# **Executive Summary**

At the beginning of February 2023, we, Group 3 of the Fall 2023 TWC 544 User Experience class, planned this user research with the aim to gain an understanding of the motivations and behaviors of wildlife website users. The potential users of wildlife websites are mainly students, educators, researchers, and the general public that possess an interest in wildlife conservation. In order to gain an in-depth knowledge of the users, our group's research focuses on the student users, more specifically, students at Arizona State University who are interested in animals and wildlife conservation.

Starting mid-Feburary, our group began to recruit participants at ASU through faculty and friend connections. We recruited a sample of 9 participants with high interest in animal and environmental conservation-related genres. We then distrubuted an user survey to each participant to gather information such as basic demographic data, goals when visiting wildlife websites, current ways of gaining wildlife knowledge, and interest in contributing to conservation projects. Following the survey, we conducted semi-structured interviews with 4 of the survey participants to gain a better understanding of how they interact with a chosen wildlife website, their overall satisfaction of site content and features, types of content that attracted their interest or provoke their willingness to keep browsing and learning, and what they wish to gain more from the site.

By synthesizing the quantitative and qualitative data gathered from the above procedures, we learned that

We will utilize our research result as guidance for designing interfaces in the following month to help a team of ASU scientists publicizes a burrowing owls conservation project at the ASU Polytechnic campus. With the above findings, we recommend that the newly designed interface to include

# Contents

Executive Summary	1		
Contents	2		
Introduction	3		
Methodology			
Study Participants	4		
User Surveys			
Semi-Structured Interviews			
Results and Discussion			
User Survey Results			
Major Interview Findings			
Conclusions	10		
Recommendations	10		
Appendices	12		
A - User Survey & Responses			

B - Interview Questions & Observations

# Interface Design Recommendations for ASU Burrowing Owl Conservation Project Targeting Student Users

# Introduction

The research aims to identify the factors that motivate visitors to wildlife sites, such as their interest in learning about wildlife species, desire for outdoor recreation, and desire for solitude and relaxation. Explore the behaviors of visitors' engagement with wildlife sites and evaluate the impact of the visitors. Our group of UX students started planning and conducting research in February 2023 to evaluate the functionality and user experience of the National Geographic, and Monterey Bay Aquarium websites and others.

The website of the Monterey Bay Aquarium seeks to promote ocean conservation. They want to spread awareness of the value of ocean conservation and encourage eco-friendly behaviors to save the marine ecosystem. The website for National Geographic strives to encourage concern for the environment. They seek to support conservation and sustainable behaviors while fostering awareness of the natural environment and our interaction with it. Exploring and capturing the globe while using science and narrative to inspire viewers to consider environmental and conservation concerns is part of the goal of National Geographic.

The users of the website are primarily students at Arizona State University that could potentially be interested in learning and contributing to the Burrowing Owl Conservation project at ASU. To make sure that we recruit participants that are a good fit of the user group, we decided to recruit students pursuing a degree in a wildlife-related field, for example, biology, pre-vet, wildlife management or environmental science. Over the two weeks starting mid-Feburary, we recruited ideal participants and conducted user research through surveys and semi-structured interviews which we will discuss further in the following section.

# Methodology

Considering the accessibility of our participants, our team decided to design a 3-minute user survey followed by a 10-minute semi-structured interview to gather both quantitative and qualitative data.

### **Study Participants**

We recruited a total of 9 participants for the user survey and recruited 4 participants from the survey to conduct the following semi-structured interview with. The table below conducts the key outline of the participant's data.

Participants Data										
Participant	#1	#2	#3	#4	#5	#6	#7	#8	#9	
Age	18-24	18-24	18-24	25-34	25-34	18-24	25-34	18-24	18-24	
Gender	F	F	F	F	М	М	F	F	F	
Education	В	S	S	В	S	А	М	S	Н	
Major	V	ABS	ABS	ABS	Р	ABS	E	ABS	ABS	

Participants highlights in gold- participant also did the semi-structured interview **Education**:

A- Associate degree; B- Bachelor degree; H- High school degree; M- Master degree; S-some college credit **Major:** 

V- Veterinary medicine; ABS- Applied Biological Science; P- Political science; E- Environmental engineering

## **User Survey**

Participants: A convenience sample of students studying biology or environmental conservation-related genre at Arizona State University.

Procedure: Participants have been recruited through the campus and friends connections. Participants were filling out the wildlife-related google survey form including assessing their preferences for wildlife website content.

### **Semi-Structured Interviews**

This study aimed to explore the user experience of the site users. We selected semi-structured interviews as the method of research because it allows for a specific and open-ended questions to be asked. This provided us with the opportunity to collect reliable qualitative data from site users that included both structured and unstructured responses. Semi-structured interviews also allowed for a two-way conversation, which resulted in additional data that we were not able to anticipate. Moreover, we used standardized responses to collect demographic and background-related information.

Participants: The biology or environmental conservation-related students who responded willingly to do the follow-up interview from the Google form survey.

