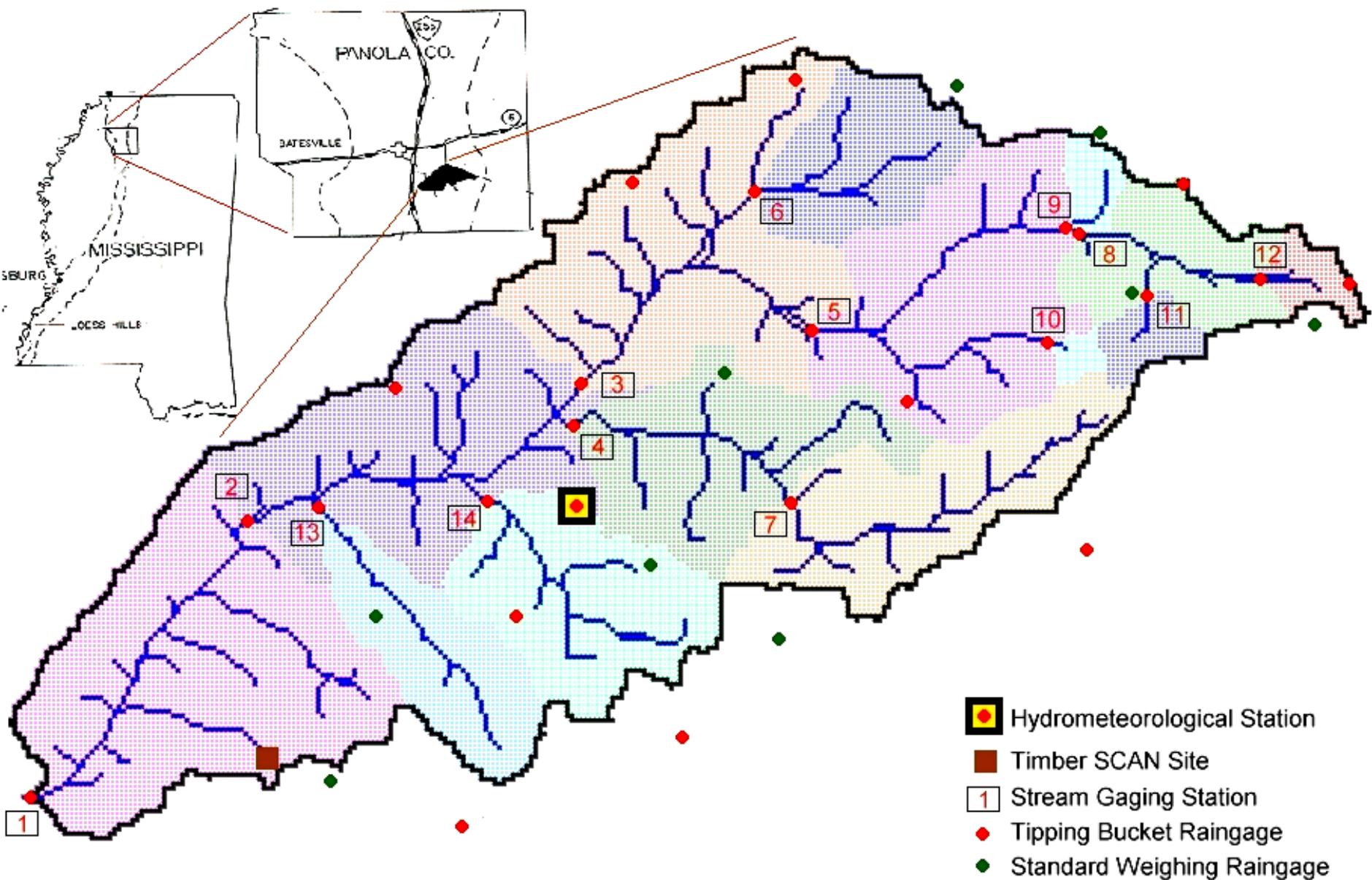


# Goodwin Creek Experimental Watershed

National Sedimentation  
Laboratory

Oxford, Mississippi



Area = 21.3 km<sup>2</sup>; 14 flow gauging stations,  
 32 rain gages, 2 SCAN sites, 1 SURFRAD site.

