

Enhancing the Functionality and Accessibility of the Zoo Praha Website



Report Prepared By:

Christina Aube
Benjamin Bagley
Morgan Collins
Jack Hanlon
Sarah Spencer



Enhancing the Functionality and Accessibility of the Zoo Praha Website

An Interactive Qualifying Project

Submitted to the Faculty of

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfilment of the requirements for the

degree of Bachelor of Science

By:

Christina Aube

Benjamin Bagley

Morgan Collins

Jack Hanlon

Sarah Spencer

Date:

December 15, 2022

Report Submitted to:

Markéta Hoidekrová

Oliver Le Que

Zoo Praha

Advisors:

Melissa Butler

Kimberly Hollan

This report represents work of five WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, see <http://www.wpi.edu/Academics/>

Abstract

Zoo Praha, located in Prague, Czech Republic, is an internationally distinguished zoo that receives roughly 1.4 million visitors annually. Despite such acclaim, their current website is outdated, lacks translated English content, and is not fully accessible to individuals with disabilities. Our project goal was to provide guidelines to help Zoo Praha redesign their website, enhancing its functionality, improving web accessibility, and bolstering tourism. We achieved this by conducting observational research, distributing surveys, and analyzing content from other top zoo websites. The team developed guidelines and multiple webpage mockups for Zoo Praha to use while redesigning their website, focusing on organization, aesthetics, content, accessibility, and language accommodations.

Acknowledgements



From left to right: Melissa Butler, Kimberly Hollan, Oliver Le Que, and Markéta Hoidekrová

We'd like to extend a huge thank you to our advisors, Melissa Butler and Kimberly Hollan for their guidance throughout this project. They have committed an incredible amount of time and effort to providing us useful feedback and supporting us through any all challenges we faced. This project would not have been possible without them.

We would also like to thank our amazing project sponsor, Zoo Praha. Specifically, we'd like to thank Deputy Director of Public Relations, Markéta Hoidekrová, for giving us the opportunity to work at Zoo Praha on this project and marketing/social media manager, Oliver Le Que, for taking the time out of his busy schedule to meet with us weekly and provide us direction. As well as that, we would like to thank Oliver for providing us with the animal images presented in this report.

Meet the Team



From left to right: Benjamin Bagley, Jack Hanlon, Sarah Spencer, Christina Aube, and Morgan Collins

Benjamin is a 3rd year student from North Andover, Massachusetts majoring in Computer Science. He is also the treasurer of the WPI chapter of Sigma Alpha Epsilon.

Jack is a 3rd year student from Newburyport, Massachusetts majoring in Computer Science. He is also the treasurer of the WPI chapter of Lambda Chi Alpha.

Sarah is a 3rd year student from Sharon, Massachusetts majoring in Industrial Engineering and minoring in Computer Science. At WPI, she is a tour guide and sits on the student advisory council for the Dean of the Business School.

Christina is a 3rd year student from Douglas, Massachusetts double majoring in Robotics Engineering and Electrical and Computer Engineering. At WPI, she is involved in SPARC and The Alliance.

Morgan is a 3rd year student from Hudson, Massachusetts majoring in Architectural Engineering. She is also on WPI's Varsity Indoor and Outdoor Track and Field team, specializing in throws.

Executive Summary

As the third largest funder of global conservation and a significant provider of numerous societal benefits, zoos and aquariums play a vital role in a community's economy and culture (*Visiting a zoo this week?* 2020). Increasing tourism for these institutions has proven to be beneficial for fostering human-animal connections, promoting a life-long involvement in conservation, and contributing to the economies of nearby communities (Nekolný, 2018).

As access to the internet grows, tourists are more likely to look online when choosing destinations, thus, having a successful website can help organizations reach a larger audience of visitors (Jakovljevic, 2010). However, even with the widespread use of the internet in travel and tourism industries, access to information remains the greatest problem people experiencing disabilities face (Singh et al., 2021). As such, the 2022 WebAIM report—which analyzed the accessibility of one million websites—found that roughly 97% of homepages analyzed had detectable violations of web accessibility guidelines. This statistic demonstrates the demand for accessible websites that can be used by all demographics. Beyond being accessible to people experiencing disabilities, successful websites should also be aesthetically pleasing, have an intuitive design, and present interesting content. Without these aspects, any user—whether or not they are experiencing a disability—may be deterred from the site.

Zoo Praha, located in Prague, Czech Republic, receives about 1.4 million annual visitors and houses 685 different species (“The Zoo in numbers,” n.d.). Additionally, Zoo Praha heavily focuses on both in-situ and ex-situ conservation and even worked

with Mongolia to repopulate the Przewalski horse (“We help them to survive,” n.d.). In 2021, the zoo received the highest award for their efforts from the World Association of Zoos and Aquariums (WAZA): the WAZA Conservation award (“The Highest Award for Prague Zoo,” 2021). Despite all of this, Zoo Praha's website is visually unappealing (see Figure 0.1), does not fully comply with internationally adopted web accessibility guidelines, and has major content discrepancies between their Czech and English pages.

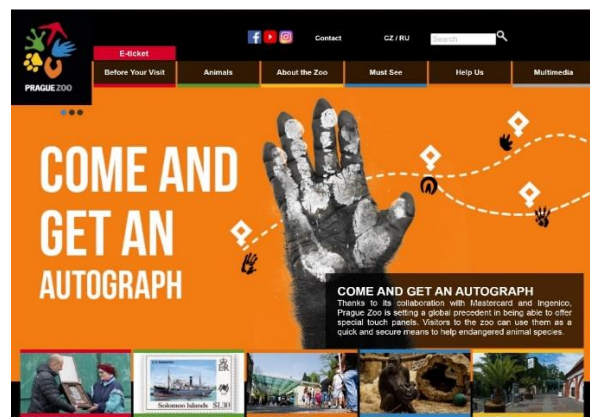


Figure 0.1 Zoo Praha's Homepage

The goal of our project was to develop guidelines and multiple webpage mockups to help Zoo Praha redesign their website, thus, enhancing its functionality, improving web accessibility, and bolstering tourism. We accomplished this goal through four objectives: identifying design issues, determining “top zoo content”, identifying accessibility issues, and recognizing discrepancies in content and translations between the Czech and English page of the Zoo Praha website. As seen in Figure 0.2, the team executed numerous methods to accomplish each objective.

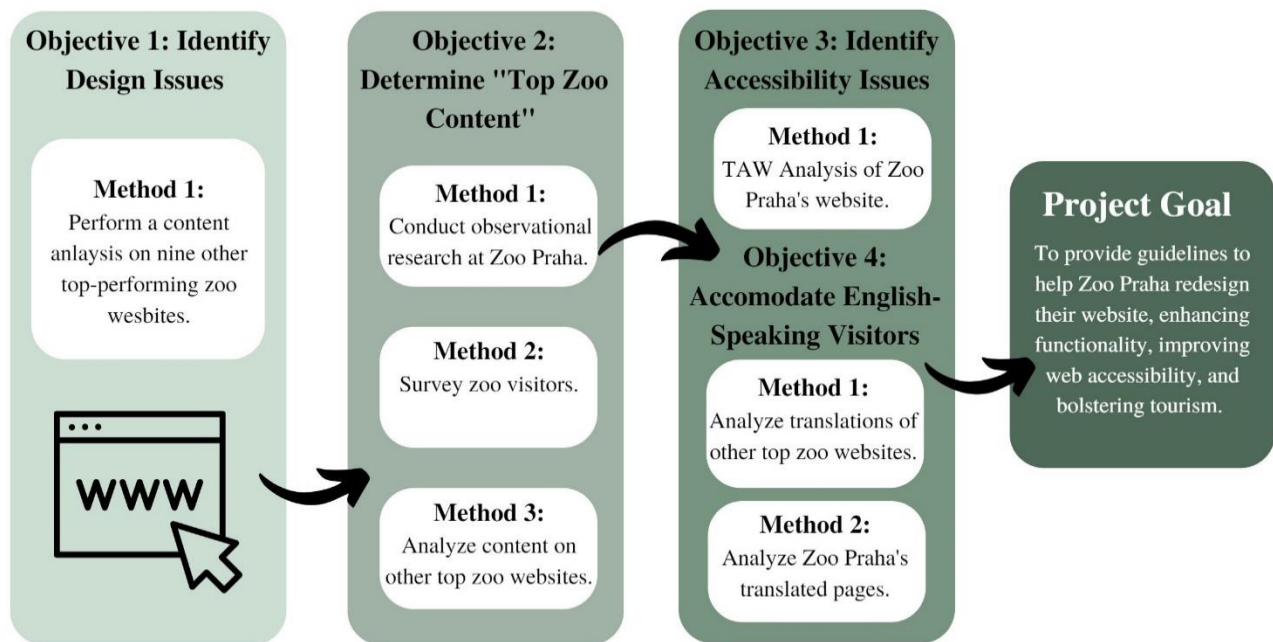


Figure 0.2 Infographic describing team’s objectives and methods

Identifying Design Issues

To determine design issues on the Zoo Praha website and discover other useful design strategies, our team analyzed the websites of nine other top-performing zoos in Europe and recorded the most common design practices amongst them. We then used these design practices to analyze Zoo Praha’s website and identify its most prominent issues.

Our content analysis revealed that the visual presentation and navigation of Zoo Praha’s website needed the most improvement. The website currently uses outdated graphics and a convoluted navigation system that we aimed to enhance through our deliverables.

Determining Popular Zoo Exhibits

To identify what animals or exhibits were most popular with zoo visitors, we conducted observational research at Zoo Praha, noting the duration visitors stayed and how many visitors took photos of animals. After observing 13 different exhibits, the team determined that visitors spent the longest at the gorillas, polar bears, and kangaroos. However, the results also showed that crocodiles, Tasmanian devils, wombats, and shoebills were the most photographed exhibits. From these results, we concluded that in addition to displaying popular animals such as the gorillas, Zoo Praha should also promote less commonly known animals, such as the gharial crocodiles, to attract visitors.

Surveying Zoo Praha Visitors

To validate the findings of our observational research, the team also distributed QR codes to a survey which asked visitors about their experience at the zoo. From this survey, we aimed to collect data about visitors' purpose for coming to the zoo, what they used the website for (if they used the website), and their favorite animals.

The results showed that the vast majority (76%) of respondents came to the zoo for entertainment. Furthermore, we concluded visitors use the website for mostly logistical information such as opening hours or purchasing E-tickets. However, visitors did still use the website for animal information and content. As shown in Figure 0.3, the survey results indicated that the top five most popular exhibits at Zoo Praha were: elephants (72%), gorillas (69%), polar bears (45%), penguins (41%), and lions (38%).

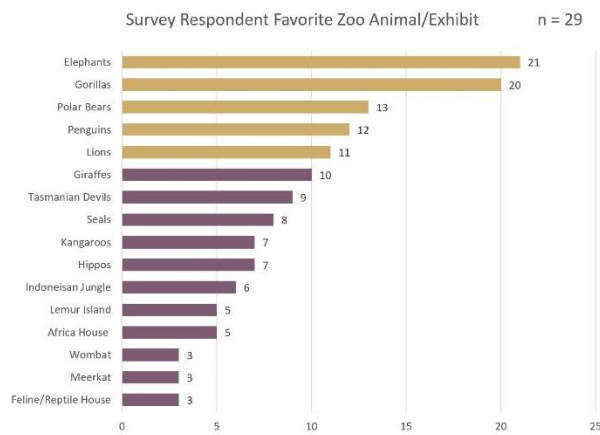


Figure 0.3 Favorite exhibit survey results

“Top Zoo Content” Analysis

To gauge what visitors would like to see on the website, our team analyzed nine top-performing European zoo's websites. In this analysis, we recorded the content found on the homepage of the site as well as in the subsections, then grouped the collected information based on its primary purpose and focus. From these groups, two categories were concluded—entertainment-related content and educational content—as well as four subcategories—animal content, human-education content, conservation content, and zoo services content.

The team determined that animal content was most commonly found on homepages with eight out of nine zoos (89%) dedicating an average of 65% of their homepage to this type of content. On the contrary, results revealed that conservation content was least commonly found on the homepages, with less than 5% of all content being conservation related.

Zoo services appeared most commonly in website subsections with six out of nine zoos (67%) dedicating an average of 51% of the total content in their subsections to zoo services. However, only 15% of the total content found within the subsections being dedicated to conservation as evidenced by mission statements, partnered wildlife organizations, and sustainability information.

Identifying Accessibility Issues

To identify where on the current website Zoo Praha has accessibility issues, we used an online accessibility assessment tool, Test de Accesibilidad Web (TAW) which analyzed the website's adherence to the internationally adopted Web Content Accessibility Guidelines. We ran both pages of Zoo Praha's website, finding 15 problems with 166 warnings on the English page and 41 problems with 227 warnings on the Czech page.

From this analysis, we determined that the English page has far fewer problems because it is missing a significant amount of content that is displayed on the Czech page. From this, we concluded less content overall yields fewer accessibility issues. After identifying which of the WCAG success criteria were violated by Zoo Praha's website, the team created recommended solutions for how the zoo should address each of these problems and included this list in our guidelines.

Identify Discrepancies in Translations

At the request of our sponsor our team identified where Zoo Praha struggled with English accommodations on their website. We conducted a content analysis of both the English and Czech versions of the website to gain an understanding of what the English pages lacked. We also conducted an external content analysis including eight of the top European zoo's websites, looking for similar issues. Results from these content analyses identified common translation methods and shortcomings of translation software programs, as internet translators have poor success rates when context is involved (Latief et al., 2020). Our systematic review of the sites looked at how many main menu sections, sub-sections, individual pages, and frequently updated pages were missing from

the English version. We also searched for pages that had incomplete English translations to provide a more accurate understanding of what percentage of content has been translated.

Our internal language-based content analysis found that Zoo Praha lacks both page availability and complete translations, as they only translated 46% of Czech site. The external analysis found that seven of eight top European zoo websites (88%) successfully translated at least 75% of their content from their native language into English through a variety of translation methods. We also found human translations to be the most successful method used among the zoos. These findings suggested Zoo Praha has poor translations, despite using a human translator. Users were forced to use Google Translate where content was not available in English, pointing out several things the zoo needed to improve.

Recommendations for Zoo Praha:

Based on our findings from our numerous methods, we recommend Zoo Praha redesigns their website by:

- Improving aesthetics and visuals,
- Displaying a wider variety of animals on their homepage and refine zoo services within their subsections,
- Adhering to WCAG 2.1 guidelines, and
- Hiring a human-translator to ensure full and proper translations across all pages.

References

- Jakovljević, M. (2010). The Role of Public Relations in Croatia as a Tourist Destination. *Tourism & Hospitality Management, Conference Proceedings* 101-113. [The Role of Public Relations in the Marketing of Tourist Destinations in Croatia marinko jakovljevic - Academia.edu](#)
- Nekolný, L., & Fialová, D. (2018). Zoo tourism: What actually is a zoo? *Czech Journal of Tourism*, 7(2), 153–166. <https://doi.org/10.1515/cjot-2018-0008>
- Singh, Ismail, A., PS, S., & Singh, D. (2021). Compliance of accessibility in tourism websites: a pledge towards disability. *Journal of Hospitality and Tourism Insights*, 4(3), 263–281. <https://doi.org/10.1108/JHTI-05-2020-0092>
- The highest award for Prague Zoo. Waza honoured its many years of helping save the Przewalski's horse.* Prague Zoo. (2021, October 12). Retrieved December 7, 2022, from <https://www.zoopraha.cz/en/about-zoo/news/13093-the-highest-award-for-prague-zoo-waza-honoured-its-many-years-of-helping-save-the-przewalski-s-horse>
- The webaim million – 2022 update.* WebAIM. (2022, April 4). Retrieved October 5, 2022, from <https://webaim.org/blog/webaim-million-2022/>
- The zoo in numbers.* Prague Zoo. (n.d.). Retrieved September 29, 2022, from <https://www.zoopraha.cz/en/animals/the-zoo-in-numbers>
- WAZA. (n.d.). WAZA | World Association of Zoos and Aquariums. Retrieved November 4, 2022, from <https://www.waza.org/>
- We help them to survive.* Prague Zoo. (n.d.). Retrieved September 5, 2022, from <https://www.zoopraha.cz/en/animals/we-help-them-to-survive>

Authorship Table

Section	Primary Author(s)	Primary Editor(s)
Abstract	SS	All
Executive Summary	All	All
Table of Contents	BB	All
List of Tables and Figures	BB	All
Acknowledgments	MC, SS	All
Meet the Team	MC, SS	All
1.0 – Introduction	All	All
2.0 – Background	SS	All
2.1 – The Societal and Economic Implications of Zoos	SS	All
2.2 – History of Zoo Praha	MC	All
2.3 – Implementation and Effectiveness of Online Content from Zoos	BB	All
2.4 – Popular Social Media and Website Usage	BB	All
2.5 – Human-Computer Interaction and its Importance	JH	All
2.6 – Web Design	CA	All
2.7 – Web Accessibility	CA, SS	All
2.7.1 – International Web Accessibility Guidelines	SS	All
2.7.2 – Deaf and Hard of Hearing, Blind and Visually Impaired Accessibility	JH	All
2.7.3 – Online Translators and Language Barriers	JH	All
2.8 – Zoo Praha Website	MC	All
2.9 – Summary	All	All
3.0 – Methodology	All	All
3.1 – Identify Design Issues on the Current Zoo Praha Website	JH	All
3.1.1 – Analyzing the Design of the Internationally Ranked Zoos’ Websites	CA	All
3.1.2 – Survey Zoo Praha Visitors About the Website	CA	All
3.1.3 – Interview with Computer Science Faculty at WPI	JH	All
3.2 – Determine “Top Zoo Content”	MC	All
3.2.1 – Analyzing Promoted Content on Zoo Websites	MC	All

3.2.2 – Observational Research Within Zoo Praha	BB	All
3.2.3 – Survey Zoo Praha Visitors about the Zoo	CA, MC	All
3.3 – Identify Lack of Website Accessibility on the Zoo Praha Website	SS	All
3.3.1 – TAW Analysis of Zoo Praha’s Website	SS	All
3.4 – Accommodate English Speaking Visitors	JH	All
3.4.1 – Translation Analysis of Top European Zoo Websites	JH	All
3.5 – Gantt Chart	All	All
4.0 – Results and Discussion	SS	All
4.1 – Identified Design Issues on Zoo Praha’s Website	CA	All
4.2 – Determined “Top Zoo Content”	MC	All
4.2.1 – Observational Research	BB	All
4.2.2 – Visitor Experiences at Zoo Praha	SS	All
4.2.3 – Content Displayed on Top-Performing Zoo Websites	MC	All
4.3 – Identified Zoo Praha’s Web Accessibility Issues	SS	All
4.3.1 – Recorded WCAG 2.1 Problems on the Zoo Praha Website	SS	All
4.4 – Identifying Discrepancies Between Native and English Language Pages	JH	All
5.0 – Limitations	CA	All
5.1 – Surveying Zoo Praha Visitors	CA	All
5.2 – Interviewing Web Design Experts	JH	All
5.3 – Observational Research at Zoo Praha	BB	All
6.0 – Conclusions and Recommendations	SS	All
6.1 – Redesigning Zoo Praha’s Website: Organization and Visuals	CA	All
6.2 – Assessing and Adjusting Featured Website Content	MC	All
6.3 – Improving Web Accessibility	SS	All
6.4 – Conclusions	SS	All
7.0 – Team Reflection	SS	All
References	All	All
Appendices	All	All

Table of Contents

Abstract	iii
Acknowledgements	iv
Meet the Team	v
Executive Summary	vi
Authorship Table	xi
List of Figures	xv
List of Tables	xvi
1.0 Introduction.....	1
2.0 Background.....	4
2.1 The Societal and Economic Implications of Zoos	5
2.2 History of Zoo Praha.....	7
2.3 Implementation and Effectiveness of Online Content from Zoos.....	8
2.4 Popular Social Media and Website Usage	9
2.5 Human-Computer Interaction and its Importance.....	10
2.6 Web Design	11
2.7 Web Accessibility	12
2.7.1 International Web Accessibility Guidelines	13
2.7.2 Deaf and Hard of Hearing, Blind and Visually Impaired Accessibility	15
2.7.3 Online Translators and Language Barriers	17
2.8 Zoo Praha Website	18
2.9 Summary	21
3.0 Methodology	23
3.1 Identify Design Issues on the Current Zoo Praha Website	23
3.1.1 Analyzing the Design of Internationally Ranked Zoos’ Websites	24
3.1.2 Survey Zoo Praha Visitors About the Website.....	25
3.1.3 Interview with Computer Science Faculty at WPI	26
3.2 Determine “Top Zoo Content”	27
3.2.1 Analyzing Promoted Content on Zoo Websites	27
3.2.2 Observational Research within Zoo Praha	28
3.2.3 Survey Zoo Praha Visitors about the Zoo	29
3.3 Identify Lack of Web Accessibility on the Zoo Praha Website	29

3.4 Accommodate English-Speaking Visitors	36
3.4.1 Translation Analysis of Top European Zoo Websites.....	36
3.5 Gantt Chart	37
4.0 Results and Discussion	39
4.1 Identified Design Issues on Zoo Praha’s Website.....	39
4.2 Determined “Top Zoo Content”	42
4.2.1 Observational Research	42
4.2.2 Visitor Experiences at Zoo Praha	47
4.2.3 Content Displayed on Top-Performing Zoo Websites	50
4.3 Identified Zoo Praha’s Web Accessibility Issues.....	51
4.3.1 Recorded WCAG 2.1 Problems on the Zoo Praha Website	53
4.4 Identifying Discrepancies between Native and English Language Pages.....	56
5.0 Limitations	59
5.1 Surveying Zoo Praha Visitors	59
5.2 Interviewing Web Design Experts	59
5.3 Observational Research at Zoo Praha	60
6.0 Conclusions and Recommendations	63
6.1 Redesigning Zoo Praha’s Website: Organization and Visuals.....	63
6.2 Assessing and Adjusting Featured Website Content.....	66
6.3 Improving Web Accessibility.....	68
7.0 Team Reflection.....	70
References.....	71
Appendices.....	77
Appendix A: Top-performing Zoos in Europe.....	77
Appendix B: Hyman et al. Codebook	79
Appendix C: Criteria Created During Web Design Content Analysis.....	81
Appendix D: Zoo Visitor Survey	83
Appendix E: Observed Zoo Animals and Exhibits	86
Appendix F: Duration Data for Observational Research	87
Appendix G: Observational Research Data	88
Appendix H: Design Recommendations for Zoo Praha’s New Website	89
Appendix I: Zoo Praha Webpage Mockups	119

List of Figures

Figure 0.1 Zoo Praha’s Homepage	vi
Figure 0.2 Infographic describing team’s objectives and methods.....	vii
Figure 0.3 Favorite exhibit survey results.....	viii
Figure 2.1 Conservation expenses from international wildlife organizations	6
Figure 2.2 Growth in Trip Advisor user interactions.....	8
Figure 2.3 First guidelines in section 1 of WCAG 2.1	15
Figure 2.4 Chuckwalla translation from the Czech animal appendix of Zoo Praha’s website.....	18
Figure 2.5 Drop-down menus of the translated Czech site.....	19
Figure 2.6 Drop-down menus of the English site	19
Figure 3.1 TAW homepage for Bioparc Valencia website.....	31
Figure 3.2 TAW summary report for Bioparc Valencia.	32
Figure 3.3 TAW Violation Results for the Czech page of the Zoo Praha website	33
Figure 3.4 Annotated HTML source code from TAW for Czech page of Zoo Praha website	34
Figure 3.5 Gantt Chart showing final timeline of project task	37
Figure 4.1 Visitor duration percentage by exhibit	43
Figure 4.2 Percentage of visitors that took pictures by exhibit.....	44
Figure 4.3 Survey results displaying most popular animals and exhibits at Zoo Praha	48
Figure 4.4 Survey respondent results on website usage	49
Figure 4.5 Flowchart of categories concluded from top zoo content analysis.....	50
Figure 4.6 Comparison of total number of TAW problems for 18 different web pages	53
Figure 6.1 The ZooParc de Beauval website homepage.....	64
Figure 6.2 The Berlin Zoo website navigation tabs	65
Figure 6.3 The Berlin Zoo website homepage.....	65
Figure 6.4 Schönbrunn Zoo homepage with links to animal content highlighted	67

List of Tables

Table 2.1 Animals at Zoo Praha, as displayed on the English vs Czech page.....	21
Table 3.1 Top zoos in Europe (Fish, 2021)	24
Table 3.2 Recommended fix to resolve WCAG 2.1 problem on Zoo Praha’s website	35
Table 4.1 The extent to which Zoo Praha uses common web design practices.....	40
Table 4.2 Exhibit skew categories	43
Table 4.3 Qualitative Analysis Exhibit Ranking	46
Table 4.4 Categorized TAW problems on Zoo Praha’s Czech Page	55



1.0 Introduction

1.0 Introduction

As one of the most visited tourist destinations, zoos and aquariums report an estimated 729 million annual visits worldwide (Nekolný, 2018) (Dick et al., 2010). From a socio-economic standpoint, zoos have a significant beneficial impact on their nearby communities and environments as they create jobs and spend roughly \$350 million annually on wildlife conservation (Nekolný, 2018) (Orchik, 2004) Dick et al., 2010). A successful online presence can provide benefits to zoos and their visitors, as tourists have become increasingly likely to look online when choosing destinations (Jakovljevic, 2010). Zoo Praha, located in Prague, Czech Republic, is active on some of the most popular forms of social media such as Instagram and YouTube (Chaffey, 2022). However, as an internationally distinguished zoo that attracts approximately 1.4 million visitors annually, Zoo Praha’s website does not accurately reflect its international acclaim (“Naše poslání”, n.d.).

