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**The role of zoos and aquariums in today's society: their  
legitimacy in the eyes of the public and their role in  
conservation and education**

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## **RINGRAZIAMENTI**

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## **ABSTRACT**

After years of being considered as mere places of entertainment and fun experiences, today zoos and aquariums' conservation and education roles are more important than ever.

In an Era scarred by a global climate crisis, characterized by biodiversity loss and habitat deterioration, zoos and aquariums have the means to reach out to as many people as possible, with varying degrees of knowledge, and open their eyes to this extreme situation.

This study was prompted by the necessity to act on the misunderstandings and miscommunication surrounding zoos and aquariums, and, therefore, by the importance to work on more innovative and clearer communication strategies. Therefore, the hope for the future is the creation of systems able to reach a wide spectrum of potential visitors, to educate them on the life and mission of these institutions, and to provide an array of learning opportunities.

After thorough research and analysis of varying scientific literature, this study was divided into different chapters: first, it is provided a description of the meaning of zoos and aquariums; secondly, the many roles and goals of these institutions are observed; then, the relationship between these institutions and the general public is explored, in particular how zoos and aquariums, and their legitimacy and roles, are perceived by today's society. Also which role mainstream media play is taken into account. Finally, it is suggested that zoos and aquariums try and make themselves more attractive to visitors and more interactive, and the possible ideal of a zoo is proposed.

The findings show that, even though the majority of zoogoers visits zoos to enjoy quality time with friends and/or family, they still value and support conservation and education efforts, and believe conservation to be the most important role of zoos. The findings also suggest how the work of these institutions in the eco-sustainability field may influence eco-friendlier actions and behaviours of both visitors and the general public towards the natural world.

As a consequence, since the desire of many visitors to be more involved in the life of these institutions clearly emerges from this study, suggestions for accomplishing this result are discussed.

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## **1: INTRODUCTION**

Zoos and aquariums are institutions with important social value and various roles, goals and missions, all intertwined: conservation and protection of wild species and wild habitats; education of the public about animals' biologic, physical and psychological characteristics, their natural habitats, and their behaviour; entertainment, by providing visitors with fun and unique experiences; research, which is essential for a better understanding of the animals held by these facilities, in order to better care for them.

However, zoos and aquariums often get misunderstood by the general public, and therefore negative perspectives and questions about their legitimacy arise. Animal rights' groups and activists tend to exaggerate negative stereotypes about these institutions, describing them as prisons where the animals get mistreated.

On the other hand, a large part of society sheds a positive light on the work of zoos. These people happily visit zoos and aquariums as places where to spend their leisure time, sharing quality experiences with family and/or friends; some visit zoos in order to find quiet and peace and thus to connect with the natural world; also, many visitors are just fascinated by wild specimens and thus want to learn more about their needs and wants.

Besides, this thesis wants to present the great potential that zoos and aquariums show in educating the general public about environmental issues, in order to fight against the climate crisis our planet is facing, and thus to lay out the huge role they play in suggesting eco-friendlier behaviours that might reduce or mitigate environmental harm.

Moreover, for many people the knowledge acquired during the visit may fade with time, while, with the appropriate resources available, zoos and aquariums could keep visitors posted on new learning experiences and initiatives, therefore offering a long-term learning outcome.



Therefore, zoos and aquariums should also widen their communication techniques and how they approach themselves towards the general public. They have the means to reach out to as many people as possible, whether at their homes with letters, brochures and booklets; on their cell-phones with texts and emails; or on their computers thanks to websites and online forums.

Theoretically, with the appropriate resources and means, zoos and aquariums have the chance to become essential institutions for society's education about the natural world, and safe housing environments for animals with the highest standards of care.

## **2: PERCEPTION AND DEPICTION OF ZOOS AND AQUARIUMS**

### **2.1 The role of zoos and aquariums in a changing world**

#### **2.1.1 What are zoos and aquariums?**

The term “zoo” is the short form for “Zoological Garden”, which is a facility where wild animals are kept in enclosures for public display.

Or, as the *Oxford Dictionary* dictates, a zoo is “a place where many kinds of wild animals are kept for the public to see, and where they are studied, bred and protected”.

However, zoos haven’t always been places where animals were studied and protected. As a matter of fact, the first zoos ever created were private collections for the wealthy to show off their power, in complete disregard of animal dignity and well-being.

With time, zoos became much more popular, and more importantly, public. The model of the modern zoo was structured in the 18<sup>th</sup> century, the Age of Enlightenment, during which science, reason and logic were the ideals supposed to guide society.

Still, these facilities were quite rudimentary, all concrete buildings and no trace of wilderness whatsoever. Often, animals were kept in small display areas, with as many species as space would allow.

The first ever modern zoo was opened in Paris in 1793, even though it was accessible only to aristocrats and the King and Queen of France.

In 1828, another important zoo was inaugurated: The London Zoo. This zoo was thought only for scientific study and research, and exclusive for members of the Zoological Society. It was only in 1847 that the London Zoo became public.

Over time, zoos and aquariums have evolved in various ways, developing into different types of institutions.

Today, we see many different kinds of “zoos”:

- a) There are “Urban Zoos” found in large cities, often situated in historical buildings; and “Suburban Zoos”, which, on the other hand, being just outside of the city, are provided with much more territory and thus provide much more natural habitat enclosure design choices, allowing a complete “landscape immersion”.
- b) There are “Aquariums”, which are large collections of aquatic animals and plants, recreating entire ecosystems. Capacious aquariums can include also specimens of sharks, otters, seals, penguins, dolphins and orca whales.
- c) There are “Safari Parks” where visitors can drive their own cars, or be driven by keepers, to see exotic wildlife, living in large, enclosed areas.
- d) There are “Game Reserves” that are large swaths of land where animals are able to roam free and are protected from poachers and illegal hunting.
- e) Finally, there are “Petting Zoos”, that is, areas often situated within the zoo itself, where visitors, both adults and children, can feed and pet domesticated species, such as goats, piglets and rabbits.<sup>1</sup>

### **2.1.2 Roles, vision and missions of modern zoos and aquariums**

In today’s society, zoos are cultural institutions with social value, which share specific, recognized and accepted roles and goals, all inter-related:

1. Education: zoos offer many opportunities to visitors to learn about wild animal species, their needs, their natural habitats, and the environmental issues threatening them. This informal, free-choice kind of learning can sometimes be more efficient and effective than a formal education context. Zoos use many different kinds of learning strategies and techniques. Besides zoo staff and volunteers, who guide visitors and present each enclosure, throughout the zoo much labelling can be observed. Labels show scientific

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<sup>1</sup> <https://education.nationalgeographic.org/resource/zoo/>

information, such as an animal's name, species and genus, its native geographical location and range, and the threats it may face in the wild.<sup>2</sup>

However, studies indicate there is a variety of methods with which a zoo can transmit knowledge in alternative and more innovative ways:

interesting stories and fun facts about animals can connect zoogoers to the animals; poetry may facilitate a sense of discovery and the alignment of feeling and learning; substitution strategies could be employed, in which messaging suggests visitors more environmentally sustainable behaviours that can reduce and mitigate problematic harm to the natural world.

