MEETING: 21st Biennial Conference of the Coastal and Estuarine Research Federation, 6-10 November, 2011, Daytona Beach, FL

TITLE: Environmental Conditions in Northern Gulf of Mexico Estuaries: Before and After the Deepwater Horizon Oil Spill.

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When conducting an environmental assessment to determine the ecological effects of the Deepwater Horizon (DWH) Oil Spill in the Gulf of Mexico (GOM), baseline environmental data is essential to establish ecosystem condition prior to the incident. EPA's National Coastal Assessment (NCA) monitored the ecological condition of estuaries in the GOM annually from 2000 to 2006, providing a historical baseline for water quality, sediment quality and biological condition in northern GOM estuaries, prior to the DWH Oil Spill in 2010. This assessment was based on summer season measurements of nutrients, chlorophyll, dissolved oxygen, water clarity, sediment chemistry and toxicity, total organic carbon, benthic macroinvertebrate communities, and fish tissue contaminants. Immediately following the DWH explosion, EPA Regions 4 and 6 mobilized teams to collect samples in estuaries before oil or oil-related contaminants were transported into nearshore environments. This oil spill response monitoring effort provided more recent data for water and sediment chemistry in northern GOM estuaries prior to exposure to contaminants from the DWH Oil Spill. EPA continued its monitoring efforts through fall 2010 as the region became exposed to oil-related contaminants to determine extent of exposure and potential ecosystem effects from the DWH Oil Spill. In addition, the National Coastal Condition Assessment (NCCA) was conducted in summer 2010 to provide an assessment of ecological conditions using water quality, sediment quality, and biological condition indicators similar to those employed by the NCA. Comparisons of water and sediment chemistry and toxicity data from these surveys show evidence of limited, local exposures to oil-related contaminants in GOM estuaries. Benthic macroinvertebrate data from NCA and NCCA will be compared to determine potential ecological effects related to the DWH Oil Spill.