

UC San Diego

Capstone Projects

Title

Key Conservation: Empowering Hope. A mobile platform for the scientific community to engage in global conservation solutions

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Key Conservation: Empowering Hope. A Mobile Platform for the Scientific Community to Engage in Global Conservation Solutions.

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Megan Cromp, Director of Key Conservation

A handwritten signature in black ink that reads "Megan Cromp". The script is fluid and cursive, with the first letters of each word being capitalized and prominent.

Capstone Committee:
Antonella Pisani, CEO of Eyeful Media

A handwritten signature in black ink that reads "Antonella Pisani". The script is elegant and cursive, with the first letters of each word being capitalized and prominent.

Dr. Jennifer Smith, Scripps Institution of Oceanography

A handwritten signature in black ink that reads "Jennifer Smith". The script is cursive and somewhat stylized, with the first letters of each word being capitalized and prominent.

Abstract

As the effects of climate change and habitat loss are seen increasingly around the world researchers and organizations need a way to connect with the general public. Mobile phone and social media use continues to increase and conservationists need to utilize these platforms in their efforts. For my capstone, I partnered with Key Conservation to add a researcher section to their mobile application. I spent the quarter speaking with researchers about what would make the app most useful for them and incorporated these ideas into new features on the mobile application. I also learned how to use Adobe XD and worked to make this part of the app fit within the platform that was already built. Through this mobile application, I hope that researchers are able to connect with people around the world who can offer help and solutions to the conservation issues we face.

Introduction

Today, people are more connected with the rest of the world than ever in history. This is all possible through the internet and smartphones. The use of phones globally is rapidly increasing, “having surpassed 5 billion people connected to mobile services in 2017, the global mobile industry will reach further milestones over the next eight years. The number of unique mobile subscribers will reach 5.9 billion by 2025, equivalent to 71% of the world’s population.”¹ Not only have increased connectivity, but social media platforms have engaged people in new topics around the world. Social media has made it easy for people to connect and share information. Unfortunately, the science world has not leveraged social media and mobile applications to the fullest extent. Now, more than ever, people need to be involved in the conservation of plant and animal species. Conservation issues can not be solved by only science but instead require interdisciplinary approaches that involve many different types of people.

For my capstone project, I was very interested in creating a network where scientific researchers could connect to people in the communities in which they work. I was unsure what this might look like, but confident it would reside online. Upon doing research, I learned of the San Diego based organization, Key Conservation. Key Conservation is a mobile application (in development) that aims to give conservationists funding and global support. Conservationists are mainly organizations, like NGOs, and anyone is allowed to sign up as a “global supporter”. Global supporters can donate money, skilled impact, or in person aid. This allows people near and far to participate in conservation work anywhere in the world. While these two groups are

¹ GSMA Intelligence. (2018) The Mobile Economy, <https://www.gsma.com/mobileeconomy/wp-content/uploads/2018/05/The-Mobile-Economy-2018.pdf>

very important, I still felt that researchers should be involved in the application. This is not only for researchers to gain help from others but also to share the results of their studies beyond the scientific community.

What I aimed to achieve in my capstone was creating a part of Key Conservation for scientific researchers that are specifically involved in research with conservation goals. The researcher aspect of Key Conservation will allow researchers to engage directly with each other, the public, or organizations. There are two parts to it: researcher to researcher and researcher to the public and organizations. The goal of my capstone was to lay the foundation for this part of the app. This included deciding on features, what it would look like within the already designed Key Conservation app, finding developers, assessing usefulness, and finding funding.

Assessment of Goals

1. Establish main features for the researcher portion of the application

Throughout the quarter I spoke informally to different researchers about the mobile application to gauge what the different uses might be for them within the app. I also spent a lot of time thinking about what a researcher profile might look like within the framework of the application. I wanted it to be useful for researchers to connect with each other but also foster relationships with global supporters and conservation organizations. I wanted to create an easy way for the public to engage with scientists' different research projects and gain access to scientific papers that they might not be able to read or acquire otherwise. Scientific journals are often expensive and difficult to find, so creating a space on the app for them to be linked for free was very important to me.