All these strategies are studied to effectively transmit scientific knowledge about wildlife, but also to create relational bonds between human and non-human animals, so that people feel the need to act in order to protect and preserve nature.

2. Conservation: nowadays considered by the general public a zoo's most crucial mission, it consists in the protection of wild species and spaces, in order to mitigate biodiversity loss (often at the hand of humans) for current and future generations. It also consists in species and/or habitat restoration; research and monitoring for policies and management, in order to impact legislation and future practice; and of course promoting conservation knowledge, attitudes, values and behaviours.

Over the years, research has observed that conservation-related behaviours involve empathy, motivation, decision-making, and development of new social norms. This led to the foundation of a new science field: conservation psychology, which states that individual attitudes (the psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour), knowledge, and motivations can lead to more environmentally protective and sustainable society-level norms.<sup>3</sup>

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<sup>2</sup> Rob Ballantyne & Jan Packer, (2016), *Visitors' Perceptions of the Conservation Education Role of Zoos and Aquariums: Implications for the Provision of Learning Experiences*

<sup>3</sup> Fraser J, Switzer T, (2021), *Ontology, The Social Value of Zoos*

Therefore, zoos have the great potential to encourage visitors to reconsider their own role in environmental problems and recognize themselves as part of the solution.

Moreover, zoos contribute to and finance many in-situ conservation projects: this means acting directly on the native natural environments of animals by creating habitat preservation projects, in-situ (in an animal's natural habitat) and ex-situ (at the zoo) breeding programs in order to preserve and repopulate endangered species, and by providing educational tools to inform and educate the local populations on how to protect their ecosystems.

3. Recreation and entertainment: zoos shall offer zoogoers involving, enjoyable and fun experiences through a process of “edutainment”<sup>4</sup>, in which engaging and stimulating activities are designed to accelerate science-related learning. Besides, positive experiences often result in heightened awareness of, interest in, and empathy for animals, which can lead to increased conservation efforts in order to protect those species.

Moreover, many visitors choose to spend their leisure time at the zoo in order to enjoy the company of family and friends. It has indeed been observed that many parents take their children to the zoo as a way to strengthen family bonds, to pass on personal values and to teach them respect and kindness towards the natural world.

Zoos can also be places where people, consciously or unconsciously, make social interactions, even with strangers, to explore different points of view and exchange ideas about environmental issues, to make unfamiliar or alternative narratives more understandable, or to reflect on human-animal relationships and interactions.

For example, zoo staff and educators can provide tactile experiences at touch tanks exhibits, or up-close experiences, in order to teach science-related concepts in a thrilling and interactive way, by also connecting visitors to animals and thus creating bonds.<sup>5</sup>

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<sup>4</sup> Fraser J, Switzer T, (2021), *Pleasure*

<sup>5</sup> Fraser J, Switzer T, (2021), *Connectedness*

4. Science and Research: zoos have many scientific roles, from biology and genetics, to reproduction and physiology, and behavioural science. All these science fields are essential to understand many of the problems that not only threaten the natural world but also human society, and can provide assistance in management and conservation, and in solving human medical problems. As a matter of fact, veterinarians, biologists, and other professionals, besides treating animals, contribute to the health of humans with strategies of disease surveillance, and control, prevention and elimination of zoonoses (diseases that can be transmitted from animals to humans, and vice versa).<sup>6</sup> Indeed, research on animals has been incredibly relevant during the COVID-19 pandemic, thanks to all the knowledge gathered about animal biology and physiology, and human-animal interactions. In particular, zoos have been trustworthy centres of information to the general public, and thus had great impact in dispensing information about scientific valid and safe behaviours and practices.

To show how intertwined these roles are, let us think of how much conservation efforts depend on research; without scientific knowledge, professionals would not be able to understand animals' physical and psychological needs, and, therefore, could not care and provide for them, and especially would not know how to preserve and protect wildlife and nature.

But at the same time, research could not be possible without resources, the kind of resources that come from zoos incomes, and thus from visitation rates and popularity, private donations, and public funding.

### **2.1.3 The social role of zoos in the fight against climate change, biodiversity loss and habitat deterioration**

As trusted cultural institutions with an important social role, zoos also might have a huge impact in the ongoing fight against the climate change crisis.

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<sup>6</sup> Titilayo O. Olukole & Olukole Samuel Gbadebo, (2008), *Patterns of Visits and Impacts of Zoo Animals on Visitors*

Zoos can provide the public with some “climate literacy”, which is an understanding of an individual’s influence on climate, and the climate’s influence on society. The relationship society has with the climate is studied by “conservation psychology”, which is the scientific study of the reciprocal relationships between humans and the rest of nature, with a particular focus on how to encourage conservation of the natural world.<sup>7</sup>

In particular, a Yale project on climate change communications and a George Mason University Centre for climate change communications, the “Global Warming’s Six Americas” study provides a baseline to understand the general American public’s attitudes about global warming, and builds a foundation for effective communication.<sup>8</sup>

This study profiled the American public into six different segments, based on attitudes and behaviours regarding the climate crisis:

- 1) Alarmed: respondents already participate in conservation actions and see the value in doing more; they enjoy talking to others about global warming; they tend to perceive themselves as highly knowledgeable about the causes and effects of global warming.
- 2) Concerned: like the previous segment, respondents also take action in conservation efforts; they are less likely to share narratives and to dialogue with others; and they believe they have a fairly high knowledge level about global warming.
- 3) Cautious: respondents perceive themselves as having a low degree of global warming knowledge and feel the need to learn more; they show a moderate trust in zoos as sources of global warming information; they do engage in some conservation actions.
- 4) Disengaged: respondents do not know much about global warming but do not tend to devote attention to global warming information; they do not

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<sup>7</sup> Lisa-Anne DeGregoria Kelly, Jerry F. Luebke, Susan Clayton, Carol D. Saunders, Jennifer Matiasek & Alejandro Grajal, (2014), *Climate Change Attitudes of Zoo and Aquarium Visitors: Implications for Climate Literacy Education*

<sup>8</sup> Reference 7.

strongly trust scientists, environmental organizations as sources of global warming information.

