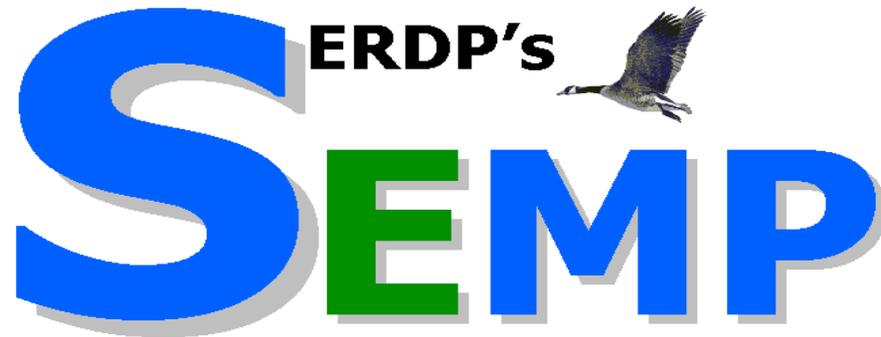




01 TARA Review

ERDP's SEMP



Ecosystem Management Project

Dr. Harold Balbach

US Army ERDC

Champaign, IL



**US Army Corps
of Engineers®**



01 TARA Review

Key Properties and Processes

(Form the Basis for SEMP Research)

- Those for which fundamental understanding is required to ensure goals of sustainability can be met
 - Hydrologic flux and storage
 - Biological productivity
 - Biogeochemical cycling and storage
 - Decomposition
 - Maintenance of biological diversity

(Christensen, N.L. et. al. 1996. The Report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Ecological Applications 6(3):665-691.)