As with any social media platform, privacy and safety was very important to me. Some of the features on this app allow people to see other's locations; because of that I wanted to make sure there were proper privacy settings put in place. Users are able to choose if they make this information public, completely private, or shareable with only their connections. There is also always a question of permits when you are working with scientists or academic institutions. Sharing this information within the app is up to the discretion of the individual researcher to not violate their permits.

After many discussions with researchers that ranged from recent undergraduates to well known Private Investigators that had their own labs, I was able to come up with a list of features that seemed to be common topics among everyone. These are in addition to what the app already provides and were mainly designed within the new researcher profile. There were not many changes to the rest of the way the app works.

The main features that we have decided to include within the researcher profile are as follows:

- Ways to tag where and what they work on to easily find others and so that they are easily found
- Ways to show connections to global supporters, other researchers, and organizations
- Ways to “endorse” skills or global supporters, similar to LinkedIn
- Ways to block campaigns they don’t want to see, so that there is not clutter
- Ways to post opportunities for field research, whether this is in a potential forum (further along in development) or on their general profile
- Way to ask for research papers, possibly partner with ResearchGate
- Search people by skills, location, habitat, subject
- Field station information, field stations have a profile and people can say that they are there, have been there, or are going there. Privacy settings will decide who can see this information.
- Privacy settings on who can message/connect with them
- Ability to send things from Key to instagram, twitter, facebook using deep linking
- Utilize the citizen science part of the app (further along in development)
- In country emergency contact, researchers can opt to make their contact info available to people in a certain radius as them and act as an emergency contact
- Guides or fast easy ways to learn about the customs of an area, researchers can mark that they are willing to share information with others visiting a specific area
- Research stations vs. academic institutions vs. individual researchers. Each will have a profile and you can show connections to these different facets of research

2. Find development/funding for the research portion

Because this is a large add on to the app that is already almost fully developed, I need to find developers and funding to create it. We have had discussions with Triton Software Engineering, who are a group of computer science students at UCSD that do pro-bono development for non-profit organizations. They are very interested in working with us and we are continuing to speak with them about what this might look like. They are reviewing our current code and we hope to have them start this summer. Unfortunately, they may not be able to do a lot of work over the summer, but this is not yet confirmed. We are exploring other options as well, like the Lambda School. They teach people to code for free and these people help with a project in turn for learning how to code. We like the idea of finding people who would gain valuable experience from this, not only because of funding, but because the core goal of the app is to connect scientists to others with specific skills and a wish to help. If these options do not work out we will move into the professional sphere.

In regards to finding funding, I was awarded the Edna Bailey Sussman Internship as well as an extra merit award that will allow me to continue working with Key Conservation through October. I am very excited to be able to stay on the team. Designing and developing an app in

just a few months is not realistic so I am grateful for the extra time I am allowed. Moving through the summer, finding additional funding to be able to continue building this part of the app and helping Key Conservation expand is extremely important to me. This project is exactly the area I would like to have a career in and now I have the opportunity to continue to do so. In this regard I think my capstone was very successful because it is supposed to set you up for a future in the field and mine did exactly that.

