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The NOAA NRDA Gulf of Mexico Offshore Fish and Nekton Program: Rationale, Design and Sampling/Sensing Synopsis


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Session: 004

Date: Monday, January 27 - 6:00 PM

Room: Main Ballroom (Convention Center)

Track: Integrated Understanding of the Impacts of the DWH Oil Spill on Fisheries: Exposure Vectors, Biological-Physiological Effects and Abundance of Fisheries Populations

Type: Poster 4-151

Native Species in Ecotoxicological Assessments: Using Non-Standard Organisms to Assess Ecological Impairment Following the Deepwater Horizon Oil Incident

Presenter: Brandi Echols

Florida International University

Authors: B. Echols, A. Smith, B. Seda, G. Rand;

Florida International University, North Miami, FL.

Abstract:

Recommended test species are often used to assess the potential risk to an aquatic ecosystem, either prior to or in response to a perturbation. However, these species may be less sensitive than the native organisms inhabiting a system. Native species are not frequently used in laboratory toxicity studies due to a number of reasons, including limited availability, sensitivity to handling stress, a lack of established testing guidelines and insufficient background information on sensitivity and reproducibility of test results. As part of the Natural Resource Damage Assessment program in response to the Deepwater Horizon Oil incident, a toxicological testing program was developed and included the use of representative native species, including sensitive life stages of vertebrates and invertebrates. Studies were conducted with MC252 source and field-collected weathered oils, as well as a reference toxicant. Acute responses of sensitive life stages have been evaluated for fish species, including Red Drum, Spotted Sea Trout, Red Porgy, Florida Pompano and Cobia. Invertebrate species are also being evaluated. Results of fish tests suggest that the native fish species are generally more sensitive to both reference toxicants as well as water-accommodated fractions of weathered and unweathered oils, compared to the standard test organism, *Menidia beryllina*. Juvenile fish were also more sensitive to unweathered oil, than the weathered oil.

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Type: Poster 4-405

The NOAA NRDA Gulf of Mexico Offshore Fish and Nekton Program: Rationale, Design and Sampling/Sensing Synopsis

Presenter: Tracey Sutton

Nova Southeastern University

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Abstract:

The Deepwater Horizon Oil Spill was not only unique for its material volume but also for its depth, ~1500 m, necessitating a whole-water-column approach for assessment. Given the absence of data regarding the pelagic fauna at these depths, a large-scale program was developed that included at-sea sampling/sensing, sample analysis, and database management. A four-cruise survey aboard the NOAA ship *Pisces* was conducted to provide data on the pelagic nekton from the surface to 1600 m, with emphasis between 800-1400 m (subsurface plume depth). Multi-frequency acoustic data were collected simultaneously to further characterize the horizontal and vertical distribution of pelagic biomass. Additionally, a 107-station survey grid was sampled over nine months on the R/V *Meg Skansi* using discrete-depth trawl gear paired with multi-frequency acoustics. Given the wide geographic (LA to FL, 29-27N), temporal (4 seasons), and depth (0-1600 m) ranges encompassed in the program, this is putatively the largest deep-pelagic sample set ever collected. Biological sample with coupled acoustic data analysis is currently ongoing, with initial results reflect the speciose character of the Gulf of Mexico oceanic province.