Having an inaccessible website that is difficult to navigate, poorly organized, and visually unappealing—like Zoo Praha has—may deter users from visiting the zoo, especially those experiencing disabilities (Singh et al., 2021) (Febrina 2020). When developing a well-designed website, implementing the fundamentals of Human Computer Interaction (HCI) is key. One crucial aspect of HCI is web design, focusing heavily on the layout, aesthetics, and accessibility of pages for individuals with cognitive and physical disabilities. When designing a website, considering navigability, aesthetics, and adherence to web accessibility guidelines is crucial in providing equal access to information for those experiencing disabilities (“WCAG 2 Overview”, 2022). Moreover, determining what content is most important and popular to display on the website is critical in attracting visitors.

Our sponsor, Zoo Praha, would like to redesign their website, improving its aesthetics, accessibility, and language accommodations as well as more effectively highlighting the zoo's exhibits and conservation efforts. The goal of this project was to provide recommendations and guidelines to help Zoo Praha redesign their website, thus, enhancing its functionality, improving web accessibility, and bolstering tourism. We accomplished this goal through four objectives:

- Identifying design issues on the current Zoo Praha website.
- Determining “top zoo content” that Zoo Praha should display on their website.
- Identifying problems with web accessibility on the Zoo Praha website.
- Recognizing discrepancies in content and translations between the Czech and English pages of the Zoo Praha website.

To accomplish these objectives, our team analyzed the websites of other internationally acclaimed zoos in Europe to understand popular content and commonly used web design practices. Additionally, our team distributed a survey to gauge demand for certain information from zoo visitors and conducted observational research to identify popular exhibits and visitation patterns. This research was pertinent to creating web design guidelines for Zoo Praha as they helped us identify major problems and potential solutions. Our mission in doing so was to make the website more accessible and intuitive to attract a wider audience of zoo visitors.



2.0 Background

2.0 Background

The following sections provide insight into the importance of tourism, the internet presence of Zoo Praha, and useful research into Human Computer Interaction (HCI) as well as website design. Each section contributed information relevant to designing an accessible website that will present meaningful content in a visually appealing and effective way, thus bolstering tourism for Zoo Praha.

2.1 The Societal and Economic Implications of Zoos

Reputable zoos and aquariums strive to be leaders in both education and conservation efforts for the public (Dick et al., 2010). According to the World Association of Zoos and Aquariums (WAZA), there are an estimated 729 million annual visitors to zoos and aquariums worldwide (“Home,” n.d.). As the third largest funder of global conservation, WAZA members reportedly spend about \$350 million on wildlife conservation annually, with 97% of the contributions coming from North America and Europe (“Home,” n.d.) (“Visiting a Zoo this Weekend?” 2020). These statistics shown in Figure 2.1 suggest that the global zoo and aquarium community play an essential role in both education and wildlife conservation.

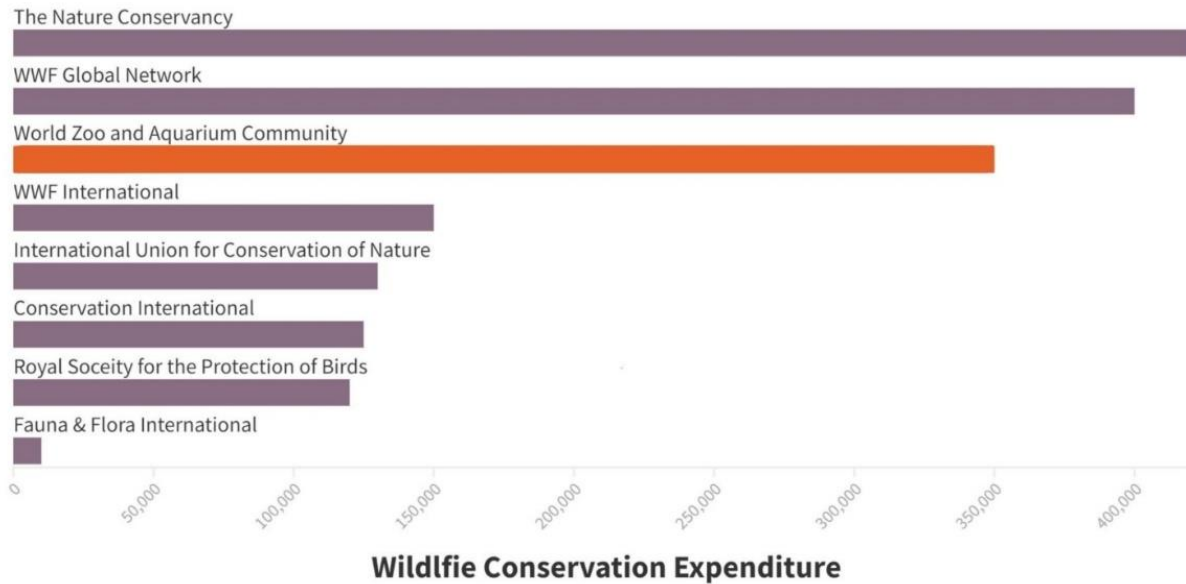


Figure 2.1 Conservation expenses from international wildlife organizations (Dick et al., 2010)

Because zoos are one of the most visited tourist attractions worldwide, they have major societal impacts on their surrounding communities. Zoos are “specialized cultural and educational facilities,” (Nekolný, 2018) which have four major aspects to their mission: amusement, education, scientific research, and species preservation. They aid the development of human-nature relationships, foster human-animal connections, and promote a life-long involvement in conservation, all of which contribute to a healthy, sustainable community (Nekolný, 2018).

From an economic standpoint, zoos increase both domestic and foreign tourist revenue. While bolstering tourism is beneficial for zoos—as it allows for a well-maintained park and expansive enclosures—it also strengthens the economy of zoos’ neighboring cities and communities (“Why Zoos are an Important Part of Responsible Wildlife Tourism,” 2017). A study conducted at the Memphis Zoo in 2004 examined the economic returns generated for the community after the recent addition of a giant panda exhibit and found that an estimated 34,000

additional non-local visitors came to Memphis specifically to see the pandas, spending nearly \$50 million in the Memphis area (Orchik, 2004). Likewise, studies conducted at the Minnesota and Cincinnati Zoos reported similar conclusions with zoo tourism contributing \$146 million (Erkkila, 2012) and \$143 million (University of Cincinnati, 2013) to their respective local economies.

2.2 History of Zoo Praha

Zoo Praha, located in Prague, Czech Republic, has a history dating back to 1881, when an invitation published in the newspaper spoke about establishing a zoo in Prague. On September 28, 1931—50 years later—the zoological garden was open to the public, although it was still under major construction (“History,” 2016). From the beginning, Zoo Praha’s mission statement has focused on conservation and protection of the 685 species they house (“The Zoo in numbers,” n.d.). More specifically, they focus on the breeding of animals within the zoo—ex-situ conservation—as well as the preservation of their habitats in the wild—in-situ conservation (“We help them to survive,” n.d.). The wildlife park has worked with many other countries both inside and outside of Europe to promote their mission, the most recent being with Mongolia to repopulate the Przewalski horse. This breed of wild horse had been on the decline since the 1960s, but with the help of ex-situ breeding at Zoo Praha, the species was brought back from the brink of extinction (“Return of the Przewalski’s Horse to Mongolia,” n.d.). As a result of their work, the zoo received the highest award from WAZA, the WAZA Conservation Award, making it only the sixth zoo in the world to receive this honor (“The Highest Award for Prague Zoo,” 2021).

2.3 Implementation and Effectiveness of Online Content from Zoos

Websites and social media can provide numerous benefits to zoos and their visitors when implemented correctly. As the number of people with internet access grows, tourists are more likely to look online when choosing destinations (Jakovljevic, 2010). For example, TripAdvisor, which is a leading online platform for tourists to browse potential destinations and interact with other tourists, has continuously seen growth in user interactions and success since its creation as seen in Figure 2.2 (Hotels, 2015). Though zoo websites do not focus on providing a place for tourists to share reviews and opinions, the increase displayed in this graph demonstrates the demand for tourism related content online.



Figure 2.2 Growth in Trip Advisor user interactions (Hotels, 2015)

Additionally, online content, specifically from zoo websites, is a valuable resource for educators and students as they aid teachers while preparing for upcoming field trips and help

students expand upon what they learned after visiting a zoo (Hardcastle, 2018). Using the internet is also an effective method of spreading awareness about conservation efforts.

Conservation related content helps people rationalize why zoos keep certain species in captivity and assists conservation organizations in gaining support (Hunt, et. al 2018). Overall, an online presence helps zoos reach a larger audience, keeps visitors engaged, and reinforces information learned at the zoo.

However, the level of coordination between multiple online platforms greatly impacts the value that users gain from zoo content. A 2020 study surveying the various methods that visitors used to obtain information about the Ragunan Zoo in Indonesia, concluded that the use of websites and social media is useless without clear objectives and proper planning (Febrina 2020). In addition to displaying visually pleasing content, zoos must also communicate information about specific exhibits, events, and values. Therefore, it is crucial to have a thorough understanding of what content is best suited to be on a website versus social media.

2.4 Popular Social Media and Website Usage

As of July 2022, 59% of the world's population actively uses social media (Chaffey, 2022). This has large implications for the tourism industry, and more specifically wildlife parks. Currently, Zoo Praha is active on Facebook, YouTube, Instagram, TikTok and Twitter, which all fall within the top 15 most used social media platforms worldwide (Chaffey, 2022). One study that analyzed a variety of social media campaigns for tourism destinations concluded that the top goals achieved by a well-executed social media presence are as follows: increasing awareness of the destination, reaching global publicity, encouraging visitors to plan their journey, and strengthening the destination image (Királová, 2014). While these goals are important, they are more focused on branding and marketability rather than technical and informational needs of

visitors. Websites fill this gap by providing educational and detail-oriented content as well as technical information about zoo services such as the zoo map, ticket prices, and general park rules.

2.5 Human-Computer Interaction and its Importance

Human-Computer Interaction (HCI) is a discipline concerned with the design, evaluation, and implementation of computing systems for human use (Sinha et al., 2010). This field within computer science has only recently gained popularity and is becoming increasingly important as computers advance and become more widely accessible. HCI has multiple cross-disciplinary pieces, including principles, practices, and people that drive the development of modern computers to maximize both the accessibility and usability of developing systems (Dix, 2017). As humans evolve and change, more is needed from computers in terms of power, features, and accessibility, forcing developers to account for every possible scenario that may come their way from users (MacKenzie, 2013).

Some common changes or developments made within computer science as a result of HCI studies include user interface changes, color scheme guidelines, intuitive touch screen displays, hands-free devices or applications, and smartwatches. While many of these developments may seem trivial to the everyday user, they all serve an incredible purpose in pushing forward the boundaries and uses of computing technologies. Currently, one of the most important innovations lies within the realm of accessibility, specifically with those who are young or aging, have mental or physical impairments, or have limited to no computer experience (Jacko, 2007). Creating systems that are usable by everyone has become a driving force in the evolution of computer science, establishing HCI as a critical field of study.

In the case of Zoo Praha, a variety of different technologies convey information to visitors both inside and outside of the zoo (“News,” 2022). Historically, the zoo has used simpler technologies such as multitouch panels, information kiosks, public use telephones, and locations with internet connection to enhance visitor experience. More recently, the zoo has introduced new items such as experimental night tours using night-vision goggles, offering new learning opportunities and experiences to all visitors (“Prague Zoo Introduced Night Tours with the Latest Technology,” 2021). Despite Zoo Praha’s technological strides, their website has not been updated since 2012 and requires a redesign as it is a decade behind advancements in HCI.

2.6 Web Design

Web design refers to the appearance, layout, and content of a website that impacts user experience (Interaction Design Foundation, n.d.). With approximately five billion internet users worldwide and continued growth of this digital population, it is imperative that organizations develop effective web design (Statistica, 2022). Good web design is key to staying relevant in a competitive digital landscape and is especially important to ecommerce and business sites. (Flavian et al., 2009). One study found that the most used website success factors are information quality, ease of use, responsiveness, privacy, visual appearance, trust, interactivity, personalization, and fulfillment (Gretzel et al., 2007). Tourists mainly use a destination website to gather information about the place they plan to visit by browsing through links and documents, making navigation features especially crucial (Jansen et al., 2006). This also means that a website must display relevant, accurate, and up-to-date information (Iannuzzi et al., 2011). If the website is successful, visitors will develop a stronger interest in visiting the destination (Pallud et al., 2014).

The visual aspects of websites are just as important as their functionality since visitors develop an impression within seconds of accessing websites (Hyman et al., 2012). When assessing the quality of a website, users consider a variety of visual attributes: attractiveness, organization, proper use of fonts and colors, graphic-text balance, use of multimedia, and page length (Aladwani et al., 2002). Effective implementation of these aesthetic-related features can pique a visitor's interest in the destination they are researching.

A study analyzing the web designs of 235 top global destinations examined best practices and produced set criteria that researchers can use to examine the effectiveness of web design in destination websites like Zoo Praha (Hyman et al., 2012). Some of these practices include:

- using image slideshows to highlight the most popular attractions,
- having animated buttons and links that offer aids to reduce information-seeking efforts (site maps, search tools, language translations, etc.),
- promoting travel aids (interactive destination maps, local weather information, a calendar of events, hotel booking services, etc.), and
- displaying no more than 10 links on the home page.

Generally, destination websites must clearly display the destination in the simplest, most attractive, and most effective way possible. The site must minimize the amount of time and effort it takes to gather desired information and complete transactions while providing engaging and enticing content to captivate visitors.

2.7 Web Accessibility

In addition to being well-organized, navigable, and aesthetically pleasing, a successful and well-designed website should also be accessible for all users. The World Wide Web

Consortium (W3C) defines web accessibility as a website designed so that people experiencing disabilities can use it. According to the World Health Organization (WHO), about 15% of the world's population has a documented disability that may make web navigation and interaction more difficult. This percentage will likely increase over time because of population aging and growing chronic health diseases (Singh et al., 2021). With the widespread use of the internet in the travel and tourism industries, methods to access information have evolved rapidly, yet access to information remains the greatest problem that people experiencing disabilities face (Singh et al., 2021). The 2022 WebAIM report—an annual accessibility analysis of the one million most visited websites—shows that 96.8% of home pages had detectable violations of internationally adopted web accessibility guidelines. Additionally, the average number of detectable accessibility errors on a homepage was about 51, with the most common violations being low contrast text, missing alternative text, empty links, missing input labels, empty buttons, and missing document language. Violations from these six groups accounted for 96.5% of all homepage errors (“The WebAIM Million–2022 update”, 2022). These constraints on access to information online directly impact the decision-making process of people experiencing disabilities as they may give up on tasks such as booking flights and reservations when frustrated due to inaccessibility issues (Singh et al., 2021).

2.7.1 International Web Accessibility Guidelines

The creation and normalization of Information and Computer Technologies (ICT)—such as the world wide web, kiosks, and other multimedia—has helped people experiencing disabilities develop and maintain their employment, education, and social life. These technologies can help individuals perform tasks they aren't able to do themselves, however ICTs are only beneficial when websites comply with accessibility guidelines (Singh et al., 2021).

Formulated and continuously updated by the W3C, the Web Content Accessibility Guidelines (WCAG) provide internationally recognized web accessibility standards (“WCAG 2.1 Overview,” 2022).

The most recent version of these guidelines, WCAG 2.1, has four main sections that correspond to the major principles of accessible web design. A website must first be perceivable, meaning users of all abilities should be able to understand the content displayed. Second, a website must be operable so that it is functional and easy to navigate. Next, it must be understandable, which means the page should be predictable and intuitive for users. Finally, an accessible website must be robust, meaning it is available for all assistive technologies such as different browsers, screen readers, and screen magnifiers. Under each of these four sections, there are numerous success criteria necessary in creating an accessible website. For example, Figure 2.3 shows the first success criterion which states that any non-text content, such as images, must have an accompanying text alternative that relays the same information. Text alternatives could include a larger or different font, symbols, or speech.

1. Perceivable

§

Information and user interface components must be presentable to users in ways they can perceive.

Guideline 1.1 Text Alternatives

§

Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.

Success Criterion 1.1.1 Non-text Content

§

(Level A)

[Understanding Non-text Content](#)
[How to Meet Non-text Content](#)

All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for the situations listed below.

Figure 2.3 First guidelines in section 1 of WCAG 2.1 (“WCAG 2.1 Overview,” 2022)

One study analyzed the accessibility of 57 U.S. official tourism websites through the Test de Accesibilidad Web (TAW), a software system created by the Spanish office of W3C that checks for accessibility issues against the WCAG 2.1 standard. The study concluded that not one of these websites passed the assessment as each of them had at least one accessibility barrier. Failure to comply with the internationally adopted guidelines inhibits people experiencing disabilities from using the website and gathering information.

2.7.2 Deaf and Hard of Hearing, Blind and Visually Impaired Accessibility

As advancements in today’s technologies enable the development of voice activated devices, known as conversational user interfaces (CUI), new obstacles arise for those experiencing deafness or hardness of hearing (DHH). A lack of significant prior research within this realm of accessibility is contributing to a growing disparity of solutions and accommodations, leaving individuals with hearing accessibility needs unsatisfied (Glasser et al.,

2020). Researchers and activists in this field have long advocated for an increase in closed captioning for videos, sign linguists for video calls, and sign-language animation technology. However, technical and performance requirements for sign recognition and animation technologies are not yet established or tested, highlighting a need for deeper research (Glasser et al., 2020).

As the web has become a valuable source of information and provides a higher level of autonomy to those who experience disabilities, there has been substantial growth in blindness or visual impairment (BVI) computer ownership. The establishment and implementation of WCAG standards “guarantees the normative accessibility of websites,” (Giraud et al., 2018) by allowing the transposition of visual information into auditory information by screen readers. One direct benefit from advancements in these accessibility technologies is the rising population of disabled computer owners. For example, a case study in France found that over a ten-year period the proportion of those who have access to the internet in their homes with BVI drastically increased from around nine percent to an astonishing 55%. Despite such growth in BVI computer ownership and technological developments, 81% of those experiencing these disabilities still struggle with internet accessibility, claiming that access is still difficult or even impossible on the majority of websites (Giraud et al., 2018). The reasons listed for the difficulties are a lack of alternative text for images, no speech-to-text capabilities, and poor navigational design. Just as DHH researchers have pushed for accommodation development, those studying BVI have advocated for websites to adhere as strictly as possible to the WCAG guidelines (Giraud et al., 2018).

While Zoo Praha has made some progress in adhering to these guidelines by implementing technologies directly into their web page—including a screen reader, text editors,

color blind filters, and more—they do not fully incorporate all recommendations given in the guidelines. This has the potential to lead many visitors toward believing that the park itself lacks accommodation, potentially discouraging attendance and diminishing the zoo experience for individuals who are deaf or visually impaired.

2.7.3 Online Translators and Language Barriers

Language barriers and a lack of effective online translators on destination websites also create problems with tourist accessibility. While there are a handful of common online translators such as Google Translate and DeepL, they often fail to consider that context is key for a proper translation and struggle to recognize whole phrases, slang, and uncommon regional dialects (Latief et al., 2020). This leads to issues for web users when trying to browse sites that lack a translation to their native language, as they may get inaccurate information when auto-translating the page (Latief et al., 2020). For instance, the Berlin Zoo website supports the Google Translate browser extension, but still encounters context issues that require human translation. Despite supporting the translation extension and offering 11 different languages, the information available on most of the pages remains limited.

Human translation is key to the success of multilingual websites and could be better adopted by Zoo Praha to accommodate their massive number of tourists each year (Latief et al., 2020). One such example, showing machine translation issues on the Zoo Praha page, can be found on the “Lexikon Zvířat”, the animal appendix for Zoo Praha. The closest thing to an English equivalent of the page is called “Let’s Get to Know Each Other” as the English site lacks a proper animal appendix. This causes problems for English speakers as there are only seven animals briefly described on the page, whereas the appendix offers a description, location, and scientific information on every animal in the park. If an English-speaking visitor wanted to read

more about an animal, they would have to rely on Google Translate to search through the alphabetized list of animals in Czech. However, the machine translators encounter issues in doing so, mistranslating many names in the appendix, as shown in Figure 2.4 where a specific species of lizard—Chuckwalla—translated to “She was chubby.” While the translation may accurately reflect the physical description of the animal, it is not the animal’s official name. This issue highlights just one of several prevalent problems found on the Zoo Praha website, particularly on the English pages.

CLASS	Reptiles
ORDER	Scaly (Squamata)
EXTENSION	North America (southwestern US and northern Mexico)
BIOTOPE	desert and semi-desert (rocky deserts)
FOOD	plant parts (leaves, flowers, fallen fruits and other parts of desert plants, they only occasionally catch small invertebrates.)
DIMENSIONS	body length 28–43 cm, of which tail length min. 50%, weight up to 350 g
REPRODUCTION	number of eggs 4–14, incubation lasts 72–93 days.

Points of Interest

Iguanas are herbivorous desert iguanas, found in several species exclusively in southern North America. The basis of their diet is various herbs, they love desert flowers and only occasionally catch small invertebrates. The čukvala is a diurnal lizard perfectly adapted to desert conditions. It waits out the colder period in a state of torpor. The smooth, flat body and flexible spine allow it to quickly escape from predators into rock crevices. It then inflates and wedges in them. During the courtship season (April to July), males become temporarily territorial and a social hierarchy based on overall size emerges between them. Females lay eggs usually once every two years and bury them in the soil.

- [Small-scaled snipe](#)
- [Kissing sniffer](#)
- [Green sniffer](#)
- [Australasian teal \(white-throated\)](#)
- [Hottentot teal \(diamond\)](#)
- [Plain blue](#)
- [Common teal](#)
- [Slim line](#)
- [Narrow-billed teal](#)
- [Yellow-billed teal](#)
- [Cízek forest](#)
- [African boatbill](#)
- [Green quatrefoil](#)
- [She was chubby](#)

Figure 2.4 Chuckwalla translation from the Czech animal appendix of Zoo Praha’s website (“Lexikon Zvřát,” n.d.)

2.8 Zoo Praha Website

Like other zoos, visitors use the Zoo Praha website for buying tickets, exploring new exhibits, and finding educational resources for all ages. However, their English page has less than half of the content of their Czech page. For example, looking at the drop-down menus, the Czech site, shown in Figure 2.5 (translated into English for comparison purposes), has sections including zoo information, animal and exhibit information, educational resources, and even an e-shop. However, the English site, shown in Figure 2.6, contains no educational resources or an e-shop; instead, the zoo has replaced these sections with “Must See” and “Multimedia” sections.

While many English-speaking visitors may not need access to educational resources for a school field trip, families travelling with young children may want to use these types of resources to enhance their child’s zoo experience. Additionally, purchases made through the e-shop directly support Zoo Praha, so limiting access to those who speak Czech deters the potential for the zoo to receive revenue from online sales.

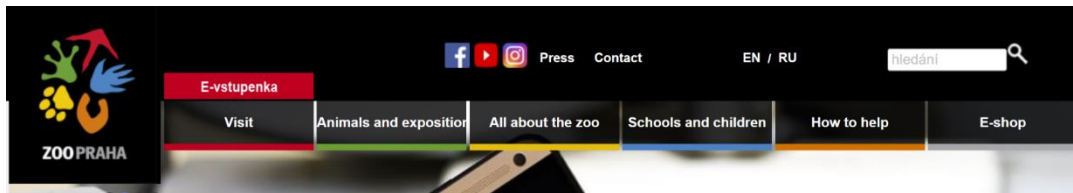


Figure 2.5 Drop-down menus of the translated Czech site (“Zoo Praha”, n.d.)

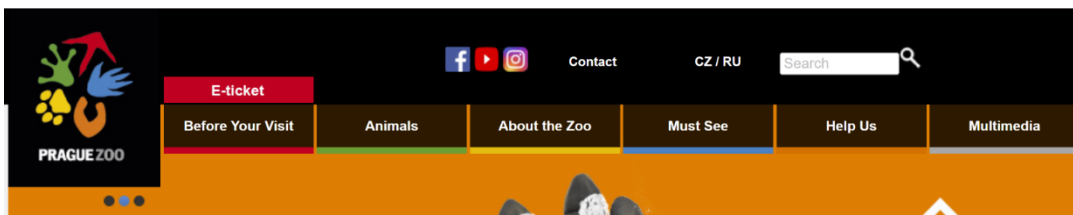


Figure 2.6 Drop-down menus of the English site (“Prague Zoo”, n.d.)

For the few subsections the pages do share, the Czech version is much more comprehensive. As Figure 2.7 shows, the Czech site displays articles like the history of the zoo that are filled with old photographs and provides extensive details while the English site lists a more limited history using only bullet points.