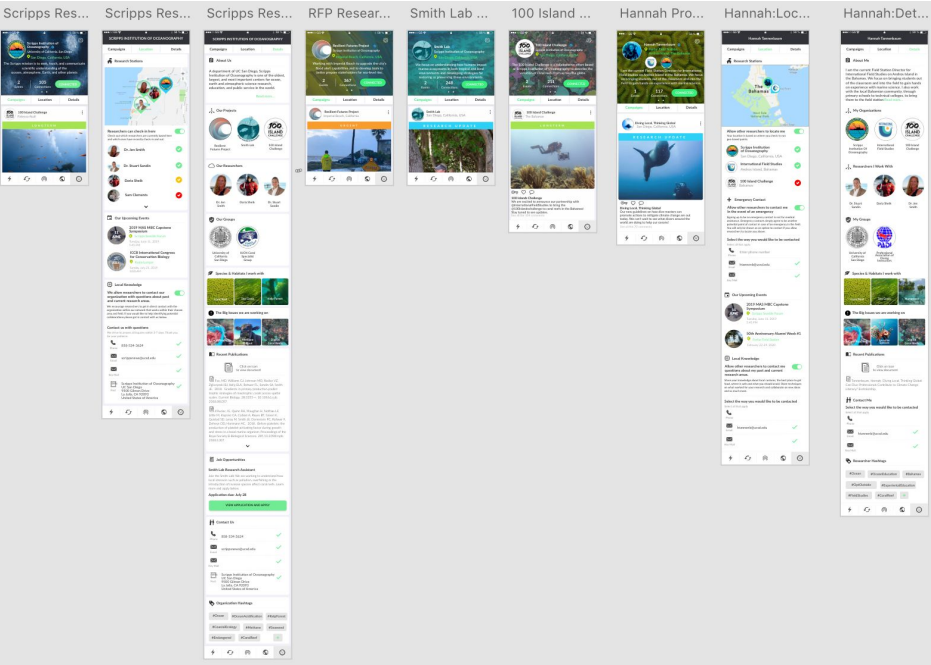
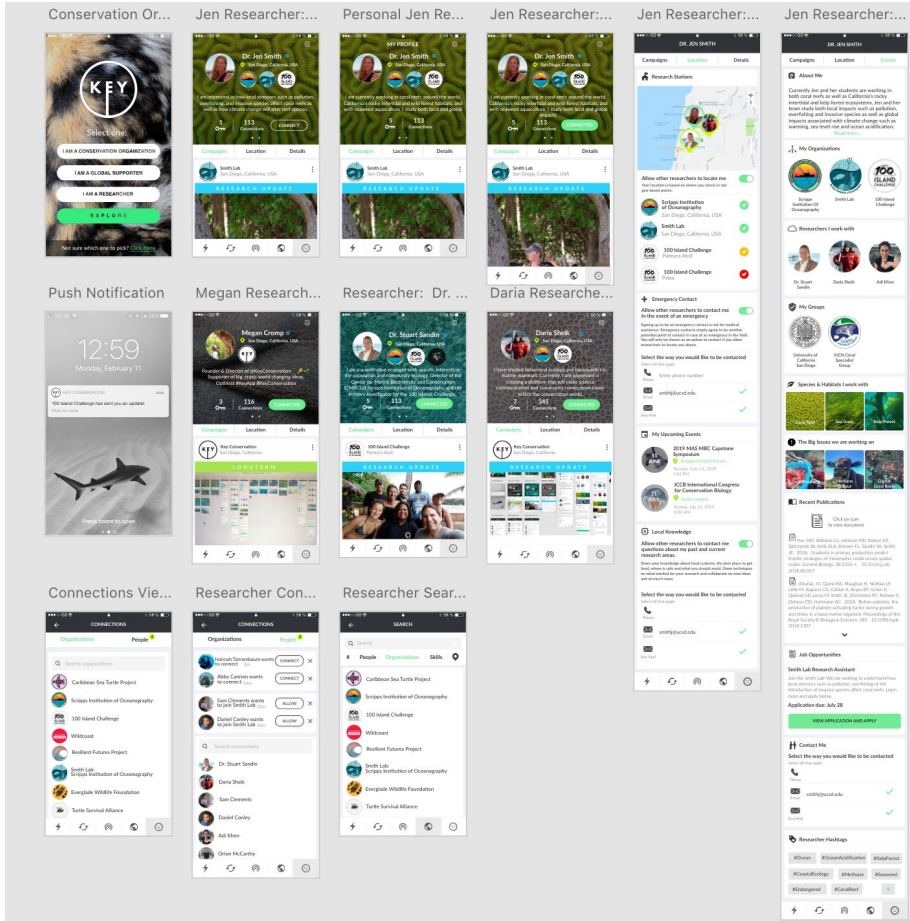
3. Find a group of beta testers

