CEAP Assessment

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

Watershed Description

- About 2 million acres
- Predominantly agricultural
- Streams have been designated impaired water bodies by Oklahoma.
- Impaired water quality parameters: phosphorus, turbidity, oxygen, and pathogens.
- A Total Maximum Daily Load (TMDL) limit is planned for phosphorus and turbidity.

Issues: Runoff carries sediment and excess nutrients to Lake Texoma, the second largest reservoir in Oklahoma.

Approach

Water sampling: Phosphorus, nitrate-nitrogen, and sediment

Watershed models: SWAT (Soil and Water Assessment Tool), EPIC (Erosion Productivity Impact Calculator), APEX (Agricultural Policy Environmental Extension), and CONCEPTS (Conservational Channel Evolution and Pollutant Transport System)

Research: Hydrologic data from 1981 to the present will be used to calibrate computer models. Farmer surveys will be correlated with water quality sampling; Oklahoma Conservation Commission will assess stream habitat.

Communicating Results

A model will be developed to predict reductions in sediment and nutrients from conservation practices. Reports will describe the hydrology, calibration of models, effects of practices on water quality and water supply.

Timeline

2003 - Initial funding
2004 - CEB bibliographies
2005 - Wetlands peer review
2006 - Preliminary habitat quality models — Prairie Potholes wetland region
2007 - Preliminary National Assessment Report
2008 - 3rd ARS Benchmark Watersheds progress report
2010 - 4th ARS Benchmark Watersheds progress report

Contacts

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Collaborators

- USDA, ARS National Soil Erosion Laboratory
- USDA, Natural Resources Conservation Service
- U.S. Geological Survey
- U.S. Environmental Protection Agency
- Great Plains Resource Conservation & Development
- Local landowners
- Oklahoma Conservation Commission
- University of Oklahoma
- Oklahoma State University

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