

## **Agenda**

### **Coastal Marsh Dieback in the Northern Gulf of Mexico: Extent, Causes, Consequences, and Remedies**

**January 11-12, 2001**

**Radisson Hotel and Conference Center, Baton Rouge, Louisiana**

#### ***Sponsors***

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Burlington Resources Inc.  
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**Federal and State:**

USGS National Wetlands Research Center  
USGS Louisiana Water Resources District  
Louisiana Department of Natural Resources  
National Oceanic and Atmospheric Administration  
U.S. Army Corps of Engineers  
U.S. Environmental Protection Agency

#### ***Contributors***

**Private:**

3001, Inc.  
Entergy  
Society of Wetland Scientists

**Federal and State:**

Louisiana Department of Wildlife and Fisheries  
USDA Natural Resources Conservation Service  
U.S. Fish and Wildlife Service

## Thursday, January 11

**8:45 Welcome and Introductions.** Len Bahr, Louisiana Governor's Office, and Bob Stewart, National Wetlands Research Center, U.S. Geological Survey

**8:50 Charge for Meeting Participants.** Governor of Louisiana Mike Foster (invited)

**Plenary Overviews. Chairs:** Len Bahr, Louisiana Governor's Office, and Bob Stewart, National Wetlands Research Center, U.S. Geological Survey

**9:00 Science for Understanding Change in Coastal Ecosystems and Restoring Degraded Environments.** Charles Groat, Director, U.S. Geological Survey

**9:20 The Setting for the Brown Marsh Phenomenon: Physical and Biological Context for Wetland Change.** Donald F. Boesch, President, University of Maryland Center for Environmental Sciences

**9:40 Developing Conceptual Models of Coastal Wetland Restoration: Environmental Drivers of Ecological Succession.** Robert R. Twilley, Director, Center for Ecology and Environmental Technology, University of Louisiana at Lafayette

**10:00 - 10:20 Break**

**10:20 - 12:00 Concurrent Sessions I and II**

**Concurrent Session I. Aerial Photography, Satellite Imagery, and Models for Tracking and Analyzing Marsh Dieback. Chairs:** Jimmy Johnston, National Wetlands Research Center, U.S. Geological Survey, and Tim Osborn, National Oceanic and Atmospheric Administration

**10:20 Characterizing the Brown Marsh Spectral Response at the Plant and Canopy Level with Hyperspectral and Temporal Remote Sensing Data.** Elijah Ramsey and Gene Nelson, National Wetlands Research Center, U.S. Geological Survey; Sijan Sapkota, Kristine Martella, and Amina Rangoonwala, National Wetlands Research Center, Johnson Controls World Services, Inc.

**10:40 Remote-Sensing Methods for Marsh Dieback Identification and Delineation.** Rob Cunningham, Center for Coastal, Energy, and Environmental Resources, Louisiana State University; Russell Watkins, 3001, Inc.; and DeWitt Braud, Department of Geography and Anthropology, Louisiana State University

- 11:00 Marsh Dieback Aerial Photography: Overview and Prospects.**  
Lawrence R. Handley and William R. Jones, National Wetlands Research Center, U.S. Geological Survey
- 11:20 Aerial Mapping of Marsh Dieback in Saline Marshes in the Barataria-Terrebonne Basins.** Greg Linscombe, Louisiana Department of Wildlife and Fisheries; Robert Chabreck, Retired, Louisiana State University; and Steve B. Hartley, National Wetlands Research Center, U.S. Geological Survey
- 11:40 Hydrologic/Spatial Model Approach to Evaluating Marsh Dieback.**  
Joseph N. Suhayda and Vibhas Aravamuthan, Louisiana Resources Research Institute, Louisiana State University, and Paul Kemp, Center for Coastal, Energy, and Environmental Resources, Louisiana State University

**Concurrent Session II. Studies of Dieback in Different Marshes and Evaluation of Causes and Effects. Chairs:** C. Edward Proffitt, National Wetlands Research Center, U.S. Geological Survey, and Paul Kemp, Louisiana Governor's Office and Louisiana State University

- 10:20 Sudden Salt Marsh Dieback: Update from 20 Experimental Sites in Terrebonne and Barataria Basins.** Karen L. McKee, National Wetlands Research Center, U.S. Geological Survey; Irving A. Mendelsshon, Wetland Biogeochemistry Institute, Louisiana State University; and Michael D. Materne, Natural Resources Conservation Service, U.S. Department of Agriculture
- 10:40 Statewide Distribution of Brown Marsh as Determined from Aerial Surveys.** Thomas C. Michot and Christopher J. Wells, National Wetlands Research Center, U.S. Geological Survey, and Greg Linscombe, Louisiana Department of Wildlife and Fisheries
- 11:00 Characterization of Plants and Soils in a *Spartina alterniflora* Saltmarsh Experiencing “Brown Marsh” Dieback in Terrebonne Parish, Louisiana, USA.** Thomas C. Michot, National Wetlands Research Center, U.S. Geological Survey; Mark A. Ford, Patricia S. Rafferty, Scott Kemmerer, and Troy Olney, National Wetlands Research Center, Johnson Controls World Services, Inc.
- 11:20 Marsh Surface Elevation Response to Water Level Variations in a Stressed *Spartina alterniflora* Marsh (Old Oyster Bayou).** Donald R. Cahoon, National Wetlands Research Center, U.S. Geological Survey; Brian C. Perez and Bradley Segura, National Wetlands Research Center,