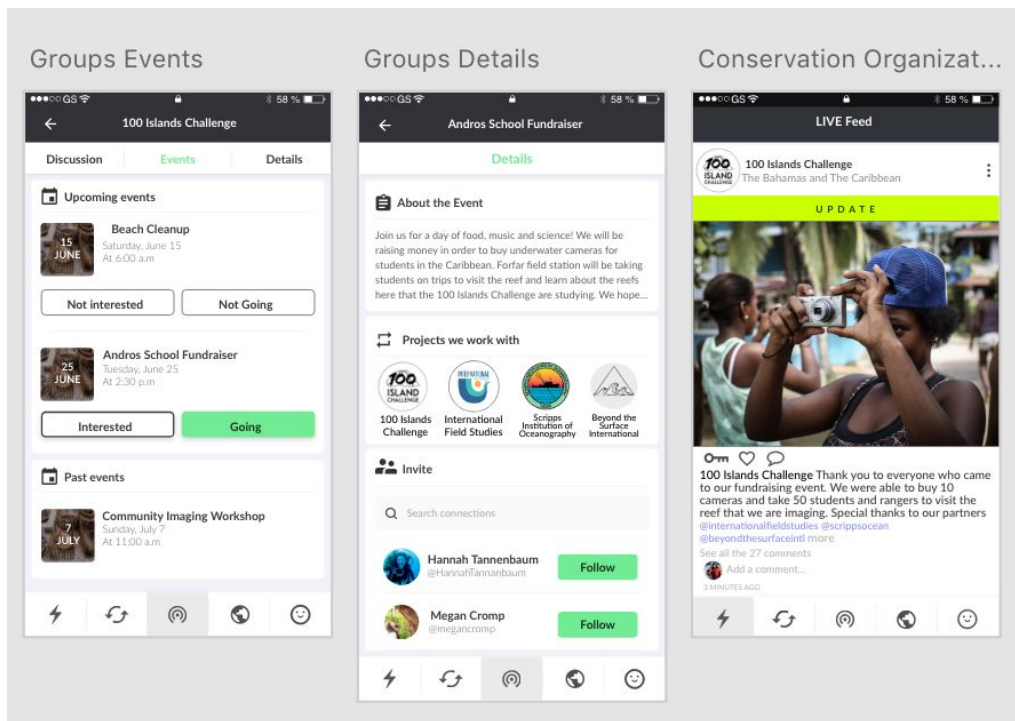
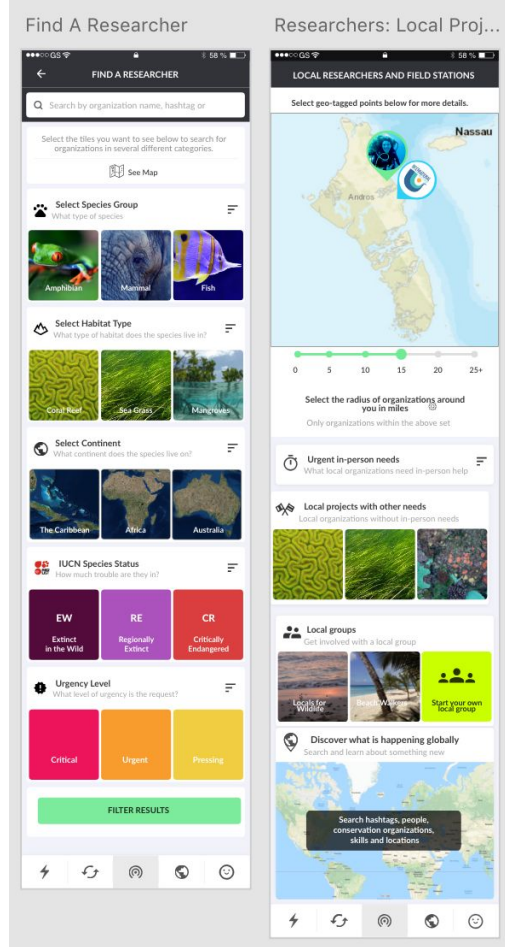
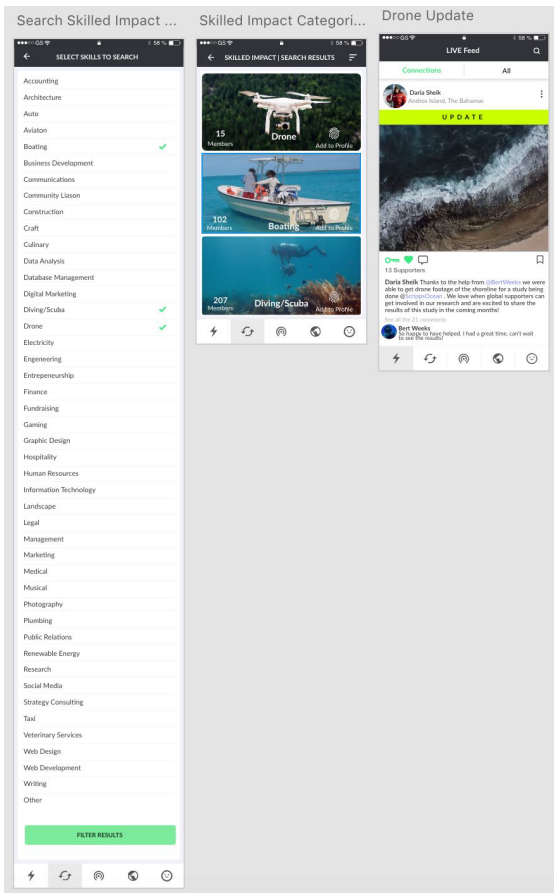
Originally we discussed the idea of using a field station as our beta test because they receive a high volume of researchers that are working on different topics in a centralized location. But, as I started speaking to more people and as the app expands, we decided it would be more useful to ask a number of scientists at Scripps Institution of Oceanography (SIO). Scripps scientists work around the world in every habitat and continent so we will be able to see how it works abroad. In addition, partnering with SIO awards us credibility around the world and could encourage others to download the app. Key Conservation is San Diego based and the city itself offers many conservation opportunities especially with institutions like the San Diego Zoo.