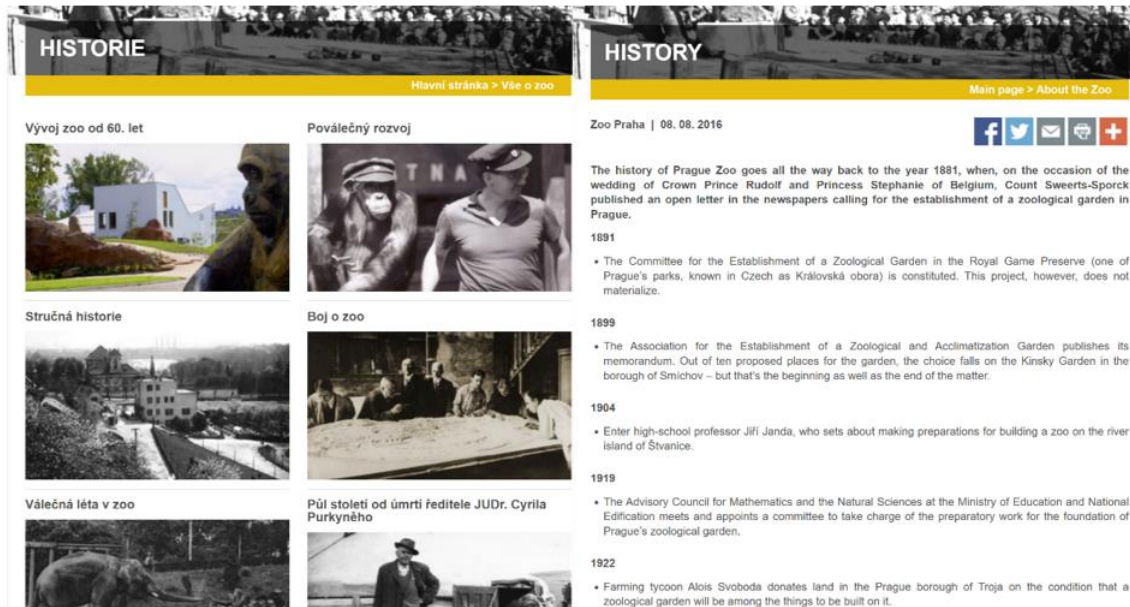


Figure 2.7 Zoo Praha history page on the Czech site (“Historie”, n.d.) (left) and English site (“History”, 2016) (right)

In addition, subsections between the sites often do not match in terms of data displayed. For instance, Zoo Praha’s section entitled, “The Zoo in Numbers”, shows inconsistencies between the Czech and the English version in terms of the number of species and animals housed at the zoo, as shown in Table 2.1. In addition to that, there are also differences in formatting and aesthetics. This suggests that the English version may not be updated as often as its Czech counterpart.

Table 2.1 Animals at Zoo Praha, as displayed on the English vs Czech page

Type	Species (English site)	Species (Czech site)	Specimens (English site)	Specimens (Czech site)
Mammals	164	162	1201	1057
Birds	304	303	1798	1955
Reptiles	134	132	1017	1056
Amphibians	11	11	141	246
Fish	32	36	796	998
Invertebrates	31	34	96	63

2.9 Summary

Zoo Praha is an internationally distinguished zoo whose mission is supporting conservation of wildlife both inside and outside of the zoo. Having a consistent and well-executed internet presence is extremely important for the zoo to provide educational resources to the public and reach a larger audience. Moreover, properly adhering to web accessibility guidelines allows for a larger demographic of people to access the Zoo Praha website, improving their user experience. This research guided us in completing the methods discussed in the next chapter by influencing the team to focus on solving issues with content discrepancies, content choice, and accessibility features within the Zoo Praha website.



3.0 Methodology

3.0 Methodology

The goal of our project was to provide recommendations and guidelines to help Zoo Praha redesign their website, enhancing its functionality, improving web accessibility, and bolstering tourism. Our team addressed this goal by accomplishing the following four objectives:

- Identifying design issues on the current Zoo Praha Website.
- Determining “top zoo content” that Zoo Praha should display on their website.
- Identifying problems with web accessibility on the Zoo Praha Website.
- Recognizing discrepancies in content and translations between the Czech and English pages of the Zoo Praha website.

Our team determined tasks for each of the four objectives listed above that we completed while in Prague, Czech Republic from October 24, 2022, to December 16, 2022. In order to achieve our goal, we needed to gather information about what technical and content issues existed on Zoo Praha’s website, gauge its website’s accessibility, and evaluate the translational discrepancies between the Czech and English pages of the website. To do this, the team conducted a survey, content analyses of top European zoo websites, and contacted web design experts to interview. The following sections explain each methodological approach that we took to research and propose better web design guidelines for Zoo Praha.

3.1 Identify Design Issues on the Current Zoo Praha Website

Our team’s first objective was to identify and understand the issues with the current website that make it unappealing and difficult to navigate. After meeting with our project sponsor, we learned that the zoo staff believed the website was outdated and did not contain modern features. The staff believed these issues deterred potential visitors from using the site

and caused those experiencing disabilities to encounter more difficulties than expected. To identify design issues and propose potential solutions, the team conducted a content analysis of Zoo Praha’s website, distributed a survey asking visitors’ experiences using the site, and contacted web and application design experts for interviews.

3.1.1 Analyzing the Design of Internationally Ranked Zoos’ Websites

Our team conducted a content analysis of Zoo Praha’s website by comparing it to criteria that we developed by examining trends of common design strategies across the websites for other top-performing zoos (Fish, 2021). At our sponsor’s request, we only analyzed the websites of zoos in Fish’s list that reside in Europe as well as including one more zoo—the Hannover Zoo in Germany (see Table 3.1).

Table 3.1 Top zoos in Europe (Fish, 2021)

Zoo	Country
Beauval Zoo	France
Pairi Daiza	Belgium
Berlin Zoo	Germany
Schönbrunn Zoo	Austria
Chester Zoo	England
Valencia Biopark	Spain
Tierpark Hagenbeck	Germany
Loro Parque	Spain
Hannover Zoo	Germany

Consistent with the research performed by Hyman et. al. (see Appendix B), we counted each time the zoo websites used a certain web design strategy or practice, including but not limited to, navigability, interactivity, and surface-level visuals. To expand upon Hyman’s study, we incorporated additional visual practices and any other frequently used strategies noticed when analyzing the other websites. We then compiled the most common practices—those used by more than 50% of the nine websites—to create the criteria for our analysis (see Appendix C).

Next, the team made a table including each of the common practices and recorded whether they appeared on Zoo Praha's website. This analysis helped us determine issues with the design of the website and develop recommendations for improvement.

3.1.2 Survey Zoo Praha Visitors About the Website

In concurrence with the content analysis, our team developed an anonymous online survey that prompted Zoo Praha visitors about their visit to the zoo and the efficiency of the website (see Appendix D). The team had originally planned to hand out two different surveys: one for discovering visitors' opinions on Zoo Praha's website, and another for determining what "top zoo content" the website should feature. While we wanted to link the survey about the website to E-Ticket purchase emails as well as display it on the zoo's current website, our sponsor did not approve of this approach. To overcome this, we combined our two original surveys into one online survey as we found it infeasible to ask visitors to fill out more than one survey while visiting the zoo.

Per requirements of the WPI Institutional Review Board (IRB), the survey was entirely voluntary and included a consent statement explicitly stating the survey's purpose and that respondents could skip any questions. We created the survey using Qualtrics, an online survey tool, and implemented a feature that would bring respondents to the end of the survey if they answered "No" to the consent question. The survey started with demographic questions and then asked a mixture of multiple choice and open response questions. Questions 10 through 13 of the survey asked about any issues when using the website and its visual appeal. The survey was brief to avoid missing data and to improve the rate of completion (Bateson et al., 2014). We avoided using technical jargon and considered language barriers that may impact a respondent's

understanding (Panetto et al., 2006). Qualtrics can translate the survey into different languages, so we offered it in Czech and English, per the request of our sponsor.

Our sponsor did not want us to hand out paper copies of the survey or leave papers unattended near the exhibits due to concerns with animal safety. Because of this, we had to distribute our survey through a QR code. The team printed multiple papers with the QR code for the survey alongside a written request in both Czech and English asking zoo visitors to complete the survey. The team chose to distribute the QR code to visitors who were observing the indoor gorilla exhibit in the Dja Reserve. Along with the previously mentioned restrictions, there were many other factors that influenced this decision. Due to the cold weather, more visitors were viewing indoor than outdoor exhibits, giving us the opportunity to interact with more visitors at once. The gorilla exhibit has large amphitheater seating where many families sit and take pictures of the animals. Since many visitors were seated and already had their phones out, it was a great opportunity to ask them to take the online survey. We took turns holding up a printed QR code and approaching visitors sitting in the amphitheater to ask them if they would like to take our survey. We distributed the survey for around four hours each day during the weekend of November 12th and 13th as there are more visitors during this time than on weekdays. Since visitors filled out the survey online through their phones, they had the ability to finish the survey at any time after they scanned the QR code. For this reason, the team received responses up to a week after we handed out the survey.

3.1.3 Interview with Computer Science Faculty at WPI

For the team to assess how well Zoo Praha adheres to modern day web design standards—looking mainly at organization, navigation, color, and layout—we contacted five professors through email from Worcester Polytechnic Institute (WPI) for interviews. We selected

potential interviewees by reviewing their qualifications and experience before deciding to request an interview. The interview consisted of technical questions and unstructured probes into their past projects and job experiences. In addition to this, we asked questions about Zoo Praha's website, asking for input based upon web design standards. Unfortunately, the team did not collect any meaningful data as we were only able to interview one professor. Due to this, the team decided it best to remove this method from consideration.

3.2 Determine “Top Zoo Content”

Along with identifying design issues with the current website and determining what constitutes good design, our team needed to consider what visitors are most interested in when coming to Zoo Praha. We accomplished this by examining how successful zoo websites promote their content, conducting observational research, and surveying zoo visitors. Through these methods, we defined what “top zoo content” is for Zoo Praha so that their website can cater to the demands of zoo visitors.

3.2.1 Analyzing Promoted Content on Zoo Websites

In order to determine what zoo visitors are interested in seeing on the Zoo Praha website, our team analyzed the previously mentioned top-performing European zoo websites for popular content. To conduct this content analysis, we conceptually analyzed each of the zoo websites, recording the occurrence of commonly featured information for each website (Columbia University, 2022). This information differed from what was researched by Hyman et. al., as this analysis was less focused on web design and more on web content. Our team specifically looked at what types of content were presented on each zoo's homepage, as well as within their subsections.

After examining each zoo website, the team compiled all the information gathered and coded the data based on the primary intention and focus of the content. Content that was predominantly animal focused, such as animal photos or videos, descriptions, exhibit information, and feeding times were grouped together, forming the category “animal content”. In addition to that, content that was more so directed at educating the visitors, such as the history of the zoo, children’s activities, and special events were also grouped together, forming the category “human-education content”. Ticket prices, zoo opening hours and other information pertaining to the operation of the zoo were also grouped, forming the category “zoo services content”. Finally, information such as partnered wildlife organizations, mission statements, and scheduled animal talks were grouped together, as this type of content was primarily conservation oriented, forming the category “conservation content”. Classifying the data in such a manner allowed our team to categorize and quantify the types of content that are most effective in promoting Zoo Praha to visitors on the website.

3.2.2 Observational Research within Zoo Praha

Since our team worked on-site at Zoo Praha, we had the opportunity to observe visitors directly interacting with exhibits. By collecting data at various locations throughout the zoo, we were able to determine the most engaging exhibits, their commonalities, and general visitation patterns. After consulting our sponsor, we selected 13 of the zoo’s most popular exhibits to observe (see Appendix E). We observed these exhibits from 11am to 2pm on any given day from October 26th to November 2nd, 2022. At each of these, we recorded the number of visitors that came, the amount of time visitors spent, the number of visitors who took pictures, and general characteristics of the exhibit. However, this approach was not feasible for indoor exhibits such as the Africa House, Feline and Reptile House, or Indonesian Jungle as they grouped together many

animals in the same building. For these exhibits, we recorded more general trends such as what enclosures engaged visitors the most, and how commonly visitors took pictures of certain animals. The analysis of such data allowed us to pinpoint characteristics responsible for attracting many visitors, guided us in creating a set of criteria to further evaluate exhibits, and played a large role in determining the most popular exhibits at the zoo. Thus, providing insight into which animals the website should emphasize to attract as many visitors as possible.

3.2.3 Survey Zoo Praha Visitors about the Zoo

In addition to providing information about website accessibility and navigation, the survey (see section 3.1.2) the team developed also allowed us to better understand what visitors like to see at the zoo (see Appendix D). Questions seven and eight asked for the reason the visitor went to the zoo as well as what their favorite animal or exhibit was at the zoo, in a multi-select format. The final question of this section, question nine, then asked visitors to elaborate on exhibits they were surprised to see at Zoo Praha. Our team analyzed the data collected from this section of the survey to determine the most essential animals and exhibits in attracting visitors to the zoo.

3.3 Identify Lack of Web Accessibility on the Zoo Praha Website

The team's third objective was to identify areas on the current Zoo Praha website that lacked adherence to internationally adopted web accessibility standards. While our group recognized that Zoo Praha's website is generally inaccessible—due to small text, nonintuitive design, and poor organization—it was equally important for us to examine where Zoo Praha's website violated web accessibility guidelines in order to suggest improvements. To do this, our team used an online web accessibility assessment tool, Test de Accesibilidad Web (TAW). As explained in Chapter 2, TAW analyzes a website's accessibility in reference to the latest version

of the Web Content Accessibility Guidelines (WCAG Version 2.1). Because there are different accessibility rankings under the WCAG, TAW allows users to compare a website's accessibility against A, AA, and AAA levels of WCAG 2.1 (Singh et al., 2021). For the purposes of our project, we compared all websites against the AAA level because it is the highest standard for web accessibility.

3.3.1 TAW Analysis of Zoo Praha's Website

To gauge where Zoo Praha lies within the realm of web accessibility, we first ran initial tests on the top nine European zoo websites (see Appendix A). The purpose of doing so was to identify how the level of web accessibility on the Zoo Praha website compares to other zoos as a means to determine where Zoo Praha should focus their efforts: web design or accessibility.

We decided to run both the native language and translated English page of each of the nine zoo websites so we could compare them to the native language page (Czech) and English page of Zoo Praha's website. To run TAW, we entered the URL for each of the websites into the search box and hit analyze as shown in Figure 3.1. This allowed the software to go through each line of corresponding HTML source code and identify the exact location of violations of the WCAG 2.1.

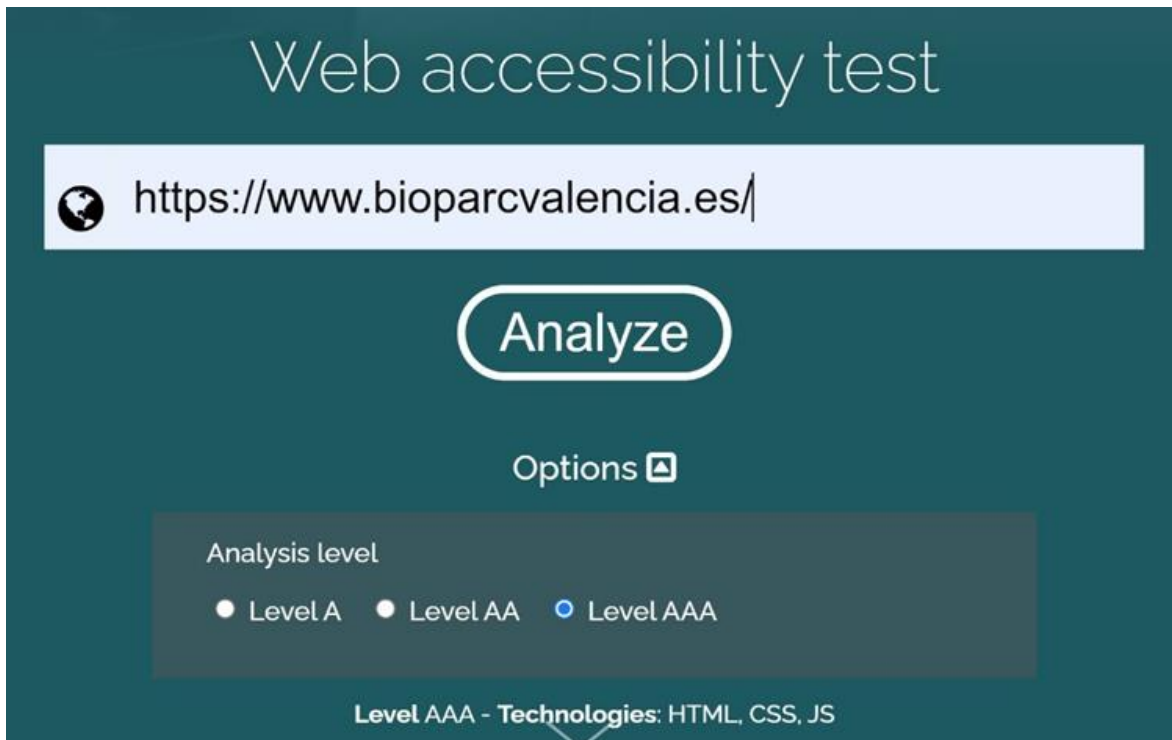


Figure 3.1 TAW homepage for Bioparc Valencia website (“Web Accessibility Test,” 2022)

TAW sifted through the website’s code and returned a list of problems, warnings, and items left unreviewed. In general, problems require immediate attention, whereas warnings and unreviewed items need human assessment. Figure 3.2 displays an example of the summary report TAW generated upon completion of the website analysis, in this case, for Bioparc Valencia in Spain.

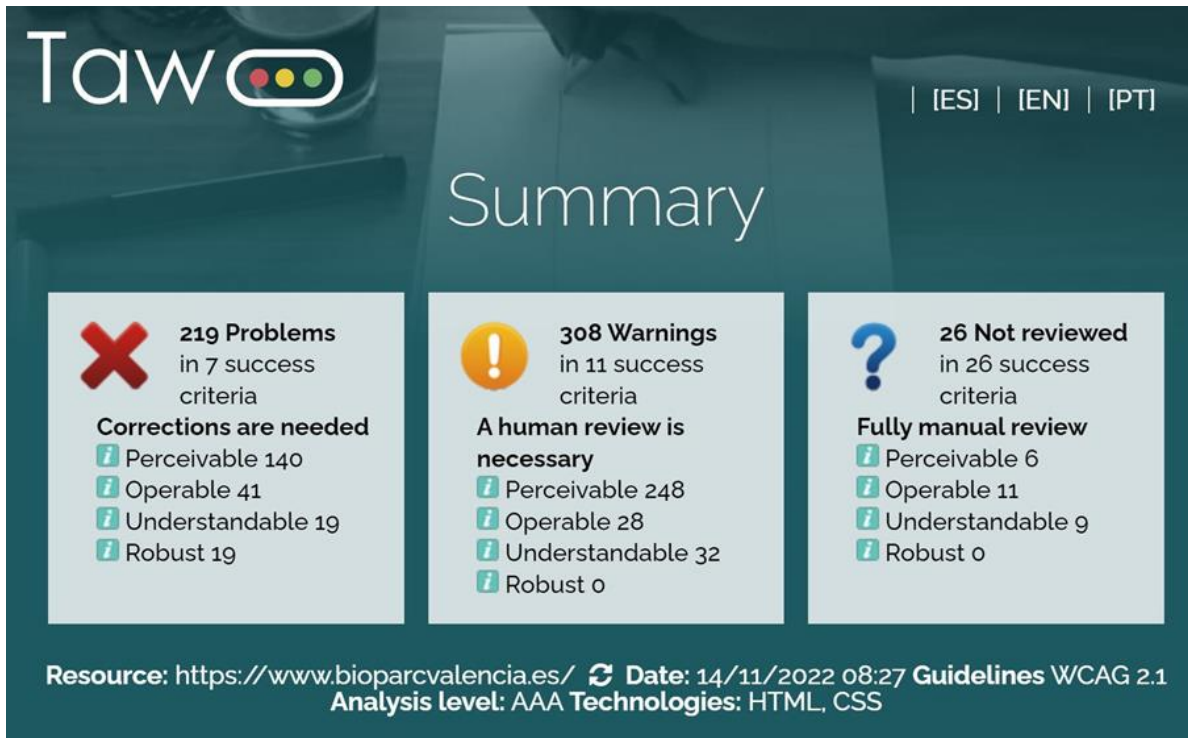


Figure 3.2 TAW summary report for Bioparc Valencia (“Summary,” 2022).

After analyzing web accessibility of both languages on the websites from the top nine European zoos, the team analyzed the accessibility of both the Czech and English page of the Zoo Praha website. In addition to the initial summary, TAW also generated a table with the website’s specific problems and warnings of the WCAG 2.1 success criteria (see Figure 3.3).




















Guideline	Level	Result	Problems	Warnings	Not reviewed
1.1-Text Alternatives			2	37	0
<u>1.1.1</u> - Non-text Content 	A	✘	2	37	
1.2-Time-based Media			0	0	0
<u>1.2.1</u> - Audio-only and Video-only (Prerecorded) 	A	na			
<u>1.2.2</u> - Captions (Prerecorded) 	A	na			
<u>1.2.3</u> - Audio Description or Media Alternative (Prerecorded) 	A	na			
<u>1.2.4</u> - Captions (Live) 	AA	na			
<u>1.2.5</u> - Audio Description (Prerecorded) 	AA	na			
<u>1.2.6</u> - Sign Language (Prerecorded) 	AAA	na			
<u>1.2.7</u> - Extended Audio Description (Prerecorded) 	AAA	na			
<u>1.2.8</u> - Media Alternative (Prerecorded) 	AAA	na			
<u>1.2.9</u> - Audio-only (Live) 	AAA	na			
1.3-Adaptable			2	35	1
<u>1.3.1</u> - Info and Relationships 	A	✘	2	12	
<u>1.3.2</u> - Meaningful Sequence 	A	⚠		23	
<u>1.3.3</u> - Sensory Characteristics 	A	?			1
1.4-Distinguishable			0	37	6

Figure 3.3 TAW Violation Results for the Czech page of the Zoo Praha website (“Summary,” 2022)

In a more in-depth TAW report, there was a comprehensive table with each identified violation and the line in the HTML source code to which it corresponded, as noted by the icons (see Figure 3.4).

Table 3.2 Recommended fix to resolve WCAG 2.1 problem on Zoo Praha’s website

Violation	1.1.1 - Non-text Content: All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for certain situations
No. Problems	1
Prob. Type	Forms – Form controls without associated label
Level	A
Code	158.  <code><form action="/zoo/search/" method="get">    <input <img="" alt="red x" class="inputsearch" data-bbox="535 577 560 609" name="searchword" onclick="this.value=','; value=" search">="" type="text"/> <input ><="" class="butsearch" code="" name="search" type="submit" value=""/></code>
Problem	<p>When you load the page, the search bar has a text representation of the search bar image, but when you click away from the box, the “search” text goes away and there is no longer a “text alternative that serves the equivalent purpose” for non-text content.</p>  <p>This is the search bar when you initially load the page. You can clearly see a text alternative (“search”) for a non-text element (the search bar icon).</p>  <p>This is the search bar after you click on it and then click away (if you decided not to search something). The text is no longer there.</p>
Solution	<pre><input class="inputsearch" type="text" name="searchword" onclick="this.value=','; value="Search" placeholder="Search"></pre> <p>Add placeholder = “Search” to ensure that whenever the search box is clicked off and there is no input, the word “Search” will reappear in the box</p>

The team provided concrete recommendations to address accessibility issues that TAW categorized as problems on Zoo Praha’s website. We chose not to address warnings as our sponsor plans to completely redesign the website.

3.4 Accommodate English-Speaking Visitors

Our team's fourth and final objective was to accommodate English users by ensuring that Zoo Praha's website has consistent content and accurate translations between the English and Czech pages. To increase accessibility for all visitors, we conducted a content analysis of both versions of the website to get an understanding of what the websites lacked. We then used this information to create guidelines and webpage mockups detailing potential solutions. This content analysis will aid zoo staff in reworking English translations on the website, as internet translators have poor success rates when context is involved (Latief et al., 2020).

It's important to note that this analysis used the same list of top European zoos as the other analyses but excluded Schönbrunn Zoo because it was an outlier that skewed our data.

3.4.1 Translation Analysis of Top European Zoo Websites

The team conducted the language-based content analysis of the top eight European zoo websites, which included comparisons between translated content. Our systematic review of the sites looked at how many main menu sections, sub-sections, individual pages, and frequently updated pages were missing from the native language page to the English page. We also searched for pages that had translations left incomplete or completely in the language native to the country in which the park resides, giving us a percentage of how much content is translated. In addition to the translations themselves, we analyzed what translation methods each website had implemented to assess which one yielded the most successful results. As these zoos were rated as the top wildlife parks across Europe, this analysis revealed the average translation standards the zoos consider appropriate and how their standards appear when compared to their peers. We analyzed Zoo Praha in depth, using the common themes and data gathered to gain a

greater understanding of what contributed to their ranking. The team used the research from the ranking process in tandem with the in-depth individual analysis to create a list of missing and poorly translated pages.

3.5 Gantt Chart

Figure 3.5 is our team’s Gantt chart which depicted the timeline we followed for each task we completed to meet our project goal and produce our deliverables. The team developed each task so that it could be completed in a manner that allowed us to base further analysis and writing on data gained in the previous weeks. The timeline was subject to change throughout the course of our project.