Johnson Controls World Services, Inc.; and James Lynch, National Wetlands Research Center, U.S. Geological Survey

**11:40 The Physical Determinants of Sediment Salinity and Their Relationship to the Brown Marsh Phenomenon in Louisiana.** James T. Morris, Department of Biological Sciences, University of South Carolina

**12:00-1:00 Lunch and Luncheon Speaker. Coastal Restoration—The Investment We Cannot Afford Not to Make.** Mark Davis, Coalition to Restore Coastal Louisiana

**1:00 - 1:40 Concurrent Sessions I and II continued**

**Concurrent Session I Continued. Aerial Photography, Satellite Imagery, and Models for Tracking and Analyzing Marsh Dieback. Chairs:** Jimmy Johnston, National Wetlands Research Center, U.S. Geological Survey, and Tim Osborn, National Oceanic and Atmospheric Administration

**1:00 Remote Sensing and Brown Marsh.** Tim Osborn, National Oceanic and Atmospheric Administration; Shea Penland, University of New Orleans; and Craig Harvey, John C. Stennis Space Center, PixSell, Inc.

**1:20 Development of a Soil Erosion Model to Predict Vulnerability of Various Marsh Ecosystems.** Jerry J. Daigle, Natural Resources Conservation Service, U.S. Department of Agriculture, and Steve B. Hartley, National Wetlands Research Center, U.S. Geological Survey

**1:40 Questions from the Audience and Discussion**

**Concurrent Session II Continued. Studies of Dieback in Different Marshes and Evaluation of Causes and Effects. Chairs:** C. Edward Proffitt, National Wetlands Research Center, U.S. Geological Survey, and Paul Kemp, Louisiana Governor's Office and Louisiana State University

**1:00 Dieback in *Spartina alterniflora* Marshes Along the Southwest Louisiana Coast.** Keith R. Edwards, Louisiana Environmental Research Center, McNeese State University; C. Edward Proffitt and Steven Travis, National Wetlands Research Center, U.S. Geological Survey

**1:20 Determining the Role of Plant Pathogens in the Coastal Marsh Dieback: Lessons from Agriculture and Forestry.** Raymond W. Schneider and John P. Jones, Department of Plant Pathology and Crop Physiology, Louisiana State University Agricultural Center

**1:40 Preliminary Studies of Brown Marsh in a Chenier Plain, *Spartina patens* Marsh.** J.A. Nyman, School of Forestry, Wildlife and Fisheries,

Louisiana State University; A.K. Burcham, Department of Biology, University of Louisiana at Lafayette; J. D. Foret, Lafayette Field Office, National Marine Fisheries Service; G. Melancon, Rockefeller Wildlife Refuge, Louisiana Department of Wildlife and Fisheries; T.C. Michot, National Wetlands Research Center, U.S. Geological Survey; and T. J. Schmidhauser, Department of Biology, University of Louisiana at Lafayette

**2:00 – 3:00 Concurrent Sessions III and IV**

**Concurrent Session III. Socioeconomic Implications of Brown Marsh and Coastal Wetland Loss. Chair:** Rex H. Caffey, Department of Agricultural Economics and Agribusiness, Louisiana State University Agricultural Center/Louisiana Sea Grant

- 2:00 Why Should You Care About Land Loss in Coastal Louisiana?** Steve Mathies, Battelle Memorial Institute
- 2:20 Federal Emergency Management Agency’s Role in Natural Hazards Such as the Recent Marsh Dieback.** Rod E. Emmer, Federal Emergency Management Agency
- 2:40 Brown Marsh and Coastal Land Loss: The Role of Resource Economics.** Rex H. Caffey and Richard F. Kazmierczak, Department of Agricultural Economics and Agribusiness, Louisiana State University Agricultural Center/ Louisiana Sea Grant; and Mark Schexnayder, Louisiana State University Agricultural Center/Louisiana Sea Grant

**Concurrent Session IV. Forecasting the Big Picture: Evaluation of Climate, River Flow, and Other Factors as They Relate to Salt Marsh Dieback. Chair:** Charles Demas, U.S. Geological Survey

- 2:00 Climate Assessment of the South Louisiana Drought.** Jay Grymes, Louisiana Office of State Climatology, Louisiana State University
- 2:20 The Influence of River Discharge, Coastal Water Levels, and Climate on Extreme Salinity Events in the Louisiana Coastal Marshes.** Erick M. Swenson, Coastal Ecology Institute, Louisiana State University
- 2:40 Salt Marsh Dieback and Fault-Induced Subsidence in Coastal Louisiana: An Interim Report.** Sherwood M. Gagliano, Coastal Environments, Inc.

