

Tropical Conservation Internship

Christina Jackson

I had the opportunity to conduct some field work on my own for the first time in my scientific research career! Unfortunately, I wasn't very successful, but it's all part of the experience. One of the goals of my project was to catch crayfish for experimental purposes. With this, I decided to go out on the lake in the middle of the FIU Palmettum on the Modesto Maidique Campus. I went out before sunset with my volunteer, Ipanema, to set up the traps with dog food. We set up four traps tied with string to trees in four separate shallow corners of the lake to increase our chances of catching crayfish. These were left overnight and picked up in the morning. Unfortunately, we did not catch any crayfish, but we did catch mosquito fish. Maybe I will have better luck next time.

Andreina Contreras

I conducted a butterfly count in some areas of the Deering Estate. Now if you'd like I'll run you through what a typical day looked like. I would hop on the security guard gulf cart which took me to the Pine Rocklands of the estate. As we drove through the Chinese Bridge, I would wonder if it would be the day I ran into a coyote. Once inside I started my walk through the area, scouting for any flying insects that might resemble a butterfly—often, it was a dragonfly. I would continue to walk through the Rocklands while admiring the scenery. The lizards would scramble in the bushes at every other step I took. I heard vultures, but I continued scouting for the butterflies. I saw an orange leaflike object flying towards me, and there it was, a Gulf Fritillary. I recorded a short video of it flying and continued my search. Eventually, it got shadier. I heard the wind blowing and got to cool off from the sunny walk in the Rocklands. The lizards were still scrambling everywhere I went. I ran into my first spider web and moved it aside like I'd seen my mentor do. As I continued to walk, I ran into three other spider webs that were completely unnoticeable; now it was my turn to scramble a little, but I continued scouting for butterflies. Finally, there it was, a Zebra Longwing. It flew right in front of me, and it seemed like it had a friend. I recorded it and continued trekking as I continued my walk out of the hammocks. I admired the broken trees, the sunspots, and the shade. Then I started to wonder, "Where were all the Atlas?"

Lindsay Gramling

I interned at U.S. Fish and Wildlife where I researched the Florida Bonneted Bat (*Eumops floridanus*), a federally listed endangered bat species found only in southern Florida. There is still a lot of information that we do not know about this species yet we try to learn more so that we can protect and recover their populations efficiently.

During my time at my internship, I learned how to use bioacoustic monitoring equipment to identify and analyze calls from Bonneted bats. I conducted my research on the Zoo Miami grounds since they have identified some bonneted bats on the property through previous acoustics studies and through images taken in the bat houses that they recently installed on the property.

To get the data, I set the recorder to record from sunset to sunrise when triggered by sounds with a certain frequency and length. After leaving the recorder out for a few nights, I would come in and run the thousands of recordings through a software called Sonobat. After I filtered out the poor-quality calls, I manually went through the remaining calls.

Bonneted bat calls are much easier to tell apart from the other species in the area because they are in a much lower frequency range. They actually fall in the range that many humans can hear without any enhancing! By looking at the shape of the calls, you can tell if it's a feeding call, searching call or social call. The data obtained from these recordings are incredibly valuable because we can find distribution patterns, times they are most active and determine the type of activity going on in the area.

We thought that the bat houses that were inhabited with bonneted bats just contained younger males who weren't fully mature; however, we were happy to discover with a camera that in one of the bat houses there appeared to be four bats living in it! That was exciting news because very few roosts for these species are known at all. This is also a much safer location for a roost for these bats than in a residential home, which is where they likely were roosting before moving here.

Christensen Medina

Interning at Dream in Green, a non-profit organization whose mission is to develop, implement and oversee educational programs that promote conservation and sustainability, allowed me the opportunity to examine the role, techniques and influence of environmental education in the community. Dream in Green provides educational resources to residents of all ages to make informed decisions about how their actions can impact the sustainability of local and global communities. It is sort of like the 'teach a man to fish' parable – first they learn, then they act.

In my time as an intern, I had the pleasure of working hand-in-hand with officials from Miami-Dade Water and Sewer Department as well as with Miami-Dade County Solid Waste Management to co-host Dream in Green's Water and Energy + Learning and Behavior (better known as WE-LAB) workshops. At these workshops, a panel of environmental experts explains the complicated interdependence of water and energy (the water-energy nexus), its relevance to South Florida and the importance of committing to water and energy conservation at home.

