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I'll never forget the time I saw my first long tailed salamander.

Many of you may know what I did not at the time. The Long tailed Salamander is a threatened and endangered species. Their tail takes up $\frac{2}{3}$ of their body, hence the name. They tend to be a brilliant bright orange color and have black little leopard like spots. They are absolutely gorgeous!

I was in a creek sampling macroinvertebrates and I lifted a rock and was just awestruck by this beauty! I was 10 at the time, and I named it Amber. I don't know if it was a male or a female. I took, like, a couple hundred photos, most of them blurs.

I did find one special photo of this salamander. I would always put this picture on the corner of my poster or presentation boards, you know, just for good luck!

Recently, I was at a Freshwater Science conference in Raleigh, North Carolina presenting some analyses that I had done on Benthic Macroinvertebrates, and a device I built to remotely monitor TDS, total dissolved solids. Another attendee, actually from the Stony Brook-Millstone Watershed, was there.

He pointed out the salamander and asked me about the photo. I told him my story, and there was great excitement! It turned out to be one of the most southern finds of a long tailed salamander in NJ. He immediately notified the NJ Fish & Wildlife Service and just last weekend I met up with a researcher from Columbia University who actually specializes in these little fellas.

We surveyed the site together, and although we did not find a long tailed salamander that day, she confirmed that this was the ideal habitat for them, due to the limestone and slate stream banks, bedrock, and groundwater seeps that they use for hibernacula. They are a threatened species and it is important to protect them, especially with pipeline crossings being proposed upstream.

Water is the essence of life. Special magical life surrounds a clean body of water. My earliest memories beginning at 2 or 3 years old are of walking the Delaware River Canal trail near Washington Crossing State Park with my dad, stomping through little creeks, lifting rocks, looking for life. That's where my love of amphibians and reptiles started. I

loved gathering a bunch of snails in the palm of my hand then letting them crawl all over me.

When I was 6 years old I started doing environmental monitoring at the Stony Brook-Millstone Watershed. We did something called BATS which stands for Biological Action Team. My dad and I would go out and take a biological sample and identify all the macroinvertebrates we found.

If you have an impaired body of water it can really affect the ecosystem. High nutrient pollution can lead to algal blooms and cause the water body to become eutrophic, which means that all of the dissolved oxygen has been consumed. All gilled organisms require dissolved oxygen to survive. Some algae can even release toxins into the water that could even harm people or pets. Eventually, effects can ripple upward through the food chain and can have long term impacts.

As time progressed, I also started on the CATS. the Chemistry Action Team, dissolved oxygen, PH, Nutrients, and stuff like that.

When I was about 8 years old I also signed up for a very interesting elective class taught by an Ethnobotanist who had worked in the rainforests of Indonesia and Brazil. After walking with her I began to see the deep connection between our society and the plants and animals on even the most unassuming plot of land. Needless to say I took every class with her that I could! That teacher was Dr. Patricia Shanley, and she became a mentor in my life.

A few years later, when I was around 10, I learned that one of my favorite wild places, the last undeveloped glades in the Princeton Ridge, had been chosen as the site for a natural gas pipeline.

I did not know too much about pipelines at that time, so I did some research and learned about the potential for this construction to change ecosystems if it is not done carefully.

At that point I started to attend and speak at meetings for public comment on the pipeline. The first time, I was completely petrified, surrounded by adults talking about improving the state's economy. As I trembled with fear waiting for my name to be called and my turn at the podium, I pictured salamanders with their gentle gazing eyes. I got up and talked about how my friends and I enjoyed flipping rocks, and about all the beautiful animals and plants we saw there.

Later I began sampling a stream on the Princeton Ridge. This allowed me to monitor before and after the pipeline and see the pipeline's real effects on the stream's ecosystem.

I attended other public meetings. When I stood up with the Princeton Ridge Coalition and talked about the stream health. I showed the data I had, comparing it with other streams sampled in the area and the difference in stream health was clear. Afterward, one of the other presenters told me "This room was so full of opinions. You are the only one who brought data."

I was able to advocate for using the least invasive construction methods to the local ecosystem.

I feel like we actually made an impact. Rather than trenching the stream, they would go under it. Rather than cutting more trees for an 80 foot right of way, they would work in a 55 foot right of way. It felt really great to make a difference!

I'm currently working on some projects involving stormwater runoff and how runoff from residential areas can affect streams by going thru tributaries and into streams that drain into the Delaware River.

I also do a lot of talks and work with several nature centers and youth groups in the area. I have a little curriculum i call "The Salamander's Dilemma." The main theme is that is that stream assessment provides important tools to inform decisions.

I would like to say how thankful I am to The Watershed Center, to Erin Stretz, Dr. Steve Tuorto, Jeff Hoagland, Tammy Love, Mike Pisauo, and Dr. Jim Waltman, to name a few who have inspired me and taught me.

I would also like to recognize the phenomenal teachers at Hopewell Valley Regional School District such as Kelli Iannacone and Karen Lucci.

As well as mentors from the DRBC such as Bob Limbeck.

As we consider use of undeveloped spaces, understanding and monitoring environmental impacts is critical to maintaining environmental health. I feel called to make the world's waterways cleaner and more accessible to all people and creatures. Because salamanders cannot speak for themselves.