- 5) **Doubtful:** respondents show low average ratings for trust in zoos and aquariums as sources of global warming information, but tend to trust scientists and family or friends; they believe global warming is caused by natural environmental changes.
- 6) **Dismissive:** this segment tends to think global warming is not happening, and they distrust any information sources about global warming, especially the mainstream news media.

After seeing the results of this study, zoos and aquariums presented their own large-scale survey, designed to gather information about zoogoers, in order to develop relevant climate literacy resources. This questionnaire included the same segmentation process used in the “Global Warming’s Six Americas” study, so to allow comparisons of climate change attitudes between zoo and aquarium visitors and the general American public.

Questionnaires were presented at 10 zoos and 5 aquariums, and a total of 3,594 forms were completed between July 1<sup>st</sup> - August 15<sup>th</sup>, 2011.

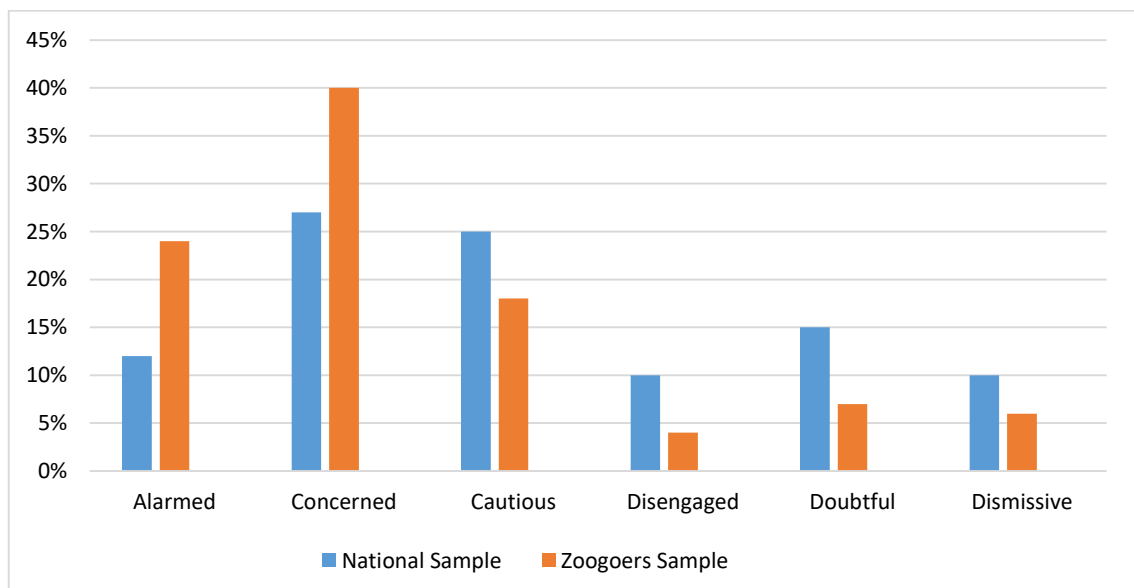


Figure 1. Graphic on the segmentation of zoo and aquarium visitors according to the Six Americas categories as compared to the national sample.



As observed in Figure 1, zoo and aquarium visitors clearly demonstrate stronger supportive responses to the topic of climate change.

The results of this study complements the “Global Warming’s Six Americas” profile information, and offer suggestions for resource development for each segment.

Above all, this study shows that zoos and aquariums present a tremendous opportunity for education about this issue, and for providing tailored climate literacy resources to both visitors and the general public with varying levels of engagement to the issue.

#### **2.1.4 Accreditation favours zoos and aquariums legitimacy**

During the 20<sup>th</sup> century, the roles of zoos became more and more relevant in the eyes of the public, especially conservation-related efforts. This is the reason why many zoos joined forces and uniformed standards of purpose and care. So, in the 1960s, the American Association of Museums founded the Association of Zoological Parks and Aquariums. Today, it has become the Association of Zoos and Aquariums (AZA)<sup>9</sup>, which operates worldwide.

Another relevant organization, which operates throughout Europe, is the European Association of Zoos and Aquariums (EAZA)<sup>10</sup>.

These institutions fall under the umbrella organization for the world zoo community: The World Association of Zoos and Aquariums (WAZA)<sup>11</sup>. WAZA provides guidance and support to zoos globally, integrating conservation activities into all aspects of their work, and ensuring that each institution brings its conservation efforts to a maximum level.

To be a part of one of these organizations, a zoo or aquarium must undergo a rigorous accreditation process, and once an accredited zoo, to be able to

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<sup>9</sup> <https://aza.org/>

<sup>10</sup> <https://eaza.net/>

<sup>11</sup> <https://waza.org/>

maintain that title, it has to endure ongoing reassessment on how effective and efficient its strategies are in order to achieve mission-related outcomes.<sup>12</sup>

This process, other than increasing zoo legitimacy in the eyes of the public, ensures that all accredited zoos and aquariums follow strict rules about animal care and welfare, enclosure design, training of zoo staff and volunteers, in order to provide high level performances and to maximize mission-related efforts and outcomes.

## **2.2 The public's point of view**

### **2.2.1 How people perceive zoos and aquariums**

Throughout their history, zoos and aquariums have frequently been questioned and judged by the general public. In some cases, it simply was about people with insufficient knowledge about the roles and missions of these institutions; however, in other instances, zoos had to deal with more tenacious and aggressive associations, such as various animal rights' groups and animal rights advocacy organizations.

These groups, still today, question the legitimacy of zoos and aquariums, challenging the benefits and the morality of captivity.

To them, animals are kept prisoners with lack of empathy or respect of any kind, and captivity is just a way for humans to assert their dominance over every other non-human living being. By doing this, zoos and aquariums are denying the inherent right for freedom every sentient being is entitled to (such as from captivity, from pain, fear and distress). However, even though in the wild, surely, animals can roam freely, they are not free from pain, fear or distress, given the presence of predators, parasites, diseases, and also habitat deterioration. Therefore, this position kind of loses its point.

