

Southeast Watershed Research Unit

2013 Conservation Effects Assessment Project

Progress Report

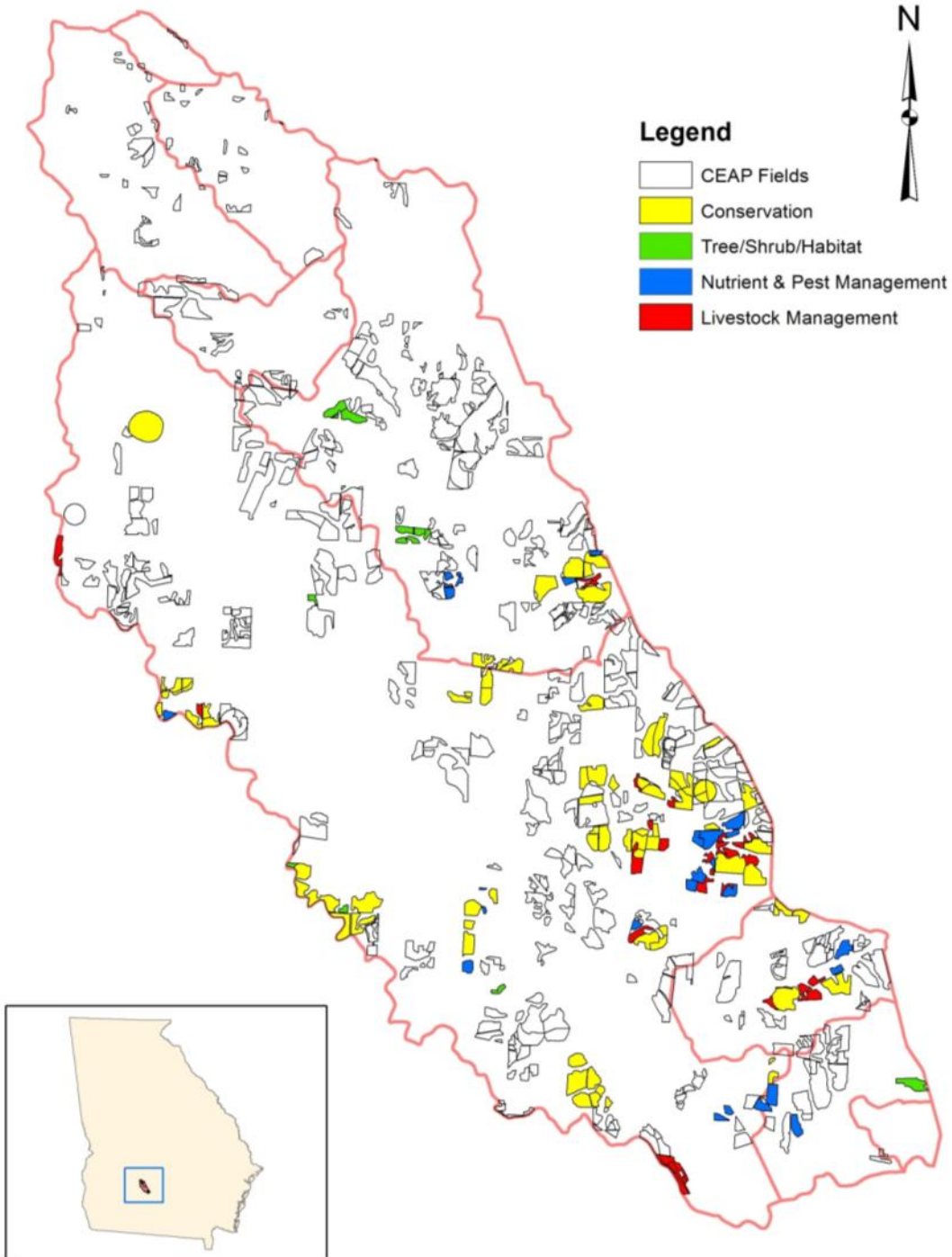


Ongoing Efforts

- Quantification of Conservation Practices
- Winter Cover Effects at Watershed Scale
- Watershed Scale Modeling

