

CEAP

Competitively Funded Watershed Case Studies

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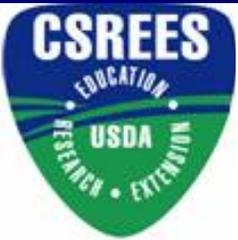
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CEAP Blue Ribbon Panel Meeting

January 12-14, 2005

Washington, DC



Cooperative State

Research, Education, and Extension Service

Goal of the CEAP CSREES Competitive Grants Program

- The long-term goal of this program is to understand how to achieve locally-defined water quality goals through:
 - the selection of a *suite of applicable conservation practices*,
 - the *geographic distribution* of these practices throughout a watershed, and
 - the *timing of implementation* of conservation activities.
- ❖ Outreach component required
- ❖ Partnerships required: e.g. NRCS, EPA, state
- ❖ Evaluation of social and economic factors

CEAP CSREES Competitive Grants

- 4 projects
- 3 year duration
- Funded 2004-2007
- Maximum award - \$660K/project
- \$3 million (CSREES 2M, NRCS 1M)
- Competitive external review

**Conservation Effects Assessment Project (CEAP):
Watershed Studies Component, 2004**



**Competitive Grants
Watersheds**

	<u>Watershed name</u>	<u>Research Lead</u>
IA	Three watersheds (Walnut Creek, South Fork Iowa River, Sny Magill)	(Iowa St. U.)
UT	Little Bear River	(Utah St. U.)
OH	Rock Creek	(Heidelberg College)
ID	Paradise Creek	(U. of Idaho)

Note: CEAP Watershed locations are plotted as 8-digit Hydrologic Unit Code Watershed boundaries for general locations only.

(1) Little Bear River Watershed, Utah

- 74,000 hectares
- Land use –
 - 70% grazing and forest
 - 19% irrigated cropland
 - 7% dry cropland
 - 4% urban
- 50 dairy farms, avg. 120 cows



Practices Implemented in the Little Bear River Watershed

■ Practices:

Manure management

Stream fencing and channel stabilization

Riparian buffers

Grazing management

■ Resource concerns:

Sediment & nutrients



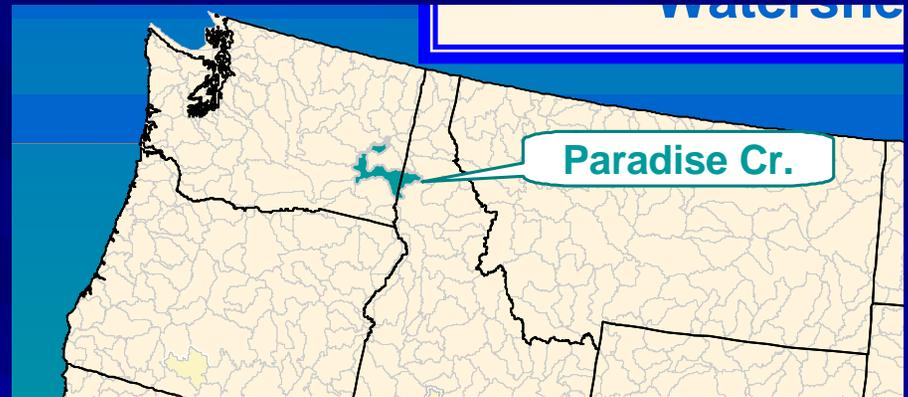
Monitoring & Modeling – Little Bear River Watershed

- Monitoring:
 - USGS & other in-stream monitoring
 - Biological monitoring
- Modeling:
 - PSIAC (grazing erosion model)
 - AGNPS (Agricultural Non-Point Source Pollution Model)
 - EPIC (Erosion/Productivity Impact Calculator)

(2) Paradise Creek Watershed, Idaho

■ 4,980 hectares

■ Land use:
70% Agriculture
16% Forest
14% Urban



■ Crops: Dryland wheat, barley, peas, lentils

Practices Implemented in the Paradise Creek Watershed

- Practices:
 - Water control structures
 - Direct seeding (no-till) rotations
 - Filter strips
 - Riparian forest buffers
- Resource Concerns:
 - Sediment, nutrients, & pathogens