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<sup>12</sup> Fraser J, Switzer T, (2021), *Preface*

Moreover, critiques state that captivity is a vile *escamotage* to exploit animals for commercial profit. Their accusation seems valid, given the presence of various merchandise and gift shops within zoos. However, it has been observed that visitors that buy from gift shops often look for tokens, objects that symbolize their visit to the zoo, which reminds them of the empathy they felt for the animals, the relational bonds they created, and because of this, they feel more pro-active towards environmentally sustainable efforts and behaviours.<sup>13</sup>

In the past 50 years, research has gathered information about new enrichment strategies and knowledge about animal welfare, in order to better care for the physical, psychological and social dimensions that constitute the life of an animal.

Zoos and aquariums have been making it clear to the general public that their main mission is to provide protection to wild species and spaces; to present zoogoers with entertaining and educational opportunities; and to ensure the health and improvement processes of the animals under their care.

As a matter of fact, in 2000, the AZA organization founded the Animal Welfare Committee, whose role is to apply new tools to continually improve the welfare of captive animals, and to provide the worldwide community with the highest standards of care.

### **2.2.2 The public's motivations for and priorities while visiting, factors contributing to overall satisfaction**

Over the past few years, many studies have been conducted in order to understand the public's perceptions of the roles of zoos and aquariums, what motivations bring people to visit zoos, what are their interests and priorities while visiting, and what prompts their satisfaction with the experience.

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<sup>13</sup> Fraser J, Switzer T, (2021), *Morality*

A study conducted across the United States, the United Kingdom, Canada and South Africa, was centred on understanding zoogoers' perceptions of the role of zoos and aquariums; their priorities for visiting the zoo or aquarium; their wildlife-related interests; and the factors contributing to visit satisfaction.<sup>14</sup>

In Figure 2, it can be observed how visitors consider conservation learning an important role of zoos and aquariums, feel the need to learn more about environmental issues and threats to wild animals, and their willingness to take action in order to protect and preserve wilderness.

However, they also believe zoos should be places where an individual may feel at peace and connected to nature, and also where fun experiences are offered.



Figure 2. This graphic shows the importance of conservation learning in visitors' perceptions of the role of zoos and aquariums.

<sup>14</sup> Rob Ballantyne & Jan Packer, (2016), *Visitors' Perceptions of the Conservation Education Role of Zoos and Aquariums: Implications for the Provision of Learning Experiences*

In addition to that, in Figure 3, we can notice how for zoogoers the top motivations for visiting a zoo are entertainment and social interaction opportunities; this means that spending quality time with friends and/or family is still a priority, though visitors recognize and support the zoo's role in conservation and they would like to see more educational activities.

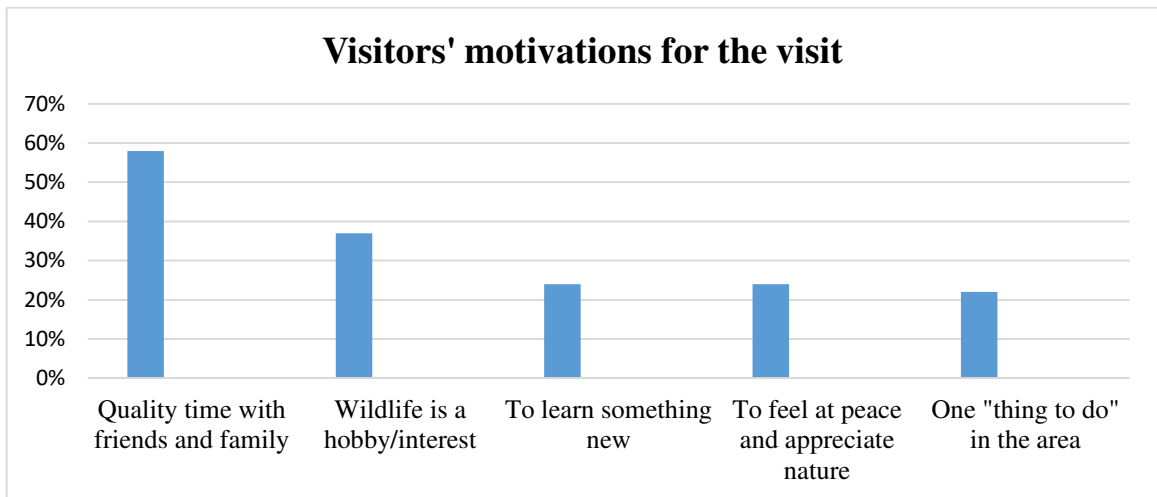


Figure 3. The chart describes the main motivations that bring people to visit zoos and aquariums.

In Figure 4, furthermore, it is shown what the factors contributing to visitors' satisfaction with the experience are, which makes us understand that satisfaction is directly connected with animal welfare concern. Therefore, the more zoogoers are allowed to interact with animals and to create relational bonds, empathizing with them, the higher the level of overall satisfaction.