# CEAP Objectives

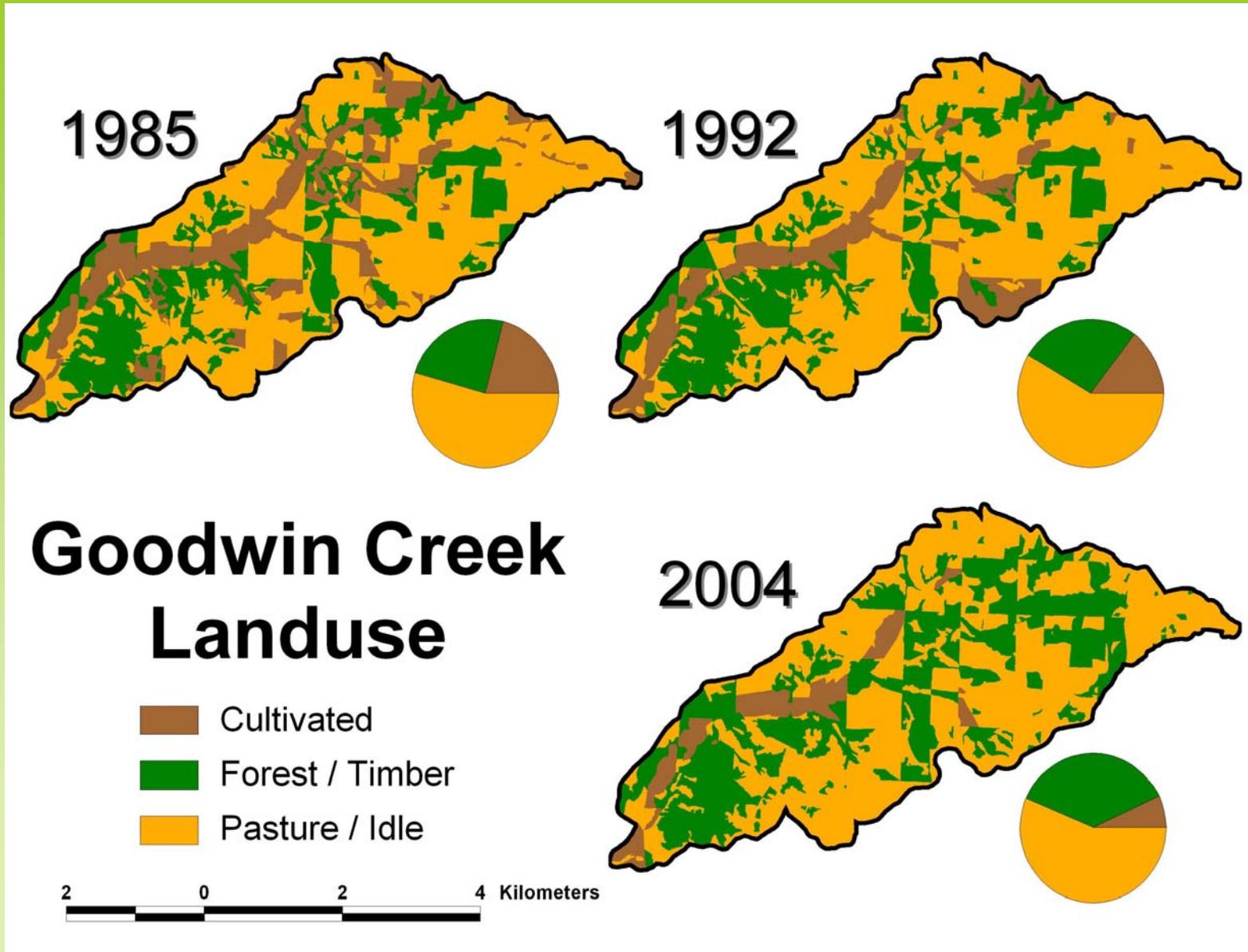
- Evaluate changes in land use, conservation practices and channel responses as they affect water quality (sediment, nutrients).
- Quantify source areas of sediment within the watershed – overland (sheet and rill), gullies (ephemeral, edge-of-field), channels.

