
Conservation Effects Assessment Project (CEAP)
United States Department of Agriculture

Evaluate conservation practices effects on soil quality, water quality and quantity.

Watershed Description
- 64,000 acres
- 53% forest, 19% pasture, 18% crop land
- Streams have been designated impaired water bodies by Mississippi.
- Impaired water quality parameters: nutrients, oxygen.
- A Total Maximum Daily Load (TMDL) limit has been set for allowable levels of sediment, pathogens, pesticides, and turbidity.

Issues:
Channel instability and streambank erosion have severely degraded stream and riparian habitats; sediment loss is twice national average.

Approach

Water sampling:
- Sediment, nitrogen, and phosphorus

Watershed models:
- Will use data from lab experiments to model contributions of subsurface drainage flow and seepage erosion to stream flow and bank failure under various conservation practices.

Research:
- Evaluate mechanisms of seepage erosion and its contribution to streambank failure and effects of soil conservation practices on these processes.

Communicating Results

Results will be presented at national science meetings and published in journals. Data will be posted on USDA-ARS National Sedimentation Laboratory website. A final report will document findings.

Collaborators
- USDA, Natural Resources Conservation Service
- U.S. Geological Service
- U.S. Army Corps of Engineers, Vicksburg District
- Local landowners and drainage districts
- Mississippi State University Cooperative Extension Service
- University of Mississippi
- Colleges of Agricultural Sciences, Mississippi State University
- Marquette County Conservation District
- Mississippi Department of Wildlife, Fisheries, and Parks
- Texas A&M University
- University of Arkansas
- University of Georgia
- Cooperative Extension Service, Arkansas
- Cooperative Extension Service, Missouri
- Cooperative Extension Service, Mississippi
- Cooperative Extension Service, Alabama
- Cooperative Extension Service, Louisiana
- Cooperative Extension Service, Tennessee
- Natural Resources Conservation Service, Mississippi
- U.S. Department of Agriculture, Forest Service, Cooperative Forest Studies

Timeline

2003
- Initial funding
- August CEAP bibliographies
- 2004
- Crops
- May
- Wetlands peer review
- July
- Wildlife literature review (program-based)
- October
- Crop and livestock literature reviews
- Wildlife literature review (practice-based)
- Wildlife Work Plan
- November
- Wetlands Work Plan
- December
- Draft findings—Prairie Pothole region

2006
- Preliminary habitat quality models—Prairie Potholes wetland region
- March
- Preliminary National Assessment Report
- December
- 2nd ARS Benchmark Watershed progress report

2007
- Fall
- National Assessment Final Report
- December
- 3rd ARS Benchmark Watershed progress report

2008
- December
- 4th ARS Benchmark Watershed progress report

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Homer L. Wilkes

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