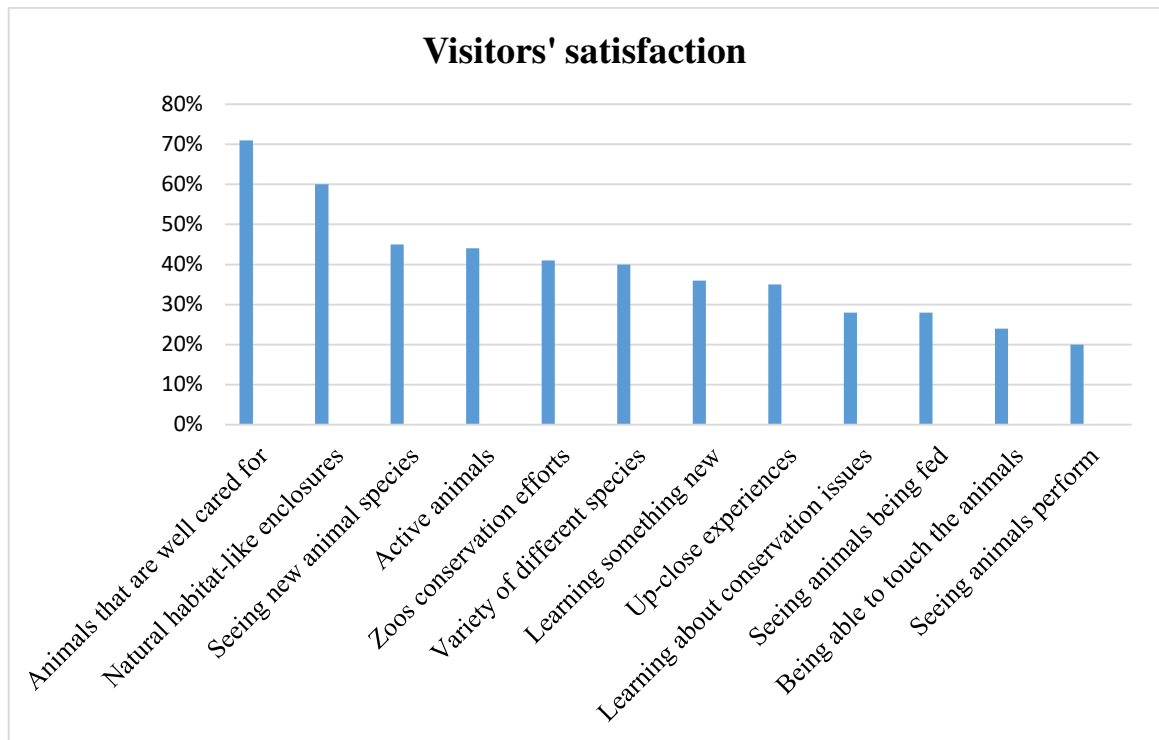


Figure 4. This graphic presents the experiences that influenced visitors' satisfaction with the visit.

### 2.2.3 How captive animals are perceived and the importance of environmental enrichment

Another important study for this thesis was conducted at the Edinburgh Zoo, in which two different sets of surveys were submitted to two very different samples of people. Indeed, the questionnaire was first completed by 200 street interviewees from the general public, and, subsequently, by 216 visitors from the Edinburgh Zoo.<sup>15</sup>

Both survey groups were questioned about their perceptions of captive animals and the roles of zoos in society.

Both study groups perceived the conservation role of the modern zoo as the most crucial one, followed by research, education, and, as the least important, entertainment.

<sup>15</sup> Louise S. Reade, Natalie K. Waran, (1996), *The modern zoo: How do people perceive zoo animals?*

Moreover, as observed in previous studies, both groups recognized as their main motivation for visiting the zoo spending quality time with family and/or friends.

Despite this preliminary harmony, some discrepancies arose when respondents were questioned about how well-kept and happy they perceived captive animals to be, and on the importance of environmental enrichment to the animals' welfare and well-being (Figure 5); also, enclosure design strategies were considered, which applied more naturalistic choices, in order to resemble the natural habitat of wild species as much as possible (Figure 6).

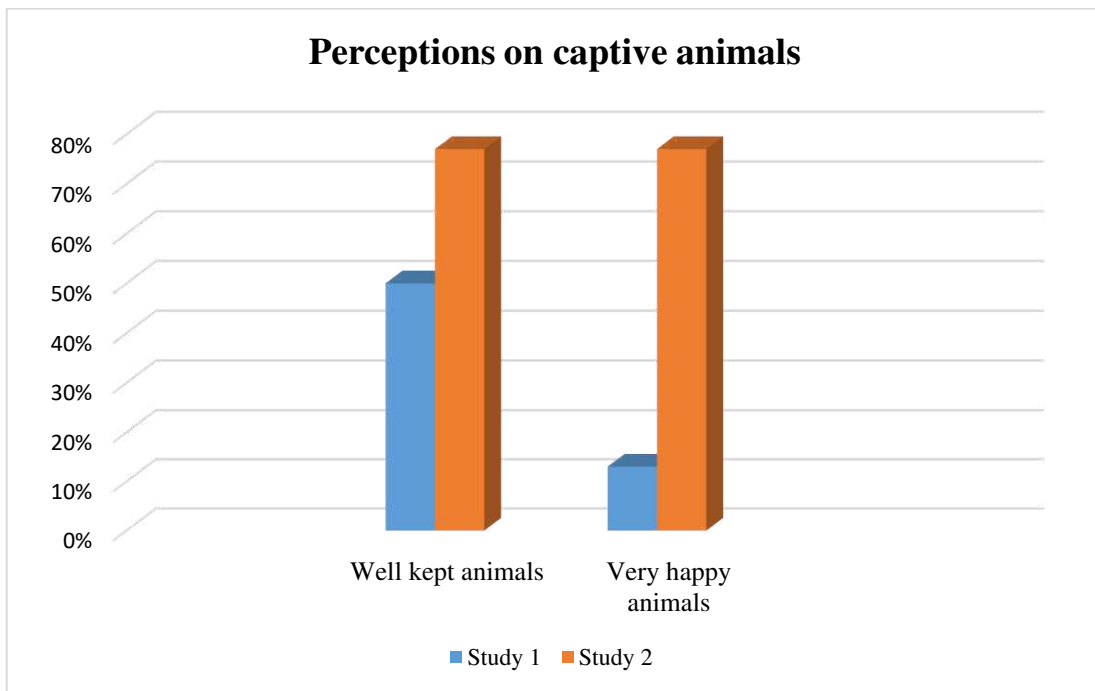


Figure 5. Comparison between Study 1 street respondents and Study 2 zoogoer respondents about how they perceive captive animals in zoo settings.