# Approach

- Collect new information on land management practices from NRCS and add to current data base (CRP, EQIP, channel stabilization, grade stabilization, channel bank vegetation).

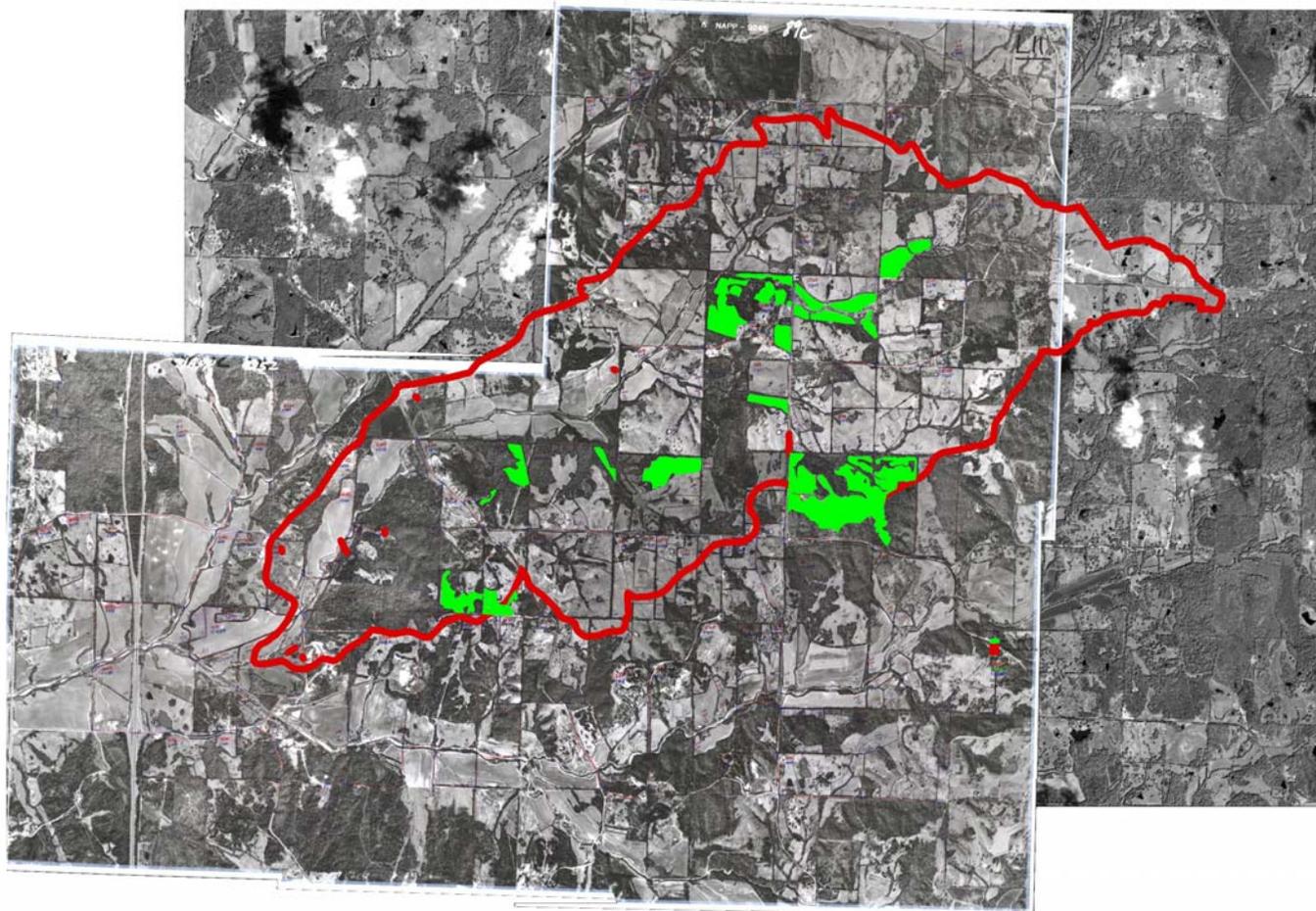


# Methods – Digital land use record



# Methods

## Integrating Imagery, Landuse and NRCS Data



# Approach

- Evaluate water quality (sediment, nutrients) changes caused by land conservation practices.