Assignment	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
	10/24 - 10/28	10/31 - 11/4	11/8 - 11/11	11/14 - 11/18	11/21 - 11/22	11/28 - 12/2	12/5 - 12/9	12/12 - 12/16
Contact Sponsor for E-Ticket Survey	<input checked="" type="checkbox"/>							
Content Analysis - Zoo Praha Internal - Language	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Content Analysis - Zoo Praha Comparitive - Language	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Conduct Observational Research within Zoo	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Content Analysis - Zoo Praha Comparitive - Content	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Content Analysis - Zoo Praha Comparitive - Design	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TAW - Gather Results		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
TAW - Analyze Results		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Survey Zoo Visitors			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Content Analysis - Analyze Language Findings				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Content Analysis - Analyze Content Findings				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Content Analysis - Analyze Design Findings				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Analyze E-Ticket Survey Data				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Analyze Observational Research				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Create Final Presentation					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Page Mock-up Creation					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Create Guidelines			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Continue Writing Final Paper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 3.5 Gantt Chart showing final timeline of project task



4.0 Results and Discussions

4.0 Results and Discussion

After executing our survey, observational research, and several content analyses, our team gathered a significant amount of data that was crucial in developing recommendations for how best to redesign the Zoo Praha website. The following sections present the findings and discussion from each of these methods.

4.1 Identified Design Issues on Zoo Praha's Website

Through the analysis of other top performing zoos in Europe, the team was able to find some of the most common design practices for zoo webpages (see Appendix C). We categorized the design practices into four different categories: visual and presentation style, navigation and interactivity, textual information, and social media and travel aids. We then took detailed notes to analyze Zoo Praha's website and the practices it utilizes. Table 4.1 shows each of these practices split into two columns: those that Zoo Praha's website utilizes, and those that it does not.

Table 4.1 The extent to which Zoo Praha uses common web design practices

Practices Zoo Praha's Website Contains	Practices Zoo Praha's Website Does Not Contain
Visual and presentation style of Homepage	
Page layout	
Balanced	Large (3 or more screens)
Multimedia	
Many images (> 5 images)	
Destination brand (Logo)	
Animated images (image slide show)	
Animated buttons/links	
Colors	
	≤ 5 colors
	Scheme
	Monochromatic
Fonts	
Font family sans serif	2 fonts
	Body text size ≥ 16 px
Navigation and interactivity of Homepage	
Navigation	
≤ 6 navigation tabs	≤ average of 6 subsections beneath tabs
Site map	
Search tool	
Interactivity	
Main menu with more than 10 links	Visitor info on homepage
News on homepage	Events/feedings on homepage
Languages other than local	
≥ 3 language translations	
Textual information	
Presence of	
Homepage title	
Text length	
Few words (≤25% of screen)	
Social media and travel aids	
Social Media	
Facebook	Twitter
YouTube	
Instagram	
Travel Aids	
City map	Events schedule

In terms of the visual and presentation style of the homepage, Zoo Praha's website includes their logo as well as a balanced layout with more than five images, an image slideshow, animated buttons and links, and a readable font. The textual information on the homepage is also satisfactory as it displays the title and less than 25% of the screen has text. However, the webpage is not large enough (less than the length of 3 screens when scrolling down), uses too many colors, does not follow a color scheme, and does not use enough fonts or large enough text. While the homepage successfully implements six navigation tabs, a site map, a search tool, more than 10 links, language translations, and zoo news, it displays too many subsections beneath each navigation tab and fails to conveniently promote other important visitor information like opening hours, the zoo map, feedings, and shows. Lastly, the homepage promotes links to a few of their social media accounts—Facebook, Instagram, and YouTube—but the link to their Twitter account is missing. For planning purposes, a map of the city is included in directions for getting to the zoo, but other travel aids like a proper schedule of events are missing.

Content analysis revealed the areas where Zoo Praha's website is effective and where it needs improvement. The area of the website that needs the most enhancement is its visual and presentation style. The zoo has not updated the design of their website since 2012, causing the continued use of unappealing and outdated graphics compared to other zoo websites. The website's navigation also requires development as it is overcomplicated. The analysis revealed that many of the other zoo websites favor a simpler navigation system that groups together more related information and promotes important content, which Zoo Praha does not do well. The practices displayed in Table 4.1 will aid us in the development of our recommendations for Zoo Praha's new website.

4.2 Determined “Top Zoo Content”

In order to recommend content for Zoo Praha to display on their website, our team conducted observational research at various zoo exhibits, surveyed visitors to validate these observations, and assessed the content on websites of nine other top-performing European zoos. Through this, we have deduced the types of content that visitors are most interested seeing on a zoo website.

4.2.1 Observational Research

Observing a variety of zoo exhibits allowed us to draw important conclusions about the visitor experience at Zoo Praha. The data we collected reflects general visitation patterns and has provided guidance in catering to visitor preferences. Our analysis includes individual exhibits that we could observe one at a time, as well as indoor exhibits that grouped together multiple animals such as the Feline and Reptile House, Africa House, and Indonesian Jungle.

One important metric we recorded was the duration that visitors stayed at each exhibit. Figure 4.1 shows the percentage of visitors who stayed at an exhibit for a given time interval. Some exhibits such as the gorillas attracted visitors for longer periods of time with 73% of visitors staying for five minutes or longer. Others such as the penguins did not retain visitor attention as around 95% of visitors stayed for less than three minutes. This is represented by the left skew of the bars corresponding to the gorilla exhibit and a right skew of the bars corresponding to the penguins. For further data on our observational research, such as total visitors counts, can be seen in Appendix F.

Visitor Duration % by Exhibit

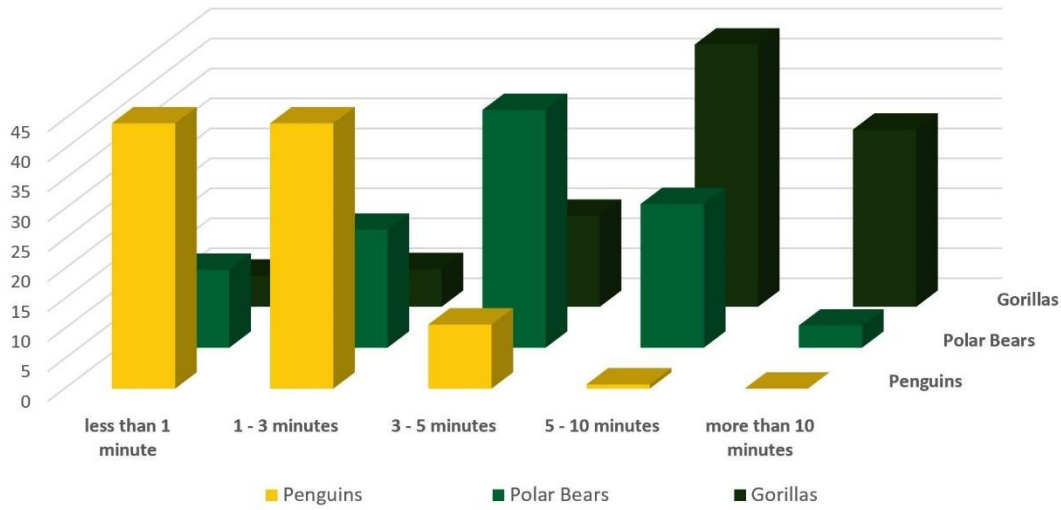


Figure 4.1 Visitor duration percentage by exhibit

By looking at the skew of distributions for each exhibit the team observed, we were able to categorize exhibits into four groups: left skewed, symmetrical, slightly right skewed, and right skewed as seen in Table 4.2. For each category, exhibits are listed in order of most heavily to least heavily skewed.

Table 4.2 Exhibit skew categories

Category	Exhibits
LEFT	Gorillas
SYMMETRIC	Polar Bears, Kangaroos
SLIGHT RIGHT	Fur Seals, Elephants ,Crocodiles
RIGHT	Penguins, Hippos, Tasmanian Devils / Wombat

Logically, visitors spend more time at the exhibits that interest them the most, therefore, the more skewed an animal’s distribution is to the left, the more popular it is. Table 4.2 represents a hierarchy of animal popularity with gorillas being the most popular, and penguins

being the least. While this model disregards several factors that may impact the time in which visitors stay at exhibits, it provided a basis for the team to expand upon through analysis of other data we collected.

In addition to recording duration, we also counted the number of visitors who took pictures at each exhibit and graphed the data as shown in Figure 4.2.

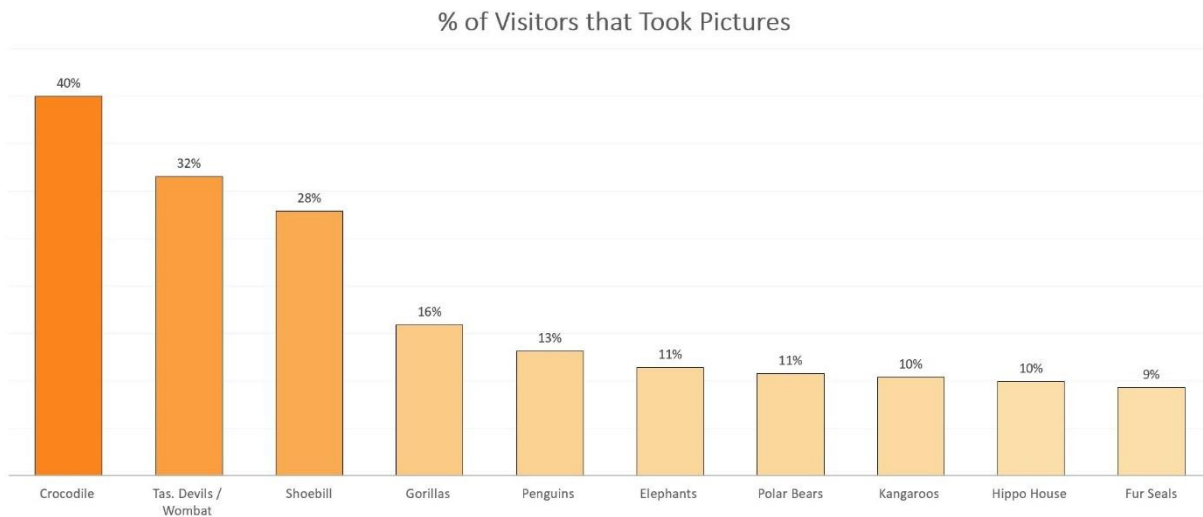


Figure 4.2 Percentage of visitors that took pictures by exhibit

By taking pictures of certain animals, visitors were showing what parts of the zoo they wished to remember and which parts they believed were particularly attractive. This data was especially useful in determining what content to put on the website as a large portion is designated for animal photos. While the team expected visitors to take more pictures at the most popular exhibits, our data revealed that this was not the case. For most exhibits, around 11% of visitors took photos. However, for the gharial crocodile (40%), Tasmanian devil/wombat (32%), and shoebill exhibits (28%), there was a large and somewhat unusual increase. Although these animals received far less traffic and attention when compared with most of the other exhibits, the

percentage of visitors that took pictures was substantially higher. For further data on the number of visitors who took pictures, see Appendix G.

From our observations and further research, we have determined that this increase stems from animal rarity and the uniqueness of an animal's physical traits. All the exhibits that had a significant increase in picture taking are endangered, uncommon at other European zoos, and/or have very distinct characteristics ("Gharial," n.d.) ("Tasmanian Devil," n.d.). These exhibits offer a much more memorable experience for visitors compared with exhibits that people typically expect to see when coming to the zoo. Because of this, it would be very beneficial for Zoo Praha to highlight not only the well-known and popular animals on their website, but also the rarer and less common ones as they are more likely to intrigue potential visitors.

To further examine exhibit popularity, we created a list of common variables seen at enclosures. The team developed criteria based on trends seen at exhibits where visitors tended to stay longer. These variables included but were not limited to animal size, animal activity level, visibility of the animal, number of structures in the enclosure, and quality of scenery. From these characteristics, we were able to grade and systematically rank the exhibits we observed as shown in Table 4.3.

Table 4.3 Qualitative Analysis Exhibit Ranking

Exhibit Rankings	
Rank	Animal /Exhibit
1	Gorillas
2	Elephants
3	Kangaroos
4	Polar Bears
5	Fur Seals
6	Crocodiles
7	Penguins
8	Tasmanian Devils
9	Hippos
10	Shoebills
11	Wombat

It is important to note the differences between these rankings and our exhibit hierarchy of visitor duration (see Table 4.2). Visitor duration shows where people actually spent their time, while these rankings (see Table 4.3) show which exhibits the team would expect to be the most successful based on our observations. In general, people who come to the zoo are interested in seeing animals being active. Whether it is seeing an animal eat, climb on a structure, or interact with other animals, it is the potential for these events to occur that will draw visitors' attention. When searching for what content to put on the website, these rankings show where such events are most likely to happen. For example, in attempting to capture pictures for the website, it is much more likely to find content that people will enjoy at the gorilla exhibit, rather than the hippos. This is not necessarily because more people like gorillas more than hippos, but because of the nature of the exhibits themselves.

The team also evaluated and compared the Feline and Reptile House, Africa House, and Indonesian Jungle using a slightly altered set of criteria due to limitations. Some of the variables

we used were the general size of the animals within each building, how immersive the exhibits were overall, visibility of the animals, and variety of species in the building. We concluded that the Indonesian Jungle ranked first followed closely by the Feline and Reptile House, and lastly the Africa House. While these buildings have many similarities, there are very noticeable distinctions between the strengths of each building. The Indonesian Jungle had significantly more immersive exhibits while the Feline and Reptile House had much larger animals overall. When portraying these locations online, the zoo should play to the strengths of each exhibit and highlight the most favorable parts.

4.2.2 Visitor Experiences at Zoo Praha

The survey the team distributed in the Dja Reserve (gorilla house) enabled us to further determine what “top zoo content” should be displayed on the Zoo Praha website. We collected a total of 35 survey responses related to respondent demographics, their purpose for coming to the zoo, and their experience with zoo exhibits (see Appendix D).

From our data, we concluded that 77% of the zoo visitors surveyed were between the ages of 18 and 35 and the majority (60%) were from the Czech Republic and spoke Czech. Visitors came to the zoo for entertainment (76%), education (16%), and to support conservation (8%). Additionally, the vast majority (90%) visited with friends or family.

Survey responses from a multi-select question on favorite animals allowed the team to determine the most popular animals and exhibits at the zoo (see Figure 4.3). It is important to note that only 29 out of 35 (83%) respondents answered this question. The top five most popular animals and exhibits at Zoo Praha were elephants (72%) and gorillas (69%), followed by polar bears (45%), penguins (41%), and lions (38%). Survey results further augmented findings from

observations and helped the team to identify what animals Zoo Praha would benefit from promoting on their websites.

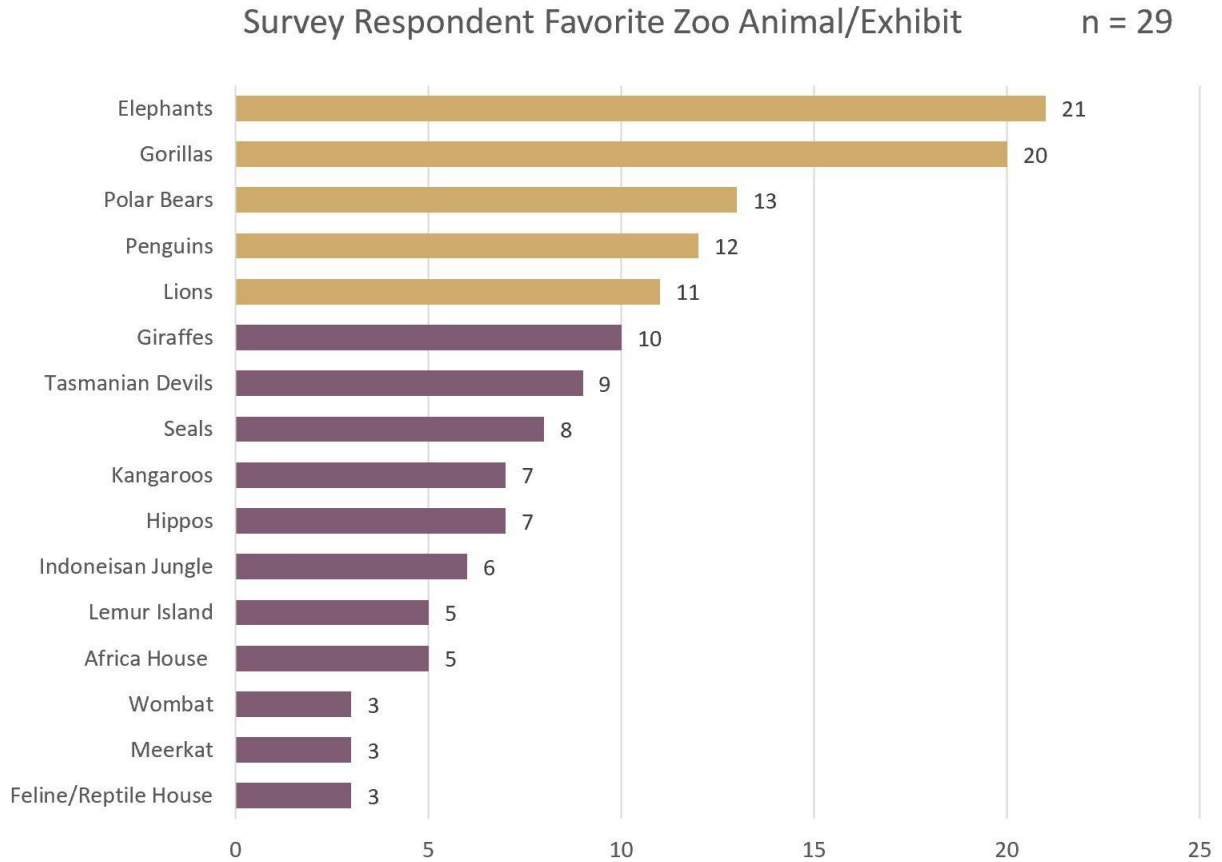


Figure 4.3 Survey results displaying most popular animals and exhibits at Zoo Praha

The survey also asked questions about the website to further identify design issues visitors might have noticed. Only 16 of the 35 survey respondents (46%) had used the website prior to their visit. Unfortunately, the majority of people (94%) who did use the website did not answer the questions related to design or functionality issues. This rendered the data from all but one of the questions about the website inconclusive. However, respondents did answer a question related to how they used the website prior to their visit and results revealed that most use it to

explore hours of operation (54%), animal or exhibit information (54%), or to purchase E-Tickets (46%). Respondents were generally less interested in zoo conservation effort information as shown in Figure 4.4.

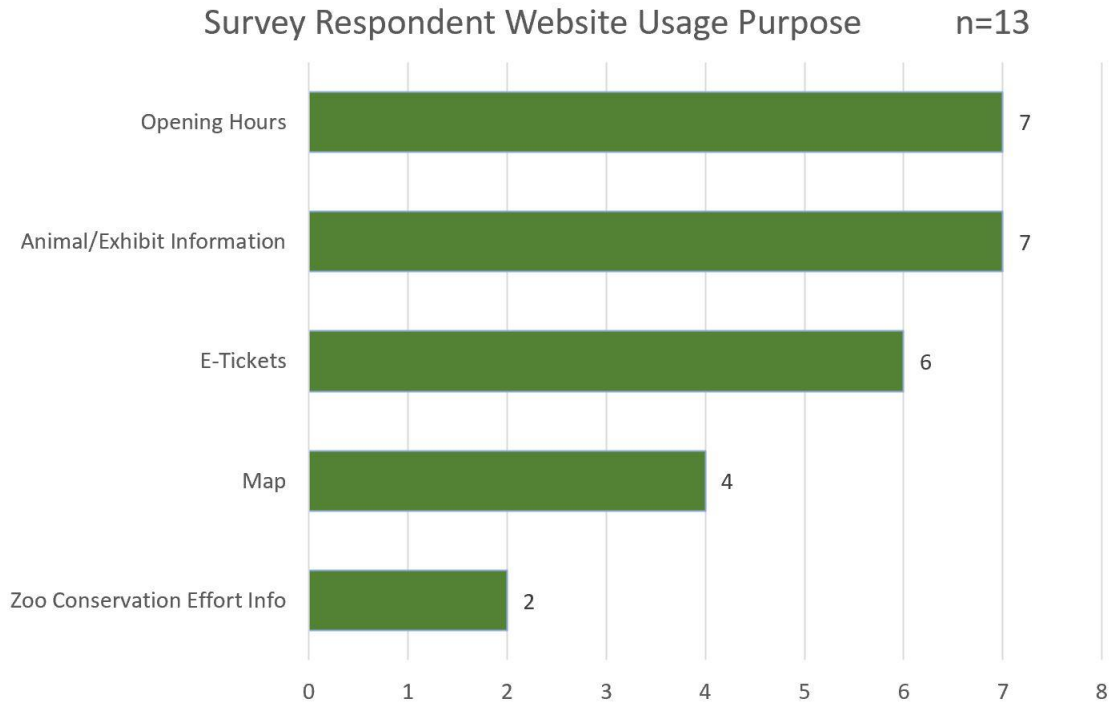


Figure 4.4 Survey respondent results on website usage

Although the team could not conclude concrete results or trends for most of the survey questions about the website, the data collected about how visitors use the Zoo Praha website affirmed that the site is commonly used for practical and logistical information (i.e., hours of operation and ticket information). The team also concluded that visitors still want to see content about the animals and exhibits on the website. Zoo Praha does this well on their social media platforms such as YouTube, Instagram, and TikTok, so transferring some of those efforts over to the website will better promote the zoo and their animals.

4.2.3 Content Displayed on Top-Performing Zoo Websites

To better understand what Zoo Praha visitors would like to see on the website, our team investigated the content displayed on nine top-performing European zoo websites. From our analysis we found that content generally fell into two larger categories—entertainment-related content and educational content—and four subcategories—zoo services, human-education content, conservation content, and animal content (see Figure 4.5).

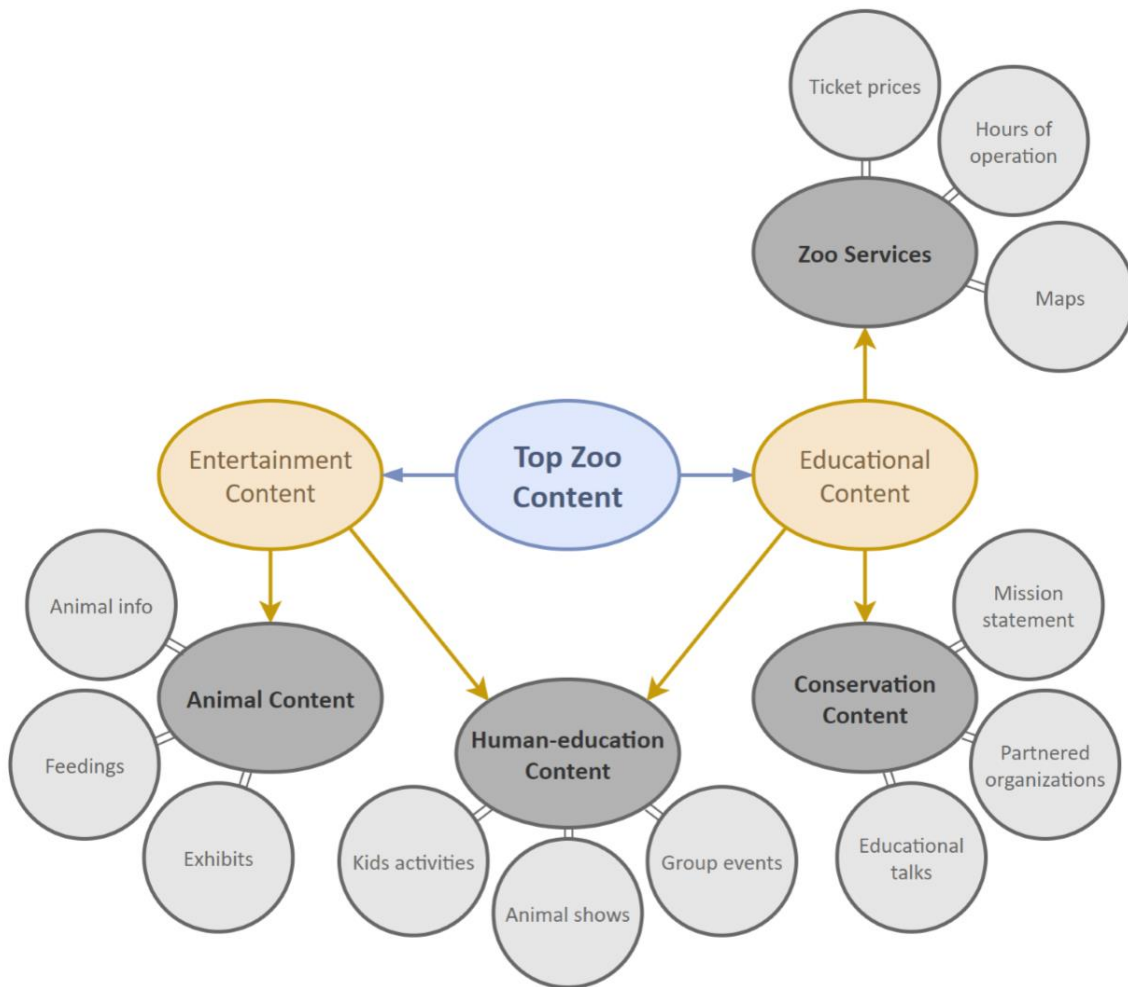


Figure 4.5 Flowchart of categories concluded from top zoo content analysis

Analysis of website homepages revealed that animal content was most prevalent with almost 90% of the European zoo websites displaying this type of content. On these sites, 65% of

the space on the homepage was dedicated to photos, videos, and descriptions of the various animals and exhibits found at the zoo. On the contrary, conservation content was least commonly found on homepages, with less than 5% of the total content focused on such. For the 67% of zoos that did display this information, the content presented came in the form of brief mission statements as well as details on conservation-themed animal presentations. Given the team's previous finding that 76% of those coming to the zoo came for entertainment purposes, our team concluded to entice visitors, top-performing zoo websites emphasized their biggest entertainment asset—the animals—and refrained from focusing too much on informational or educational details.

