

Ecosystem Functions and the Dynamic Atchafalaya River from the Old River Control Structure to the Continental Shelf

10 and 11 January 2007, Embassy Suites, Baton Rouge, Louisiana

The LSU Agricultural Center, School of Renewable Natural Resources and the Coalition to Restore Coastal Louisiana are proud to have organized this meeting devoted to the Atchafalaya River. The Atchafalaya River stretches just 135 miles from its origin to its mouth, yet the water and sediment it conveys result in tremendous geomorphological, biological, and ecological impacts across thousands of square miles of southcentral Louisiana in the floodway, delta, coastal marshes, and coastal waters. Along its length, the river influences millions of acres of wetland forests and coastal marshes that yield tremendous benefits in the form of oil and gas resources, timber, commercial and recreational fishing, hunting and non-consumptive wildlife use, and regional navigation. The Atchafalaya River Basin is managed partly for navigation but primarily as a floodway that receives water from the Mississippi and Red Rivers, and is undergoing rapid geomorphic changes as it develops as a distributary. Understanding this complex system is difficult because it is being changed by the Atchafalaya River itself and by people, intentionally and otherwise. The purposes of this meeting are to review what is known about the river and its associated environments, to report on recent and ongoing research, and to identify information gaps that complicate decision making by land managers, water managers, and policy makers.

The meeting is divided into seven sessions that consist of four or five presentations. Sessions were designed to foster a holistic understanding of the Atchafalaya River by avoiding sessions devoted to traditional geographic or disciplinary subdivisions. Instead, each session is intended to provide examples of the effects of the Atchafalaya River on geologic and hydrologic processes as well as on flora and fauna from the Old River Control Structure to the Gulf of Mexico. We hope this challenging arrangement will enrich our understanding of the Atchafalaya River when we return to the geographic or disciplinary subdivisions that guide many of our routine activities.

Meeting Sponsors

Coalition to Restore Coastal Louisiana
National Audubon Society
School of Renewable Natural Resources, LSU Agricultural Center
Society for Ecological Restoration

Meeting Organizers

Mark Ford, Coalition to Restore Coastal Louisiana
Richard Keim, School of Renewable Natural Resources
Bill Kelso, School of Renewable Natural Resources, LSU Agricultural Center
Andy Nyman, School of Renewable Natural Resources, LSU Agricultural Center
Natalie Snider, Coalition to Restore Coastal Louisiana

Ecosystem Functions and the Dynamic Atchafalaya River from the Old River Control Structure to the Continental Shelf

Thursday, 10 January 2007

- 8:00-8:30 Welcome
- 8:30-8:50 A Historical View of Events Surrounding the Controversy of the Old River Control Structures (Hale, USACOE)
- 8:50-9:10 Sedimentation Patterns Within the Central Atchafalaya Basin, Louisiana (Hupp, Demas, Kroes, Day, and Doyle)
- 9:10-9:30 Hydrology of Forested Wetlands in the Atchafalaya River Basin (Day, and Doyle)
- 9:30-9:50 Trends in Wildlife Use of Atchafalaya Delta Wildlife Management Area, Louisiana With Emphasis on Dredged Material Islands (Carloss, Lejeune, and Creef)
- 9:50-10:10 Observation of Saltwater Intrusion into the Atchafalaya Bay (Li, Roberts, Weeks, Stone, and Feng)
- 10:10-10:30 (break)**
- 10:30-10:50 Classification of Water Areas within the Atchafalaya Basin Floodway System Using Thematic Mapper 5 Imagery (Allen, Couvillion, and Constant)
- 10:50-11:10 Population Abundance, Movements And Size Characteristics Of Pallid Sturgeon From The Old River Control Complex, Louisiana (Reed, Dean, and Hartfield)
- 11:10-11:30 Plant Response to Microhabitat Changes Following Hurricane Disturbance. I: The Vegetative Cover (Keeland, Gorham, Weisbrich, Wells, and Mopper)
- 11:30-11:50 Plant Response to Microhabitat Changes Following Hurricane Disturbance. II: The Soil Seed Bank (Gorham, Keeland, Weisbrich, Wells, and Mopper)
- 11:50-12:10 A Study of Hydrodynamics, Salinity, and Waves in the Acadiana Bay System (Miller)
- 12:10-1:10 (lunch)**
- 1:10-1:30 The Influence Of The Atchafalaya River On Wetland And Estuarine Functioning: Management Implications (Day, Lane, Twilley, Justic, Shaw, and Cowan)
- 1:30-1:50 Flooding and Hurricane Effects on Tree Growth in the Atchafalaya Basin (Doyle and Day)
- 1:50-2:10 Development of a Management Plan for Wild-Caught Crawfish in Louisiana (Huner and Konikoff)
- 2:10-2:30 Fish Research In The Atchafalaya And Wax Lake Deltas: A Review (Peterson, Thompson, Milan, and Shaw)
- 2:30-2:50 Hypoxia Offshore the Atchafalaya and Mississippi Rivers (Rabalais and Turner)
- 2:50-3:10 (break)**
- 3:10-3:30 Wildlife Management In The Atchafalaya Basin (Davidson)
- 3:30-3:50 How Does Flooding in the Atchafalaya River Basin Shape Young-Of-The-Year Fishes? (Halloran, Kaller, and Kelso)
- 3:50-4:10 Wax Lake Delta: Depositional Architecture Delta Evolution, and Impacts Beyond Atchafalaya Bay (Roberts, Walker, and D'Sa)
- 4:10-4:30 Hydrologic Influences on Carbon, Nutrient and Sediment Transport in the Atchafalaya (Xu)