This experience taught me that local conservation will require local commitment and cooperation between local stakeholders. If you haven't noticed, the key word here is "local." Without a doubt, tropical conservation involves a collaborative and communal effort in working together to build a better, more sustainable South Florida and programs like WE-LAB are a perfect example of such community-based efforts. Perhaps more importantly, my internship at Dream in Green has reinforced my feeling that WE, as individuals, have the power to influence positive environmental attitudes and behaviors amongst community members.

WE-LAB prepares residents to be environmental leaders in their community.

Megan Long

I got picked for the internship under the U.S. Fish & Wildlife Service studying endangered snake and plant species. Once a month I would survey various locations for the rim rock crowned snake. At each location there were three cover boards that had to be checked and an additional 20 minutes exploring nearby terrain. I also worked with the Fairchild Tropical Botanical Garden where I dealt with endangered plant species.

Demi Aminedeau

The most memorable experience I had with Dream in Green this semester was visiting Cerasee Farm, run by Urban GreenWorks. The organization created a community garden in Liberty City, an area that is coined a food desert. The completely edible food forest is open to anyone who needs it and welcomes anyone who wants to volunteer. Dream in Green has a Green Schools Challenge Program, where registered schools are given six sustainability activities to complete throughout the year. One of the topics is food security. We met with Urban GreenWorks to learn about the schools they had food forests in and to get a better idea of what a partnership with them would look like.

We were greeted by Anita, a woman who had struggled with drug abuse and found a new path working at Urban GreenWorks. She showed us around and knew every fruit and vine there was. We learned they had recently harvested 30 sweet potatoes and they were distributed throughout the community. A lot of their food goes to the apartment complex across the street, which is senior housing. Anita went on to tell us how discovering the therapeutic benefits of horticulture have helped her find meaning in life, and she uses what she's learned to help others overcome their demons. She cited pulling weeds for anger management and how assigning responsibility to those who are accustomed to having none, has helped others find new meaning in their lives as well. Another woman is employed, and the founder was telling us how they were hoping they can help her register in school again. By the end of our tour, Anita sent us home with a bag of herbs and a loofah that she had picked.

The day was a reminder of how powerful community-led projects are. Multiple benefits come out of community gardens both environmentally and socially. It reinforced Dream in Green's mission to provide educational community services, strengthen connections and make partnerships where efforts already exist.

Anthony Chiong

Little things can't compare to watching the eyes of little kids light up as they get their hands dirty. From weeding to planting, there isn't anything they aren't willing to do if it means getting dirty, and it doesn't hurt that they also learn a bit about nutrition and the environment while they are at it. The energy and excitement they have with being able to help their school while learning at the same time is a rare sight at such a young age, and just when it seems that they might get bored, they hook themselves back in with a million more questions and a desire to keep helping.

Sofia Ocampo

When I would tell people I was interning at Fairchild gardens for the million orchid project, they would imagine me out in the field, placing orchids all over the garden or tending to plants in the orchid lab. In reality, all of my work took place in the basement, while sitting at a little fume hood. My job entailed carefully cutting into orchid roots and using a microscope to find some bits of coiled up hyphae.

Hyphae are long filaments of fungus. These coiled up hyphae inside the orchids are called pelotons. Orchids develop these because they have a special symbiotic relationship with the fungus, so they begin to grow inside the plant cells. Once I found these pelotons, I used a tiny pipette to pick them out and put them in clean water. I repeated the process three times to ensure they were clean. I then put individual pelotons to grow on some agar. Extracting the coils is a simple process, but it's time consuming. One root sample can have me sitting at the microscope for three hours! Despite the tediousness of the work, I grew to love it! Seeing the pelotons that I collected grow was such a gratifying feeling.

Marina Loiacono

My internship was at Zoo Miami, where I worked to engage the public through social media. The main goal of my internship was to see the best ways to educate people about conservation efforts going on at the zoo.

My work led me to the Zoo Miami Propagation and Breeding Center. A team of experts work within the center to breed rare and endangered species of birds from all around the world. These birds are sent to other zoo collections to ensure that every species survival plan (SSP) is followed correctly.

Many species that they house are endangered or threatened according to CITES. They have had a lot of success in breeding those species. One story that really captivated my attention was that of the Guam Kingfisher. They are currently extinct in the wild, and only remain on this earth due to zoos that are breeding them. After visiting them a couple of times, I was able to promote their work on the Zoo's conservation Facebook and Instagram and show how zoos are actively helping in the conservation of many species.