Upon completion of analysis of the homepage, the team examined subsections of the zoo websites and found that zoo services were the most commonly found content with six of the nine (67%) displaying this type of content and constituting, on average, 51% of all content available in their respective subsections. On the other hand, conservation content was found least often within the subsections of the website—only six of the nine zoos (67%) had anything related to conservation and these zoos dedicated less than 15% of space on those pages to resources such as mission statements, partnered wildlife organizations, and how to support conservation within the zoo. While conservation efforts displayed on the website are not as pertinent to a visitor's experience, zoo services are essential in planning a visit to the zoo. Providing information such as ticket prices, zoo directions, and accessibility accommodations to visitors beforehand will ensure a more enjoyable excursion.

4.3 Identified Zoo Praha's Web Accessibility Issues

To provide recommendations for how Zoo Praha could improve accessibility on their website, the team identified issues with their current website. After analyzing the accessibility of

the English and Czech page of Zoo Praha's website using an online accessibility assessment tool, Test de Accesibilidad Web (TAW), we recorded a total of 15 problems with 166 warnings on the English page, and 41 problems with 227 warnings on the Czech page.

The team also analyzed the accessibility of the websites for the other top nine zoos in Europe (see Appendix A), to show how Zoo Praha compares to other European zoo websites with respect to web accessibility. After running both the English and native language pages for each of these nine websites through TAW, we determined from the results that while the Zoo Praha website has numerous accessibility issues, it is relatively accessible. While Zoo Praha had 15 problems on the English page and 41 problems on the Czech, the results of running the other websites yielded an average number of 111 problems with a median of 66 (see Figure 4.6). Furthermore, the English page of Zoo Praha's website had the fewest number of problems out of all 18 web pages analyzed.

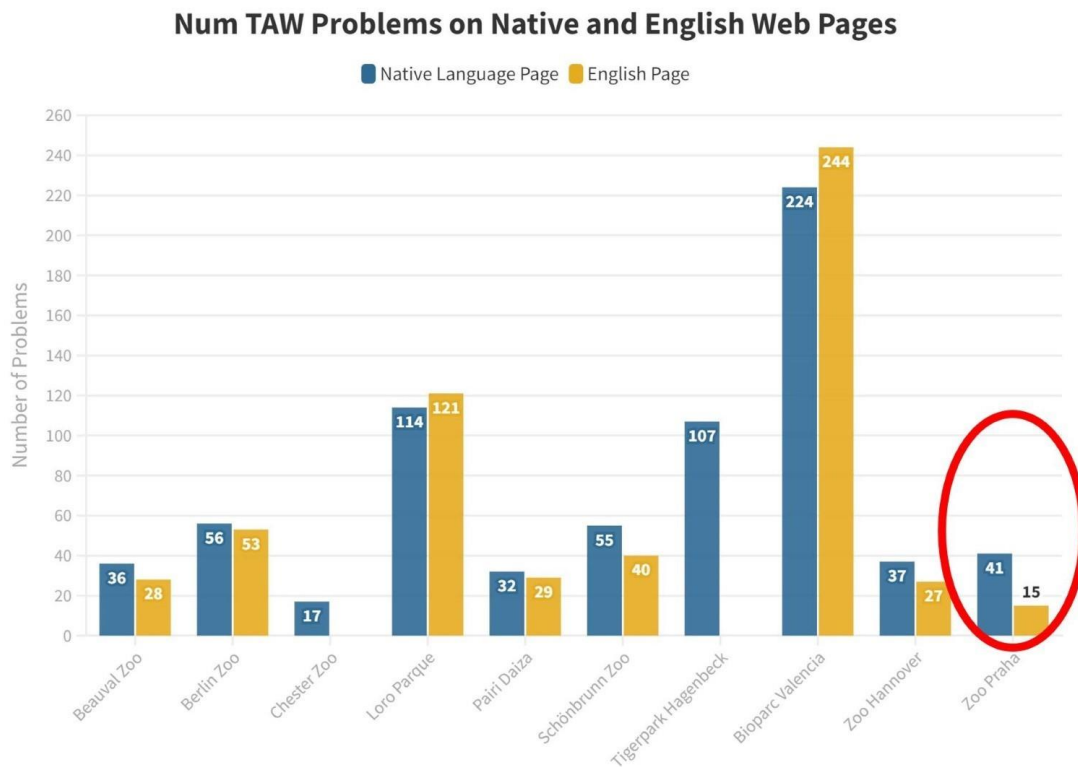


Figure 4.6 Comparison of total number of TAW problems for 18 different web pages

The team attributed the difference in number of problems from the Czech to English page of Zoo Praha’s website to the discrepancies in content between the two versions as the English page lacked a significant amount of content featured on the Czech page and therefore, caused fewer accessibility issues. Furthermore, while the Zoo Praha website still has a significant number of accessibility issues, they have far fewer than other zoo sites because their website’s design is rudimentary, less sophisticated, and the pages have less content overall.

4.3.1 Recorded WCAG 2.1 Problems on the Zoo Praha Website

Using TAW, our team identified the WCAG 2.1 success criteria flagged as problems on the Zoo Praha website. The WCAG 2.1 is organized into four main sections: perceivable,

operable, understandable, and robust. Table 4.4 displays the TAW problems the English page had with the success criteria within each of these four categories. Almost all the problems identified on the Czech page were of the same type as the English page, but the total number on the Czech page was far higher. A similar table showing the problems on the Czech page is shown in Table 4.5.

Table 4.4 Categorized TAW problems on Zoo Praha’s English Page

<p>1 – PERCIEVABLE This section details how to properly ensure information and user interface components are easy to comprehend by users of all abilities.</p>	<p>Total Number of TAW Problems: 3</p> <p>Success Criteria Violated by English Page:</p> <ul style="list-style-type: none"> ▪ 1.1.1 Non-text Content (1) ▪ 1.3.1 Info and Relationships (2)
<p>2 – OPERABLE This next section explains how to make user interface components easily functional and navigable.</p>	<p>Total Number of TAW Problems: 9</p> <p>Success Criteria Violated by English Page:</p> <ul style="list-style-type: none"> ▪ 2.1.3 Keyboard (No Exception) (1) ▪ 2.4.4 Link Purpose (In Context) (1) ▪ 2.4.9 Link Purpose (Link Only) (6) ▪ 2.4.10 Section headings (1)
<p>3 – UNDERSTANDABLE This section describes how to design a predictable and intuitive web page for users, so they understand how to use it.</p>	<p>Total Number of TAW Problems: 1</p> <p>Success Criteria Violated by English Page:</p> <ul style="list-style-type: none"> ▪ 3.3.2 Labels of Instructions (1)
<p>4 – ROBUST Finally, this section explains how to design a web page so that it is accessible through all assistive technologies (such as a screen reader or magnifier).</p>	<p>Total Number of TAW Problems: 2</p> <p>Success Criteria Violated by English Page:</p> <ul style="list-style-type: none"> ▪ 4.1.2 Name, Role, Value (2)

Table 4.4 Categorized TAW problems on Zoo Praha’s Czech Page

<p>1 – PERCIEVABLE This section details how to properly ensure information and user interface components are easy to comprehend by users of all abilities.</p>	<p>Total Number of TAW Problems: 4</p> <p>Success Criteria Violated by Czech Page:</p> <ul style="list-style-type: none"> ▪ 1.1.1 Non-text Content (2) ▪ 1.3.1 Info and Relationships (2)
<p>2 – OPERABLE This next section explains how to make user interface components easily functional and navigable.</p>	<p>Total Number of TAW Problems: 34</p> <p>Success Criteria Violated by Czech Page:</p> <ul style="list-style-type: none"> ▪ 2.1.3 Keyboard (No Exception) (1) ▪ 2.4.4 Link Purpose (In Context) (2) ▪ 2.4.9 Link Purpose (Link Only) (30) ▪ 2.4.10 Section headings (1)
<p>3 – UNDERSTANDABLE This section describes how to design a predictable and intuitive web page for users, so they understand how to use it.</p>	<p>Total Number of TAW Problems: 1</p> <p>Success Criteria Violated by Czech Page:</p> <ul style="list-style-type: none"> ▪ 3.3.2 Labels of Instructions (1)
<p>4 – ROBUST Finally, this section explains how to design a web page so that it is accessible through all assistive technologies (such as a screen reader or magnifier).</p>	<p>Total Number of TAW Problems: 2</p> <p>Success Criteria Violated by Czech Page:</p> <ul style="list-style-type: none"> ▪ 4.1.2 Name, Role, Value (2)

After analyzing these TAW results, our team identified the success criterion with the highest number of problems: 2.4.9. Success criterion 2.4.9 falls under the operable category and is referred to as Link Purpose, stating that the purpose of a link must be identifiable by the link text alone. This success criterion was responsible for 75% of all problems found on the Czech page, and 40% of ones found on the English page. Identifying success criterion 2.4.9 as the majority of TAW problems found on the Zoo Praha website further validated our assumption that less content yields fewer accessibility issues. The Czech page had 24 more instances of a violation of this success criterion than the English page did because the Czech page has far more

content, and consequently, far more links that present accessibility issues. Therefore, the team concluded that Zoo Praha’s limited number of TAW problems when compared to other zoo websites is not a sign of proper implementation of web accessibility guidelines, rather it is attributed to poor web design, poor structure, and limited content.

4.4 Identifying Discrepancies between Native and English Language Pages

Our team's final objective was to assess where Zoo Praha ranks in comparison to other top European zoos in their website translation efforts. The translation-based external content analysis found that seven of the eight European zoo websites (88%) successfully translated their content from their native language into English through a variety of translation methods including but not limited to Google Translate build-ins, support for the Google Translate browser extension, and human translation. Our team found that only two sites—Tierpark Hagenbeck and Zoo Praha—had not translated at least 50% of the pages available or 75% of features available in their native language into their English sites. However, there was no single translation method commonly used by the more successful websites and the two zoo sites previously mentioned also implement different translation methods—Tierpark Hagenbeck uses the Google Translate browser extension while Zoo Praha has human translated pages in both Czech and English.

Our internal content analysis also found that Zoo Praha lacks both page availability and complete translations, including nine of the pages previously denoted as “top zoo content”, all of which are marked by bolded text in Figure 4.7. Not only did the website offer just 46% of their Czech site in English, but only 23% of features were incorporated into the English site. As seen in Figure 4.7 there is a massive content disconnect between the languages, organized into two sections—missing or partial translations.



Figure 4.7 Missing and partial sections on the English site (“top zoo content” is bolded)

In terms of high-level content, there are three main menu sections and 12 sub-sections missing from the English website. On top of missing over half of the content offered to Czech speakers, there were also 11 subsections of the English website that had only partial translations. Having completely translated web pages is key to ensuring proper language accommodations and accessibility as well as attracting visitors, as Zoo Praha has a growing number of English-speaking visitors (Chung et al., 2015). Having improperly translated their website, Zoo Praha is deterring potential English-speaking tourists from visiting their park.



5.0 Limitations

5.0 Limitations

During our time working on this project, the team faced several limitations related to our methodological approaches that made data collection difficult. Many of our limitations were circumstantial and out of our control; however, there were some changes we made to our methods to overcome these challenges that future projects can use to avoid similar obstacles.

5.1 Surveying Zoo Praha Visitors

Due to the changes the team had to make to our survey, our data collection was limited. Since we had to combine our two original surveys, the length increased which may have led to many respondents submitting incomplete surveys. Our distribution method also may have negatively impacted our results. Distributing the survey only in the Dja Reserve limited us to gaining responses from only those who entered the exhibit. While the language barrier and the team's concern over interrupting families made it difficult to approach visitors, we also discovered that many people did not understand how to scan a QR code and were unaware that the zoo offered free Wi-Fi. Had we included instructions on connecting to the zoo's Wi-Fi alongside the QR code, it might have increased our response rate.

5.2 Interviewing Web Design Experts

The team originally contacted five computer science professors at Worcester Polytechnic Institute and planned to interview at least three to gain professional level insight on the Zoo Praha website and our content analysis criteria. However, we received only one response, and it was from a professor who has been out of the web and application design industry for over 20 years, giving no new or useful insight into the best, modern web design practices. This, along with the lack of responses, lead the team to exclude interviews from the study.

5.3 Observational Research at Zoo Praha

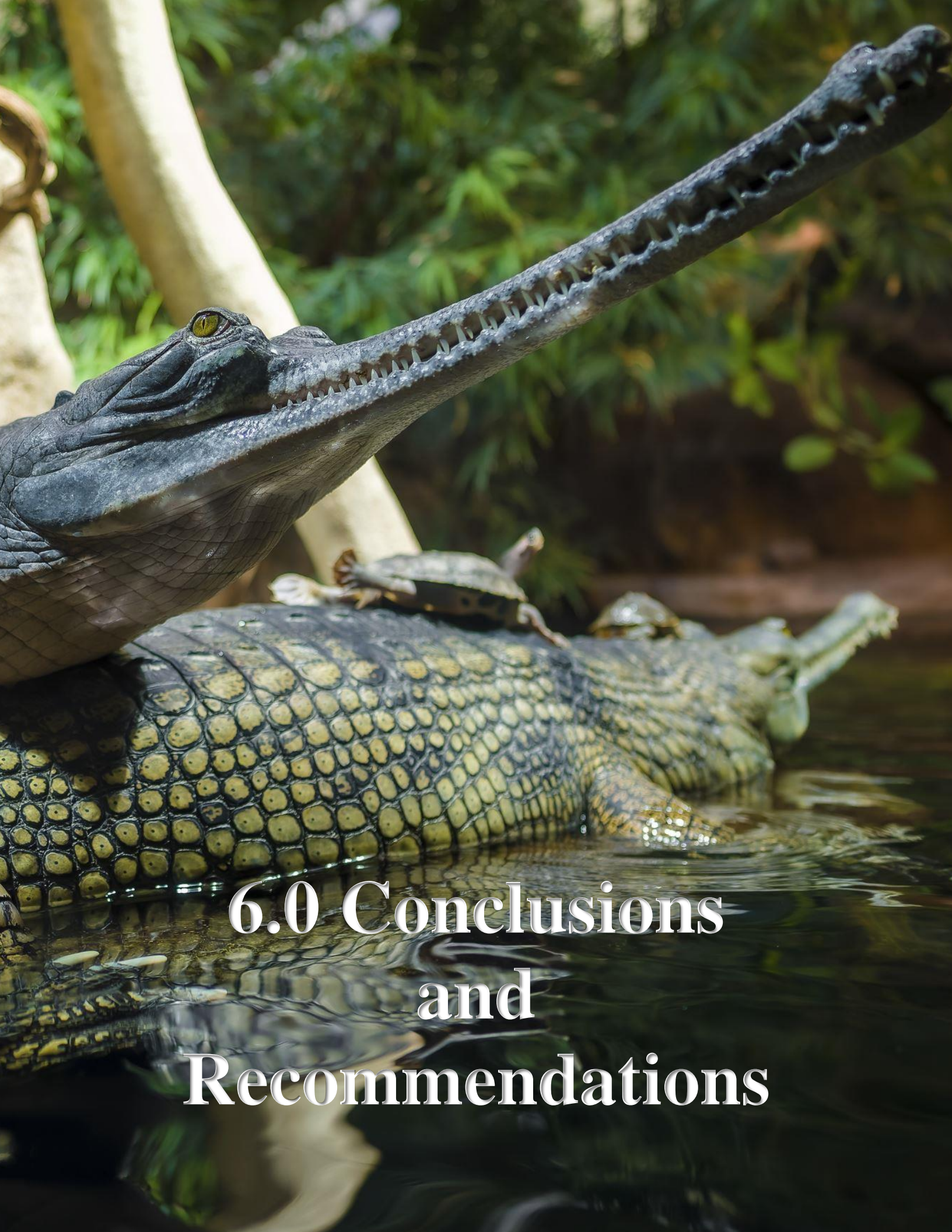
There is a multitude of variables that affect visitor interactions at zoo exhibits. While conducting our observational research, we attempted to minimize the influence of such variables, however, in some cases this was not feasible.

One of the largest factors affecting our data was an inconsistency in the number of visitors at the zoo on any given day. The day of the week greatly impacted this as a much larger number of people visited on the weekend compared to weekdays. Another major cause of this visitor fluctuation was the change in weather. Over the time period that we were at the zoo, there was a drop in temperature causing a decline in overall visitor attendance. Additionally, some animals needed to remain indoors during colder weather, thus restricting us from collecting robust data. Together, these factors limited the amount of time and opportunities we had to collect meaningful data.

The nature of certain exhibits and animals also restricted the team. One case of this was when we observed the elephants. The enclosure is extremely large and has many different locations to view the elephants. Though we chose the most central location we could, it was not possible for us to account for every single visitor who saw the elephants during our team's observation periods. The lion and tiger enclosures also proved challenging to observe as the cats had the freedom to roam their outdoor area or remain indoors. Because of this, we decided to group them in with the Feline and Reptile House as outdoor observations would have provided a less accurate representation of their popularity.

While conducting observations, it is likely that human error also affected the accuracy of our data. At exhibits that had increased foot traffic such as gorillas or penguins, it became difficult to keep track of how long each visitor stayed. To combat this, we only viewed certain

groups of visitors rather than attempting to account for every individual. This gave us a sample size of the total number of visitors at any exhibit. However, for exhibits that experienced less traffic such as the crocodiles or shoebills, we were able to view each individual visitor and note how long they stayed. Similarly, noticing every visitor that took a picture was challenging for exhibits with a lot of visitors. Due to this, our data was less accurate for exhibits with more visitor traffic.



6.0 Conclusions and Recommendations

6.0 Conclusions and Recommendations

The goal of this project was to provide recommendations and guidelines to help Zoo Praha redesign their website, thus, enhancing its functionality, improving web accessibility, and bolstering tourism. After conducting observational research, distributing a survey, and performing several content analyses on other zoo websites, our team identified numerous ways in which Zoo Praha can effectively redesign their website so that it accurately reflects the zoo's high acclaim. The complete and extensive set of recommendations we presented to Zoo Praha is in Appendix H.

6.1 Redesigning Zoo Praha's Website: Organization and Visuals

From the content analysis concerning the design of Zoo Praha's website, we noticed that their website follows much of the same structure that other top zoos in Europe use. The team recommends continuing to utilize this structure when designing the new website but incorporating several visual and organizational changes. The visuals of the new webpage should present a more pleasing page layout with the continued use of multimedia, a more attractive color scheme, and more engaging, yet still readable, fonts. The website for ZooParc de Beauval demonstrates this well by using high quality pictures, a color palette of high contrast, and different fonts that break up the titles from the body text (see Figure 6.1).

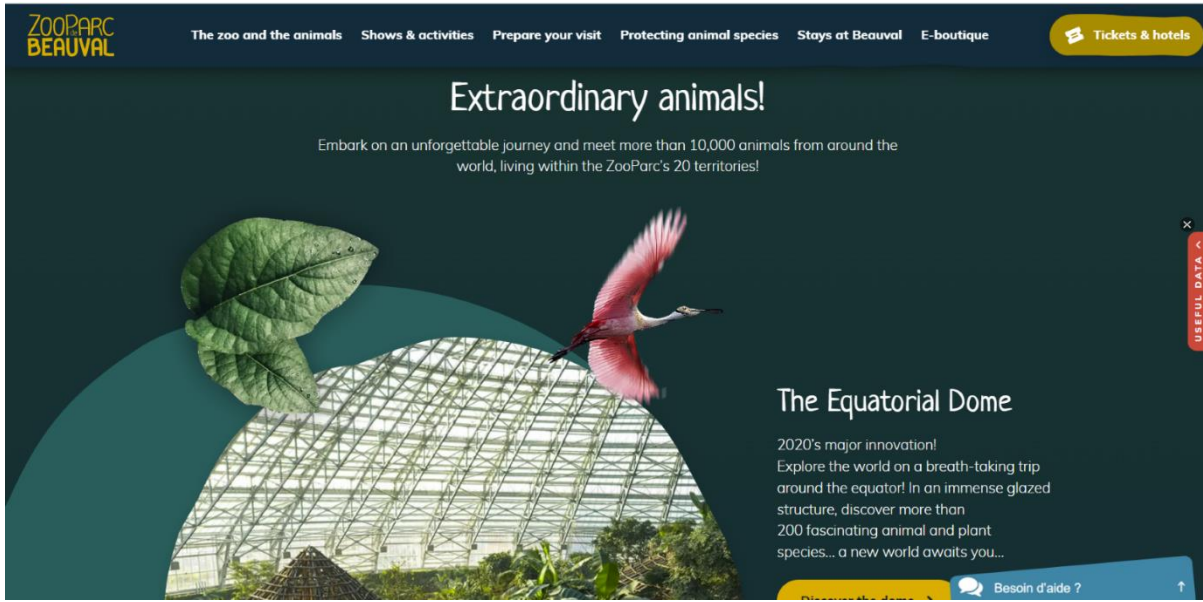


Figure 6.1 The ZooParc de Beauval website homepage (“ZooParc de Beauval,” n.d.)

To improve the organization, navigation, and interactivity of the webpage, the new site should aim to simplify its tabs by grouping related information together and promoting the most important content on the homepage. An example of an effective navigation system is the tab organization of the Berlin Zoo website (see Figure 6.2) and the content promoted on their homepage (see Figure 6.3).

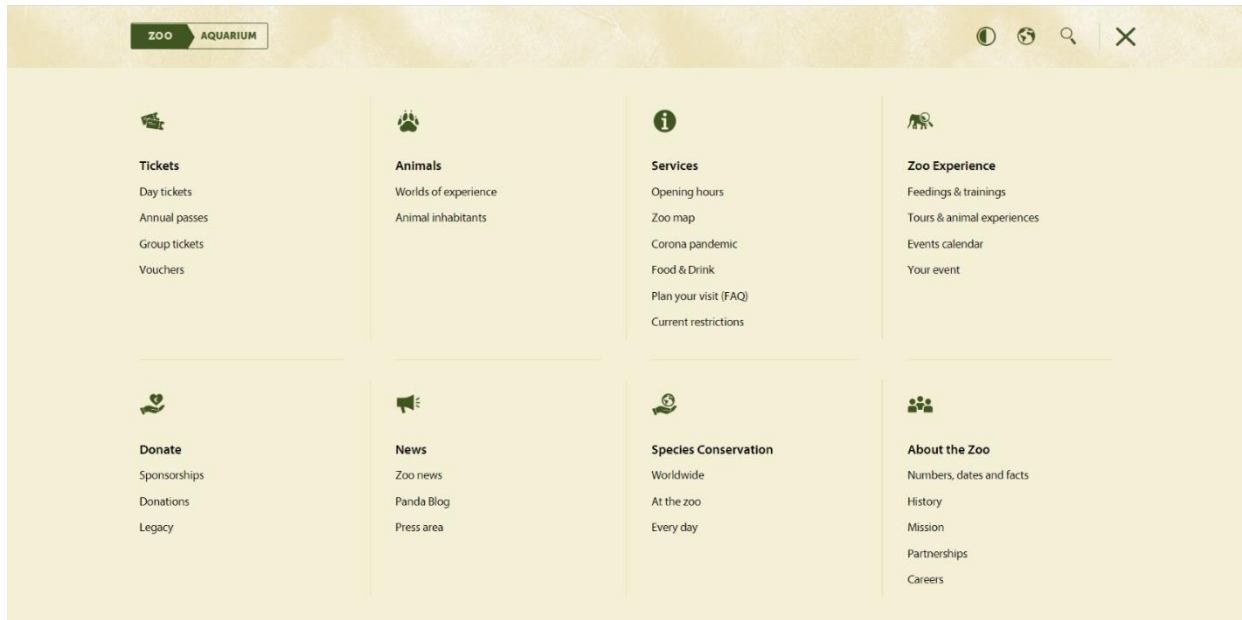


Figure 6.2 The Berlin Zoo website navigation tabs (“Berlin Zoo,” n.d.)

