The Coastal Waters Consortium Presents:

Scientist Spotlight

Lixia Wang

What is your role as a scientist for CWC?
I am a member of the modeling team dedicated to the development of numerical models to simulate hydrodynamics and to predict the physical transport of the surface oil slick in the Gulf of Mexico. We also investigate the impacts of various Mississippi River diversions on the oil transport and fate within the estuaries and continental shelf.

Can you summarize your oil spill research and describe any surprising findings you have come across?
We coupled the numerical model with wind drift to predict the pathway and distribution of the surface oil slick over the NW Gulf of Mexico continental shelf. Our model results indicated that the oil entering Louisiana Bight region in the aftermath of the Deepwater Horizon spill was mainly controlled by the surface current, wind drift, and surface tension wave. The path of the oil slick showed that part moved toward the west over the continental shelf and along coastal area and part was caught in a gyre and later transported into the Barataria Bay. This was consisted with the available high quality Synthetic Aperture Radar (SAR) imageries of near-shore oil slicks.

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?
I received my Bachelor's degree in Physical Oceanography and Master's degree in Environmental Science both at the Ocean University of China.

What inspired you to become a scientist?
Growing up on the eastern coast of China, I spent the majority of my childhood on the shoreline to watch the seawater move forward and backward and to count the waves on the beach. Since then I've always wondered where the current came from and where it went and why there were so many waves by the shore. Being curious about the natural marine world inspired me to study coastal ocean science.

Can you describe what you enjoy the most about conducting scientific research?
I enjoy coastal ocean numerical modeling because of its potential both to predict and simulate the physical and biogeochemical processes of the marine environment and to provide modeling support for scientific research and our daily life. Similar to using weather models for forecast purposes (providing daily temperature and wind), the ocean model can predict marine conditions such as oceanic temperature, salinity, current, and water level for our relevant daily life. I am always excited by the remarkable simulations and predictions of the marine environment obtainable only from models rather than mere observations and am amazed by the complex phenomena formulated from models. The more you study ocean numerical modeling, the more you enjoy it!

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