**3:00 Break**

**Plenary Session: Natural Recovery and Restoration. Chairs:** Sue Hawes, U.S. Army Corps of Engineers-New Orleans, and Greg Grandy, Louisiana Department of Natural Resources

- 3:20 Use of Department of Natural Resources Monitoring Data for Evaluating Marsh Dieback, Recovery, and Restoration Needs.** Gregory D. Steyer and Darin M. Lee, Louisiana Department of Natural Resources
- 3:40 New Approaches to Revegetating Eroding Marsh.** Tim Croughan, Rice Research Station, Louisiana State University Agricultural Center
- 4:00 Questions from the Audience and Discussion**
- 6:00 – 8:30 Reception. Privately Sponsored**

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## **Friday, January 12**

**Plenary Session: Marsh Dieback Causes, Effects, and Data Management. Chair:** C. Edward Proffitt, National Wetlands Research Center, U.S. Geological Survey

- 8:00 Variability of Marsh Soil Response to Drought Conditions: Water Balance and Interstitial Salinities.** Christopher M. Swarzenski, U.S. Geological Survey; and Mark A. Ford and Brian C. Perez, National Wetlands Research Center, Johnson Controls World Services, Inc.
- 8:20 Recovery Potential of *Spartina alterniflora* in Dieback Areas: A Greenhouse Pilot Study.** Rebecca J. Howard, Christopher J. Wells, and Karen L. McKee, National Wetlands Research Center, U.S. Geological Survey; and Thomas E. McGinnis, II, National Wetlands Research Center, Johnson Controls World Services, Inc.
- 8:40 The Potential Role of Soil Metal Toxicity in Marsh Dieback.** Paul L. Klerks, Department of Biology, University of Louisiana at Lafayette
- 9:00 Brown Marsh Effects on Habitat Functions and Fishery Species.** Lawrence P. Rozas, National Marine Fisheries Service, and John W. Fleeger, Department of Biological Sciences, Louisiana State University
- 9:20 Coastal Wetlands Information and Data Internet Repositories that Support the Ongoing Salt Marsh Dieback Resource Management and Restoration.** Scott Wilson, National Wetlands Research Center, U.S. Geological Survey

**9:40 Panhandle Salt Marsh Mortality: A Prelude to Louisiana Brown Marsh?** Paul R. Carlson, Jr., Florida Marine Research Institute, Florida Fish and Wildlife Conservation Commission

**10:00 Break**

**Concurrent Session V. Panel Discussion of Science Needs. Chairs:** C. Edward Proffitt, National Wetlands Research Center, U.S. Geological Survey; Kerry St. Pé, Barataria-Terrebonne National Estuary Program; and Robert R. Twilley, Center for Ecology and Environmental Technology, University of Louisiana at Lafayette

**10:20 Causes of Marsh Dieback.** Irving A. Mendelsshon, Wetland Biogeochemistry Institute, Louisiana State University

**10:30 Status, Trends, and Modeling of Marsh Dieback.** Jimmy Johnston, National Wetlands Research Center, U.S. Geological Survey

**10:40 Data Management.** Denise Reed, University of New Orleans

**10:50 Remediation of Marsh Dieback.** Greg Grandy, Louisiana Department of Natural Resources

**11:00 - 12:00 Discussion**

**11:30 - 12:30 Lunch and Luncheon Speaker. Global Change in Coastal Systems: Patterns Possibly Affecting Frequency of Drought.** Virginia Burkett, National Wetlands Research Center, U.S. Geological Survey

**Plenary Session: Reducing the Risks and Effects of Marsh Dieback and Loss.**  
**Chairs:** Quinn Kinler, National Resources Conservation Service, U.S. Department of Agriculture, and Bill Good, Louisiana Department of Natural Resources

**12:30 Louisiana at the Crossroads.** R. King Milling, President, Whitney National Bank

**12:50 Old River Control Project.** Charles E. Shadie, Mississippi Valley Division, U.S. Army Corps of Engineers

**1:10 Options for Diverting Mississippi River Water and Sediment.** Timothy Axtman, U.S. Army Corps of Engineers-New Orleans

**1:30 “Brown Marsh” Demonstration Projects to Test Effectiveness of Remediation Strategies.** Kenneth Bahlinger, Gregory M. Grandy, and Bill Good, Coastal Restoration Division, Louisiana Department of Natural Resources

**1:50 - 2:10 Closing Remarks. What's Next?** Kerry St. Pé, Barataria-Terrebonne National Estuary Program; Len Bahr, Louisiana Governor's Office; and Bob E. Stewart, National Wetlands Research Center, U.S. Geological Survey