

The focus of my Environmental Research in Geology



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Career Path

❖ I was interested in science by about 6th grade.

❖ High School Science:

Physical Science, Biology, Chemistry, Physics

❖ By graduation, I thought I was going to medical school...

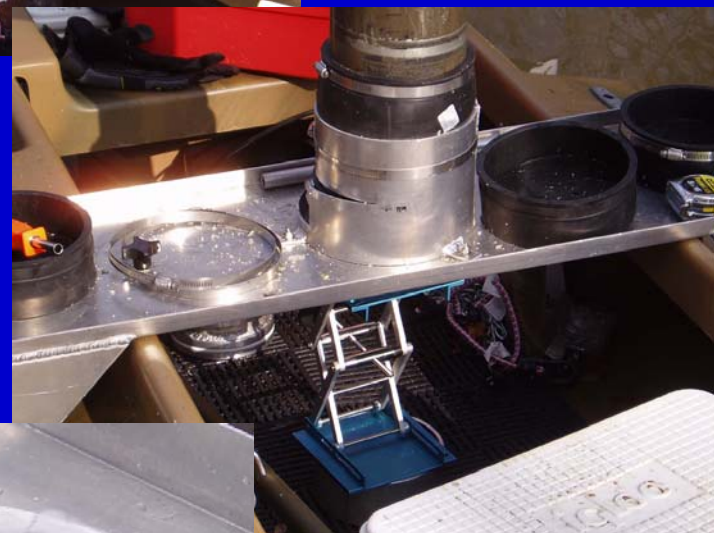
❖ In my junior year, I took a plant ecology course and realized how much I loved spending time outside.

❖ I switched to *Environmental Science* and developed an understanding and appreciation for the Earth.

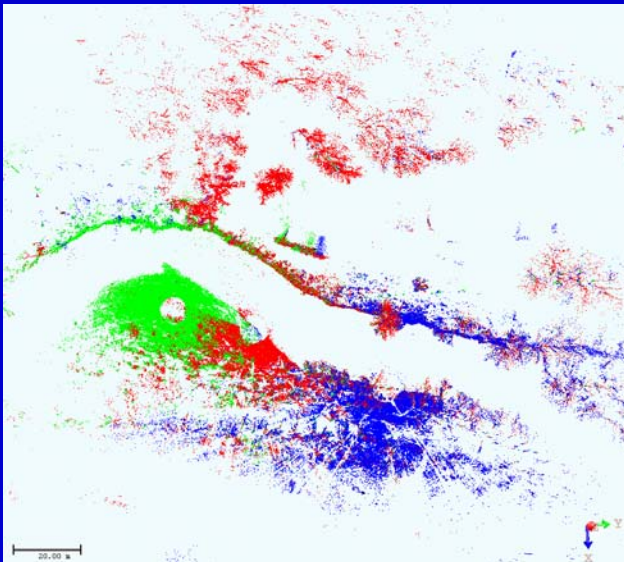




- ❖ I spent a year working in environmental consulting.
- ❖ Then went on to graduate school at UD.
- ❖ Completed a Master's degree and realized I wanted to make a full-time career of conducting research and teaching so remained for a Ph.D.
- ❖ *Now my research integrates ALL aspects of science!*




High resolution land-based LIDAR



- Can collect millions of data points in minutes
- Provides topography of a land surface
- Gives you exact position of each of the million points
- Can be used to show changes in surface through time

Why Study Rivers?



- ❖ Water is our most important resource.
- ❖ By 2025, two-thirds of the world's population will likely have water shortages.
- ❖ The U.S. uses twice as much water as other industrialized nations.
- ❖ 1.5 billion people worldwide do not have access to clean water.
- ❖ Pollution of freshwater (drinking water) is a problem for $\frac{1}{2}$ the world's population: 5 to 10 million deaths per year.
- ❖ 40% of America's rivers are too polluted for fishing, swimming, or aquatic life.