Ecosystem Functions and the Dynamic Atchafalaya River from the Old River Control Structure to the Continental Shelf

Friday 11 January, 2007

- 8:00-8:30 Welcome
- 8:30-8:50 Rethinking the Atchafalaya Basin as a Reservoir of Ecological Diversity during Trying Times (Kemp)
- 8:50-9:10 Dendrochronological Analysis of Wetland Forest Productivity and Hydrology (Amos, Keim, and Doyle)
- 9:10-9:30 Bird Survey Of The Atchafalaya Basin, Louisiana (Fontenot and Huner)
- 9:30-9:50 Isotopic Signature of Nitrogen along the Atchafalaya River (BryantMason, Xu, and Altabet)
- 9:50-10:10 Oyster Production in the Atchafalaya/Vermilion Estuarine Complex: an Overview (Banks and Cook)
- 10:10-10:30 (break)**
- 10:30-10:50 The GIWW as a Distributary of River Water to Coastal Louisiana (Swarzenski)
- 10:50-11:10 Effects of Spatial Scale on Assessment of Dissolved Oxygen Dynamics in the Atchafalaya River Basin, Louisiana (Kaller, Kelso, and Rutherford)
- 11:10-11:30 Studying Denitrification and Dendrochronology to Identify Controls on Nutrient Removal by the Atchafalaya River Basin Louisiana, USA (Scaroni, Nyman, Lindau, DeLaune, and Keim)
- 11:30-11:50 Marsh Loss Mechanisms where River Inflow is High and Subsidence is Slow: how Estuarine Marshes Can Erode even in The Virtual Absence of Wave and Tidal Energy (Nyman and McGinnis)
- 11:50-12:10 Comparisons of Harmful Algae from the Barataria and Atchafalaya Estuaries and Nearshore Waters (Rabalais, Morrison, Mendenhall, Ren, Atilla, and Dortch)
- 12:10-1:10 (lunch)**
- 1:10-1:30 The Use of Science in Natural Resource Planning and Management in the Atchafalaya Basin (Watson, van Maasackers, Faulkner, and Karl)
- 1:30-1:50 Invasive Aquatic Species in the Atchafalaya Basin (Thomas, LSU AgCenter)
- 1:50-2:10 The Emergence and Land Growth of the Wax Lake Delta: a Template for Natural Wetland Creation (Holm, Sasser, and Twilley)
- 2:10-2:30 break**
- 2:30-3:30 Panel Discussion: David Cresson (Executive Director, Coastal Conservation Association of Louisiana), Honorable Timothy Matte (Mayor, Morgan City), Rudy Sparks (Vice President of Lands and Timber, Williams Inc.), Richard Condrey (Professor, LSU), Mark Wingate (Project Manager, U.S. Army Corps of Engineers).
- 3:30-3:40 Thanks, Adjournment