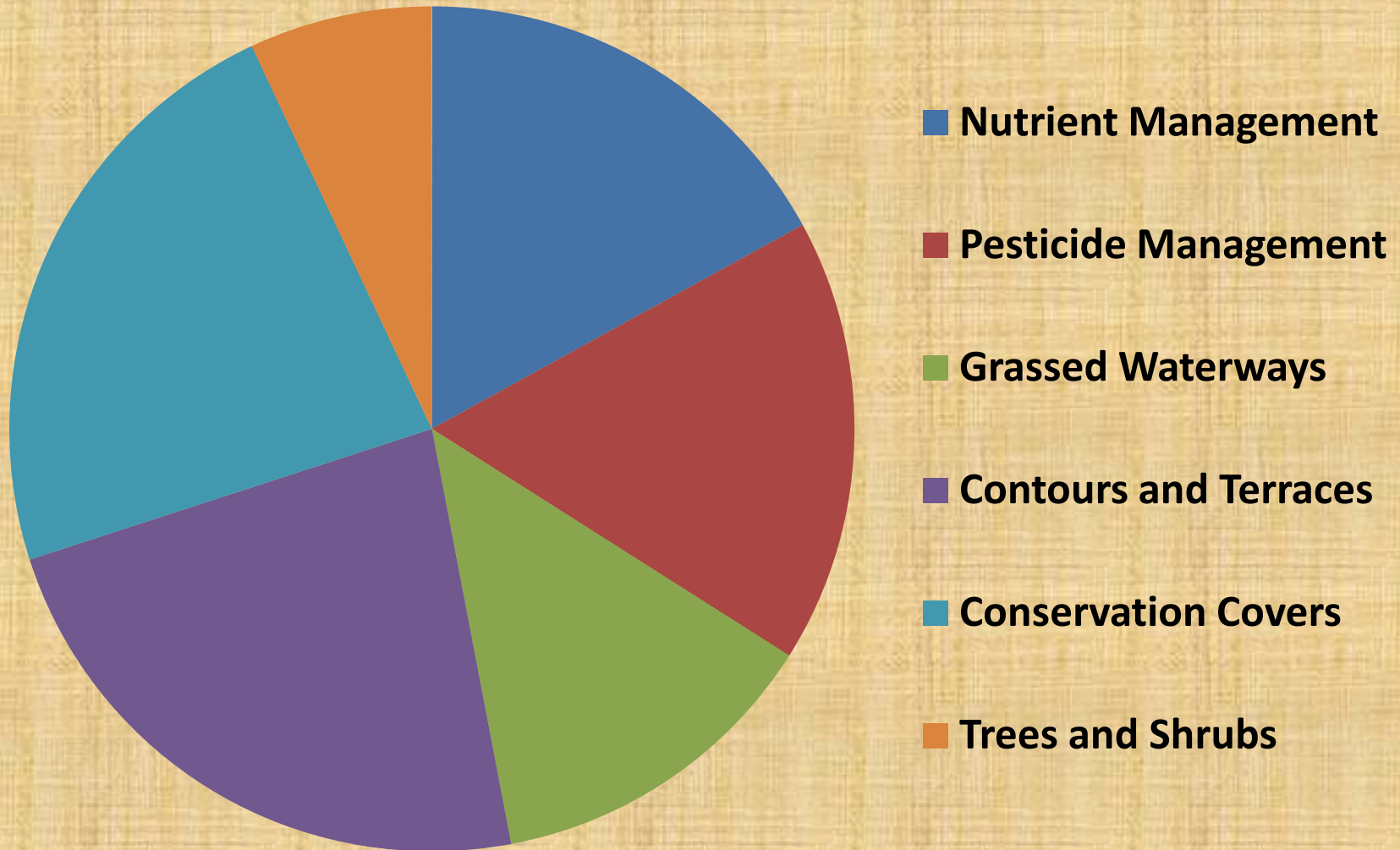


USDA Conservation Practices

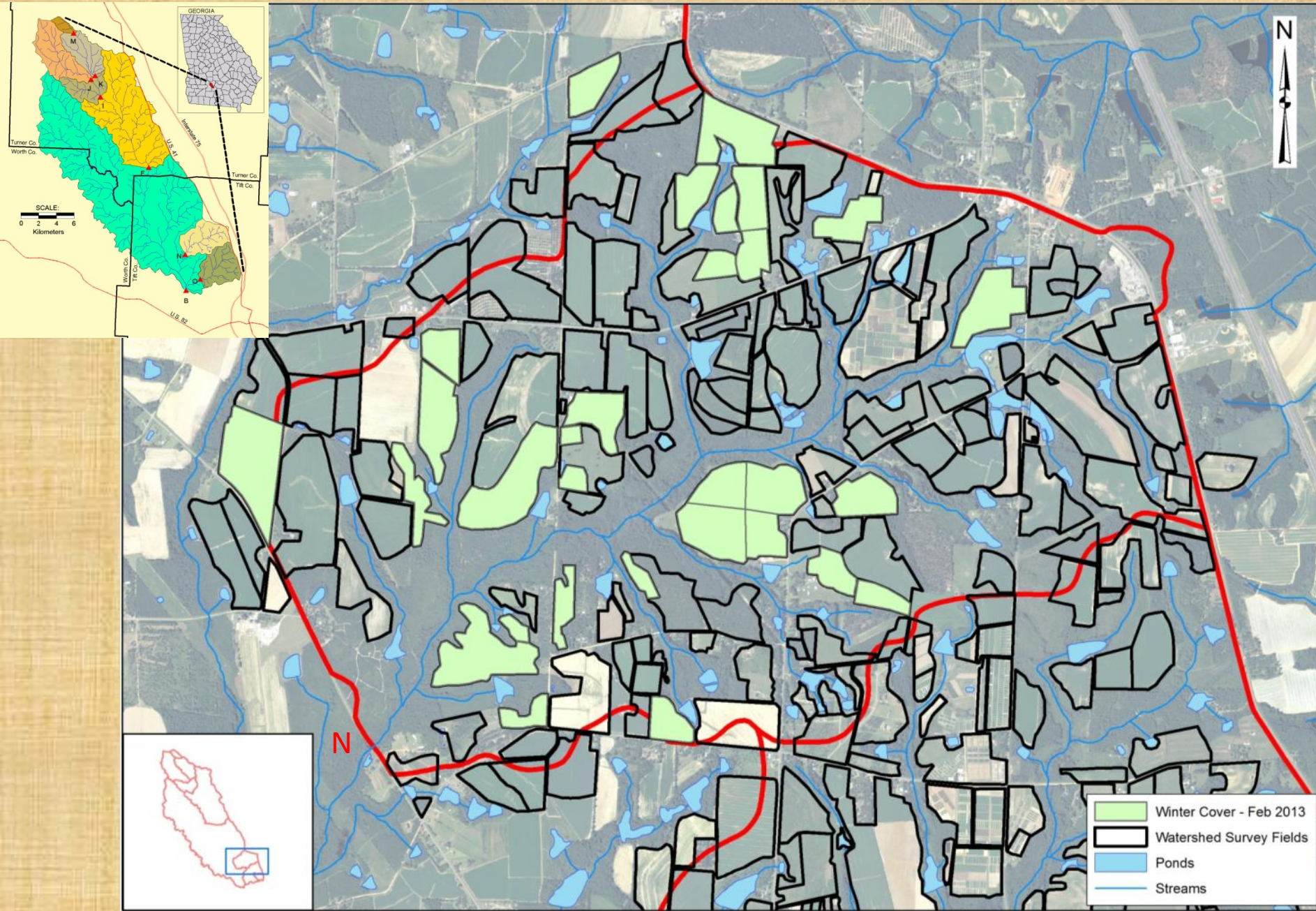