Procedure: Participants have been recruited through Google forms from the university campus who responded positively to the follow-up session. Semi-structured interviews have conducted with each participant in a quiet location on campus or via zoom as their preference, lasting approximately 10 minutes each. The interview began with open-ended questions asking about their general opinion on the purpose and motivation of visiting wildlife sites. Follow-up questions were asked to better understand their opinions and identify what kind of content they want to see on such sites. Then the participants were shown two different wildlife conservation websites and asked their preference to navigate through them while thinking aloud. Participants were encouraged to share their thoughts and opinions as they navigate the sites. If a participant recommends a site they like, they will be asked to go to that site and perform similar tasks while thinking aloud.

Data analysis: Qualitative data analysis will be used to identify common themes in participants' feedback. Descriptive statistics will be used to summarize the demographics of the sample and to identify commonalities in website content preferences.

# **Results and Discussion**

## **User Survey Results**

Participants are comprised of 6 undergraduates and 3 graduate students ranging from 18-34 years old with high interest in animal and environmental conservation-related genres. All participants either are pursuing a degree in an animal and environmental conservation-related field, for example, Veterinary Medicine, Ecology, Environmental Engineering, or are willing to learn more about wildlife by enrolling in an Applied Biological Sciences class (see Appendix A).

Based on participants' responses, we were able to discover 3 major goals that students have when visiting wildlife websites:

- To conduct research projects
- To learn about wildlife due to personal interest
- To find career opportunities.

We found 3 main methods that students use to acquire wildlife-related knowledge:

- Browsing internet sources either found through Google Search and their frequently visited wildlife websites like iNaturalist, GBIF, Ebird
- Utilizing school resources including textbooks, professor's lectures, and course materials
- Reading research papers from ASU online library and Google Scholars

In addition to the information above, we learned about 4 types of content that students wish to see more from wildlife websites:

- Ways for the general public to contribute or get involved to wildlife conservation
- High-quality pictures with detailed information of individual animal (habitat needs, survival status, ways to identify, etc.)
- Clear statement of a website's missions and purposes
- On-going conservation projects

## **Major Interview Findings**

Among the 9 participants, 4 expressed their willingness to participate in our semi-structured interview. After conducting an interview with each, we identified 4 significant findings through analyzing interview observation notes and participants' think-aloud comments.

First, the types of content that students prioritize on a wildlife website are highly dependent on their primary goal upon visiting the site. For instance, if the participant is searching for academic information for a research project, they are more likely to dive right into reading articles with long paragraphs of texts using the site's search function. However, if a participant is browsing the website our of personal interest, such as learning about aquarium species or identifying a particular species encountered while traveling, they would be primarily drawn to visual elements, concise text and headings that poke their interest before proceeding to more detailed reading. This pattern is discovered from observing multiple participants with varying goals and changes in browsing behaviors of a single participant while entering the iNaturalist site with different goals.

Secondly, during the two interviews where we directed our participants to the Monterey Bay Aquarium and the National Geographic site, both participants opted to explore the Monterey Bay Aquarium following their initial impressions of the respective landing pages. Although our sample size is limited, this observation might suggest that while offering a broad range of information could be beneficial for educational purposes, a clear arrangement and categorization to display the website content is essential to create a more favorable impression of ease of use, thus increasing users' willingness to further engage with the site.

However, even though our participants found the Monterey Bay Aquarium to be more attractive upon first entering, both participants encountered trouble trying to go back to a page they visited. Participant A visited the online store page and wanted to go back and find a cute fridge magnet that she saw but was unable to find the previous page.

Participant D really enjoyed watching one of the Live Cam videos and wanted to revisit the page but ended up spending about 15 seconds trying to locate the link to Live Cam in the navigation menu. From this observation, we learned that in addition to a clear navigation, if our website were to contain a large amount of pages, we should consider using sticky top navigation, breadcrumbs, and/or other indicators to always inform users where they are.

Moreover, for participants with a specific research objective and came to the website to search for research journals, the majority prefer to use ASU library and Google Scholar. Two of the participants find out more useful and professional information than other external websites.

Lastly, participants found live cameras to be the most outstanding feature which successfully elevated their interest in learning more about a certain species and wildlife living habitat in general.

Though we did not initially consider gender to be an influencing factor in this case, we speculate that there might be more females in general that are interested in wildlife conservation. For both the user survey and interviews, the students that expressed high interest in participating in the study are female (survey: 7 females and 2 males; interviews: 3 females and 1 male), which could have contributed to the high interest in visuals. This informs us the possibility that a large group of users of wildlife interfaces that we will later design would be female, thus it could be essential to pay attention to the presentation of visual content in order to

# Conclusions

Throughout the study by collecting survey data and semi-structed interview, we discovered that participants are mostly interested in wildlife websites for research purposes or for their own personal interests. Additionally, we have found that graphic images and overall website structure design are important factors in attracting visitors. Given these findings, we suggest that the burrowing owl conservation project should focus on visual displays on the user interface in order to attract more visitors and achieve its goals.

