Grand Strand Technology Council

Enhancing the Region's Technology-Based Businesses

Coastal Carolina University Professors Predict Oil Spill Impact Minimal on Grand Strand

by Lloyd Mackall for The Georgetown Times

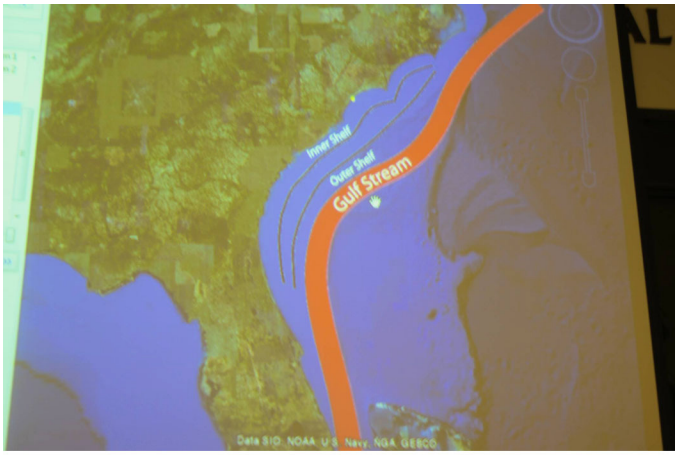
More than 95 members and guests of the Grand Strand Technology Council heard two Coastal Carolina University professors talk about the "remotely" possible impact of the Gulf oil spill disaster on local beaches and marshes on the Atlantic Coastal waters of Horry and Georgetown counties.

Speaking at a conference at the Conference Center at Horry-Georgetown Technical College Grand Strand Campus Thursday night, June 24, Dr. Louis Keiner, talked about "Ocean Currents and Modeling," and Dr. Jim Luken, spoke on "Wetlands Ecology."

Dr. Keiner said if the Gulf Stream swings up close to the Grand Strand, then tar balls carried by the flow will be constrained by the outer continental shelf and the inner shelf, meaning at least an 80-mile buffer along Myrtle Beach beaches, compared to being much closer to eastern Florida coastal areas.

Dr. Luken said the nearby coast of South Carolina contains numerous salt-marshes. "These marshes are often connected to the ocean by tidal inlets," he said. "Damaged coastal marshes can cause a fouling of leaf tissue, which stops gas exchange."

Having oil on the soil surface limits oxygen availability, Dr. Luken said. "However, depending on amount and timing of oil deposition, plants may recover. Salt



Dr. Louis Keiner illustrations includes this about "Ocean Currents and Modeling" at a Grand Strand Technology Council conference at Horry-Georgetown Technical College Grand Strand Campus Thursday night, June 24. Photo by Lloyd Mackall

Georgetown County "Hammock Coast" aerial scene illustrates Dr. Jim Luken's talk on "Wetlands Ecology" at Horry-Georgetown Technical College Grand Strand Campus Thursday night, June 24. Photo by Lloyd Mackall

marsh recovers faster than mangroves, which are more frequently found in Florida."

The CCU professor said there can be direct toxic effects to plant tissue, and talked about some lessons learned from the Exxon Valdez Disaster, when two researchers, Y. Rosen and P. Henderson, said cleaning up oil is tough at the beginning and gets harder every day. "The first job is to contain a spill, a nearly impossible task in the real world."

The purpose of the Technology Council is to get technology-based businesses in touch with one another, and include other government organizations and individuals, according to John Sanders, chairman of the organization, which he says provides a nucleus of involved technology professionals and businesses. Photo by Lloyd Mackall

Luken said the fates of spilled oil include evaporation, surface run-off, soil penetration and biodegradation. "These are complex processes of water-in-oil emulsion and particle deposition as the mixture disperses. Released oil can be weathered and dispersed, evaporated, oxidized, biodegraded or emulsified forming sort of a chocolate mousse of water in oil."

Summing up the process, Luken said immediately after release into the environment, oil begins to move, weather and experiences changes in physical and chemical properties. "These effects vary with the type of oil--light oil such as jet fuel or diesel, medium oils found in most crude and heavy crude," Luken said. "Such effects are controlled by exposure time and oil concentration."

Luken's studies showed oil effects in the open ocean are mitigated by large fish living there being able to avoid oil spills by swimming away or going deeper. "More severe impacts occur to animals that spend time at or near the surface, such as mammals, birds, turtles and plankton," he said. "Direct effects on animals include physical contact causing the loss of insulation or loss of buoyancy and resulting in a loss of gas exchange."

Toxicity can attack the central nervous system, liver and lungs, according to Luken. "There can be loss of food and ingestion of contaminated prey," he said. "Reproductive problems can occur, including egg death and developmental errors."

Dr. Luken said there are many unknowns about the problem. "These include the degree of long-range travel, impacts of dispersants and long-term impacts on larval forms which float," he said. "Toxic effects at low concentrations are difficult to determine or predict."

The Technology Council is a three-year-old organization that has monthly meetings. The purpose of the Technology Council is to get technology-based businesses in touch with one another, and include other government organizations and individuals, according to John Sanders, chairman of the organization, which he said provides a nucleus of involved technology professionals and businesses.

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