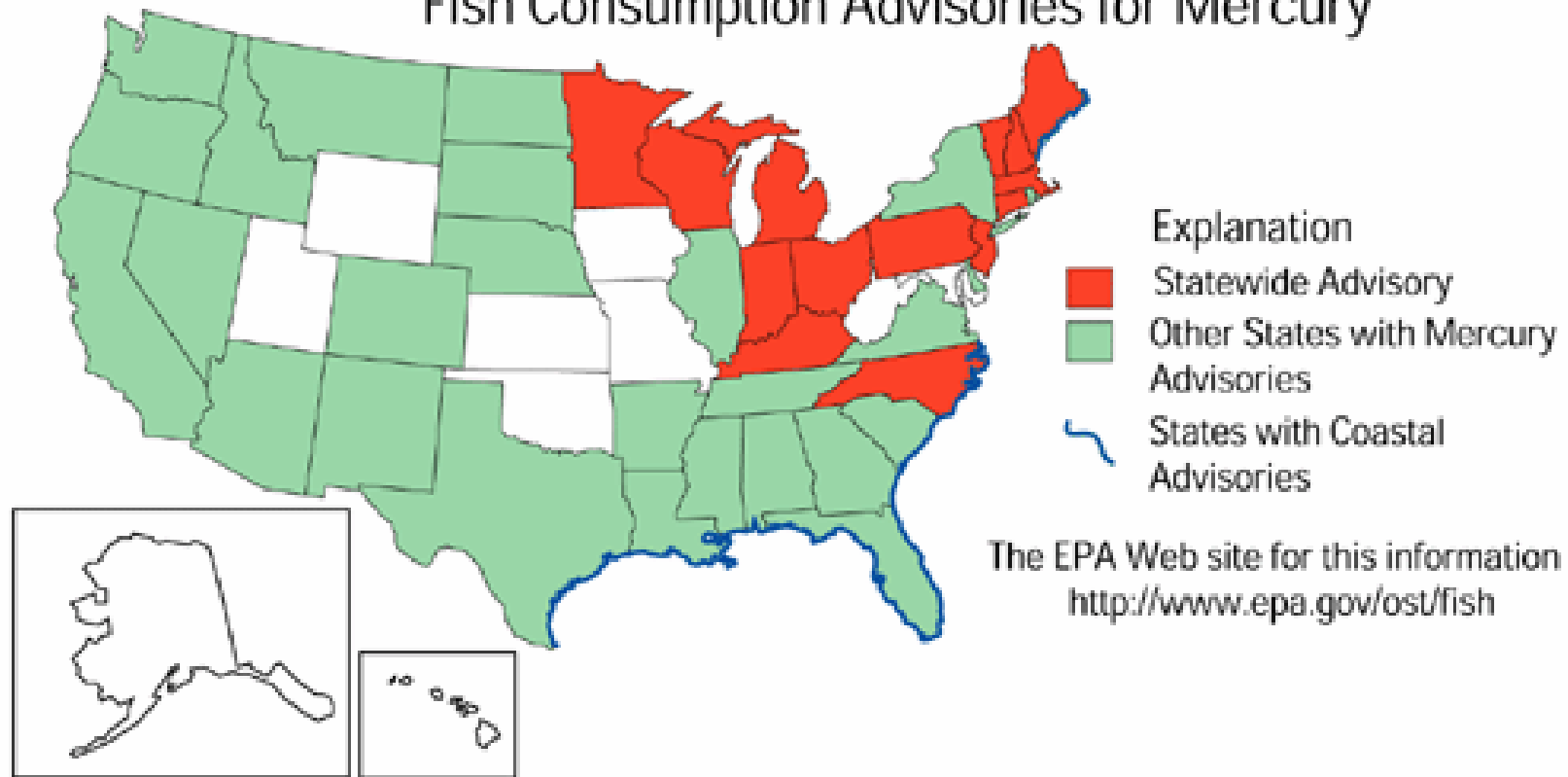
Pollution and Contamination



- ❖ My research now focuses on contaminants in rivers.
- ❖ Decades ago, industrial companies were allowed to dump toxic materials directly in the water.
- ❖ Today, many of these pollutants still persist.
- ❖ Hg is the foremost pollutant in lakes and estuaries in the United States.



Fish Consumption Advisories for Mercury



- ❖ Mercury enters the food chain and bioaccumulates.
- ❖ High concentrations of Hg can cause neurological disorders, deformities, and in rare cases, death.



- ❖ Heavy metals like Hg adhere to sediment.
- ❖ My research project focuses on investigating river processes (erosion, deposition) to determine transport of sediment and Hg in a contaminated river.



Cutting Out Risks

- ❖ Avoid eating fish from the waters listed chart.
- ❖ Eat smaller fish of a species.
- ❖ Eat smaller portions of fish and fewer meals of fish.
- ❖ Pregnant women and children avoid eating any species of fish suspected to be a problem.
- ❖ Prepare the fish in a manner that reduces contaminants.



Thank you! Any questions??