

This summer, I interned for the non-profit company Conservation Fisheries. It is a small operation (only seven employees) specializing in the breeding of rare and endangered species for reintroduction into the wild. They run a hatchery with over 250 tanks in an old warehouse near downtown Knoxville. There, endangered species of fish- both federal and state-listed species- are bred in captivity and housed. Some species have not been able to be successfully bred in captivity, so eggs are collected in the wild and hatched at Conservation Fisheries. This increases survivorship, since environmental conditions and predation can limit the success of larval fish in the wild, particularly when introduced species inhabit the same streams. These programs have had enormous success in some cases, where animals that were once on the brink of extinction now have established populations.

My work with Conservation Fisheries consisted primarily of in-house tank room maintenance and work with transfers of newly-hatched larvae. I also was included in some fieldwork, but this year's foul weather permitted this on only a handful of occasions. My duties consisted of conducting water tests: testing water samples from individual tanks for elevated nitrate, nitrite, ammonia, and other chemicals; water changes: reducing the water level in tanks with elevated chemical levels and refilling with clean water; collecting food for the fish from vats with cultures of larval insects and microorganisms; collecting eggs from tanks of breeding fish; conducting larval transfers in which newly-hatched eggs are transferred into small tanks; and conducting general maintenance such as removing rust from steel beams, painting, and replacing components of fish tank systems.

The field work that I helped conduct consisted of a variety of tasks. Mainly, it was comprised of snorkel surveys of local creeks in which I tagged, identified, and recorded the species of fish we encountered while floating downstream. We conducted one of these surveys at night, which was a mind-blowing way to experience the water. We also removed exclusion nets from a stream where there was bridge construction; these nets were meant to keep fish away from the site while a new bridge was being built. On one occasion, we did a seining survey of a small creek in southern Kentucky for a particular species of endangered fish: the arrow darter. I worked with over 20 species of fish in the hatchery and encountered at least 30 species of fish in the wild.

The main drawbacks to this internship were not being able to get into the field because of the weather and not being able to conduct any research of my own. I would have loved to have had a research project to have worked on or at least been accessory to a research project someone else was working on. If they had started the internship by sitting me down and having me study the fish species we were working with- studying the morphology and behavior of these fish so that I would have been able to conduct my own research- this internship would have been far more fruitful. I should have approached my supervisors with these concerns early on, but I did not.

That being said, this internship has been helpful in narrowing down my ideas of what I would like to do with the rest of my life. I do not want to work permanently in the hatchery side of a conservation operation; I would, however, love to conduct scientific field work to help establish what species are in need of protection. I thoroughly enjoyed working with endangered fish, as it made me feel as if I was helping accomplish something noble and vital for our earth. It was also amazing to learn about the diversity

of fish that inhabit our streams and rivers; it is far beyond what I had imagined. These points, along with the fact that my bosses were incredibly friendly and easygoing, made for an enjoyable experience overall.

I am now entertaining several options as to what I would like to do post-graduation. I am considering returning to Freiburg, Germany, for a Masters Program for Environmental Management. I am also considering a MBA program, although that would be further down the road. The last option I am thinking about is a PhD program in Ecology, focusing on Mycology, Amphibians, or Lemurs, and eventually becoming a professor.