01 TARA Review

Technical Advisory Committee for SEMP

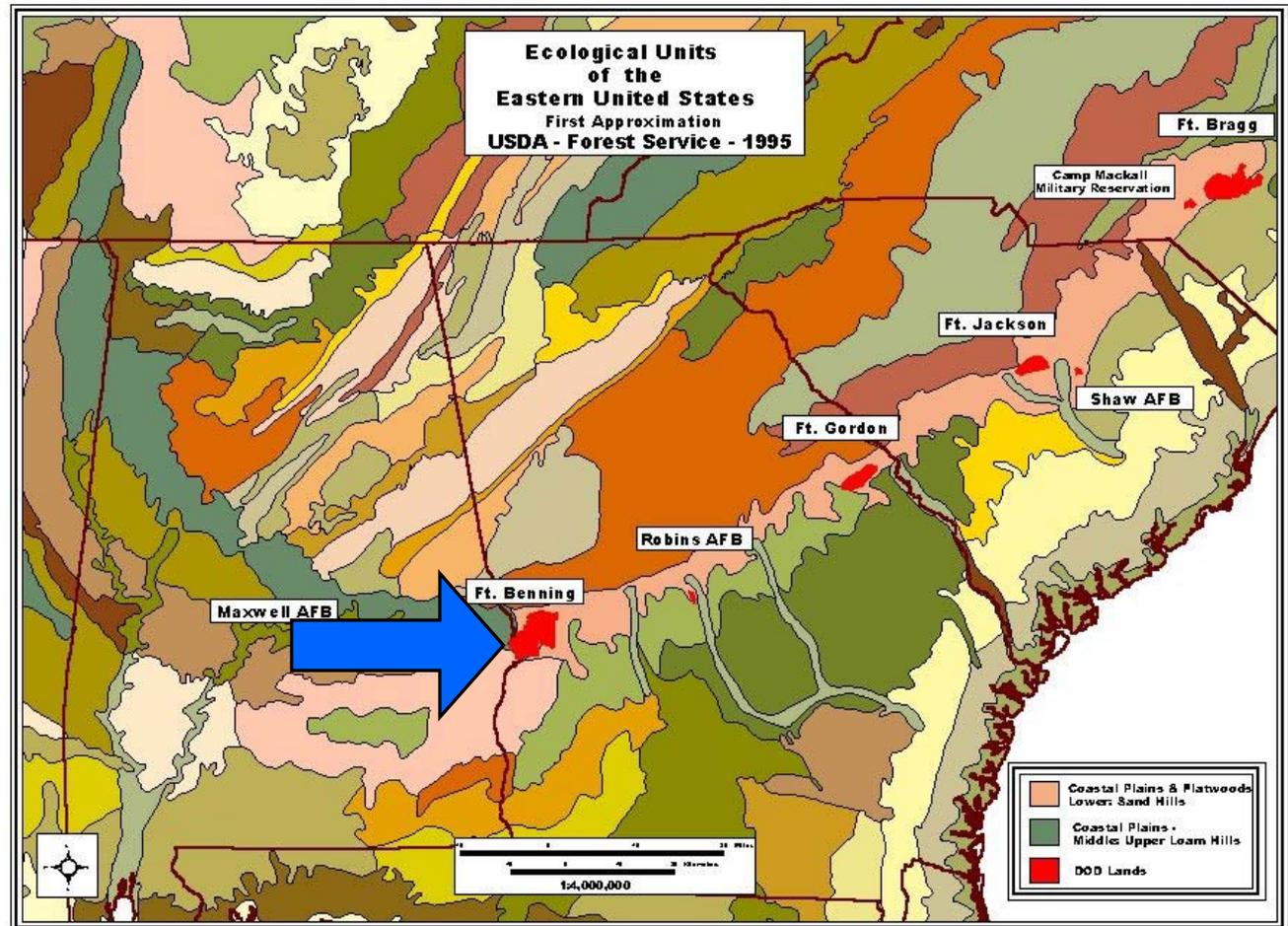
- Dr. Mary Barber, Ecological Society of America, SAB Member
- Mr. Peter Boice, Director of Conservation Programs, Deputy Undersecretary for Defense, Environmental Security, TTAWG Member
- Dr. Roger Dahlman, Program Manager, U.S. Department of Energy, TTAWG Member
- Dr. Mark Fenn, U.S. Department of Agriculture, Forest Service
- Dr. Penny Firth, National Science Foundation
- Dr. John Hall, The Nature Conservancy
- Mr. Richard McWhite, Natural Resources Chief, Eglin Air Force Base
- Dr. Doug Ripley, Headquarters, Air Force, TTAWG Member
- Dr. James Spotila, Drexel University
- Dr. J. Whitfield Gibbons, Savannah River Ecology Lab and University of Georgia



01 TARA Review

Southeastern Ecosystem Focus Desired: Fort Benning Volunteers to Host the Project

- Ft. Benning spans two major systems: Sand Hills and Coastal Plain
- Both support many DOD facilities
- Excellent opportunity to extend knowledge to other sites





