

Evaluation of Conservation Practices in a Mixed-Land Use Watershed using Cumulative Effects Modeling and Interdisciplinary Analyses

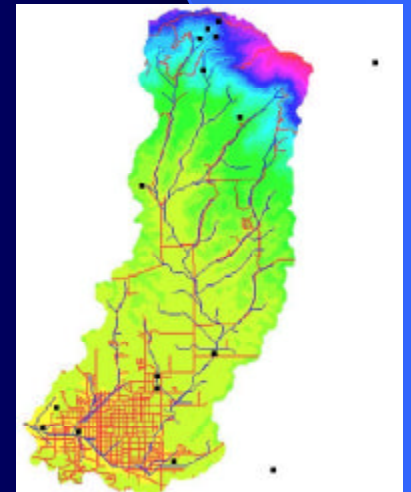
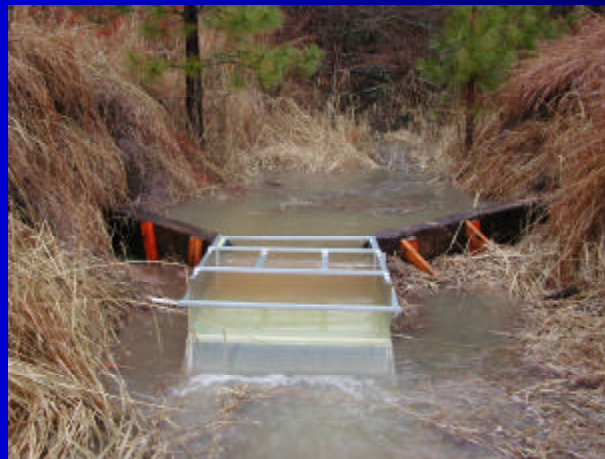
**USDA-CSREES-CEAP
Conservation Effects Assessment Project**

February 10, 2005

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Flow & Sediment Data in PCW

- USGS gauging station (since 1978)
- MWWTP (1979-1980 & 1988 - present)
- IASWCD (1999 - 2001)
- University of Idaho (2000 - present)



Paradise Creek Watershed

PCW must reduce 1040 tons/yr to 150 tons/yr (TMDL)

Water Year	tons/yr
2001	160
2002	3000
2003	2500
2004	3600

- Preliminary data from Darby Site

Possible reasons ...

- Effect of conservation practices may take decades instead of years
- Conflicting processes and activities elsewhere in watershed counter conservation effects
- Sediment reduction estimates for control structures do not apply at watershed scale
- TMDL target was set incorrectly
- Insufficient numbers of sediment control practices were implemented, or most sensitive areas were not included

Objective 1

- “To analyze water quality monitoring data to determine effectiveness of conservation practices and evaluate the value of spatial and temporal monitoring”

Objective 2

- “To apply cumulative effects modeling to explain geo-spatial and temporal factors determining effectiveness of conservation practices in PCW”

Objective 3

- “To identify primary social, cultural and economic motivations and barriers related to conservation practices affecting decision-making by agricultural producers/ landowners, and local residents in PCW”

Objective 4

- “To develop a tool to determine the optimal suite of conservation practices within PCW by integrating cumulative effects, socio-economic factors, and temporal variation in water quality”

Objective 5

- “To develop an outreach plan for disseminating results and technology transfer to appropriate audiences as well as provide evaluation techniques for outreach efforts”

Objective 6

- “To develop and implement a plan for data storage and retrieval”

Objective 1

- Statistically analyze existing data
- Find sediment sources
- Determine when sediment sources are active

Objective 2

- Determine optimal location and timing of control practices
- When do we expect to see improvement (years or decades)?
- What are conflicting processes and activities in PCW (construction of homes, stream bank erosion, road erosion)?
- Is there a flushing mechanism for sediment removal?
- What is the best monitoring strategy?

Objective 3

- Identify social and economic factors related to conservation practices and decision-making
- Understand incentives, costs, and opportunities associated with changing practices in the watershed
- Determine probability of adoption of conservation practices

Objective 4

- o Compare physical, social and economic perspectives to evaluate optimal sites for conservation practices