Dominant Practices, 1980-2006

% of Total Practices



Winter Cover Crops – Watershed N



Winter Cover

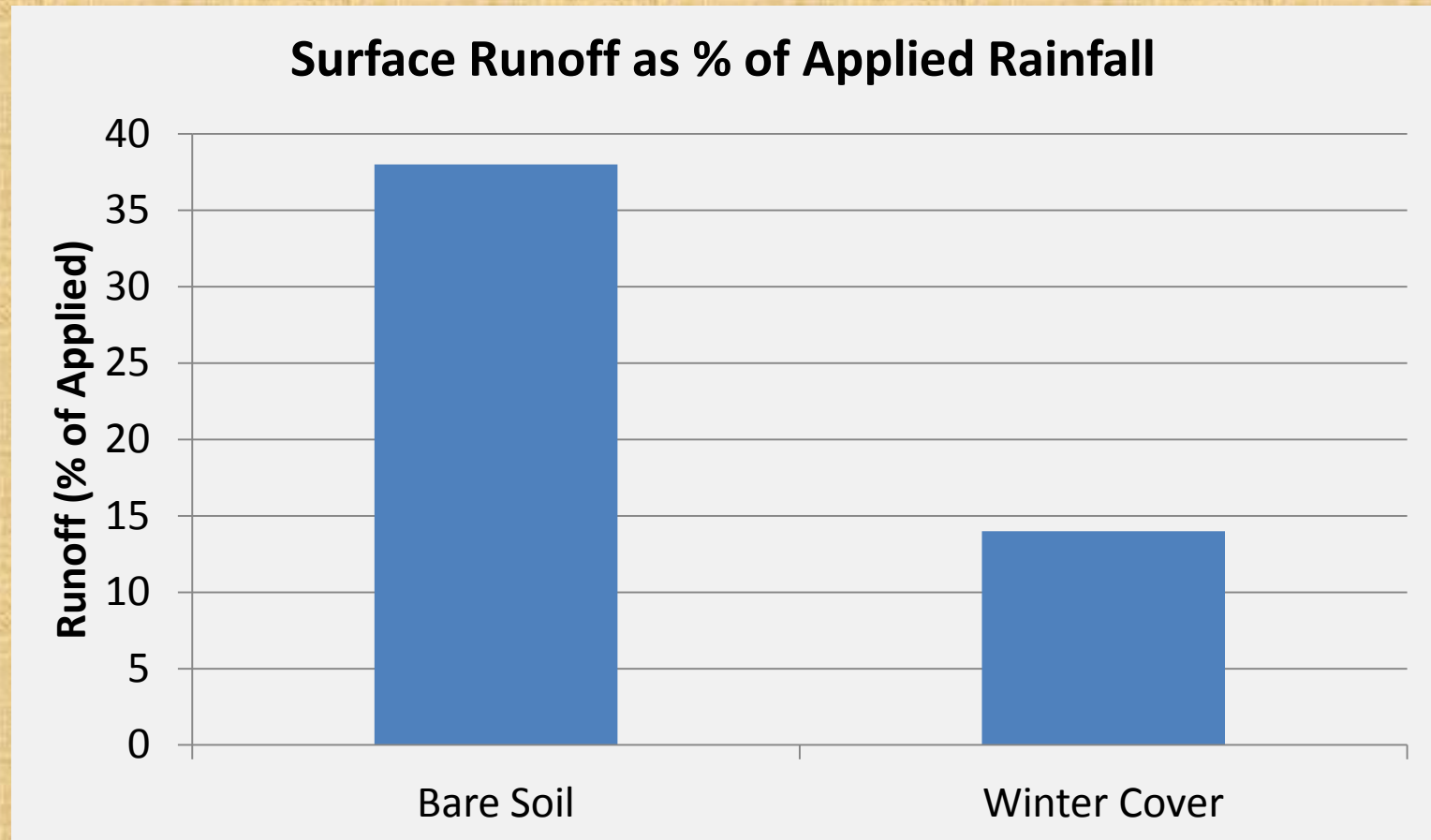
- Enhanced Infiltration
- Reduced Runoff (?)
- Reduced Erosion