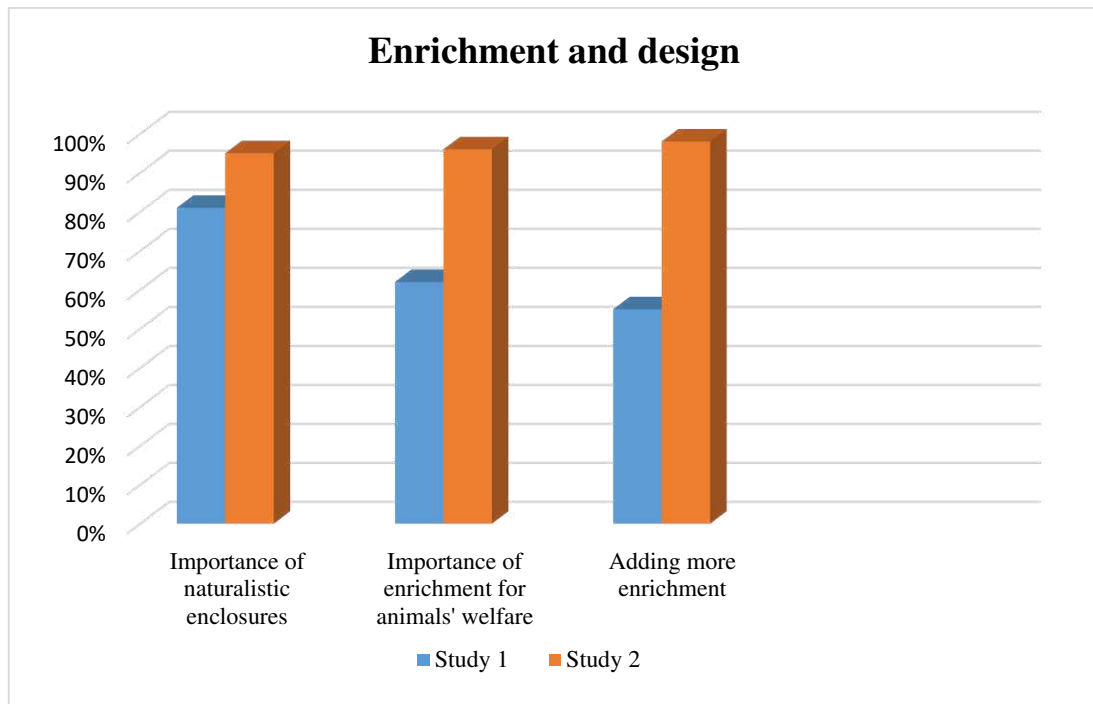


Figure 6. Comparisons between Study 1 street respondents and Study 2 zoogoer respondents about the perceived importance of environmental enrichment and enclosure design.

To sum up so far, let us reiterate the most important concepts discussed above.

Even though zoo and aquarium visitors do prioritize entertainment and social interactions as motivations for visiting these institutions, they recognize conservation and education as the most important roles of zoos, and strongly support research and conservation-related efforts, showing some willingness to adopt more environmentally sustainable behaviours.

Despite some opposition from animal rights' groups and activists, zoos and aquariums are perceived by the general public as legitimate and relevant organizations that fight to protect and preserve the natural world, and as valued sources of scientific information.

### 2.3 Media Framing

Mainstream media are a powerful tool, which is part of our everyday life and often guides its course, even if we probably do not even realize it.



As a matter of fact, mainstream media are able to shape people attitudes towards a particular topic, and their subsequent behaviours.

To better understand how this whole scheme works, it is necessary to explain the concept of *Framing*<sup>16</sup>. This is a writing and communication technique which consists in selecting certain aspects of perceived reality, making them much more captivating in a communicating text, in order to create and promote a specific and guided interpretation of the facts.

Therefore, if this framing technique is used to express negative perspectives, it is more likely to rise concern in the general public and also to set public agendas.

This is, more or less, what happened when, in 2013, a documentary for SeaWorld was released: *Blackfish*<sup>17</sup>.

*Blackfish* was a wake-up call for everybody, reporting animal welfare abuses and inappropriate living conditions for orca whales at SeaWorld. The aftermath caused widespread publicity and backlash from mainstream and social media, followed by crashing visitation rates to SeaWorld.

Besides, by using the framing strategy, some animal rights' groups tend to manipulate reality in order to achieve their goals: to discredit zoos and aquariums, their roles and their mission, to the eyes of the general public.

However, over the years, it has been observed that mainstream media tend to portray zoos and aquariums in a more positive perspective rather than a negative one.

This kind of information opens a wide discussion on the potential of zoos and aquariums to reach out the general public and educate them on their roles and goals. Indeed, zoos should be pro-actively engaging mass media and benefit from them as much as possible.

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<sup>16</sup> Lily Maynard, (2018), *Media Framing of Zoos and Aquaria: From Conservation to Animal Rights*

<sup>17</sup><https://blackfishmovie.com/about/> (Ibid.)

People often misunderstand the roles of the modern zoo; thus this is an incredible opportunity for this institution to transmit knowledge on a large-scale platform.

Sources of information may be magazines, scientific papers and books, newspapers, photography magazines (such as *National Geographic*, *USA Today*, *Science World*, *DVM Magazine for Vets*), but also social media and networks, documentaries and movies, and news channels.

Zoos and aquariums have so much to say and to show, and if used correctly, mainstream media can be a great asset to inform the general public, not just about the roles and goals, but about enclosure design strategies, environmental enrichment tools, in-situ and ex-situ conservation and education projects, staff and volunteers training and jobs.

Mainstream media could narrate the whole life of zoos and aquariums, connecting them to society in a way that has never been seen before and making them accessible to all and easy to understand.

### **3: MORE INTERACTIVE ZOOS AND AQUARIUMS**

#### **3.1 How zoos and aquariums can make themselves more attractive to the eyes of the public**

As observed in previous chapters, zoos and aquariums tend to present discrepancies between how they are perceived by society and what they truly represent.

Therefore, in order for zoos and aquariums to live up to their potential, they need strong strategies so to make themselves more attractive to zoogoers and potential visitors, and more interactive in order to become more accessible and reach as many people as possible.

As stated in chapter 2.2, visitors' levels of satisfaction with the visit are tied to their perceptions of animal welfare and well-being. Hence, in order to make themselves more attractive to the eyes of the public, zoos and aquariums need to invest more resources in enclosure design strategies; by mimicking the natural environment of wild species as much as possible, a more naturalistic enclosure is going to be not only more aesthetically pleasing for visitors, but will also connect zoogoers to wilderness and educate them about the native habitats of wild animals.

Besides, to appear more appealing, zoos and aquariums should also invest more efforts in environmental enrichment techniques. The provision of tools and toys gives more opportunities to see active, happy and well-kept animals, which will have a positive outcome not just on visitors but on animals as well, who will be able to recreate natural behaviours, which are clear signs of animal well-being.

Moreover, by offering up-close experiences or providing touch tanks, zoos and aquariums can surely attract many visitors, who cannot wait to be part of such thrilling and unique experiences. Indeed, for many people, this may be the only chance they get to be close to and connect with wild species.

### 3.2 Strategies to get people more interested and involved in zoo activities

In addition to that, zoos and aquariums need to widen their communication techniques, so to become more easily accessible and transparent to the general public.