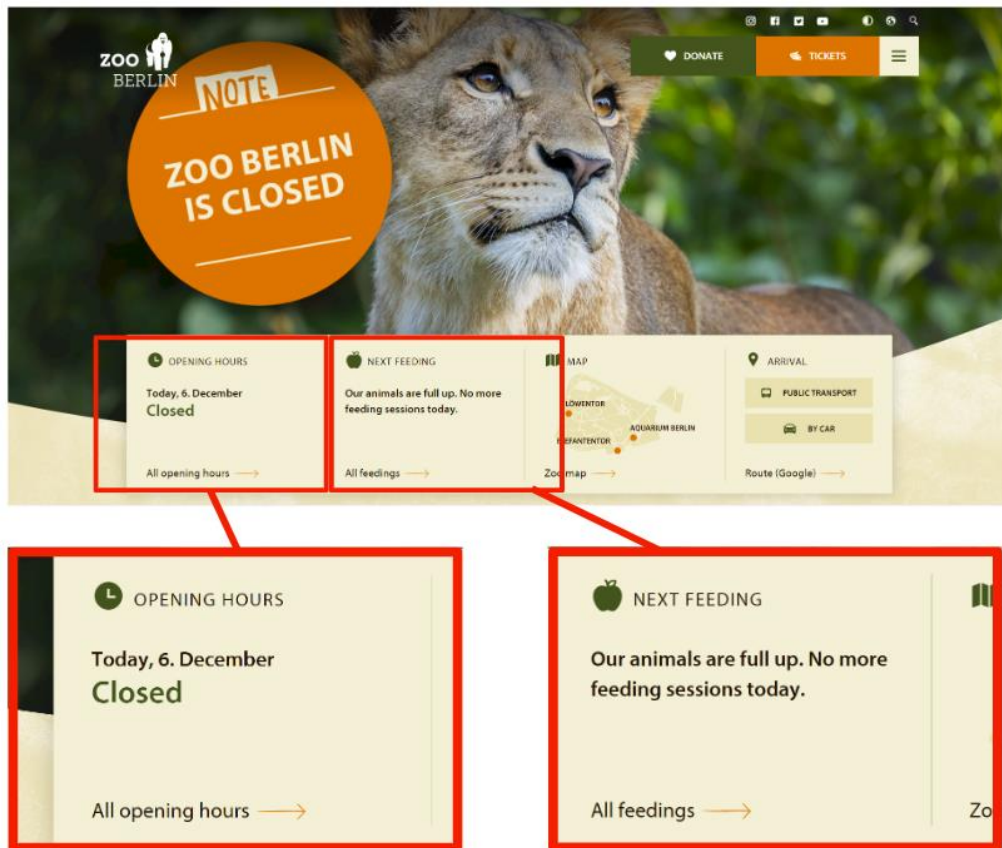


Figure 6.3 The Berlin Zoo website homepage (“Berlin Zoo,” n.d.)

The Berlin Zoo website successfully groups related pages together in a simple and intuitive manner, making navigating through the website an effortless experience. To expand upon this ease of use, they also display important visitor information—opening hours, next feedings, the zoo map, and instructions on how to get there—as some of the first content on the page. Utilizing the practices mentioned here and those from Figure 4.1 to design Zoo Praha’s new website will give the basis for an effective and professional website for visitors.

Based on our research into aesthetics and visuals, our team created an Adobe XD webpage mockup which was heavily influenced by the mockup created by our sponsor, Oliver Le Que. We changed the color scheme to more neutral colors, added more animal content, updated fonts, and changed some formatting (see Appendix I). We recommend Zoo Praha uses this mockup as a guide for how to design their new website’s aesthetics.

6.2 Assessing and Adjusting Featured Website Content

While the Zoo Praha website displays some animal content on their homepage, we recommend they display a wider variety of animals that align with results collected from our survey and observational research. Animals such as elephants and gorillas would best appeal to the interest of visitors as they are the most popular and are what visitors expect to see when coming to the zoo. However, we also recommend displaying rare animals such as the Tasmanian devils or gharial crocodiles that are not as well-known and harder to find at other zoos.

In addition to increasing both the number and types of animals represented on the website, we also recommend that Zoo Praha includes a wider variety of animal content including, but not limited to, feeding schedules, exhibit information, and updated news stories. Many of the top-performing European zoo websites displayed this type of content on their homepage, depicting a more immersive zoo experience to potential visitors (see Figure 6.4).

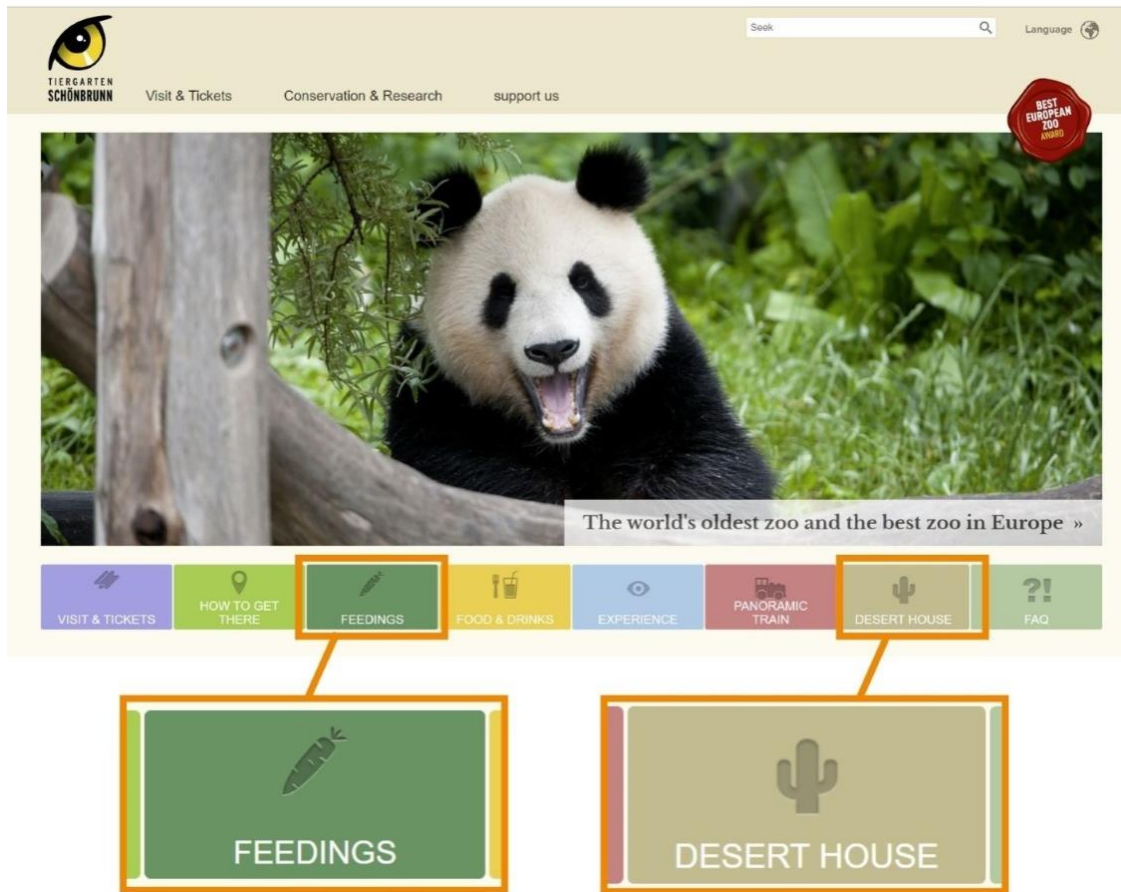


Figure 6.4 Schönbrunn Zoo homepage with links to animal content highlighted (“Homepage – Vienna Zoo,” n.d.)

Zoo Praha has feedings daily, but this information is nowhere to be found on the website. Including content such as this will help visitors get the most out of their visit, as well as potentially attract them to exhibits they may not have previously considered.

Within the subsections of the website, our team recommends that Zoo Praha refines their zoo services-related content, especially within the English page. The content analysis revealed that the majority of the subsections on the European zoo websites were dedicated to zoo services, making it easier for future visitors to plan their trip to the zoo. Zoo Praha’s current subsection with zoo service content is minimal, with a significant portion of the information being text-

based. Incorporating more photos and condensing commonly sought zoo service content will make navigation easier for visitors, enhancing their experience on the website.

6.3 Improving Web Accessibility

Based on the accessibility issues the team found with the current website using TAW, we recommend that Zoo Praha adheres to the most recent WCAG at the time of redesigning their website. We recommend they pay close attention to meeting the following success criteria, as we found numerous problems with these specific ones on the current website:

- **Success Criterion 1.1.1 – Non-text Content:** All non-text content that is presented to the user (such as images or icons) must have a text alternative that serves the equivalent purpose so that it is perceivable by assistive technologies (such as a screen reader).
- **Success Criterion 2.4.4 – Link Purpose (In Context):** The purpose of each should be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general.
- **Success Criterion 2.4.9 – A mechanism is available to allow the purpose of each link to be identified from link text alone, except where the purpose of the link would be ambiguous to users in general (no context).**

To adhere to these success criteria, we recommend Zoo Praha references the WCAG overview page on the World Wide Web Consortium site. Under each success criteria, there are both recommended techniques and common failures available. Furthermore, we suggest that Zoo Praha uses TAW to analyze the accessibility of the redesigned website so they can identify any issues and then fix them before launching the site.

Beyond the WCAG guidelines, we recommend Zoo Praha redesign their new website to be more accessible to English speaking tourists by strengthening their online English accommodations. From our analysis of other zoo websites and common translation standards, we suggest that the zoo fully translates their website to make the Czech and English sites identical by hiring a human translator. This manual translation method yields the best results, as Google Translate frequently encounters issues with context and grammar and will allow for images to also be translated.

6.4 Conclusion

From each of the team's findings, we concluded that Zoo Praha should redesign their website as we found the current website has poor aesthetics, missing and outdated content, and inaccessible web components. Through our research the team has determined that redesigning the Zoo Praha website will allow the zoo to reach a wider audience of web users, catering to their web usage and accessibility needs. Furthermore, we believe that incorporating these recommendations when redesigning the website will accurately reflect the zoo's high international acclaim, thus improving users' impressions of the zoo as a whole.

7.0 Team Reflection

While the time our team spent in the Czech Republic was short, it was an incredible experience as we have learned a great deal about working as a team and about ourselves. From this project we have learned the importance of exploring the social aspects and implications of a technical problem. Our team is beyond grateful for the time we got to spend at Zoo Praha and for both the people and animals we got to meet along the way. None of this could have been possible without the support of our liaison, Oliver Le Que who worked closely with us during this seven-week period and even introduced us to some animal friends. We are going to miss working at the zoo and on this project but cannot wait to see Zoo Praha implement our recommendations on their redesigned website.



References

- 50 Best Zoos In the World 2022. TourScanner. (2022, March 30). Retrieved October 4, 2022, from <https://toursanner.com/blog/best-zoos-in-the-world/>
- Aladwani, & Palvia, P. C. (2002). Developing and validating an instrument for measuring user-perceived web quality. *Information & Management*, 39(6), 467–476. [https://doi.org/10.1016/S0378-7206\(01\)00113-6](https://doi.org/10.1016/S0378-7206(01)00113-6)
- Atrash, D. (2022, February 9). *Understanding web accessibility standards: Ada, Section 508, and WCAG compliance*. Medium. Retrieved October 3, 2022, from [https://bootcamp.uxdesign.cc/understanding-web-accessibility-standards-ada-section-508-and-wcag-compliance-143cfb8b691e'](https://bootcamp.uxdesign.cc/understanding-web-accessibility-standards-ada-section-508-and-wcag-compliance-143cfb8b691e)
- Bateson, M., McPeake, J., & O'Neill, A. (2014). Electronic surveys: how to maximise success. *Nurse Researcher*, 21(3), 24–26. <https://doi.org/10.7748/nr2014.01.21.3.24.e1205>
- Berlin Zoo. n.d. Retrieved December 13, 2022, from <https://www.zoo-berlin.de/en>
- Cazañas, A., & Parra, E. (2017). Strategies for mobile web design. *Enfoque UTE*, 8, 344-357. <https://doi.org/10.29019/enfoqueute.v8n1.142>
- Chaffey, D. (2022, August 31). *Global Social Media Statistics Research Summary 2022 [June 2022]*. Smart Insights. Retrieved September 27, 2022, from <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/>
- Columbia University. (2022, June 7). *Content analysis*. Columbia Public Health. Retrieved October 4, 2022, from <https://www.publichealth.columbia.edu/research/population-health-methods/content-analysis>
- Coughian, M. (2009). Interviewing in qualitative research. *International Journal of Therapy and Rehabilitation*, 16(6), 309–314. <https://doi.org/10.12968/ijtr.2009.16.6.42433>
- CTIC, F. (n.d.). *Web accessibility test*. TAW. Retrieved October 3, 2022, from <https://www.tawdis.net/index>

- Dick, G., & Gusset, M. (2010). The global reach of Zoos and aquariums in visitor numbers and conservation expenditures. *Zoo Biology*, 30(5), 566–569.
<https://doi.org/10.1002/zoo.20369>
- Dix. (2017). Human–computer interaction, foundations and new paradigms. *Journal of Visual Languages and Computing*, 42, 122–134. <https://doi.org/10.1016/j.jvlc.2016.04.001>
- Erkkila, D. L. (2012). *Economic impacts from the Minnesota Zoo*. Economic Impacts from the Minnesota Zoo. Retrieved October 5, 2022, from
<https://conservancy.umn.edu/handle/11299/167878>
- Febrina, D. (2020). New Media in Public Relations: A Study of New Media in Ragunan Zoo as a Tourism Destination. *International Journal of Media and Communication Research (IJMCR)*, Vol. 1 No. 1 (2020). <https://journal.uir.ac.id/index.php/ijmcr/article/view/4587>
- Fish, M. (2021, December 12). *The world's best zoos should be on your family's travel bucket list*. MediaFeed. Retrieved October 4, 2022, from <https://mediafeed.org/the-worlds-best-zoos-should-be-on-your-familys-travel-bucket-list/>
- Flavian, Gurrea, R., & Orús, C. (2009). Web design: a key factor for the website success. *Journal of Systems and Information Technology*, 11(2), 168–184.
<https://doi.org/10.1108/13287260910955129>
- Gharial*. Smithsonian's National Zoo, 29 June 2018
Retrieved December 3, 2022 from <https://nationalzoo.si.edu/animals/gharial>.
- Giraud, S., Thérouanne, P., & Steiner, D. D. (2017, November 4). *Web accessibility: Filtering redundant and irrelevant information improves website usability for blind users*. *International Journal of Human-Computer Studies*. Retrieved September 25, 2022, from
https://www.sciencedirect.com/science/article/pii/S1071581917301490?casa_token=7JfCI-TIMPXwAAAAA%3A1DdkfXRt3fm2vTOWzZv5wiZ-HWtlwDs3_txEYcP8geFR4lAyncW5PwWwhFMarSzfCtznXBn2
- Glasser, A., Mande, V., & Huenerfauth, M. (2020, July 1). *Accessibility for deaf and hard of hearing users: Proceedings of the 2nd Conference on Conversational User Interfaces*. *Accessibility for Deaf and Hard of Hearing Users: Sign Language Conversational User Interfaces*. Retrieved September 25, 2022, from
<https://dl.acm.org/doi/abs/10.1145/3405755.3406158>

- Hardcastle, Jamie L., "Preparing Teachers for Their Zoo Trip With An Interactive Website" (2018). *School of Education and Leadership Student Capstone Projects*. 281. https://digitalcommons.hamline.edu/hse_cp/281
- Historie*. Zoo Praha. (n.d.). Retrieved December 12, 2022, from <https://www.zoopraha.cz/vse-o-zoo/historie>
- History*. Prague Zoo. (2016, August 8). Retrieved September 5, 2022, from <https://www.zoopraha.cz/en/about-zoo/history>
- Hlavackova, M. (2020, May 29). *Report name: Biofuel mandates in the EU by Member State - 2022*. Global Agricultural Information Network. Retrieved September 28, 2022, from <https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Biofuel%20Mandates%20in%20the%20EU%20by%20Member%20State%20-%202022%20Berlin%20European%20Union%20E42022-0044.pdf>
- Homepage – Vienna Zoo.* – Vienna Zoo. (n.d.). Retrieved December 13, 2022, from <https://www.zoovienna.at/en/>
- Királová, A. & Pavlíčka, A. (2014). Development of Social Media Strategies in Tourism Destination. *Procedia - Social and Behavioral Sciences*, 175 (2015), 358–366 <https://doi.org/10.1016/j.sbspro.2015.01.1211>
- Inbound tourism explained: Understanding the basics*. Tourism Teacher. (2021, October 17). Retrieved September 28, 2022, from <https://tourismteacher.com/inbound-tourism/>
- Jacko. (2007). Human-computer interaction, interaction design and usability: 12th international conference, HCI International 2007, Beijing, China, July 22-27, 2007: proceedings (Jacko, Ed.; 1st ed. 2007.). Springer. <https://doi.org/10.1007/978-3-540-73105-4>
- Jakovljevic, M. (2010). The Role of Public Relations in Croatia as a Tourist Destination. *Tourism & Hospitality Management, Conference Proceedings* 101-113. [The Role of Public Relations in the Marketing of Tourist Destinations in Croatia marinko jakovljevic - Academia.edu](https://www.academia.edu/101113101/The_Role_of_Public_Relations_in_the_Marketing_of_Tourist_Destinations_in_Croatia_marinko_jakovljevic)

- Jansen, & Spink, A. (2006). How are we searching the World Wide Web? A comparison of nine search engine transaction logs. *Information Processing & Management*, 42(1), 248–263. <https://doi.org/10.1016/j.ipm.2004.10.007>
- Latief, M. R. A., Saleh, N. J., & Pammu, A. (2020, October 1). *IOPscience*. IOP Conference Series: Earth and Environmental Science. Retrieved September 25, 2022, from <https://iopscience.iop.org/article/10.1088/1755-1315/575/1/012178/meta>
- Lexikon Zvířat*. Prague Zoo. (2016, August 8). Retrieved December 9, 2022, from <https://www.zoopraha.cz/zvirata-a-expozice/lexikon-zvirat>
- Lopatovska. (2015). Museum website features, aesthetics, and visitors' impressions: a case study of four museums. *Museum Management and Curatorship* (1990), 30(3), 191–207. <https://doi.org/10.1080/09647775.2015.1042511>
- Luna-Nevarez, & Hyman, M. R. (2012). Common practices in destination website design. *Journal of Destination Marketing & Management*, 1(1-2), 94–106. <https://doi.org/10.1016/j.jdmm.2012.08.002>
- MacKenzie, I. S. (2013). *Human-computer interaction: An empirical research perspective*. Elsevier Science & Technology.
- Mason, P. (2010). Zoo tourism: The need for more research. *Journal of Sustainable Tourism*, 8(4), 333–339. <https://doi.org/10.1080/09669580008667368>
- Nekolný, L., & Fialová, D. (2018). Zoo tourism: What actually is a zoo? *Czech Journal of Tourism*, 7(2), 153–166. <https://doi.org/10.1515/cjot-2018-0008>
- Orchik, A & Wallace. (2004). The economic impact of pandas and the Memphis Zoo. *Business Perspectives* (Memphis, Tenn.), 16(3), 30–.
- Pallud, & Straub, D. W. (2014). Effective website design for experience-influenced environments: The case of high culture museums. *Information & Management*, 51(3), 359–373. <https://doi.org/10.1016/j.im.2014.02.010>

- Panetto, H. & Whitman, L. (2006). The missing link: Culture and language barriers to interoperability. *Annual Reviews in Control*, 30(2), 233–241.
<https://doi.org/10.1016/j.arcontrol.2006.09.008>
- Park, & Gretzel, U. (2007). Success Factors for Destination Marketing Web Sites: A Qualitative Meta-Analysis. *Journal of Travel Research*, 46(1), 46–63.
<https://doi.org/10.1177/0047287507302381>
- Prague Zoo. *Home* [Facebook Page]. Facebook, Retrieved September 26, 2022, from [\(20+\) Zoo Praha | Facebook](#)
- Prague Zoo introduces night tours with the latest technology*. Prague Zoo. (2021, September 10). Retrieved December 12, 2022, from <https://www.zoopraha.cz/en/about-zoo/news/13051-prague-zoo-introduces-night-tours-with-the-latest-technology>
- Prague Zoo*. Zoo Praha. (n.d.). Retrieved December 12, 2022, from <https://www.zoopraha.cz/en>
- Prague Zoo. [YouTube Page]. YouTube, Retrieved September 26, 2022, from [Prague Zoo -YouTube](#)
- Rasyiqah Rusdi, Noraidah Sahari@Ashaari, & Siti Fadzilah Mat Noor. (2017). USABILITY GUIDELINES FOR ELDERLY WEBSITE INTERFACE. *Asia-Pacific Journal of Information Technology and Multimedia*, 6(2), 109–122. <https://doi.org/10.17576/apjitm-2017-0602-10>
- Return of the Przewalski's horse to Mongolia*. Prague Zoo. (n.d.). Retrieved September 29, 2022, from <https://www.zoopraha.cz/en/animals/we-help-them-to-survive/projects/7678-return-of-the-przewalski-s-horse-to-mongolia>
- Romanazzi, Petruzzellis, L., & Iannuzzi, E. (2011). “Click & experience. Just virtually there.” The Effect of a Destination Website on Tourist Choice: Evidence from Italy. *Journal of Hospitality Marketing & Management*, 20(7), 791–813.
<https://doi.org/10.1080/19368623.2011.605037>

- Rose, P. E., Hunt, K. A., & Riley, L. M. (2018). Animals in an online world; an evaluation of how zoological collections use social media: Social media in zoos. *Journal of Zoo and Aquarium Research*, 6(2), 57–62. <https://doi.org/10.19227/jzar.v6i2.324>
- Singh, Ismail, A., PS, S., & Singh, D. (2021). Compliance of accessibility in tourism websites: a pledge towards disability. *Journal of Hospitality and Tourism Insights*, 4(3), 263–281. <https://doi.org/10.1108/JHTI-05-2020-0092>
- Sinha, G., Shahi, R., & Shankar, M. (2010). Human computer interaction. Digital Object Identifier System. Retrieved September 8, 2022, from <https://doi.org/10.1109/ICETET.2010.85>
- Smith, L. (2012). Visitors or visits? an examination of zoo visitor numbers using the case study of Australia. *Zoo Biology*, 32(1), 37–44. <https://doi.org/10.1002/zoo.21013>
- Statista Research Department. (2022, September 20). *Internet and social media users in the world 2022*. Statista. Retrieved October 5, 2022, from <https://www.statista.com/statistics/617136/digital-population-worldwide/>
- Tasmanian Devil*. Encyclopedia Britannica, Encyclopedia Britannica, Inc., Retrieved December 3, 2022 from <https://www.britannica.com/animal/Tasmanian-devil>.
- The Interaction Design Foundation. (n.d.). *What is web design?* The Interaction Design Foundation - Web Design. Retrieved October 5, 2022, from <https://www.interaction-design.org/literature/topics/web-design>
- The webaim million – 2022 update*. WebAIM. (2022, April 4). Retrieved October 5, 2022, from <https://webaim.org/blog/webaim-million-2022/>
- The zoo in numbers*. Prague Zoo. (n.d.). Retrieved September 29, 2022, from <https://www.zoopraha.cz/en/animals/the-zoo-in-numbers>
- University of Cincinnati. (2013, July 13). *Zoo boosts local economy with big regional impact*. Cincinnati Zoo & Botanical Garden®. Retrieved September 28, 2022, from <https://cincinnati.zoo.org/news-releases/zoo-boosts-local-economy-with-big-regional-impact/>

(WAI), W. C. W. A. I. (2022). *WCAG 2 Overview*. Web Accessibility Initiative (WAI). Retrieved October 5, 2022, from <https://www.w3.org/WAI/standards-guidelines/wcag/>

WAZA. (n.d.). WAZA | World Association of Zoos and Aquariums. Retrieved November 4, 2022, from <https://www.waza.org/>

We help them to survive. Prague Zoo. (n.d.). Retrieved September 5, 2022, from <https://www.zoopraha.cz/en/animals/we-help-them-to-survive>

Yocco, V., Danter, E. H., Heimlich, J. E., Dunkel, B. A., & Meyers, C. (2011, November 1). *Exploring use of new media in environmental education contexts: Introducing visitors' technology use in zoos model*. Environmental Education Research. Retrieved September 28, 2022, from <https://doi.org/10.1080/13504622.2011.620700>

Zoo Praha. (n.d.). Retrieved December 12, 2022, from <https://www.zoopraha.cz/>

ZooParc de Beauval. (n.d.) Retrieved December 13, 2022, from <https://www.zoobeauval.com/en/>

Appendices

Appendix A: Top-performing Zoos in Europe

Rank	Zoo	Country
2	Beauval Zoo	France
3	Pairi Daiza	Belgium
5	Berlin Zoo	Germany
7	Schönbrunn Zoo	Austria
8	Chester Zoo	England
9	Valencia Bioparc	Spain
10	Tierpark Hagenback	Germany

18	Zoo Praha	Czech Republic
23	Loro Parque	Spain
N/A	Hannover Zoo*	Germany

Source: Fish, M. (2021, December 12). *The world's best zoos should be on your family's travel bucket list*. MediaFeed. Retrieved October 4, 2022, from <https://mediafeed.org/the-worlds-best-zoos-should-be-on-your-familys-travel-bucket-list/>

*Added Hannover Zoo as a direct request of our sponsor

Appendix B: Hyman et al. Codebook

Measured variable	Category	Value
Primary focus		
Primary focus (Foc)	Predominantly informative/cultural	1
	Predominantly commercial/transactional	2
	Informative-commercial	3
Visual and presentation style		
Page size (Siz)	Small (1–2 screens)	1
(based on 1024×768 screen resolution)	Large (3 or more screens)	2
Page layout (Lay)	Unbalanced (left/right)	0
	Balanced	1
Number of images (Img)	Few images (≤5 images)	1
	Many images (>5 images)	2
Destination brand shown (Log)	No logo	0
	Logo	1
Animated images (Ani)	No image slide show	0
	Image slide show	1
Animated buttons/links (But)	No animation	0
	Animation	1
Pop-up window (Pop)	No pop-up window(s)	0
	Pop-up window(s)	1
Stream audio/music (Aud)	No audio	0
	Audio	1
Stream video (Vid)	No video	0
	Video	1
Navigation and interactivity		
Site map (Map)	No site map	0
	Site map	1
Search tool (Set)	No search tool	0
	Search tool	1
Languages other than local (Lan)	Multiple languages offered	Same
Level of interactivity (Int)	Low (main menu with 0–5 links)	1
	Medium (main menu with 6–10 links)	2
	High (main menu with more than 10 links)	3