Winter Cover

-Enhanced Infiltration

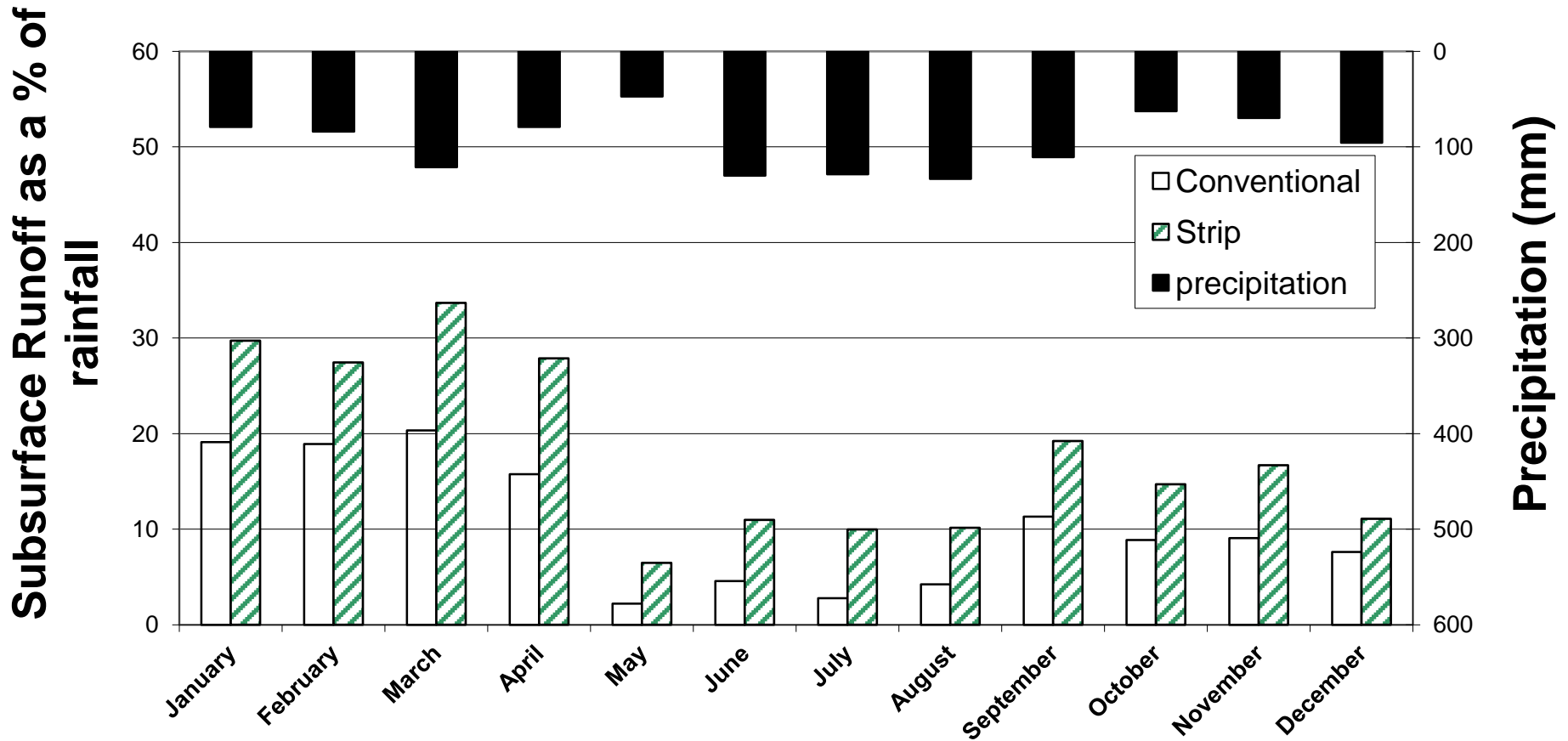
-Reduced Runoff (63% reduction in surface runoff)



