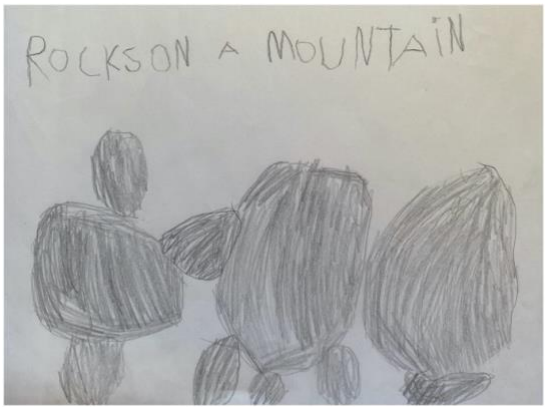
OREGON MARINE SCIENTIST AND EDUCATOR ALLIANCE

Muddy Waters – Researcher Bio

Molly Keogh, Wetland Geologist

How did you get interested in geology?
When I was a little kid, I LOVED rocks. I loved to collect them and look at all the different colors and textures. Later, in college, I discovered that I could study rocks and learn WHY they have those interesting colors and textures.



As a 6-year-old, I loved rocks so much, I drew pictures of them.

As a geology major in college, I studied sedimentary rocks along the Gulf of California coast (Mexico) to understand what happened when the gulf first opened 6 million years ago. I found the transition in the rock record where the sediment changed from terrestrial to marine.

Isla Tiburón and the Gulf of California, Sonora, Mexico

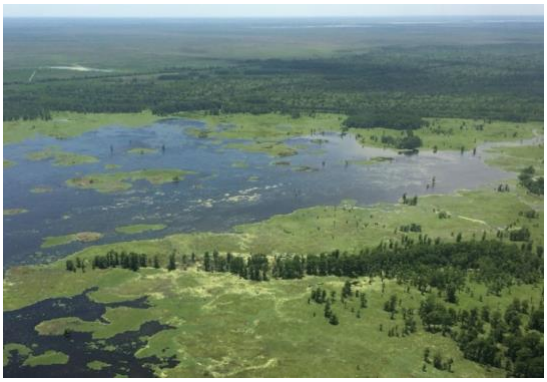
What did you do after college?

After I graduated, I got a job working for an environmental consulting company as a wildlife biologist (I minored in biology in college). I primarily worked on a wind farm, surveying birds and bats to see how they were impacted by the turbines.

Wind farm in central Washington

Why did you decide to go to graduate school?

After the wind farm project ended, I found myself working on projects that I didn't enjoy as much. I wanted more choice in what I studied and I needed more skills. Graduate school was the right choice for me.



Where do the wetlands come in?

In grad school, I began studying the interface between land and water: wetlands! Coastal wetlands are particularly important because they dampen storm energy, filter water, and provide food and shelter for fish, shellfish, and migratory birds.

Vast wetlands in the Mississippi River Delta

As a graduate student, I studied the way sediment moves through wetlands and restoration strategies to make wetlands more resilient to sea-level rise.

Measuring water velocity in the Mississippi River Delta

What do you study now?

Today, my research focuses on sediment dynamics in Oregon coast estuaries. I study how sediment moves over short timescales, from individual storms to seasons. Where does sediment build up? Where does it erode? Does sediment bury important species such as eelgrass and oysters?

To answer these questions, I use water quality data (water level, salinity, turbidity), sediment core data (sediment accumulation rate, grain size), and computer modeling.

Collecting a sediment core in South Slough

Sediment is the foundation of every wetland. Understanding sediment helps us understand wetlands and how to protect these important yet sensitive ecosystems!

South Slough, Oregon