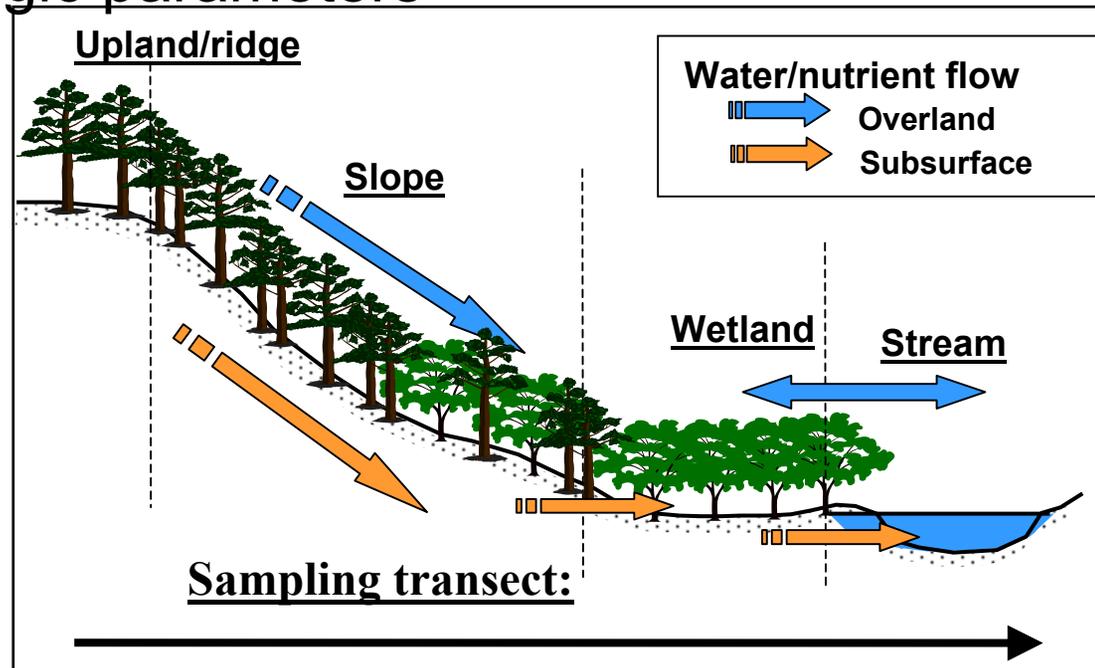
01 TARA Review

Determination of Indicators of Ecological Change

University of Florida (and Purdue University) –

PI: W. DeBusk

- Hillslope Hydrology - 2 sub-watersheds studied
- Data collection - hydrologic parameters
- Biogeochemical sampling at 300 sites
- Analysis of soil chemistry and microbiology





01 TARA Review

Development of Ecological Indicator Guilds for Land Management

ERDC/Embry-Riddle – PI: A. Krzysik and H. Balbach

- Conducted intraproject “workshop” of all PIs
- Examined developmental instability, including photosynthetic responses
- Surveyed terrestrial invertebrates and fishes
- Installed 36 lysimeters and 6 slope profilometer arrays
- Examined bacterial and fungal diversity at these sites



EMBRY-RIDDLE
Aeronautical University



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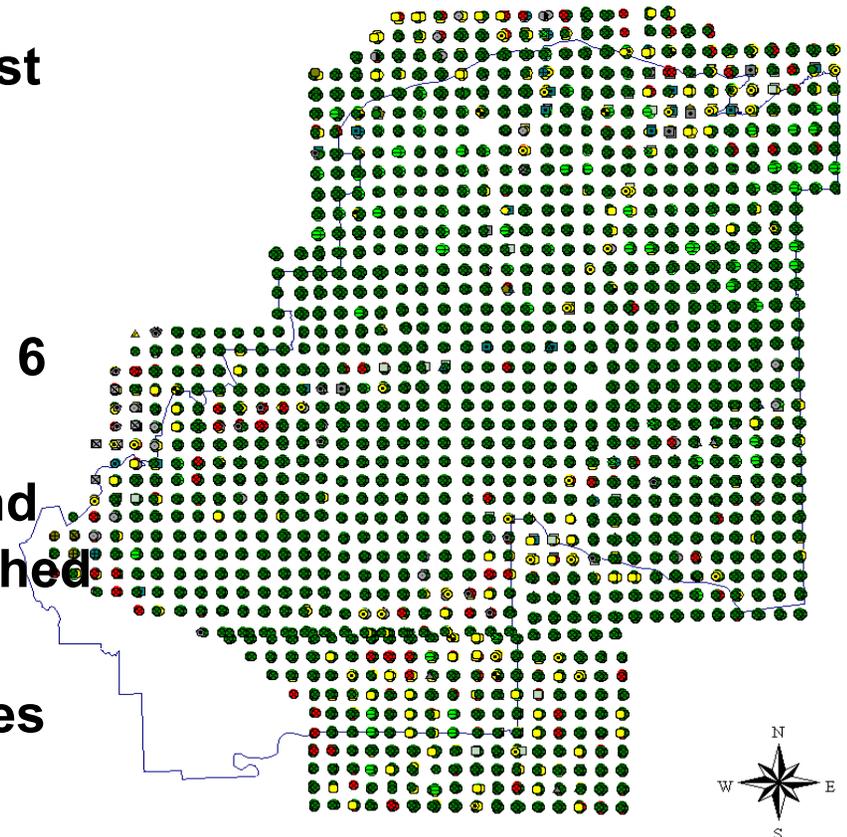
Indicators of Ecological Change

