South Fork of the Iowa River Watershed: Status of CEAP Research

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Research objectives

1. Evaluate spatial and temporal patterns in water quality.
2. Assess current land use and conservation practices that are in place.
3. Develop planning tools that identify optimal locations to place specific conservation practices.
4. Encourage implementation of new conservation practices and identify their water quality impacts.
5. Calibrate/test SWAT model
South Fork NO$_3$-N Concentrations

Obj. 1
<table>
<thead>
<tr>
<th>Date</th>
<th>Total Phosphorus conc., mg/L</th>
<th>Sediment concentration, g/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td></td>
<td></td>
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<tr>
<td>2002</td>
<td></td>
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<tr>
<td>2003</td>
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</tbody>
</table>

**Total phosphorus concentrations by date 2001-2003**

Obj. 1
Crop Cover

Multiple years of NASS data

Obj. 2

Crop Rotations
Manure application and its distribution in the watershed
Crop Rotations and SWAT modeling

- Included 2-year crop rotations and hog manure application
- Utilized AVSWAT-X and its splitting and SSURGO extension tools

Objs. 2 & 5

C.H. Green and J.G. Arnold, GSWRL-ARS, Temple, TX
Hydrologic calibration of SWAT - completed!

- Completed annual, monthly, and daily discharge calibration and validation
- Completed tile flow calibration and validation
- Continuing work with pothole inclusion
- Performed parameter sensitivity analysis

Obj. 5

C.H. Green and J.G. Arnold, GSWRL-ARS, Temple, TX
Assessing conservation practices in a watershed

NRCS to complete a field by field inventory this year

Obj. 2
Optimal placement of conservation practices


Obj. 3
Encouraging new practices

• Partnering with Southfork Alliance and Iowa Soybean Association
• Seeking additional funds for EQIP through NRCS Special Projects
• Establishing new monitoring stations for a tile-drained sub-basin