



Diana Sturm



Randy Sims

A HOME TO MANY – DELTA DIVERSITY

While every state has witnessed species extinctions, such losses have not occurred uniformly across the nation. States exhibiting high numbers of extinctions tend to boast high overall numbers of species, fragile ecosystems with at-risk flora and fauna and intense human impact. Unfortunately for Alabama, all three of these scenarios apply. According to data collected by the nation's Natural Heritage programs and The Nature Conservancy, Alabama is the most extinction-prone state of the mainland United States, with 96 extinct species (83% of which are aquatic). Because of its ancient, complex geological terrain and waterways that span four river basins, Alabama is home to more species of animals and plants than any state east of the Mississippi River. An estimated 15% of these species are in peril due to human alteration of the landscape.

The Mobile-Tensaw Delta extends northward from Mobile Bay to the confluence of the Alabama and Tombigbee Rivers, encompassing approximately 250,000 acres. This watershed is considered by many to be the "best" remaining delta ecosystem of its kind in the country and is the second largest delta in the continental U.S. It provides habitat for various invertebrates, fishes, waterfowl, migrant birds, as well as, other game and non-game species.

The biodiversity is rich. Historically, over a hundred species found nowhere else in the world lived in the drainage basin. Because the Delta is a melting pot of freshwater and

marine ecosystems, it supports a phenomenal diversity of at least 126 fish species, 40 species of mammals, 69 reptiles, 30 amphibians, and an untold host of insects. The plant life is equally diverse to include ancient pygmy cypress, swamp tupelos, bottomland hardwoods and beautiful swamp lilies. Sightings of formerly rare species such as eagles, ospreys, and brown pelicans have become commonplace. The delta is also attractive to aliens, ecologically destructive exotic species such as nutria, feral hogs, and fire ants.

Despite this knowledge and the obvious importance of the Delta as a natural filter, sedimentation trap, and habitat for rare plant and animal communities, we know very little about the biodiversity that defines this unique ecosystem. Algae and aquatic plants are ecologically important as they support the entire food web and are often sensitive indicators of ecosystem change. Because algae and aquatic plants respond rapidly to a wide range of environmental stressors (such as change in water quality, temperature, and salt concentration), they represent largely ignored warning signals of habitat deterioration and change.

Over the last decade, scientists have become increasingly aware of the negative effects human activities have had on aquatic, estuarine, and coastal ecosystems. Some tell-tale signs of impact include declining biodiversity, occurrence and persistence of harmful algal blooms, disappearance and dying-off of critical habitat (seagrass beds) and accumulation of

toxic substances in the food chain. The Mobile Delta, and other watersheds like it, have been impinged upon and plagued by nutrient input from sewage, industrialization and human development. In Alabama alone, an estimated 3.7 million acres of historic wetlands have been destroyed, predominantly, around the coastal areas of the state. Heightened awareness among scientists, politicians and concerned citizens has prompted recent efforts to conserve and protect the Mobile-Tensaw Delta. However, with the exception of harmful phytoplankton blooms and seagrasses, very little attention has been paid to algal and aquatic plant assemblages in this region.

Researchers Kelly and Clinton Major at the University of South Alabama are beginning a project to determine algal and aquatic plant diversity within the Mobile-Tensaw Delta. They are taking note of native, invasive and rare species that may affect the area's productivity. They hope to identify species that are sensitive to environmental stress and then apply the information toward long-term monitoring, management and preservation of coastal regions and the species that inhabit them. The Mobile Bay NEP hopes that information collected by these researchers and others will ultimately support wise policy decisions in the future. To learn more about this project and others funded by the Alabama Center for Estuarine Studies log on to www.southalabama.edu/aces/.

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Mobile Bay NEP

FAST FACTS

- Weeks Bay National Estuarine Research Reserve comprises over 6,000 acres of protected areas (1800 land 4200 water bottoms) some 3000 of which were added in the last ten years
- The Mobile Bay NEP, in cooperation with the ADEM Coastal Program, has undertaken major habitat mapping projects of grass beds and wetlands in the Mobile Bay area
- Over 300 species of birds have been recorded at the 160-acre Audubon Bird Sanctuary on the south side of Bienville Boulevard on Dauphin Island
- The U.S. Fish and Wildlife Service has used recycled Christmas trees to promote shoreline and habitat stabilization. Keep Mobile Beautiful and Baldwin County recycle Christmas trees for mulch
- Coastal wetlands help protect inland areas by absorbing the surge of large storms. All wetlands help protect adjacent properties by absorbing flood waters and heavy rainfall
- Habitat fragmentation and destruction is a primary contributor to species decline and water quality degradation



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