orn1

Oak Ridge National Laboratory – PI: V. Dale

- Corrected and completed 1827 forest cover map
- Processed storm-affected stream samples
- Resampled benthic invertebrates in 6 streams
- Analyzing understory vegetation and soil microbiology from plots established in different disturbance types
- Utilizing alternate statistical analyses appropriate to multivariate systems

Ft. Benning 1827 Vegetation Map





01 TARA Review

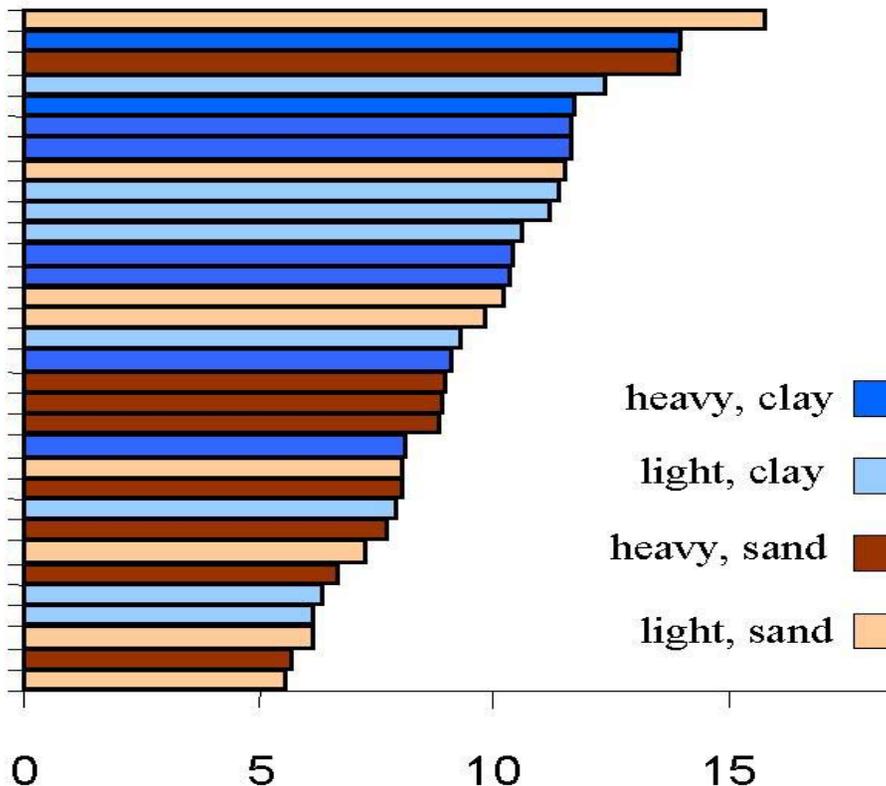
Thresholds of Disturbance: Land Mgmt Effects on Vegetation and Nitrogen Dynamics



The University of Georgia

Savannah River Ecology Laboratory

Ground Layer Richness



University of Georgia (SREL) PI: B. Collins

Identified sites,
 Baseline vegetation survey
 Sampled soil texture to determine if
 selected sites were accurately
 categorized
 Conducted disturbance survey to
 determine the pre-treatment impact
 of land use in each site
 Upland mixed pine-hardwood sites
 subjected to prescribed burning
 during winter 1999-2000 were
 chosen