To further test the effectiveness of this recommendation, it may be useful to conduct usability testing or A/B testing to compare the effectiveness of different website designs and features. Additionally, it may be valuable to continue to collect feedback from visitors to ensure that the website is meeting their needs and expectations over time.

# Recommendations

Based on what we learned from the survey results and interviews, in order to publicize the burrowing owl conservation project, we recommend that:

- The interface to provide the content in multiple languages to best accommodate all interested students. Given that ASU comprises a diverse student body with varied language backgrounds, non-natives may be more inclined to engage with website content in their preferred language, particularly when exploring topics, not for academic purposes.
- 2. Visual graphs or live cam that would attract general and non-research purpose students' attention. Whenever speaking of attracting, people don't like to read long sentences if not needed. Meanwhile, the most effective way would be visual communication. More female audiences are possibly being attracted to the adorable species.
- 3. A clear and concise site structure would keep the audience focused on the findings. A clear path and navigation with a focus topic could be assisted in order

to lead the audience to the page. It would enhance the visitor's willingness to continue browsing the website.

- 4. In addition to solely designing interfaces, physical posters could be printed and displayed throughout ASU campuses, raising awareness of the conservation project and directing students to explore the burrowing owl website/app. We believe most ASU students don't know about the burrowing owl project. In fact, ASU students are more than willing to know more about what is happening in the burrowing owl project, so it is important to push the information out.
- 5. Providing information on opportunities for interested ASU students to become involved in the burrowing owl conservation project. This could be beneficial for our stakeholders – the scientists and researchers who are leading the project as student volunteers with a passion for animals and relevant knowledge could offer valuable assistance to the project. For our users – the students, more specifically, those pursuing a career in wildlife conservation-related fields, participation in the project could be a meaningful part of their professional experience.

# **Appendices**

## Appendix A: User Survey & Responses

## Survey link

## Responses





## Appendix B: Interview Questions & Observations

Semi-Structured Interview: Scenario & Questions to Ask

- 1. Assuming you're completing a research assignment, where do you go to gather the information
- If participant says yes Ask "why do you prefer this site?
  If multiple, which one is your favorite? Or which feature do you like the most?
- 3. If participant says no provide the two websites <u>Monterey Bay Aquarium</u> <u>National Geographic</u>
- 4. How do you usually interact with this website
- 5. What kind(s) of content are you looking for?
- 6. Anything missing? / Anything else you'd like to see from the site?
- 7. Extra questions: Have you ever heard of Burrowing owl conservation project at ASU? What do you think that we could do to raise awareness among the students?

### Interview Observation

### Participant A

I like to watch aquarium click-Monterey Bay Aquarium

Live camera- I like this, it's a new idea in an innovative way. Shop collection-Fridge magnet

It would be better if there is language options for non-native speakers. I would like to see adorable animals

visually orientated, pictures are more attractive.

navigation issue, there is too much content and it tends to get lost if you go to another page and return. It is easy to forget the path

No sticky navigation(when scrolling down no menu bar)

Attractive "Donation" button? environmental issue? Join and give button

Live cam should be a specific button because it is a special feature.

Use live cam as special to attract people in order to achieve the goal such as a donation.

What is that expensive price? (surprisingly) Oh, donation, I thought it is another event ticket. Can be

lowered a bit, otherwise, it would make people feel like the site is asking the money.

I would like to see the Ticket and the price as well

Sea otters are cute

Everything with images would be better

### Participant B

Prefer ASU library website for research purposes and Google scholar

Keywords to find ...

Filter by articles and all dates or ( ASU library )

Free for all the students so he prefers ASU library

Problems: some paper that they don't have or some external site don't work

Some pdf downloads, have Lots of access.

Some tools like site paper...

One student's wildlife camera monitoring Remove weeds Predators coming or eating

### Participant C

I used iNaturalist, GBIF, and Ebird to search for species information. Browsing the iNaturalist. First click Explore tab and use the location to search species.

Every user can upload their own information without registering as a member. The web likes a community and people in there can revise the information.

Does something need to be improved in iNaturalist?

Species and maps should be more clear. Using the iNaturalist and Ebird to look for species first.

How to attract students to join know burrowing owl? Using a game or camera to see owls since having a visual sign is important to people who first visit the website.

Enjoying watching animal planet to get the species information, used to a be volunteer before and have donated to Alturas Wildlife Sanctuary.

Recommend website: https://www.alturaswildlifesanctuary.org/

#### Participant D

I often use ASU Library to search for information and google research first.

When I browse Monterey Bay Aquarium, clicking the animal title tab first and track species animal. Then, click type and marine mammal, and choose the sea lion that I am interested in.

The animal webpage walks through, scrolls the whole page, and looks for another subtitle.

Depending on personal interest, the picture is first then the subtitle.

If I want to do deep-related research, I will pick photos first and see the detail.

Next, click the camera tab, and see the Live kelp forest cam to understand the scene.

Heard the burrowing owl from the student who was involved in and talk with the professor.

Suggestion: release more text/posters in the campus to let people notice, or even know about the project Motivation to browse the wildlife animal webpage, seeing animals during never known or have special features will attract me to learn a lot.