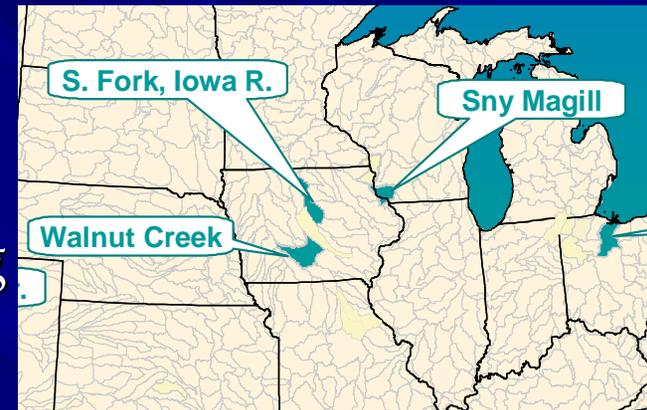


Monitoring & Modeling – Paradise Creek Watershed

- Monitoring:
 - Nested watersheds
 - USGS & other in-stream monitoring
 - Sewage treatment plant sampling
- Modeling:
 - WEPP (Water Erosion Prediction Project)
 - CEM (Cumulative Effects Model)
 - Watershed-based Bioeconomic Model

(3) Iowa Project

- 5 watersheds
- 2 paired watershed studies
- Monitoring:
 - USGS & other in-stream monitoring
 - Biological monitoring
- Modeling:
 - SWAT (Soil and Water Assessment Tool)
 - GFLOW (groundwater-surface water model)
 - Micro level economic models
 - Sediment delivery model
- Economic Analysis:
 - Practice cost and maintenance, Rental rates compared to CRP, Crop risk variability



Walnut Creek/Squaw Creek, Iowa

- 9,960 hectares (Paired watershed total)
- Land use:
 - Row crops (corn/soybean)
 - Prairie restoration (1,060 hectares)
- Resource Issues:
 - Water quality
 - Wildlife
- Practices:
 - Conversion to warm season grass
 - Nutrient and pest management

Sny MaGill/ Bloody Run Creek , Iowa

- 18,940 hectares (Paired watershed total)

- Land use:

 - 49% forest

 - 24% pasture

 - 26% cropland

- Resource Issues:

 - Water quality

 - Wildlife

- Practices:

 - Conservation tillage

 - Contouring

 - Terracing

 - Strip cropping



South Fork, Iowa

- 78,000 hectares
- Land use:
 - 85% cropland (corn/soybean)
 - 100 Swine operations
 - Tile drains
- Resource Concerns:
 - Nutrients
- Practices:
 - Manure and nutrient management
 - Conservation tillage
 - Constructed wetlands
 - Drainage management



(4) Rock Creek Watershed, Ohio

- 89,600 hectares
- Land use:
 - 82% Agriculture (corn/soybean, wheat, livestock)
 - 16% Forest
 - 2% Urban



BMPS – Rock Creek Watershed

- Practices:
 - No-till, conservation till
 - Nutrient management
 - CRP
 - Buffers
 - Cover crops
- Resource concerns:
 - Sediment & nutrients



Monitoring & Modeling – Rock Creek Watershed

- Monitoring:
 - USGS & other in-stream monitoring
 - Biological sampling
- Modeling:
 - AnnAGNPS (Annualized Agricultural Nonpoint Source Pollution model)

Education & Extension Efforts

- ❖ Farmer adoption studies
- ❖ Community, farm and agency workshops
- ❖ Spatial risk maps
- ❖ Satellite conferencing
- ❖ Watershed, commodity, environmental groups
- ❖ Annual meetings
- ❖ Closing summit
- ❖ Extension fact sheets
- ❖ EPA Nonpoint Source News
- ❖ Websites



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Or visit

<http://www.usawaterquality.org>