

The Coastal Waters Consortium Presents:

Scientist Spotlight



Dr. Giulio Mariotti

What is your educational background?

B.S. and M.S in Environmental Engineering, University of Florence (Italy)

PhD in Earth Sciences, Boston University

Post-Doc in Geobiology, MIT

What inspired you to become a scientist?

I have always been curious. When I was a kid I liked to watch water running, especially in fast moving mountain streams. I liked to stir the sediments in the water and see them being carried by the current downstream. I would build small dams on the side of the stream and then break them to see the water running faster. I also liked math more than writing or reading. What I do now merges those two things - I study how water and sediment move using mathematical models.

Can you describe what you enjoy the most about conducting scientific research?

I like to see the results of a model - seeing graphs that have a meaning being created by a model that I wrote line by line. I find it quite mysterious how math (and computer models) can describe reality. How putting together simple equations can lead to very complex results. I like to go out in the field and get ideas about processes that I normally model on a computer sitting in my office. Also, I like the intellectual pleasure of understanding and discovering.



What is your role as a scientist for CWC?

I study how salt marshes erode. I lead an effort to build a model to predict the rate at which marshes retreat due to waves and pond formation. I also collect wave data in the field to validate the wave model. The goal of this research is to predict marsh loss in the future and identify strategies to reduce it.

Can you summarize your oil spill research and describe any surprising findings you have come across?

Marshes are eroding at an incredible pace. Marsh erosion is clearly seen by looking at maps drawn at the end of the 1800th, which have a surprisingly good resolution. Recently, oil spills have contributed to accelerate the rate of erosion.

The Coastal Waters Consortium's mission is to assess the chemical evolution, biological degradation, and environmental stresses of petroleum and dispersant within Gulf of Mexico coastal and shelf ecosystems.