported by Ouwehands Zoo Foundation
The Wanicare Foundation	A foundation that is supported by Ouwehands Zoo Foundation
Transparency	Transparent communication with visitors/ stakeholders
Tropical coral reef	-
uMkhuze Game Reserve	An ecosystem protected by WILDLANDS/ WNEF
Universities	-
Vegan	-
Vegetarian	-

Viswijzer	An app that indicates sustainable fishing/ fish for consumers
Vultures	-
Warmte-koude-opslag (WKO)	A sustainable way of heating buildings
Waste management	-
Waste reduction	-
Waste separation	-
Water management	-
Water reduction	-
Water use	-
WAZA	World Association of Zoos and Aquaria
WFO	Waste Free Oceans; an organization supported by WILDLANDS
Wildlife	-
WNEF	A foundation created by WILDLANDS
Wood	-
Work clothing	-
Yanesha Indians	Local farmers of coffee beans

5. Types of animals in nature conservation projects of the ZOOS

Ouwehands Dierenpark		WILDLANDS		Burgers' Zoo	
Animal	Type of animal	Animal	Type of animal	Animal	Type of animal
Hornbill	Birds	Polar bear	Mammal	Asian elephant	Mammal
Warthog	Mammal	Rhino	Mammal	Vulture	Birds
Vulture	Birds	Elephant	Mammal	Mangrove/ mahonie trees	Plants
Giant panda	Mammal	Tortoise	Reptile	Manatee	Mammal
Red panda	Mammal			Deer	Mammal
Loris	Mammal			Fish	Fish
Bear	Mammal			Coral	Marine invertebrate
Polar bear	Mammal			Ray	Cartilaginous fish
Penguin	Bird			Rhino	Mammal
Elephant	Mammal			Giraffe	Mammal
Bonobo	Mammal				