4. Create a visual prototype of the application

This was very interesting for me because I had never thought of how to design an app. Because Key Conservation was already designed, I had an example in which to base the researcher profile. We had to add more features and think of where those might go and how they might be available to certain users, ex researchers vs. global supporters. I learned how to use Adobe XD and Invision.

Below are the designs in Adobe XD. They include a researcher profile and a couple of examples of how the researcher might interact with the rest of the app, like the skilled impact and in person sections.





Moving Forward

I plan to write a blog post about my capstone project that will be on the Key Conservation website. I will continue to work with Key Conservation through the summer with support from the Sussman Internship. After the internship is over, I hope to stay on the Key Conservation team. Through the summer the main goal will be finding a development team that can work with us to help the application go public. There are organizations and individuals ready to beta test the app. We will continue to follow up with TSE but are open to seeking out other teams. I hope that we will be able to beta test the app in the coming months but this is contingent on how development progresses.

In July, I will attend a TechSoup talk in San Francisco with Key Conservation. TechSoup is an organization that supports nonprofit organizations and partners with companies like Google and Adobe. Conservation Optimism, one of Key Conservation's partners, is having a summit in Oxford in September that I plan on attending as well. I anticipate that this will be a really productive conference. Overall, I think my capstone project was very successful in creating a new platform for researchers to engage outside of the scientific community. I look forward to seeing how the app progresses and being a part of the Key Conservation team. I came to Scripps with the hope that I would create a network of scientists and local people and through my capstone I was able to do just that.