Kansas Water Resources Institute

Sediment Baseline Assessment:

Seven entities are working jointly on a sediment baseline assessment for a comparative watershed study on three small lake watersheds in Northeast Kansas. This research is a top priority of the state, as identified by the Kansas Water Office, and is part of a larger strategy to address sedimentation in Kansas reservoirs, due to the fact that federal reservoirs in Kansas represent the public water supplies for approximately 2/3 of the state's population.

The study watersheds were selected based upon availability of existing information from previous research efforts and presumed large differences in the range of sediment loads between them. Each study watershed is similar in size and located within the same ecoregion in Kansas. Watershed characteristics for assessment are: geomorphology, hydrology, geology/soils, riparian condition, land use, biology and chemistry.

The characterization of each of the study watersheds is intended to relate those characteristics to the sediment loads in each watershed. Ultimately, the management goal is to change the characteristics in watersheds with larger sediment loads to emulate the characteristics in watersheds with smaller sediment loads and use the monitoring to determine the management practice effectiveness toward that reduction.

Sediment Reduction Strategies for Tuttle Creek Lake:

The goal of this study is to evaluate different sediment reduction strategies for Tuttle Creek Lake and its watershed. A reasonable approach may be to slow the trend of sediment accumulation. In order to do that, corrective action is needed and this action would ideally be based on a better understanding of watershed and stream sediment loading characteristics as well as the economic costs of alternative reservoir/watershed management strategies. This study will answer the question: "How can physiographical and economic relationships within the watershed be quantified to provide insights into the selection of cost-effective alternative management strategies?" This study focuses on answering that question by integrating a geographic information system (GIS) based watershed model, reservoir rehabilitation management strategies, statistical analyses of historic watershed and water quality data, with an economic analysis of alternative sedimentation reduction strategies. This will offer decision makers better insight into the cost implications associated with achieving various water quality criteria and sedimentation reduction goals within a large watershed.

Water and the Future Conference:

KWRI was a joint sponsor of the Water and the Future of Kansas Conference. The goal of this conference was to evaluate "*Sustainable Water Resource Management: Assuring the Future*".

Speakers provided information regarding sustainability in relation to:

- water resources,
- Kansas reservoirs,
- the structure of sustainability,
- a national perspective,
- science communication, and
- the Kansas economy.

Concurrent sessions provided information regarding sustainability in various categories:

- sedimentation,
- High Plains Aquifer,
- water quality,
- Conservation Effect Assessment,
- municipal water,
- nutrient management,
- reservoirs, and
- policies and practices.

K-STATE Research and Extension
Kansas State University

Kansas State University Agricultural Experiment Station and Cooperative Extension Service
www.ksre.ksu.edu

KWRI Mission

The Kansas Water Resource Institute develops and supports research on high priority water resource problems and objectives, as identified through the state water planning process. It is also designed to facilitate effective communication between water resources professionals and to foster the dissemination and application of research results. For more information, contact:

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