Winter Cover

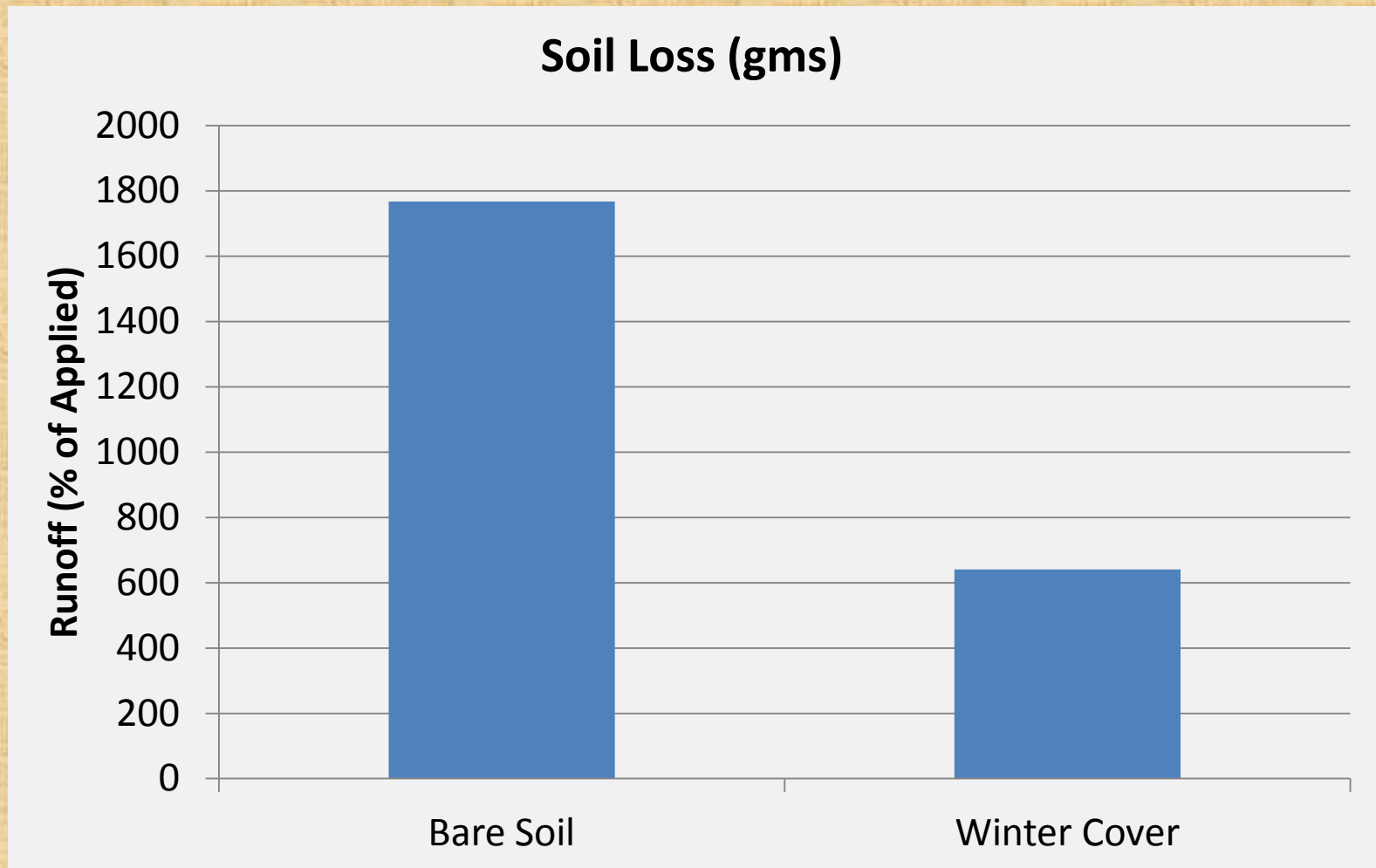
-Enhanced Infiltration

-*Increased subsurface Runoff*



Winter Cover

-Reduced Erosion (64% reduction in soil loss)