As a matter of fact, zoos and aquariums should create their own websites, where potential visitors can find out about the animal species held there, what kinds of experiences the zoo offers and the services provided to visitors. Websites may also be a good way to inform potential visitors about the roles and projects of zoos and aquariums, about seminars and talks about conservation and environmental issues, and even suggest various organizations which support relief and preservation efforts in native wild habitats.

Research studies have observed that people who visit zoos and aquariums often would very much like to receive take-away materials after their visit, in order to be kept informed about learning opportunities, thus obtaining a long-term learning outcome.

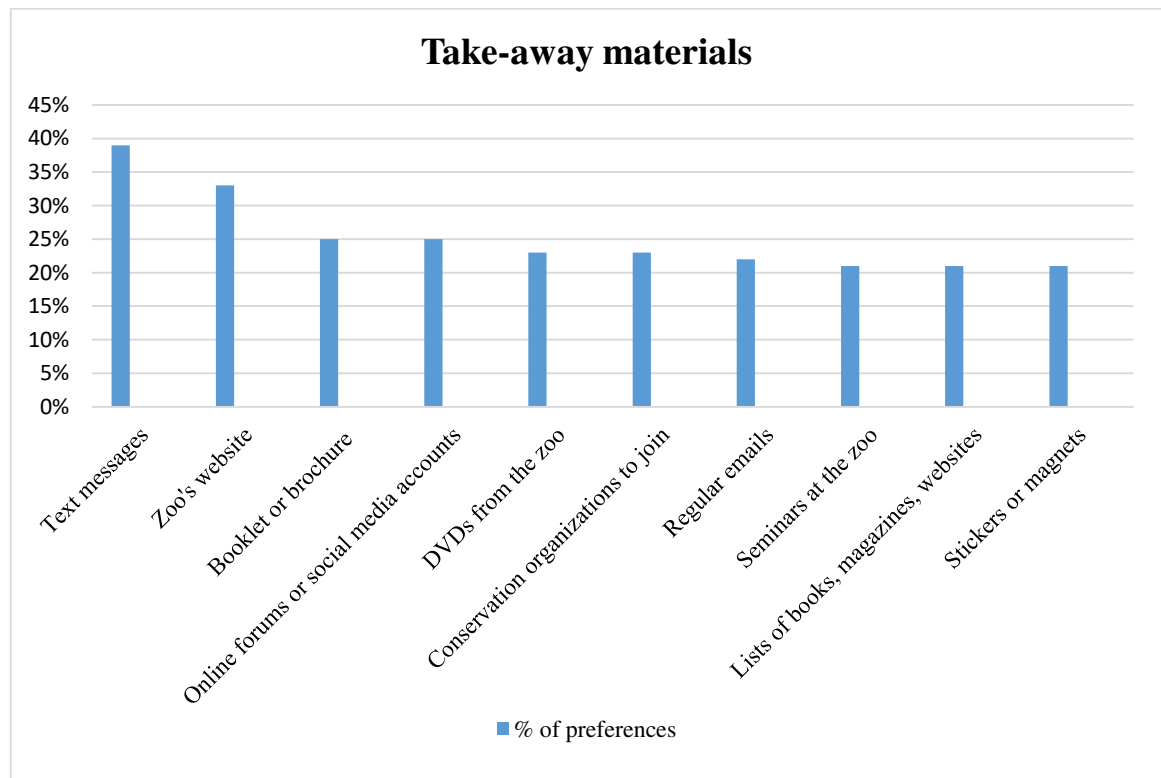


Figure 7. Visitors' preferences on take-away materials in order to continue learning after their visit.

As we can see in Figure 7, zoos and aquariums are presented with an array of possibilities on take-away materials.<sup>18</sup>

Text messages and emails could be a good way to keep people posted on activities, seminars and projects organized by zoos and aquariums.

Likewise, the creation of zoos' social media accounts (such as *Facebook*, *Instagram* and *Twitter*) could be a clever way to reach out even to adolescents and young adults, who would learn so much about the environmental crisis their generation will have to fight and live through, and thus be educated on environmentally sustainable actions and behaviour.

Furthermore, for zoos and aquariums a good idea would be to provide zoogoers with lists of suggestions about books, scientific magazines, websites, and online forums, so that they could delve into more specific topics and become more proactive.

To sum up, this chapter wants to provide zoos and aquariums with various suggestions about how to attract more visitors to their facilities, thus increasing visitation rates (and therefore income and resources), how to keep them informed and willing to continue learning even after their visit to the zoo, and how to encourage them to take action against environmental harm.

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<sup>18</sup> Rob Ballantyne & Jan Packer, (2016), *Visitors' Perceptions of the Conservation Education Role of Zoos and Aquariums: Implications for the Provision of Learning Experiences*

## **4: THE IDEAL ZOO OR AQUARIUM**

### **4.1 A sanctuary-like model**

This chapter wants to focus on how zoos and aquariums can change some of their policies and strategies, in order to appear more legitimate in the eyes of the public, thus winning over even activists and animal rights' groups.

This may happen if zoos start to follow a more sanctuary-like model.

Let us be clear, sanctuaries are very different institutions from zoos and aquariums; however, the values and ethics they share are of great relevance in giving animals as much dignity and well-being as possible.

Sanctuaries are facilities for temporary or permanent safe housing of animals of any kind, from farm animals, to pets, to wild and exotic species. They have very high standards of care and work hard to eliminate any potential stressor for their guests, so that they can live and behave as naturally as possible in a protected environment.

Sanctuaries do not behave as zoos and aquariums, meaning they are not open to the public, they do not have breeding programs and do not sell or trade any of their animals.

Sanctuaries' way of thinking and acting should lead the way to the foundation of the "ideal" zoo and aquarium.<sup>19</sup>

### **4.2 Appropriate environments and animals' welfare and dignity**

Zoos and aquariums shall therefore always provide their animals with appropriate environments: enclosure dimensions and design must always be species-specific, resembling the native habitats of animals as naturally as possible, and providing much environmental enrichment.

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<sup>19</sup> <https://sanctuaryfederation.org/about-gfas/what-is-a-sanctuary/>

Besides, animals should not be seen only as attractions, and deserve to be observed only when they feel like it, and, therefore, they must be provided with various hiding places where they can feel safe.