Textual information

Homepage title (Tit)		Same
Number of keywords in title (Key)		Same
Text length (Tex)	Few words ($\leq 25\%$ of screen)	1
	Many words ($> 25\%$ of screen)	2

Advertising

Number of banner ads (Adn)	Number of ads	Same
Animated ad (Aad)	No animated ad	0
	Animated ad	1
Ad product type (Adp)	Non-tourism related	0
	Tourism related (hotel, car rental, etc.)	1
Main ad size (Ads)	Small ($\leq 1/8$ of screen)	1
	Large ($> 1/8$ of screen)	2

Social media and travel aids

Social media (Som)	No social media/social media	0–1
	Facebook (FB)	0–1
	Twitter (TW)	0–1
	Youtube (YT)	0–1
	Flickr (FC)	0–1
	Blog (BL)	0–1
	RSS feeds (RF)	0–1
	Other	Same
City map (Cmp)	No city/destination map	0
	City/destination map	1
Weather information (Wea)	No weather information	0
	Weather information	1
Calendar of events (Cal)	No calendar	0
	Calendar	1
Hotel booking service (Bok)	No booking services	0
	Booking services	1

Appendix C: Criteria Created During Web Design Content Analysis

Measured variable	N	%
Visual and presentation style of Homepage		
Page size		
Small (1–2 screens)	1	11.1
Large (3 or more screens)	8	88.8
Page layout		
Unbalanced (Left/right)	0	0
Balanced	9	100
Number of images		
Few images (≤ 5 images)	1	11.1
Many images (> 5 images)	8	88.8
Presence of		
Destination brand (Logo)	9	100
Animated images (image slide show)	5	55.5
Animated buttons/links	9	100
Audio	3	33.3
Video	3	33.3
Fonts		
2 fonts	7	77.7
Font family sans serif	9	99.9
Body text size ≥ 16 px	7	77.7
Colors		
≤ 5 colors	7	77.7
Scheme		
Complementary	2	22.2
Monochromatic	5	55.5
Analogous	2	22.2
Navigation and interactivity of Homepage		
Presence of		
Site map	8	88.8
Search tool	6	66.6
Languages other than local	7	77.7
> 3 language translations	6	66.6
Level of interactivity		
Low (main menu with 0–5 links)	0	0
Medium (main menu with 6–10 links)	0	0
High (main menu with more than 10 links)	9	100

Textual information		
Presence of		
Homepage title	9	100
Text length		
Few words ($\leq 25\%$ of screen)	9	100
Many words ($> 25\%$ of screen)	0	0
Social media and travel aids		
Presence of		
Social media		
Facebook	9	100
Twitter	7	77.7
YouTube	7	77.7
Instagram	9	100
TikTok	2	22.2
LinkedIn	1	11.1
TripAdvisor	1	11.1
City map	6	66.6
Weather information	1	11.1
Events Schedule	5	55.5
Hotel booking service	3	33.3

Appendix D: Zoo Visitor Survey

Consent Question:

1. We would like to invite you to participate in a survey for Worcester Polytechnic Institute to gather information about any technical or design issues found on the Zoo Praha website, as well as the most popular Zoo Praha exhibits to determine what content should be featured on the front of the website. This survey is completely voluntary, anonymous, and you may withdraw at any time. You may also skip any question you do not want to answer.

If you have questions about this survey, you may contact the research team at gr-Zoo-B22@wpi.edu.

Do you consent to take this survey?

- Yes
- No

Demographic Questions:

2. What age range do you fall under?
 - 18-25
 - 26-35
 - 36-50
 - 51+
3. Which country are you a resident of?
 - Czech Republic
 - Germany
 - United Kingdom
 - United States
 - Other. Please specify below. (Text box)
4. What is your preferred first language?
 - Czech
 - English
 - German
 - Russian
 - Other. Please specify below. (Text box)
5. What type of group did you come with today?
 - Family
 - Friend
 - Significant Other
 - Alone
 - Other. Please specify below. (Text box)
6. Did you bring a dog to the zoo with you today?
 - Yes
 - No

General Zoo Questions:

7. Why did you come to the zoo today? Please check all that apply
- Entertainment
 - Educational Purposes
 - Supporting Conservation
 - Other. If so, please specify. (Text box)
8. What is your favorite animal/exhibit in the zoo?
- Gorillas
 - Elephants
 - Wombats
 - Penguins
 - Kangaroos
 - Hippos
 - Polar Bears
 - Indonesian Jungle
 - Lions
 - Feline & Reptile House
 - Lemur Island
 - Giraffes
 - Africa House
 - Tasmanian Devils
 - Seals
 - Other. If so, please specify below (Text box)
9. Were there any exhibits or animals that you were surprised to see today? If so, please specify and explain below.
- (Short answer text box)

Website Screening:

10. Did you use the website for anything before or during your visit to the Zoo?
(Can include, but is not limited to, hours of operations, map of the Zoo, list of animals, purchasing a ticket)
- Yes
 - No

Website Questions:

11. What did you use the website for? Check all that apply.
- E-Tickets
 - Animal or Exhibit Information
 - Opening Hours
 - Zoo Conservation Effort Information
 - Map
 - Other. Please specify below. (Text box)
12. Did you run into any issues when using the website? Check all that apply.
- Navigation
 - Ease of Use
 - Readability
 - Organization

- Other. Please specify below. (Text box)
13. Please rate on a scale from 1 (Worst) to 10 (Best) how visually appealing each aspect of the website was.
- Navigation
 - Ease of Use
 - Font Size
 - Font Color
 - Organization
 - Color Scheme

End of Survey:

- We thank you for your time spent taking this survey. Your response has been recorded.

Appendix E: Observed Zoo Animals and Exhibits

Exhibits Observed
Crocodile
Elephants
Fur Seals
Gorillas
Hippo House
Kangaroos
Penguins
Polar Bears
Shoebill
Tasmanian Devils / Wombats
Africa House
Feline / Reptile House
Indonesian Jungle

Appendix F: Duration Data for Observational Research

The gorillas were observed on October 28th from 11:45 to 12:45 PM. The polar bears were observed on October 28th from 12:00 to 1:00 PM. The penguins were observed on October 27th from 2:00 to 3:00 PM and November 12th from 12:30 to 1:30 PM. The average of the data collected from these days was used. The table below shows how many people stayed during the time intervals on the left from the gorilla, polar bear, and penguin exhibits. The total number of visitors for each of these exhibits can be found in Appendix F.

	Gorillas	Polar Bears	Penguins
less than 1 min	19	67	123
1 - 3 mins	23	102	123
3 - 5 mins	56	205	30
5 - 10 mins	161	124	2
10 or more mins	109	19	0

Appendix G: Observational Research Data

Animal/Exhibit	Date	Date / Time	Inside / Outside	Total Visitors	% Visitors that took Pictures
Africa House	11/1/2022	12:00:00 PM	I	258	NA
Crocodile	11/2/2022	1:00:00 PM	I	95	40%
Elephants	10/28/2022	11:30:00 AM	O	1277	11.43%
Feline/Reptile House	11/1/2022	1:30:00 PM	I	292	NA
Fur Seal 2	11/2/2022	12:15:00 PM	O	238	11.34%
Fur Seals	10/26/2022	11:00:00 AM	O	559	9.30%
Gorillas	10/28/2022	11:45:00 AM	I	1220	15.90%
Hippo House (Outside)	10/28/2022	11:45:00 AM	I / O	768	7.55%
Indonesian Jungle	11/2/2022	11:20:00 AM	I	251	NA
Kangaroos	10/27/2022	12:00:00 PM	O	384	10%
Penguins	10/27/2022	2:00:00 PM	O	957	9.93%
Polar Bears	10/28/2022	12:00:00 PM	O	1152	10.76%
Shoebill	11/2/2022	11:00:00 AM	O	82	28%
Tasmanian Devils/Wombats	11/2/2022	2:00:00 PM	O	133	31.58%

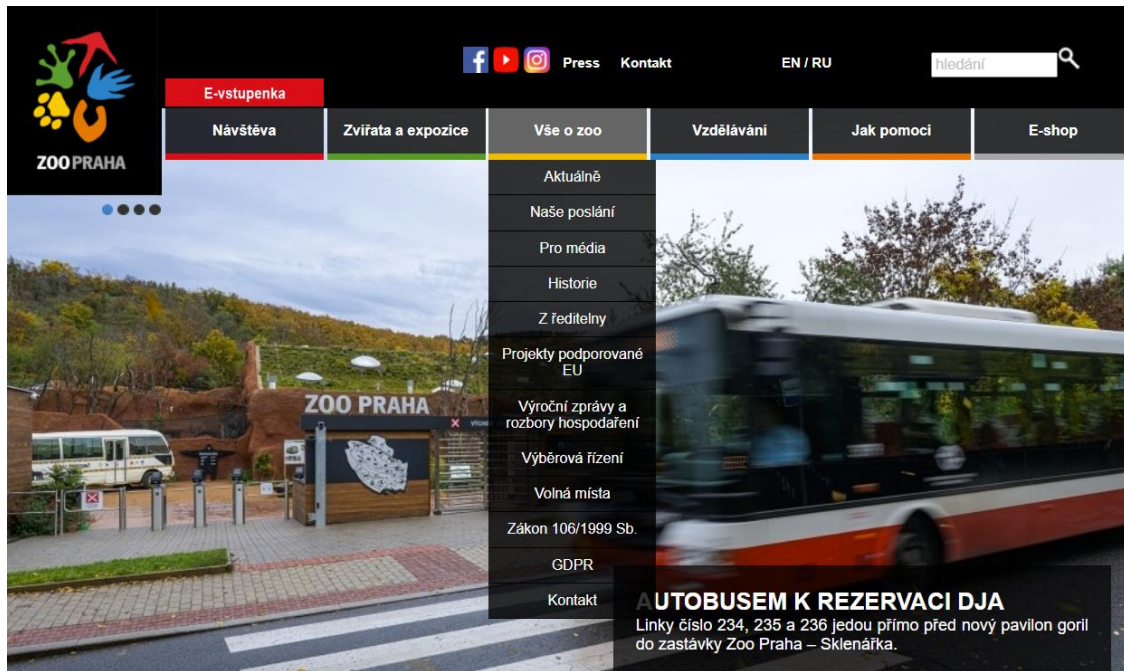
Appendix H: Design Recommendations for Zoo Praha’s New Website

After researching web design and collecting data from observational research, the survey distributed in the Dja Reserve, content analyses of other top performing European zoo websites, and a web accessibility analysis, we have created a list of recommendations for how best to redesign Zoo Praha’s website. The following recommendations are split up into five major sections: Design and Organization, Visuals and Aesthetics, Content, Accessibility, and Language Accommodations. At the end, we’ve included the team’s work on the Adobe XD Mockup. Implementing these recommendations should improve Zoo Praha’s visitors’ experience using the website. Please reach out to gr-zoo-b22@wpi.edu.



Design and Organization

Our research revealed that the current Zoo Praha website is difficult to navigate based on survey results and comparison to other European zoo websites. To improve this, we recommend changing the organization of the homepage tabs. Displaying six navigation tabs at the top of the homepage is ideal. Under each tab there should be no more than 6 subsections, as too many can make finding information difficult.



The picture above shows the current drop-down menu for 'About the Zoo' on the Czech version of the Zoo Praha website. This can be shortened by grouping together more related information and using straightforward titles. Take, for example, the Berlin Zoo website's 'About the Zoo' tab:



This menu is very simple and offers the most relevant information about the zoo.

We also recommend promoting visitor information on the homepage for the ease of visitors finding such information. Some examples include the Hannover Zoo homepage and the Berlin Zoo homepage:

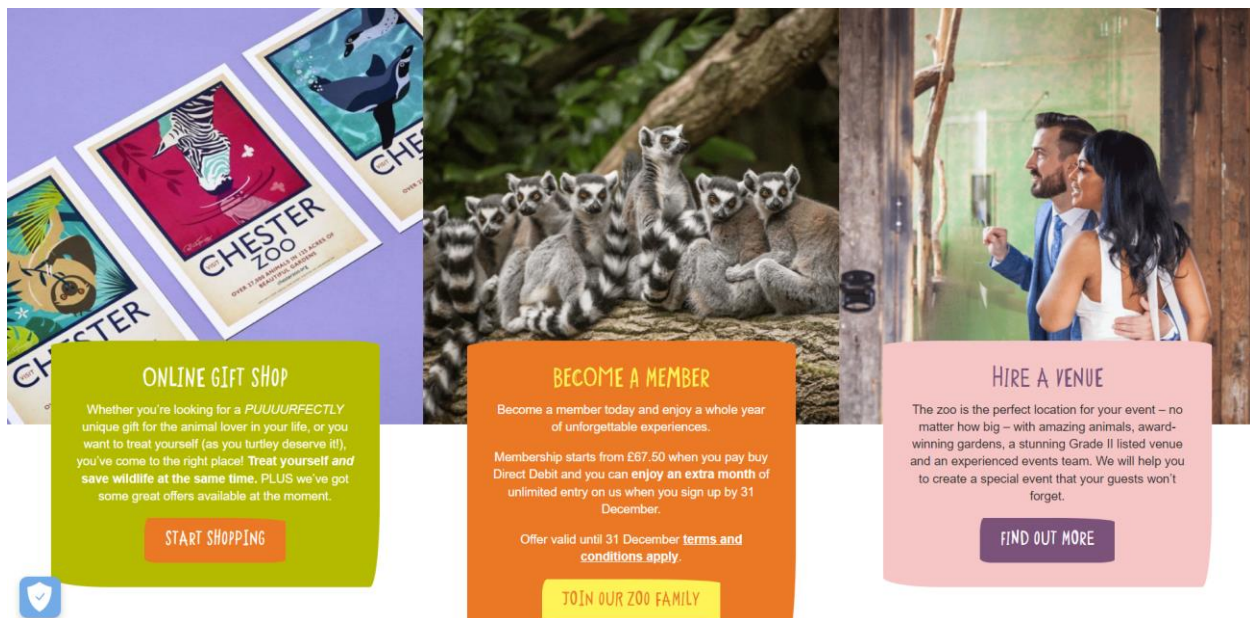


From our survey, we found that visitors use the website mainly for opening hours, e-tickets, the zoo map, and animal/exhibit information. This should be some of the first content displayed on the website organizationally.

Visuals and Aesthetics

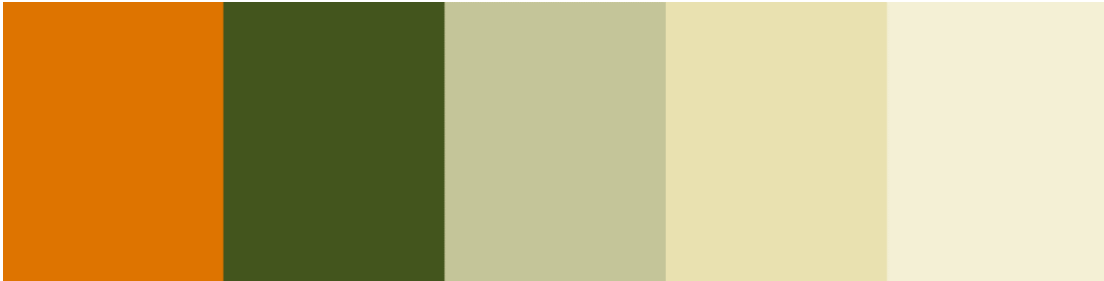
Based on what we learned from analyzing other European zoos' websites, we developed recommendations for general visual web design practices to keep in mind when designing the new Zoo Praha website. The following bullets and pictures are guidance for creating an attractive and visually pleasing webpage:

- Balanced page layout
 - Text and graphics are evenly distributed
 - Balanced on left and right



- Large page size
 - Fill up entirety of computer screens
 - Scrolls down 3 or more screens
- Display at least 5 images on each page
- Display the Zoo Praha logo
 - Suggest using white/back version of logo
- Use neutral/monochromatic color scheme/palette
 - Can add a complementary color to increase contrast
 - Ex. Earth tones

Berlin Zoo:



ZooParc de Beauval:



- Image slideshow as the main graphic on homepage
 - Promote animals/exhibits
- Animated buttons/links
 - Ex. Color of link/button changes when cursor is hovered over it
- Two contrasting fonts for headings and body text (font pair)



- Font family sans serif for readability
- Eye Catching font for headings

- **EX. MODERN LOVE CAPS**
- Simpler font for body text
 - Ex. Tahoma
 - Ex. Century Gothic

ZooParc de Beauval

The Equatorial Dome

2020's major innovation!

Explore the world on a breath-taking trip around the equator! In an immense glazed structure, discover more than 200 fascinating animal and plant species... a new world awaits you...

- Body text at least 12pt font size

- Display high quality images of animals
 - Ex. Zoo Praha
 - uses cutouts of animals with white backgrounds

Ajabu - Western Lowland Gorilla



Antonio and Eberhard – Galápagos Tortoises



Janita's Baby Elephant



Pipin and Pind'a – Humboldt's Penguins



- Ex. ZooParc de Beauval
 - Uses full photographs



The Land of the
Lions

Lions, meerkats, wild dogs, naked mole-rats...



The Heights of China

Giant pandas, snow leopards, red pandas, takins,
fishing cats...



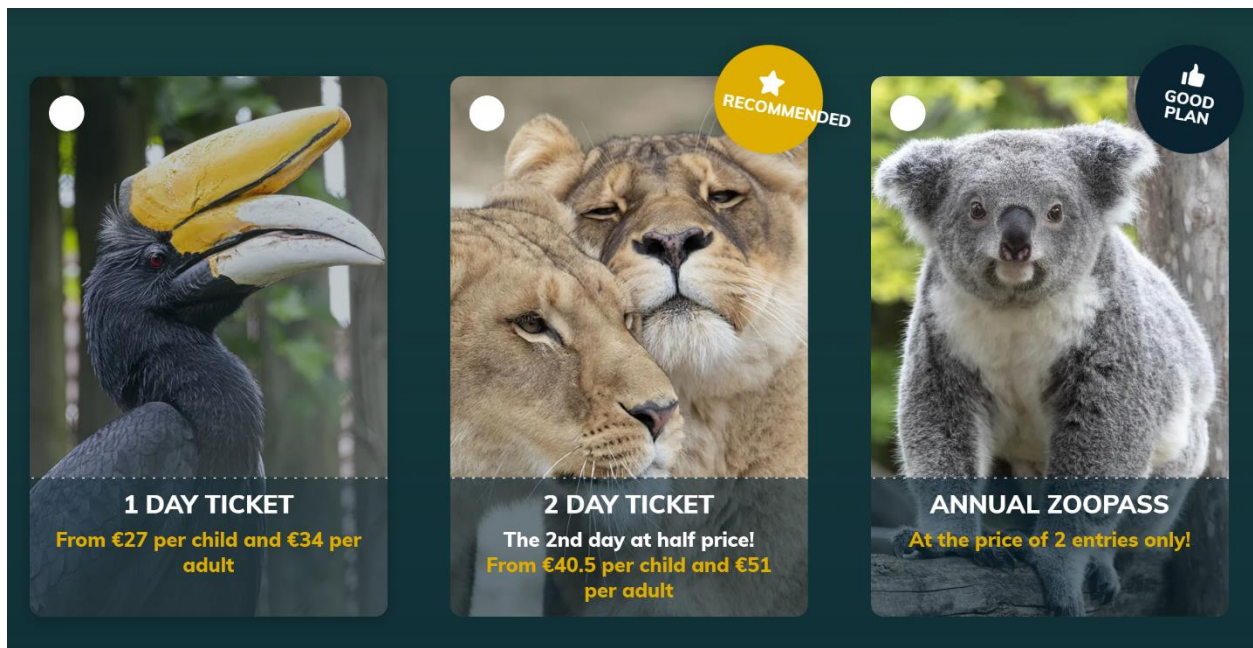
The Hippopotamus
Reserve

Hippopotamus, red river hogs, bongos, nyalas,
pelicans...

Content

From the content analysis, we determined the best type of content to display on the website. In addition to that, we determined where best to display these types of content.

- 4 main types of content:
 1. **Animal content:** content primarily focused on animals (i.e. animals/exhibit names, photos, and descriptions, feeding schedules, etc.)
 2. **Human-education content:** content whose primary intent is to educate visitors, whether that be about conservation, animal facts, etc. (i.e. children's activities, animal shows, group events, etc.)
 3. **Conservation content:** content primarily focused on conservation efforts (i.e. partnered wildlife organizations, mission statements/goals, sustainability initiatives, etc.)
 4. **Zoo services:** content pertaining to the operation of the zoo. Often this information helps visitors to plan their visit ahead of time (i.e. opening hours, ticket prices, ticket purchasing, zoo maps, etc.)
- Homepage:
 - Majority of homepage should display animal content
 - Photos of specific animals with names and brief description to foster a better connection with visitors
 - Wide variety: top-performing zoo websites displayed at least 5 different species of animals, can accompany other information such as ticket prices



Balance pictures of what people expect to see with more rare and uncommon animals

- Incorporate most important zoo service content directly on to homepage
 - Current opening hours

- Link to buy tickets, potentially have price for adult and for child directly on homepage
 - Information on special events happening at zoo, updated regularly with brief description of event, when and where it will occur, and any additional information (price, target demographic, etc.)
- Sub-sections:
 - Majority of sub-section information should be zoo serviced based
 - Current website does do this, so recommendation is to refine information within the sub-sections
 - Combine zoo map and zoo direction section for ease of use
 - Combine hours of operation with
 - Avoid going too much into detail with conservation efforts, many zoo websites keep this information limited and under one tab in the “About the Zoo” section

Animal Content Specific to Zoo Praha

Based on our research we were able to rank the animals at Zoo Praha in the following ways...

Most popular based on the duration visitors stayed:

Gorillas, Polar Bears, Kangaroos, Fur Seals, Elephants, Crocodiles

Most popular based on % of visitors that took pictures:

Crocodiles, Tasmanian Devil / Wombat, Shoebill, Gorillas, Penguins, Elephants

Best exhibits based on their individual characteristics:

Gorillas, Elephants, Kangaroos, Polar Bears, Fur Seals, Crocodiles

** These characteristics included but were not limited to animal size, animal activity level, visibility of the animal, number of structures in the enclosure, and quality of scenery.

** For a more in depth understanding of how we came to these rankings, and to see all the data we collected refer to [THIS EXCEL SHEET](#)

General Notes and Tips for posting effective animal content:

- Include pictures of the animals that tend to fall at the top of our rankings seen above.
- Maintain a balance between animals that visitors expect to see when coming to the zoo (gorillas / elephants / giraffes) with more uncommon and rare species that are more likely to intrigue visitors. (Gharial crocodiles / shoebill / Tasmanian devils)
- Show off exhibits that are immersive or allow visitors to get as close as possible to animals
 - Large areas in the Indonesian Jungle with monkeys, birds, etc.
 - Kangaroo enclosure that allows no barrier between visitors and the kangaroos
 - Bird exhibits that allow no barrier between visitors and the animals
- Some animals had a “cute-factor” that we could not represent in our data but are still great to display. (Red Pandas / Cooper the Wombat)




Accessibility

After analyzing Zoo Praha's website using TAW, we found 41 problems with 227 warnings on the Czech page, and only 15 problems with 167 warnings on the English page. We'd like to note that the English page has far fewer accessibility issues because it displays less than 50% of the content on the Czech page. When we compared these numbers to the results of analyzing both the native language pages and English pages of nine other top European zoo websites. Our team concluded that Zoo Praha's website is relatively accessible. Zoo Praha's English page had the fewest problems out of all web pages analyzed. Similarly, the Czech page had fewer accessibility problems than 50% of all pages analyzed. However, this is because the Zoo Praha website has a less sophisticated design and displays less content than the other zoo websites analyzed.




Our team went through each of these problems and recommended a way to resolve the accessibility issue. The tables below show each issue and the suggested course of action. First, we listed the WCAG 2.1 success criteria violated. Then, we included the number of problems found with this specific success criterion, the typology, and the conformance level to the WCAG 2.1 (A being the lowest, AAA being the highest). Problems with an A conformance level are ones most important to address. We also copied over the exact line of HTML code where the problem was present. Next, we explained the problem, and finally, suggested a solution. It is important to note that most of these problems could have multiple different solutions.

We've included tables for the problems found on both the Czech and English page. Almost all the problems found on the English page were also found on the Czech. Any unique problems (ones only found on the Czech page) have been highlighted in blue.