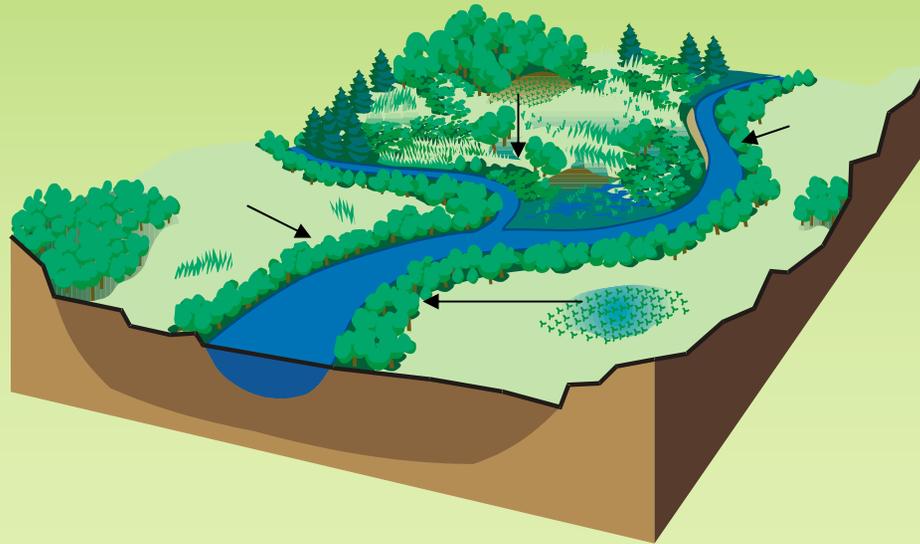
# Methods

- Collect data on water quality and existing conservation practices
- Evaluate conservation practices using watershed models (AnnAGNPS, SWAT)



# Approach

- Collect and analyze data on sediment sources contributing to sediment yield from the watershed.



# Methods

- Gullies, channel erosion studies
- Channel reach modeling (CONCEPTS)
- Sediment sourcing studies using naturally occurring radionuclides



