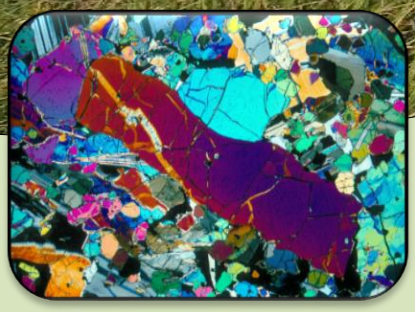
The Coastal Waters Consortium Presents:

Scientist Spotlight



Dr. Alex Riter

What is your role as a scientist for CWC?
In addition to working on remote sensing projects with Dr. Michael S. Kearney that investigate the effects of the Macondo oil spill, sea level rise, freshwater diversions, and climate change on the Louisiana marshes, I also manage Dr. Michael Kearney's remote sensing lab at the University of Maryland College Park. I train his graduate students in remote sensing techniques and assist in the supervision of their lab research on the effects of the oil spill on the Louisiana marshes and the paperwork that academic research requires.

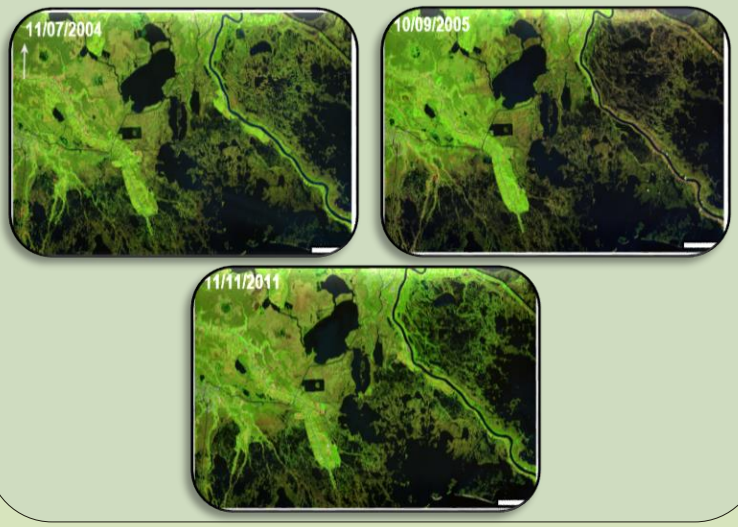
Can you summarize your oil spill research and describe any surprising findings you have come across?
At the scale of Landsat satellite data, a 30-meter^2 spatial resolution, Hurricane Katrina and Rita in 2005 and Gustav and Ike in 2008 had a much greater impact on the marshes than the Macondo oil spill in 2010 (see photos). The oil spill most affected the Barataria Bay marshes, where the greatest oiling occurred; however, marsh vegetation damage and marsh substrate erosion was primarily limited to marshes immediately adjacent to the bay waters. The scale of this damage as detected on the ground by LSU ecologists was less than a third the spatial resolution of Landsat. The scale of the damage caused by the Katrina, Rita, Gustav, and Ike was greatest in the marshes most affected by the Caernarvon freshwater diversion.

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.

What is your educational background?
Doctorate in Geological Sciences from the University of Texas at Austin
M.S. and B.S. in Geology from the University of Wisconsin-Milwaukee

What inspired you to become a scientist?
Initially I wanted to be a geological oceanographer, due primarily to the influence of an extraordinarily gifted sedimentologist/oceanographer professor who taught the first section of a 5-credit Physical Geology course. However, after seeing a photomicrograph of a 30 mm-thick section of a lunar basalt taken under polarized light, I switched to igneous and metamorphic petrology (Lunar rocks are instantly identifiable by their pristine clarity because clay-mineral alteration of primary minerals does not occur because lunar magmas did not contain water). I returned to coastal oceanography after the United States decreased funding for the solid earth geoscience.

Can you describe what you enjoy the most about conducting scientific research?
Science is intellectually interesting for anyone who enjoys the eternal thrill of learning and solving puzzles.



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