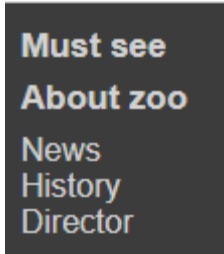

Problems with the WCAG 2.1 found on the English page:

Violation	1.1.1 - Non-text Content: All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, except for certain situations
No. Problems	1
Typology	Forms – Form controls without associated label
Level	A
Code	158.  <form action="/en/search/" method="get">  <input class="inputsearch" type="text" name="searchword" onclick="this.value=";" value="Search">  <input class="butsearch" type="submit" name="search" value="">
Problem	<p>When you load the page, the search bar has a text representation of the search bar image, but when you click away from the box, the “search” text goes away and there is no longer a “text alternative that serves the equivalent purpose” for non-text content. This is inaccessible because a screen reader can no longer read this element.</p> <div data-bbox="446 1171 1404 1390" data-label="Image"> <p>A screenshot of a search bar on a dark background. To the left of the search bar is the text 'CZ / RU'. The search bar itself contains the word 'Search' in a light gray font, followed by a magnifying glass icon.</p> </div> <p>This is the search bar when you initially load the page. You can clearly see a text alternative (“search”) for a non-text element (the search bar icon).</p> <div data-bbox="446 1558 1404 1768" data-label="Image"> <p>A screenshot of the same search bar after the text has been removed. The search bar now only contains a magnifying glass icon, with no text visible inside it.</p> </div> <p>This is the search bar after you click on it and then click away (if you decided not to search something). The text is no longer there.</p>

Recommended Solution	<pre><input class="inputsearch" type="text" name="searchword" onclick="this.value=";" value="Search" placeholder="Search"></pre> <p>Add “placeholder = “Search” to ensure that whenever the search box is clicked off and there is no input, the word “Search” will reappear in the box</p>

Violation	<p>1.3.1 - Info and Relationships:</p> <p>Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.</p>
No. Problems	1
Typology	Form – Form controls without associated label
Level	A
Code	<p>158.  <code><form action="/en/search/" method="get"></code>  <code><input class="inputsearch" type="text" name="searchword" onclick="this.value=";" value="Search"></code>  <code><input class="butsearch" type="submit" name="search" value=""></code></p>
Problem	<p>There was no label for the search box so a screen reader, for example, could not programmatically determine the information, structure, and/or relationships conveyed through presentation.</p>
Recommended Solution	<pre><label for="searchBox" hidden> Search Box </label></pre> <pre><input class="inputsearch" id="searchBox" type="text" onclick="this.value=";" value="Search" placeholder="Search"></pre> <p>Adds a label to the search box that is hidden visually from the user for organizational and structural purposes.</p>




	For (placeholder = “Search”) see above violations
--	---

Violation	1.3.1 - Info and Relationships: Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.
No. Problems	1
Typology	Structure and Semantics – Two headers of the same level with no content in between
Level	A
Code	444.  <code><h4>Must see</h4></code>
Problem	In between the “Must See” and “About the Zoo” headers there are no subcategories displayed. 
Recommended Solution	Potentially add links to the top subcategories within the “Must see” page.  HTML implementation.




```

▼ <h4>
  <a href="/en/must-see">Must see</a>
</h4>
▼ <ul>
  ▼ <li>
    <a href="/en/must-see/8798-bororo-reserve">Bororo Reserve</a>
  </li>
  ▼ <li>
    <a href="/en/must-see/8648-giant-salamande-house">Giant Salamander House</a>
  </li>
  ▼ <li>
    <a href="/en/must-see/7656-elephant-valley">Elephant Valley</a>
  </li>
</ul>
▼ <h4>
  <a href="/en/about-zoo">About zoo</a>
</h4>
▼ <ul>
  ▼ <li>
    <a href="/en/about-zoo/news">News</a>
  </li>
  ▼ <li>
    <a href="/en/about-zoo/history">History</a>
  </li>
  ▼ <li>
    <a href="/en/about-zoo/director">Director</a>
  </li>
</ul>


















```

Violation	2.1.3 - Keyboard (No Exception): All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes.
No. Problems	1
Typology	Scripts – Use of device-dependent event handlers
Level	AAA
Code	<p>158.  <form action="/en/search/" method="get">  <input class="inputsearch" type="text" name="searchword" onclick="this.value=";" value="Search">  <input class="butsearch" type="submit" name="search" value=""></p>
Problem	There is no way to navigate to the search bar without using a mouse / mouse pad.
Recommended Solution	Create a keyboard shortcut on the website that brings the user to the search bar. A potentially fix would be setting up a virtual keyboard that allows users to press the “S” key on their keyboard to take them to the search bar.


	We were unable to fully implement the HTML / JavaScript fix to this problem. For an example fix see HERE
--	--

Violation	2.4.4 - Link Purpose (In Context): The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general.
No. Problems	1
Typology	Navigation – Links with same link text but different destinations
Level	A
Code	363.  <code></code>
Recommended Problem	The problem detected is that the given link is not described properly by the link text. After reviewing this issue, we have determined that TAW did not correctly analyze this line of code. Here is the actual code which clearly has a description for the given link  For reference here is an example of a properly formatted link based guideline 2.4.4 
Solution	See 2.4.9 Solutions




Violation	2.4.9 - Link Purpose (Link Only): A mechanism is available to allow the purpose of each link to be identified from link text alone, except where the purpose of the link would be ambiguous to users in general.
------------------	---


No. Problems	6
Typology	Navigation – Links with same link text but different destinations
Level	AAA
Code	<p>151.  <code><li style="width: 25px;"></code>    <code></code>  <code></code></p> <p>198. <code></code>   <code>We help them to survive</code></p> <p>332.   <code>We help them to survive</code></p> <p>406. <code></code>   <code>Youtube channel</code></p> <p>461. <code></code>    <code>Youtube channel</code></p> <p>463. <code></code>    <code>Instagram</code></p>
Problem	Multiple links posted on the homepage go to “different” pages. This is only half true, as they all lead to the same destination, just through slightly varied links. Some links also don’t work within this, however that falls under a separate guideline and can be fixed through testing (All social media links aren’t functional)
Recommended Solution	Multiple solutions are available. One would be to rename some of the hyperlinks if you’re trying to direct users to completely different pages, ensuring that the links are named properly. Another one would be to make

	<p>sure you have one, unchanged link under each of the hyperlinks available, as they all seem to point users in the same direction (<u>This would be the best solution</u>). One final solution would be to remove the repeated links entirely, though this would lead to issues with navigability and ease of use in most cases and is thus not recommended.</p>
--	---




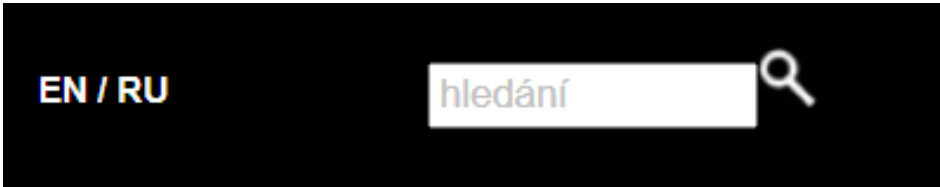

Violation	<p>2.4.10 - Section Headings: Section headings are used to organize the content.</p>
No. Problems	1
Typology	Structure and Semantics – Two headers of the same level with no content in between.
Level	AAA
Code	<p>444.  <code><h4>Must see</h4></code></p>
Problem	See 1.3.1 Problem
Recommended Solution	<p>See 1.3.1 Solution</p> <p>Same problem and solution, websites must be accommodating of people experiencing disabilities and those who aren't. Implementing a header with no sub-content as a result of the pages not being translated shows that the section is being ignored by translators, so solutions include dropping the header or adding content to sub-section.</p>

Violation	<p>3.3.2 - Labels or Instructions: Labels or instructions are provided when content requires user input.</p>
No. Problems	1
Typology	Forms – Labeling of form controls
Level	A


<p>Code</p>	<p>158.  <code><form action="/en/search/"</code> <code>method="get"></code>  <code><input class="inputsearch"</code> <code>type="text" name="searchword" onclick="this.value=";" value="Search"></code>  <code><input</code> <code>class="butsearch" type="submit" name="search" value=""></code></p>
<p>Problem</p>	<p>See 1.1.1 Problem</p>
<p>Recommended Solution</p>	<p>See 1.1.1 Solution</p> <p>Not the same issue as 1.1.1, but quite similar. This criterion specifies that all users could see it, not just those using a screen reader, implying that there is no visual text that would signify the search bar. If the 1.1.1 solution is implemented, this violation should be resolved</p>




<p>Violation</p>	<p>4.1.2 - Name, Role, Value:</p> <p>For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.</p>
<p>No. Problems</p>	<p>1</p>
<p>Typology</p>	<p>Forms – Form controls without label</p>
<p>Level</p>	<p>A</p>
<p>Code</p>	<p>158.  <code><form action="/en/search/"</code> <code>method="get"><input class="inputsearch" type="text" name="searchword"</code> <code>onclick="this.value=";" value="Search"><input class="butsearch" type="submit"</code> <code>name="search" value=""></code></p>
<p>Problem</p>	<p>See 1.1.1 Problem</p>
<p>Recommended Solution</p>	<p>See 1.1.1 Solution</p> <p>Aria-label, markup features exposing the name and role (such as form controls and label elements)</p>

Problems with the WCAG 2.1 found on the Czech page:

Violation	1.1.1 - Non-text Content: All non-text content that is presented to the user has a text alternative that serves the equivalent purpose.
No. Problems	1
Typology	Forms – Form controls without label
Level	A
Code	159.  <form action="/hledani/" method="get">  <input class="inputsearch" type="text" name="searchword" value="hledání" onclick="this.value=";">  <input class="butsearch" type="submit" name="search" value=""></form><!-- </div>-->
Problem	<p>When you load the page, the search bar has a text representation of the search bar image, but when you click away from the box, the “hledání” text goes away and there is no longer a “text alternative that serves the equivalent purpose” for non-text content. This is inaccessible because a screen reader can no longer read this element.</p>  <p>This is the search bar when you initially load the page. You can clearly see a text alternative (“hledání”) for a non-text element (the search bar icon).</p>  <p>This is the search bar after you click on it and then click away (if you decided not to search something). The text is no longer there.</p>

Recommended Solution	<pre><input class="inputsearch" type="text" name="searchword" value="hledání" onclick="this.value="";" placeholder="hledání"></pre> <p>Add “placeholder = “hledání” to ensure that whenever the search box is clicked off and there is no input, the word “hledání” will reappear in the box.</p>
-----------------------------	--




Violation	<p>1.1.1 - Non-text Content:</p> <p>All non-text content that is presented to the user has a text alternative that serves the equivalent purpose.</p>
No. Problems	1
Typology	Images – Images without “alt” attribute
Level	A
Code	<p>480. <div class="box stopabarvabg3"> ❌ ❌ </p>
Problem	 <p>The images above (found on the homepage) must have alternative text for accessibility technology, but the Kun Prevalskeho is lacking the alternative text.</p>
Recommended Solution	<pre><div class="box stopabarvabg3"> </pre> <p>See bolded text reworking above</p>

Violation	1.3.1 - Info and Relationships: Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.
No. Problems	1
Typology	Forms – Form controls without associated label
Level	A
Code	159.  <code><form action="/hledani/" method="get"></code>  <code><input class="inputsearch" type="text" name="searchword" value="hledání" onclick="this.value=";"></code>  <code><input class="butsearch" type="submit" name="search" value=""></form><!-- </div>--></code>
Problem	There was no label for the search box so a screen reader, for example, could not programmatically determine the information, structure, and/or relationships conveyed through presentation.
Recommended Solution	<p><code><label for="searchBox" hidden> Search Box </label></code></p> <p><code><input class="inputsearch" id="searchBox" type="text" onclick="this.value=";" value="Search" placeholder=" hledání "></code></p> <p>Adds a label to the search box that is hidden visually from the user for organizational and structural purposes.</p> <p>For (placeholder = “Search”) see above violations</p> <p>This solution is from the English site, adjust variables and names accordingly</p>


Violation	1.3.1 - Info and Relationships: Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.
No. Problems	1

Typology	Structure and semantics – Two headers of the same level with no content in between
Level	A
Code	614.  <code><h4>Partneři Zoo Praha</h4></code>
Problem	 <p>The Zoo Partners header sub-section (Partneri Zoo Praha) is empty, and leads from a header section to another header section</p>
Recommended Solution	<p>There are 2 potential solutions.</p> <p>The first solution would be to fill the header sub-section as seen below.</p>

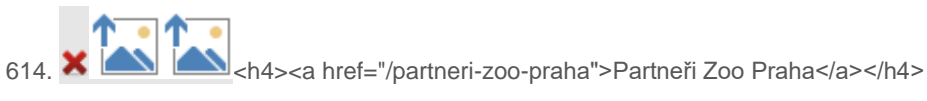
	<p>Partneři Zoo Praha</p> <p>KB Volkswagen Coca-Cola Prima Kozel</p> <p>Ostatní</p> <p>Prohlášení o přístupnosti Mobilní verze zoopraha.cz RSS kanál FAQ</p>
	<p>The second solution would be to remove the header completely, as it wouldn't be necessary with the partners listed elsewhere on the site. This solution is not recommended though, as the Site Map should have major pages such as this listed.</p>

Violation	2.1.3 - Keyboard (No Exception): All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes.
No. Problems	1
Typology	Scripts – Use of device-dependent event handlers
Level	AAA
Code	159.  <form action="/hledani/" method="get">  <input class="inputsearch" type="text" name="searchword" value="hledání" onclick="this.value=";">  <input class="butsearch" type="submit" name="search" value=""></form><!-- </div>-->


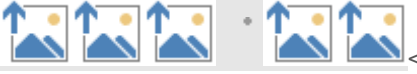

Problem	There is no way to navigate to the search bar without using a mouse / mouse pad.
Recommended Solution	<p>Create a keyboard shortcut on the website that brings the user to the search bar. A potentially fix would be setting up a virtual keyboard that allows users to press the “S” key on their keyboard to take them to the search bar.</p> <p>We were unable to fully implement the HTML / JavaScript fix to this problem. For a similar example fix, see HERE.</p>




Violation	<p>2.4.4 - Link Purpose (In Context):</p> <p>The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general.</p>
No. Problems	2
Typology	Navigation – Empty links/Links with same link text but different destinations
Level	A
Code	<pre>480. <div class="box stopabarvabg3">✘ ✘ </pre>
Problem	<p>When clicking on one of the pictures on the bottom part of the home page, it takes you to a page that is not described by text.</p> 

	More specifically, the picture of the horse on the top takes you to a different page than the link of the text directly below it. This is somewhat misleading as other pictures that have this same format take you to the same destination as the text directly below.
Recommended Solution	Reformat this section of the page so that the link of the picture matches that of the text below it. It would also be good to add a label to the picture describing what is shown and the purpose of the attached link (either visibly or programmatically).



Violation	2.4.10 - Section Headings: Section headings are used to organize the content.
No. Problems	1
Typology	Structure and Semantics – Two headers of the same level with no content in between
Level	AAA
Code	614. 
Problem	See 1.3.1 Problem
Recommended Solution	See 1.3.1 Solution Same problem and solution, websites must be accommodating of people experiencing disabilities and those who aren't. Implementing a header with no sub-content as a result of the pages not being translated shows that the section is being ignored by translators, so solutions include dropping the header or adding content to sub-section.

Violation	3.3.2 - Labels or Instructions: Labels or instructions are provided when content requires user input.
No. Problems	1
Typology	Forms – Labeling of form controls
Level	A

<p>Code</p>	<p>159.  <code><form action="/hledani/"</code> <code>method="get"></code>  <code><input class="inputsearch"</code> <code>type="text" name="searchword" value="hledání" onclick="this.value=";"></code>  <code><input</code> <code>class="butsearch" type="submit" name="search" value=""></form><!-- </div>--></code></p>
<p>Problem</p>	<p>See 1.1.1 Problem</p>
<p>Recommended Solution</p>	<p>See 1.1.1 Solution</p> <p>Not the same issue as 1.1.1, but quite similar. This criterion specifies that all users could see it, not just those using a screen reader, implying that there is no visual text that would signify the search bar. If the 1.1.1 solution is implemented, this violation should be resolved</p>

<p>Violation</p>	<p>4.1.2 - Name, Role, Value:</p> <p>For all user interface components (including but not limited to: form elements, links, and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.</p>
<p>No. Problems</p>	<p>1</p>
<p>Typology</p>	<p>Forms – Form controls without label</p>
<p>Level</p>	<p>A</p>
<p>Code</p>	<p>159.  <code><form action="/hledani/"</code> <code>method="get"></code>  <code><input class="inputsearch"</code> <code>type="text" name="searchword" value="hledání" onclick="this.value=";"></code>  <code><input</code> <code>class="butsearch" type="submit" name="search" value=""></form><!-- </div>--></code></p>
<p>Problem</p>	<p>See 1.1.1 Problem</p>
<p>Recommended Solution</p>	<p>See 1.1.1 Solution</p>

	Aria-label, markup features exposing the name and role (such as form controls and label elements)
--	---

Violation	4.1.2 - Name, Role, Value: For all user interface components (including but not limited to: form elements, links, and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.
No. Problems	1
Typology	Web page – Push button from controls
Level	A
Code	 <p>159. <code><form action="/hledani/" method="get"></code>  <code><input class="inputsearch" type="text" name="searchword" value="hledání" onclick="this.value='';"></code> <code><input class="butsearch" type="submit" name="search" value=""></code> <code></form><!-- </div--></code></p>
Problem	See 1.1.1 Problem
Recommended Solution	See 1.1.1 Solution Missing a “label” or “title” within the button class/object, must add a plain label or title to the button

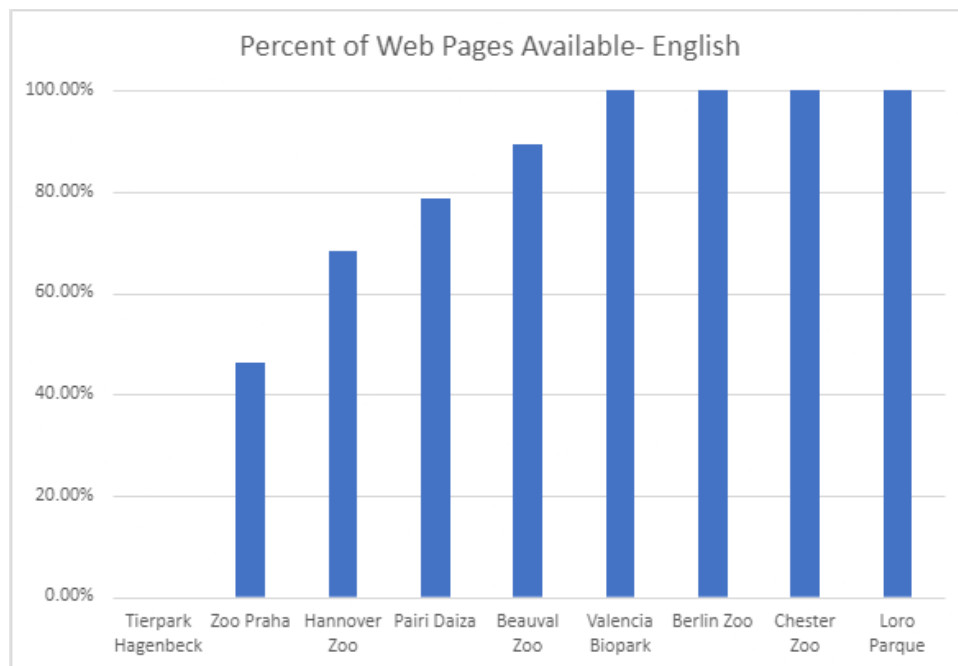
Finally, we recommend that when redesigning the new website, Zoo Praha adheres to the Web Content Accessibility Guidelines (WCAG) created by the World Wide Web Consortium. The latest version of the WCAG is 2.1, but depending on when the website is redesigned, there might be a newer version. These guidelines have many success criteria that web pages should meet in order to be accessible for all users. Under each success criteria, there are also links to recommended techniques and common failures that are helpful. The link to these guidelines is here: <https://www.w3.org/TR/WCAG21/>

Language Accommodations

Our teams research found that seven of the eight European zoo websites (88%) successfully translated their content from their native language into English through a variety of translation methods. We found that only two sites—Tierpark Hagenbeck and Zoo Praha—had not translated at least 50% of the pages available or 75% of features available in their native language into their English sites. Some of the translation methods included Google Translate build-ins, support for the Google Translate browser extension, and human translation. However, there was no single translation method commonly used by the more successful websites.

The research also found that Zoo Praha lacks both page availability and complete translations, including nine of the pages previously denoted as “top zoo content”, all of which are marked by bolded text in the following figure. Not only did the website offer just 46% of their Czech site in English, but only 23% of features were incorporated into the English site.

We recommend Zoo Praha redesign their new website to be more accessible to English speaking tourists by strengthening their online English accommodations. From our analysis of other zoo websites and common translation standards, we suggest that the zoo fully translates their website to make the Czech and English sites identical by hiring a human translator. This manual translation method yields the best results, as Google Translate frequently encounters issues with context and grammar and will allow for images to also be translated.



Partial Translation

- **Opening Hours**
- **Accessibility**
Equipment/Services
- **Animals in the Park**
- **Park Exhibits**
- **News**
- Admission/Prices
- Animal Feeding
Times
- Zoo Praha Helps
Ukraine
- Vacancies
- EU-Supported
Projects

Missing Translation

- **Current Events**
- **Disability Information**
- **Mission Statement**
- E-Shop
- Schools and Children
- Where to go in the Zoo
- Animal Personalities
- Objects Outside of the
Zoo
- For the Media
- From the Principles
Office
- Annual Reports and
Economic Analysis
- Competitions
- Act No, 106/199 Coll.
- GDPR
- Meal Vouchers

Adobe XD Mockup

In addition to the design and presentation style recommendations listed above, we also created several mockups of the Zoo Praha website using Adobe XD. Our design is heavily influenced by the mockup created by Oliver Le Que a few years ago, as we just changed the color scheme, some animal content, fonts, and formatting. In the file attached below, we've included three different color schemes: neutral colors, grayscale colors, and the zoo's logo colors (red, orange, yellow, green, and blue). While we've included three different options, we recommend the neutral color scheme based on our research of other successful zoo websites.

Because of the time constraints of our project, we only created mockups for the homepage and the history page, as we felt these were the most important pages and/or needed the most work. Other pages of the new website can copy the same formatting used on the history page.

Below is a list of features changed/added on the homepage:

- Changed the color scheme to be more aesthetically pleasing
 - To match the other colors used, we also edited the zoo's logo
- Edited the look of the information bar beneath the slideshow
 - Added the map instead of donation button, as a map was commonly found on other zoo website homepages
- Added a slideshow which switches through several photos of animals we recommend putting on the home screen based on our observational research
 - *The text on these images is a placeholder
- Added more animal content and exhibit information in a more interesting format (circles)
 - *If we had more time, we would have made the circles scroll to more of the exhibits which may be something to include on the new website
- Added a blurb about the Dja reserve (text taken from the old website)
 - *This could be a space to promote any new exhibits or animals

Below is a list of features changed/added on the history page:

- Added a slideshow of historical images (taken from the old website)
- Made an interactive historical timeline
 - *This idea was based off the design of the historical timeline used by the Berlin Zoo (<https://www.zoo-berlin.de/en/about-the-zoo/history>). If we had more time, we would have made this timeline more polished.

Appendix I: Zoo Praha Webpage Mockups

Adobe XD webpage mockups for Zoo Praha's homepage and history page can be found on the next two pages.



ZOOPRAHA



Rare and unique

E-Ticket



Opening Hours

Today, 9th of December
9:00 - 16:00

[All opening hours](#) ▶



Today's Events

Next Show: Gorilla Talk
12:00

[See schedule here](#) ▶



Map

Come explore our beautiful zoo!

[Zoo map](#) ▶

Meet our animals!

With more than 5,000 animals and 676 species, our unique exhibits will ensure an unforgettable adventure



Darwin Crater

Exhibit of various Tasmanian and Australian fauna.



Chambal - Gharial Pavilion

Indoor exhibit home to endangered Indian gharials and freshwater turtles



Elephant Valley

The half a kilometer long trail home to a large herd of Elephants!



Dja Reserve

The largest pavilion in the history of Prague Zoo so far is home to a family group of lowland gorillas and other Central African species, such as gueres, marsupials, wasps, kalonis, talapoins, brush-faced monkeys, and golden-headed gorillas.

[Learn more](#) ▶

News From Our Zoo



This is an Example Title

You should totally read this article. Test test test.



Prague Zoo Started Processing Compostable Containers

The Prague Zoo gradually replaced all plastic dishes with completely compostable dishes made from starch, launched an awareness...



Prague Zoo Holds Fifth Position Best Zoo in The World

The travel website TripAdvisor has published a new ranking of the best zoos in the world. According to this prestigious travel site, Prague Zoo is also in fifth place for 2018!

Návštěva

Vstupné
Otevírací doba
Kudy do zoo
Služby návštěvníkům
Návštěvní řád
Mapa Zoo Praha

Zvířata a expozice

Pomáháme jim přežít
Poznejme se!
Kam v zoo
Zvířata se učí
Zvířata v obalech
Ladění zvířat

Vše o zoo

Naše poslání
Historie
Z ředitelny
Výběrová řízení
Volná místa
Projekty podporované EU

Školy a děti

Pro školy
Pro děti
Zooloučák
Zoolškola

Jak pomoci

Adopce a sponzorství
Pomoc ochraňujícím druhům
SMS sponzorování
Povodně 2013

E-shop

Roční vstupenky
Trička
Suveníry
Publikace
Zážitekové programy



ZOO PRAHA