# Examples of ephemeral and edge-of-field gullies

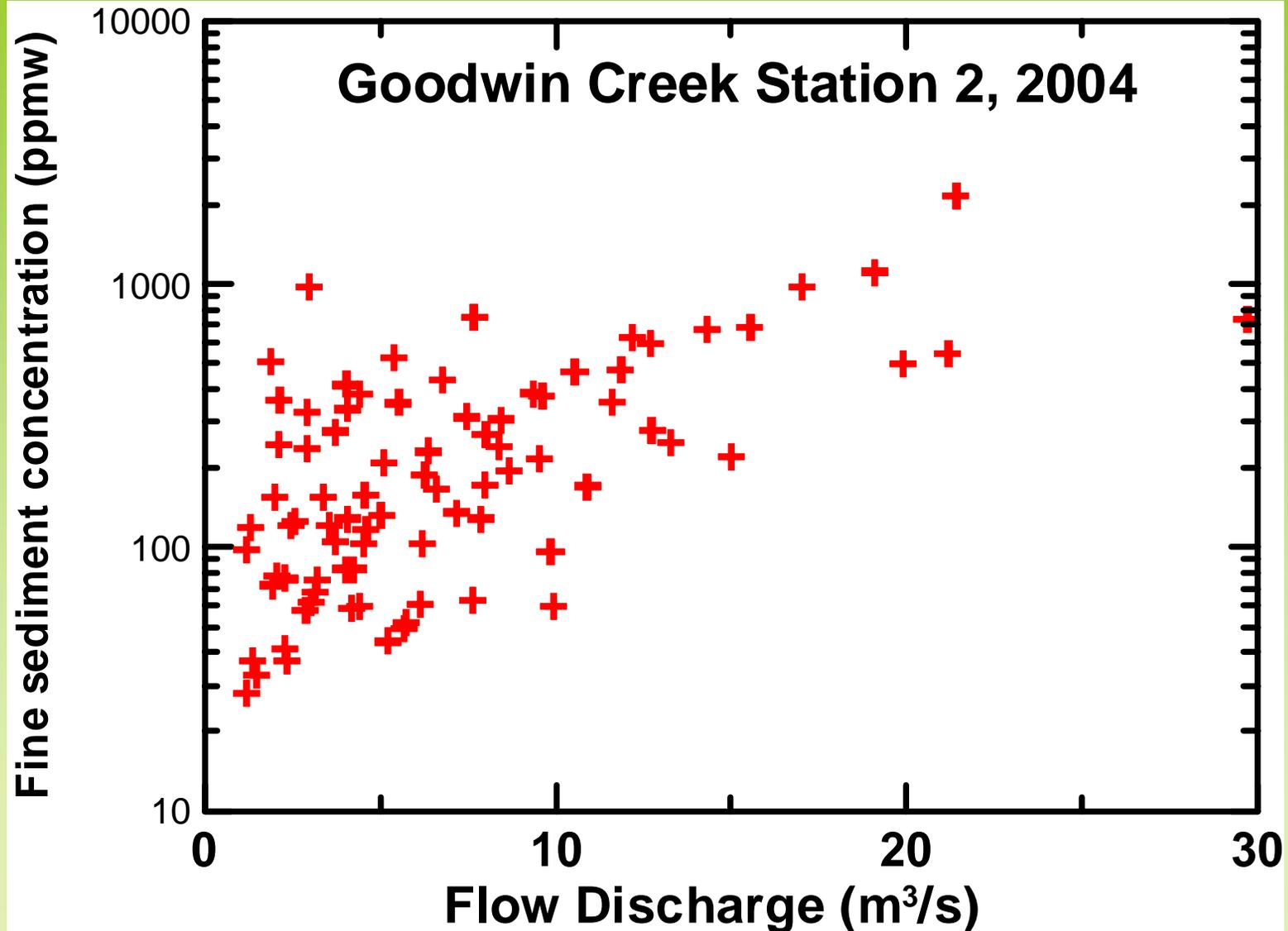


# Specific Measurements

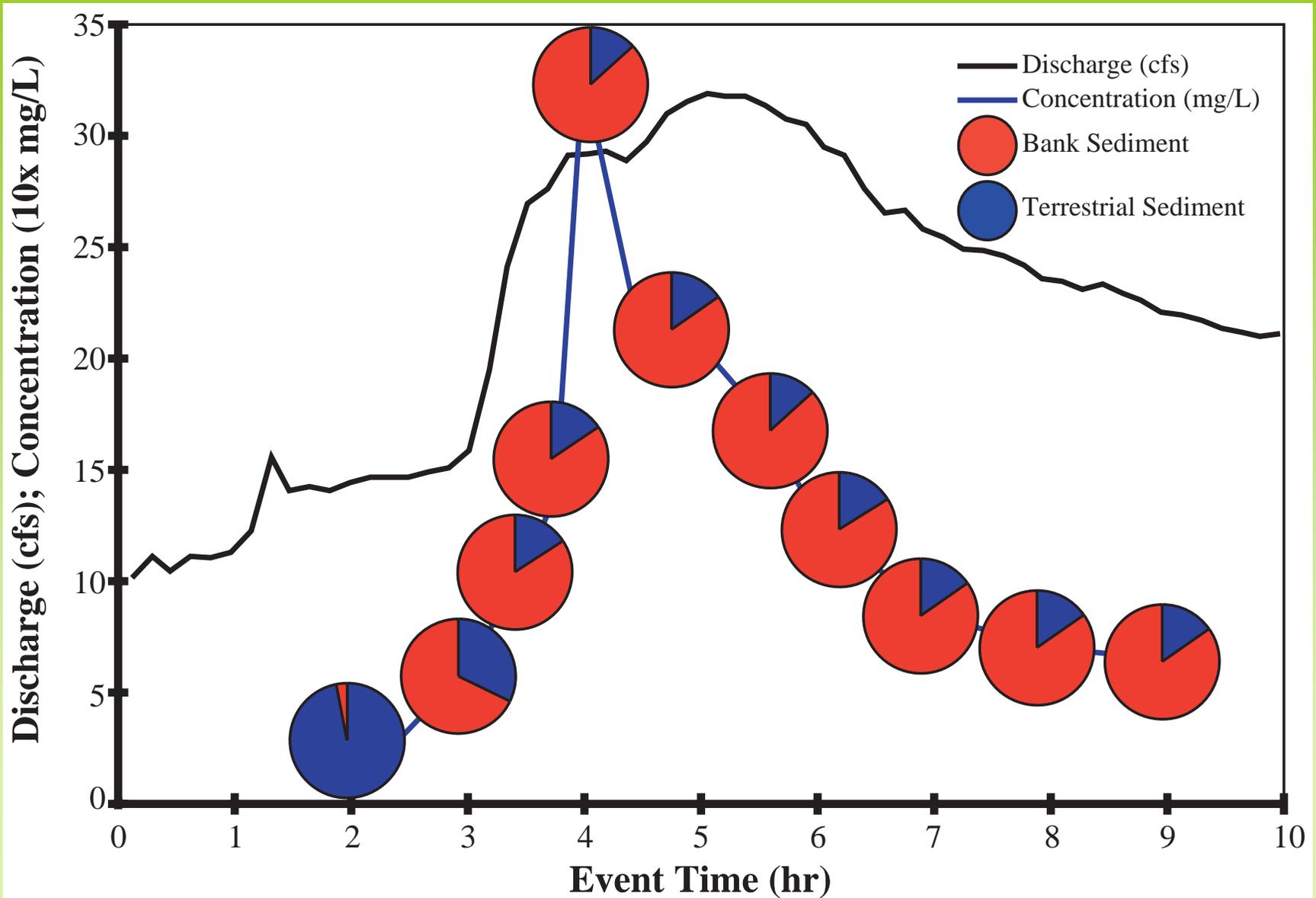
- Hydrometeorological data (rainfall, runoff (13 stations), temp, wind, solar radiation)
- Sediment –transport sampled (13 stations)
- Land use – ground based surveys, remote-sensed data
- Bank erosion processes (bendway site, gully sites)
- Ratios of naturally occurring radionuclides ( $^7\text{Be}/^{210}\text{Pb}$ ) in sediment from runoff and the land surface

# Progress to date:

## Collection of suspended sediment samples



# Determination of Suspended sediment sources



# Studies of Sediment Load from Streambank Erosion



# Gully and Streambank Processes: Goodwin Creek

hydraulic and  
seepage  
processes



Monitoring seepage forces  
with tensiometers



Matrix suction with time relation

