

Usability Testing Report

Part 1: Basic Evaluation Plan

Motivation

The purpose of this evaluation is to assess both how intuitive and usable our interface is as well as how useful the features we are including in our app are to real nature watchers. The method of our evaluation is to observe the participants as they step through three key tasks with our interactive prototype. We will incorporate the participants' feedback as we continue to iterate our design.

Tasks

Task 1: Confirming a Nature Identification

Scenario

You're currently using the app to compete in a challenge where you win points for nature sightings. You've just seen a nearby nature and you want to photograph it to confirm the sighting.

Task Completion

This task is completed when the user has submitted the photo for identification and landed on the confirmation screen informing them how many points they won.

Task 2: Locate Nature Watching Area for Specific Species

Scenario

You just moved to a new area and want to go nature watching. You did some prior research on different natures and found a nature called the "Black-capped Chickadee." Intrigued by this, you hop on the app to find a location with that specific nature.

Task Completion

This task will have our user on our nature locations page. They will then constantly navigate toward the search bar to find a certain nature they want to watch. They should be prompted with an error if there was a typo or a nature that is not in our database. After fixing the error, they can pick a location marker to go to, and then finally showcase a confirmation screen on the location with that specific nature.

Task 3: Schedule an Excursion With a Group

Scenario

You want to go nature-watching, but you don't know anyone else in your circle who is interested. You use the app to explore different excursions coming up in your area and potential people to go with.

Task Completion

The user will find an excursion group that they are interested in joining. This task will be complete once the user has requested to join an excursion group and landed on the confirmation page or the requests page.

Method

Our observations were conducted remotely over Zoom. We created an interactive prototype in Figma that we could share with participants. We asked each participant to share their screen while they completed all three tasks with the prototype.

As the participant completed each task with the prototype, the facilitator encouraged them to think aloud and share their thought process without helping the participant complete the tasks. The facilitator also took notes and recorded audio if given permission.

Pre-Observation Interview

- Do you use any mobile apps for naturewatching?
- How often do you use them?
- What do you expect from a mobile app for nature watchers?
- Which one is your favorite and why?

Post-Task Completion Interview

- What about this feature worked well?
- What didn't work well?
- What would you change if you were designing this interface?

Post-Observation Interview

- Which feature here would you find the most helpful?
- Which feature seems the least helpful?
- Do you have any more feedback or suggestions?
- Would you actually use this app?

Participant Profiles

Our target participants are active nature-watchers with at least a few months of prior nature watching experience.

Participant 1 (P1): The participant is in her 40s and is an avid nature watcher with several years of experience. She uses a number of nature-watching apps, including eNature and NestWatch, in addition to participating in Facebook groups and maintaining a nature photography Instagram account. She is primarily a backyard nature-watcher but enjoys occasional nature-watching trips when she has time off work. Ethics and conservation are important values to this participant.

Participant 2 (P2): The participant is 15 years old and is an avid nature watcher with a couple of years of experience nature-watching with her father. She uses a few apps like eNature and Audubon to help her when she is nature-watching. She goes nature watching once a week but wants more people to nature watch with.

Participant 3 (P3): The participant is a college student in his early twenties studying business. He has been nature-watching for 2 years and was introduced by his friends from college. He primarily uses his phone camera and apps such as Merlin Nature ID and Audobon. He is a casual nature-watcher and goes around once a month or once every other month with his friends.

Participant 4 (P4): The participant is a teacher residing in Wisconsin currently. He is 49 years old and has been nature-watching since the beginning of COVID-19. To record his sightings, he uses his cell phone camera and inputs his sightings into the website eNature. His nature-watching is primarily done in his backyard, and he often uses Facebook groups to share his sightings.

Part 2: Simple Evaluation

Findings

Finding 1: unanticipated challenges in photographing nature during excursions

P1 mentioned that often nature-watchers visit remote locations while nature-watching, where they might not have service. Therefore, key features of the app, especially the ability to earn

points, should be usable without service. She mentioned that “Nature-watching is just hiking with a purpose.” P3 noted how sometimes for nature photo-identification, it is not always completely accurate. This can be due to users not having a high enough quality camera, being able to get

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close enough to nature, or it can also be due to the identification technology itself. P4 also noted that camera quality could be limiting. (Of course, we also plan to develop a computer vision technology that is better than those currently available.)

Suggestion: Offline mode

The user suggested an offline mode to use when nature watching in a remote area that doesn't have service. In this offline mode, the user could take photos or record nature calls in the app that would be saved for them to id later.

Suggestion: Allow users to id natures with sound recordings

P3 suggested having the option to record the nature calls using audio recording instead or in tandem with the photo identification in order to gain a more accurate match. The audio identification would work like a song identification application, where the nature call would be matched through a database of nature calls. This would make the app more accessible to users who don't have access to a high-quality camera, especially if they are young or are beginners.