Winter Covers



Riparian Buffers and Marginal Lands

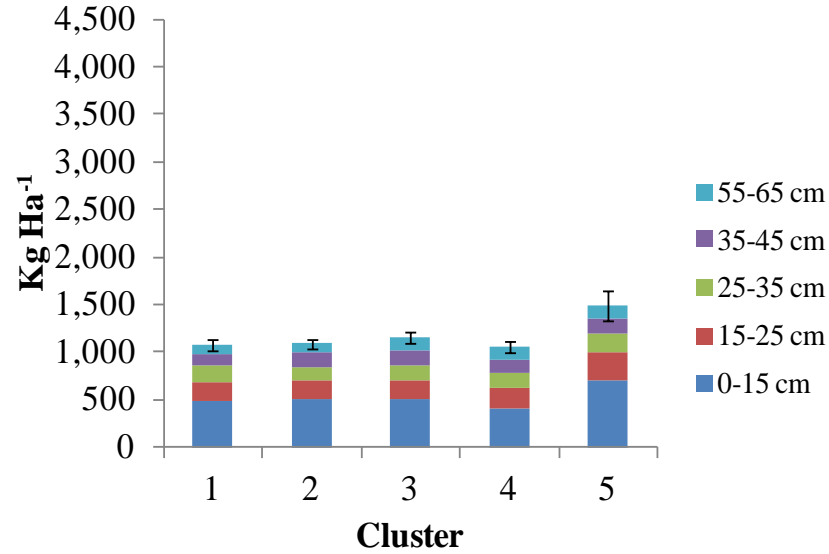


Annual Feedstocks in Cropping Rotations

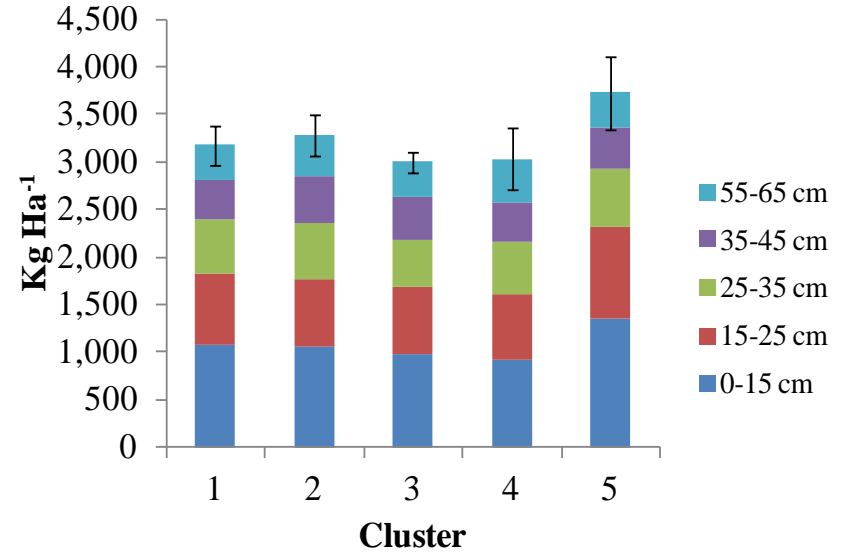


3 yrs of conservation practices

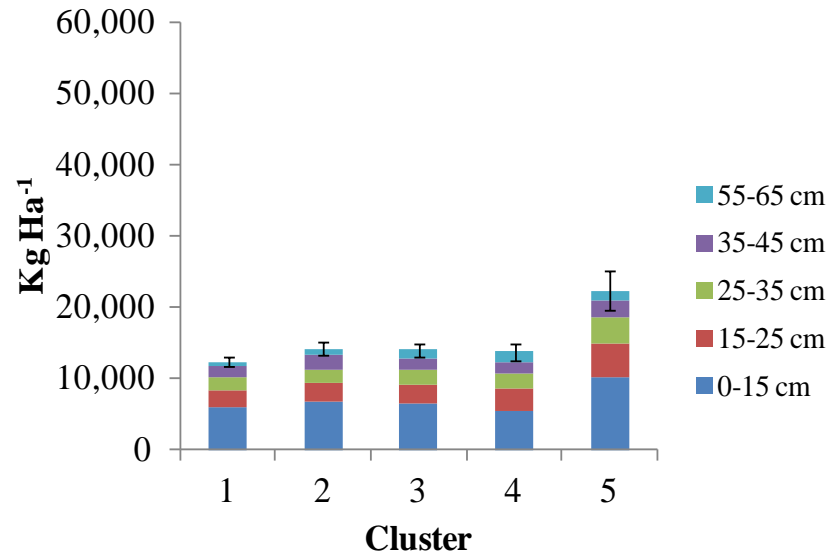
Nitrogen - 2008



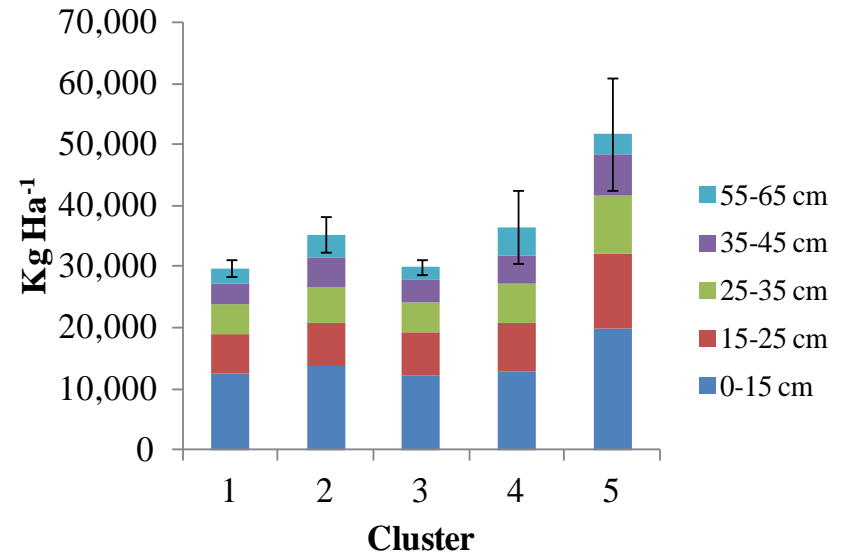
Nitrogen - 2011



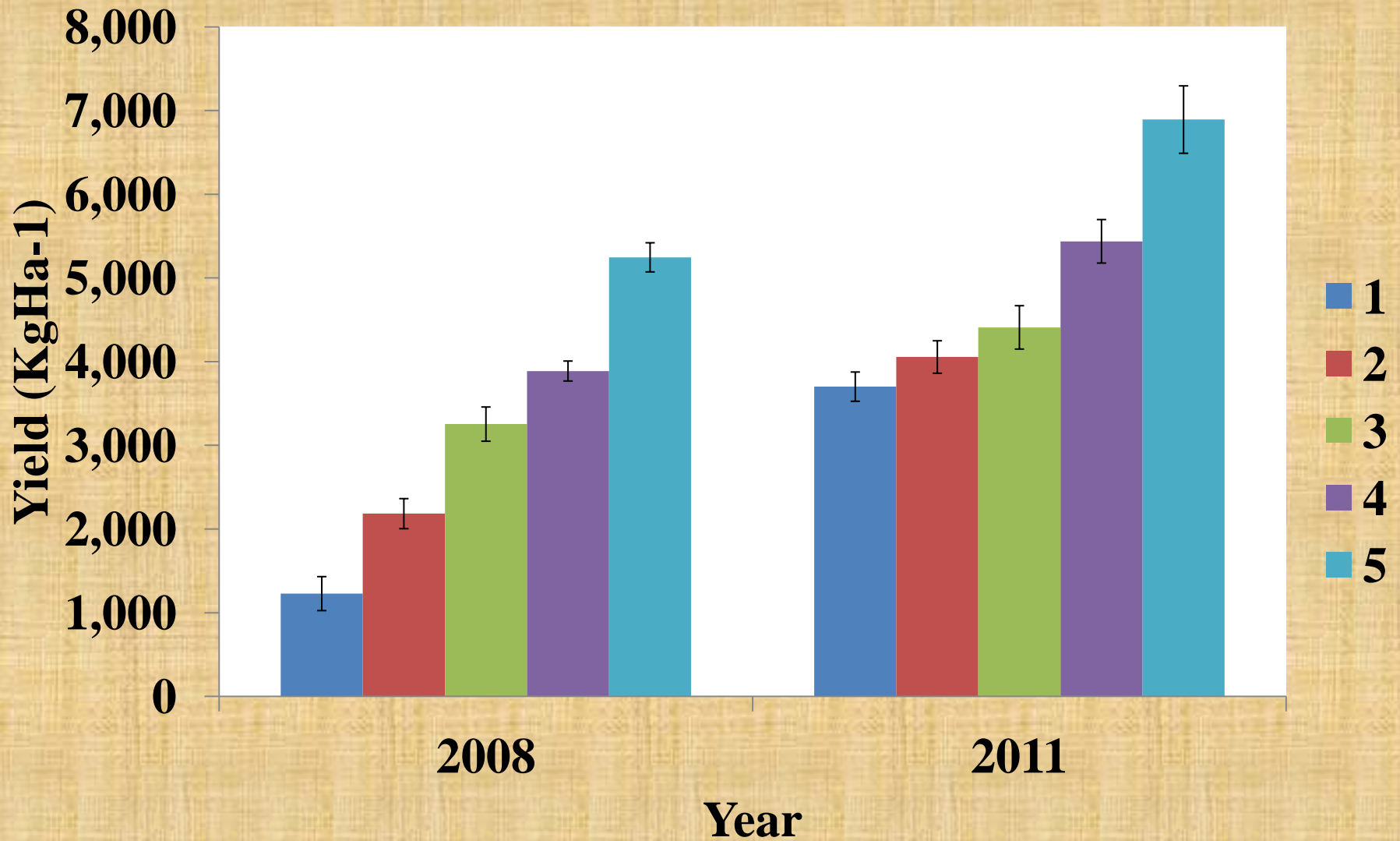
Carbon - 2008



Carbon - 2011



Corn Yield by Management Cluster



Watershed Scale Modeling

Findings

- *Riparian buffers* offer most comprehensive reduction in sediment, phosphorous, and nitrogen
- Existing riparian buffers yield a 75% reduction in sediment load, a 32% reduction in nitrogen load, and a 76% reduction in total phosphorous load
- Further increases in riparian buffer acreage would only yield additional reductions of approximately 5% for these constituents

Cho, J., G. Vellidis, D.D. Bosch, R.R. Lowrance, and T.C. Strickland. 2010. Water quality effects of simulated conservation practice scenarios in the Little River Experimental Watershed. Journal of Soil and Water Conservation Society. 65(6):463-473.