Another important aspect that sometimes people do not think of, is that the animals kept in a zoo should live in climate conditions similar to the ones of their natural habitats. Species native of very cold areas should be held by facilities situated in locations with similar climate; the same applies to species from very warm regions. No one shall have to see a polar bear kept in a zoo in some North-African state, or a lemur in some Alaskan facility.

Moreover, breeding programs in zoos and aquariums should be limited to essential conservation purposes, such as the repopulation of an endangered species or the reintroduction of a species in its natural habitat; it is not ethical to let cubs be born in captivity just so they can become attractions for zoogoers.

These changes in strategies may lead the way to more animal-friendly facilities with high ethical ground and with the highest standards of care.

## **5: DISCUSSION**

The main purpose of this study was to identify which roles modern zoos and aquariums play in today's society; how they are perceived by the general public; what motivates visitors to visit the zoo and what their interests and priorities are; what factors contribute to zoogoers' satisfaction with the visit; and how these institutions may evolve and modify some of their policies and practices in order to become legitimate, safe and trustworthy places in the eyes of everyone.

The findings of this study are that the general public considers zoos and aquariums as cultural institutions, museums, with relevant social value.

A loud and aggressive part of society, though, which includes animal rights' groups and activists, as observed in this study, is only focused on discrediting zoos and aquariums, picturing these institutions as places with lack of any respect and care for animals. However, research shows that the majority of society values the roles of zoos and aquariums and shares a positive perspective about their conservation and education efforts.

Research observed that today's society's main reasons and motivations for visiting zoos and aquariums are still entertainment and fun-related. Visitors want to spend quality time with family and/or friends; they indicate wildlife to be a hobby/interest; they feel the need to learn something new; they want to feel at peace and connect with the natural world; and in very few cases, visiting a zoo simply was something interesting to do in the area.

However, even though fun and social interactions encourage people to visit zoos and aquariums, visitors' perceptions of the roles and goals of these institutions are different; as a matter of fact, zoogoers strongly support conservation and education efforts, identifying conservation as the most crucial role of these institutions.

Indeed, when talking about the perceived roles of zoos, the public recognized them as sources of information about animals (about their biology, physiology, psychology and behaviour, their natural habitats, etc.); as places where to relax and enjoy nature; as sources of information about environmental issues



threatening the animals (such as habitat deterioration, biodiversity loss, lack of resources); as places where zoogoers are encouraged to take action and proactively protect wilderness; as places that help the public reflect on conservation issues, so that people can recognize their role as part of the solution; but also as places where fun and entertaining experiences are offered, and where visitors can admire rare and exotic species. Thus, these findings tell us that zoos and aquariums are primarily viewed as conservation and education institutions.

We also noticed that factors related to the overall visitors' satisfaction with the visit, only in few cases were tied to fun and thrilling outcomes, such as up-close experiences, touch tanks exhibits, and seeing the animals being fed or perform.

Mostly, overall satisfaction was directly connected with animal welfare concern. As a matter of fact, visitors were really interested in seeing well-cared for animals; enclosure design resembling the natural habitats of animals as much as possible; active and happy animals; and new species they had never seen before.

These results show us that zoogoers truly care for the animals' welfare and well-being, probably because during a zoo visit they create relational bonds with the animals, empathize with them, and therefore, visitors are naturally driven to better care for wilderness, and to willingly take action in conservation efforts in order to preserve the natural world and mitigate environmental harm.

This is the reason why zoos and aquariums also play an important role in the ongoing fight against the global climate change crisis.

This study observed how zoo and aquarium visitors, who strongly empathize and bond with wild animals, are much more likely to worry about environmental harm to their natural habitats and, therefore, to join conservation organizations and to engage in more environmentally sustainable behaviour; in opposition with the general public who might be more disengaged and have a lower knowledge degree level about this issue.

Furthermore, findings showed that visitors expressed the need for take-away materials after their visit, which can lead to long-term learning outcomes. These materials may include regular text messages and/or emails from zoos and aquariums in order to inform zoogoers about new zoo initiatives; websites where the public can look for zoos and aquariums' roles, goals and missions, the species held in the facility, services provided to the visitors; booklets or brochures handed right after the visit; the creation of social media accounts and online forums; lists of conservation and relief efforts organizations visitors could adhere to; hosting seminars and talks at the zoo about a wide range of topics; and also lists provided by the zoo, in which books, magazines, scientific papers are suggested so that visitors can delve into more specific issues.

However, research observed zoos and aquariums still have a long way to go in order to reach out to as many potential visitors as possible, thus improving and expanding their communication techniques, by taking advantage of mainstream media and framing strategies.

To sum up, this study wants to show that zoos and aquariums present a great potential to educate the general public about conservation and environmental issues, as accredited, legitimate and valued institutions trusted by society.

## 6: CONCLUSIONS

The findings of this study are important because they offer a critical analysis to understand the value and legitimacy of modern zoos and aquariums' roles and goals in today's society.

Other than for their entertainment function, nowadays zoos and aquariums play an essential role in conservation efforts; especially at a time scarred by the ongoing climate change crisis, these institutions may provide relevant educational opportunities in order to inform the general public about this issue, the environmental harm inflicted on wilderness (such as wild animals endangered with extinction, habitat deterioration and biodiversity loss), and, therefore, could prompt society to pro-actively engage in environmentally sustainable behaviour and take action to preserve the natural world.

The still existing discrepancies between their great potential and the way zoos and aquariums actually present themselves to the world can be solved through the creation of much easier and clearer communication, able to reach every potential visitor independently from their different degrees of knowledge.

Zoos and aquariums, therefore, need to exploit their communication strategies as much as possible, and if that is not enough they must create new ones.

They have to take advantage of the mainstream media, whose framing techniques can influence and shape people attitudes and behaviours; they need to make themselves available, and visible, on every social media platform; they should create their official websites, citing all relevant information about who they are, what they do and why, and how they do it, in order to avoid any possible misunderstanding; zoos need to reach people to their mobiles through texts and emails; they need to organize seminars at their location, so to educate the public about specific topics; they should provide take-away materials after the visits with more information about conservation organizations and issues.

Therefore, it can be said that zoos and aquariums should raise their voices as loudly as possible, so that everyone is able to hear their messages, even, and

especially, those who are doubtful and more distrustful, such as animal rights' groups and activists.

The modern zoos and aquariums play an essential role in today's society, but they shall evolve the way they approach the general public, in order to prove their value and legitimacy as trusted conservation and education institutions, and places with the highest ethical standards of care.

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