Suggestion: Allow users to id natures through questionnaires

P4 suggested having a screen where you can identify nature through a questionnaire. The questionnaire might include the size of nature, color of the nature, color pattern, behavior, and shape. This would allow the app to identify the nature regardless of the quality of the picture taken. Integrating this feature would allow full accessibility of the features even if the user doesn't have a high-quality camera.

Finding 2: Not enough information/feedback on the map of search results P1 was initially confused when landing on the search results map page showing locations of the nature they had searched for. They weren't sure what the map location markers represented, or where to click, and overall mentioned that they felt there was a lack of feedback and interactivity. They spent a while clicking around aimlessly before finding the details screen. Similarly, P2 was confused about what to do and what the location markers represented exactly. They didn't know where to go and didn't like that there wasn't much feedback. P2 also said, “Being presented with clear information on where to go is useful to nature watchers with an agenda.” P4 also mentioned that the information presented was hard to follow.

Suggestion: pop-ups on hover

Going through the map flow, the users noted that there wasn't adequate feedback on the location markers, leaving them confused and not knowing what to do. This caused a delay in completing the tasks and the users suggested creating something that can help out in that situation. So one fix we decided on was to create pop-ups when a user is hovering over a location marker, giving details on the nature, recent sightings, and more. The location markers could also change color on hover.

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Finding 3: Privacy Concerns in excursion postings

P1 expressed concern about privacy in the excursion postings. She mentioned that, especially as a woman, she would be concerned about the possibility that anyone could see exactly where she was going, when she was going there, what she looked like, and that she might be alone.

Suggestion: more general location

P3 suggested only listing the general location of the excursion and then once the request is approved, then the exact location will be revealed to the user. This means that when a user posts an excursion, they would still add the direct location, however, a 2-mile radius of the location would display in the excursion post until the request is approved.

Suggestion: private excursions

Another possible solution is to allow the user to create "private excursions" where they can restrict the visibility to a certain group of people or just their friends in the app. They might also want to create private challenges that only include the people in the excursion, as well, so that they could compete with their friends in a group. This might also have an application for education, such as a field trip where the teacher might want to host a private excursion and challenge for the students.

Finding 4: Desire to be able to disengage with other users

P3 noted how after you request to join an excursion or if you post an excursion, you would be locked in without the option to cancel or back out. P3 wishes there was a way to cancel without the pressure or guilt of disappointing other users. On a similar note, P1 mentioned that she would like to be able to block other users, which confirms that users want both ways to engage with other users as well as the ability to disengage.

Suggestion: Canceling an excursion

During the excursion flow, the user suggested a canceling method when creating an excursion. The user brought up how they couldn't cancel an excursion after making one, making them feel

obligated to go to that specific event. Based on that, we decided to add an option to cancel an excursion after it's accepted and to remove yet-unaccepted requests.

Finding 5: The chat component is too small/hidden

P2 didn't find the chat until having landed on the page that contains the chat icon several times. P1 mentioned that the chat icon felt hidden. P4 expressed that accessing the chat was an overly convoluted process. He mentioned that instead of having to navigate to each the reservation

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pages, he would appreciate a chat room component that contains all of the chats the user is a part of.

Suggestion: Chat component

During task 3, P4 thought that having to click three times (navigating to the page, "learn more" button, chat icon) would be repetitive for people who just want to view chats directly. The app could benefit by having a chat icon in the corner of the screen to view all of the user's chats directly instead of navigating to each event.

Overall Strengths

Social media aspect

P1 mentioned that she really liked the idea of a nature-watching app that allows for connecting with other users since she noted that this functionality isn't really present in current nature-watching apps. P2 also thought that having a way to connect with other nature watchers is both unique and useful. P3 said he enjoyed being able to see upcoming excursions because it would motivate him to nature watch more often if he had people to go with. P4 also enjoyed the social component because currently he only uses Facebook groups for such experiences.

Map for locating nature

P1 also noted that the map was probably the most useful feature in the app and the one she would use most frequently. While P2 thought the map feature isn't too unique because it's present in other apps that she uses, she did like the idea of specifically searching for a nature species instead of a general nature-watching location. P4 felt the map feature was very straightforward in regard to functionality.

The overall simple design provides clarity

P1 mentioned that she appreciated how simple and uncluttered the design was. P2 also liked how simple the UI was, she also mentioned that it was easy to follow because of the simple design. P3 said the design reminded him of applications he was already familiar with, which made it easier for him to navigate and use. P4 liked the personalized profiles of each user that

could be added to the excursions. In addition, the familiar calendar and upcoming excursions component were very easy to understand.