**Conservation Effects Assessment Project (CEAP)**

**Beasley Lake Watershed, Mississippi: 2004-2006**

An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.

**CEAP Assessment**

Monitor lake water quality to assess the effectiveness of best management practices that reduce contaminants and improve lake ecology and productivity.

**Watershed Description**

- Part of the Big Sunflower River watershed within the Yazoo River Basin.
- 2,100 acres
- Surface area of the receiving oxbow lake is approximately 62 acres.
- 77% crop land
- A Total Maximum Daily Load (TMDL) has been established for pathogens, low dissolved oxygen, pesticides, sediment, and nutrients.

**Issues:** Runoff is contaminated with sediments, nutrients (phosphorus, nitrate, ammonium), and pesticides. The receiving oxbow lake is impacted by suspended sediments that suppress the aquatic food chain.

**Approach**

- **Water sampling:** Water sampled from oxbow lake and wetlands
- **Watershed models:** AnnAGNPS (Annualized Agricultural NonPoint Source)
- **Water quality monitoring:** Runoff, sediments, total organic carbon, nutrients, and pesticides
- **Assess practices:** Vegetative buffers, conservation tillage, constructed wetlands, grade control pipes, and conversion of row cropland to Conservation Reserve Program (CRP).

**Communicating Results**

- Reports and papers on individual research projects within the watershed and complementary studies in nearby areas. Examples include: Delta oxbow limnology, effects of CRP on runoff and soil characteristics, lake sediment toxicity in various lakes, including Beasley Lake, assessment of wetlands in mitigating pesticides effects, and edge-of-field effects on pesticides in runoff.

**Collaborators**

- Mississippi Department of Wildlife Fisheries and Parks
- Mississippi State University
- Arkansas State University

**Contacts**

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**Timeline**

- 2005 December 1st ARS Benchmark Watersheds progress report
- 2006 December 2nd ARS Benchmark Watersheds progress report
- 2007 December 3rd ARS Benchmark Watersheds progress report
- 2008 December 4th ARS Benchmark Watersheds progress report

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