01 TARA Review

Disturbance of Soil Organic Matter and Nitrogen Dynamics: Implications for Soil and Water Quality

Oak Ridge National laboratory

PI: C. Garten



- Analyzed soil samples from 40 sites under 5 land covers; correlated with V. Dale's study
- Emphasis on:
 - C:N ratios
 - Particulate OM
 - N mineralization potential
 - Soil aggregate stability
- LU/LC correlation will require measure of military use/impact



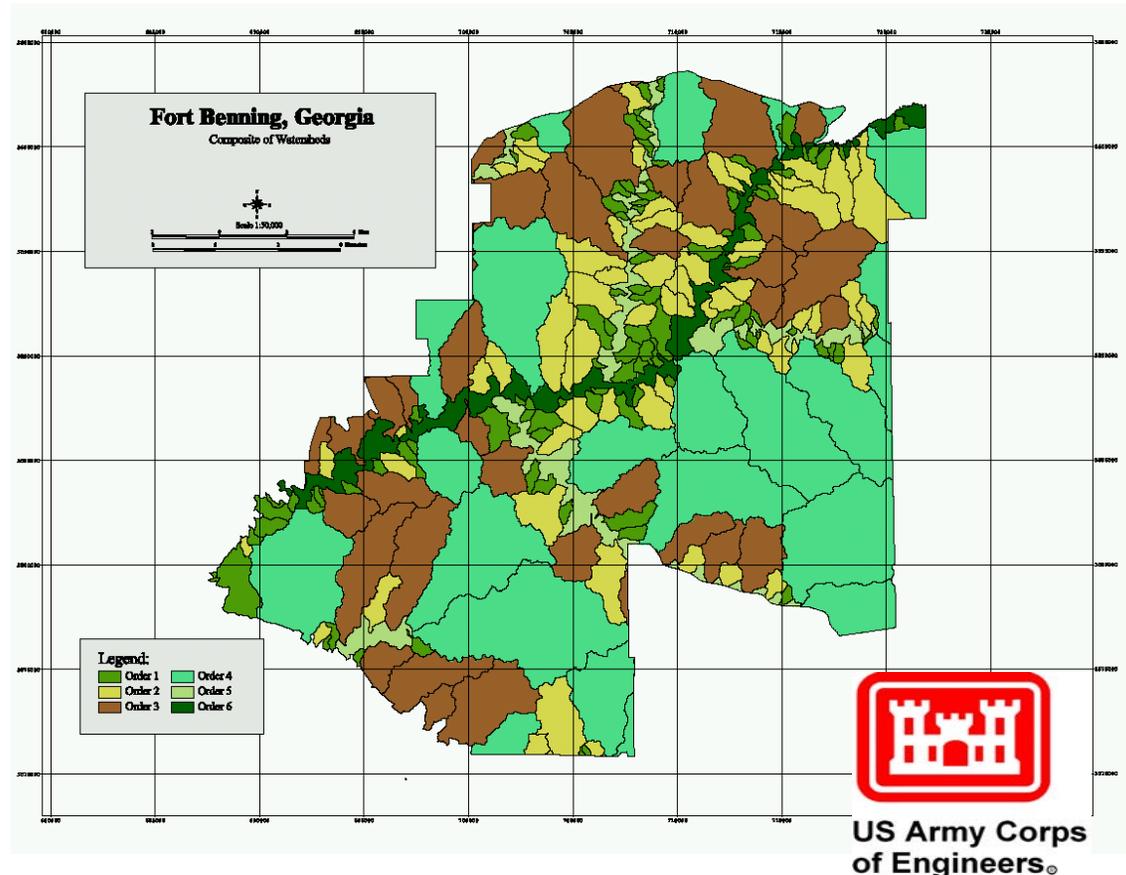


01 TARA Review

Environmental Characterization and Monitoring Initiative

PI: R. Kress

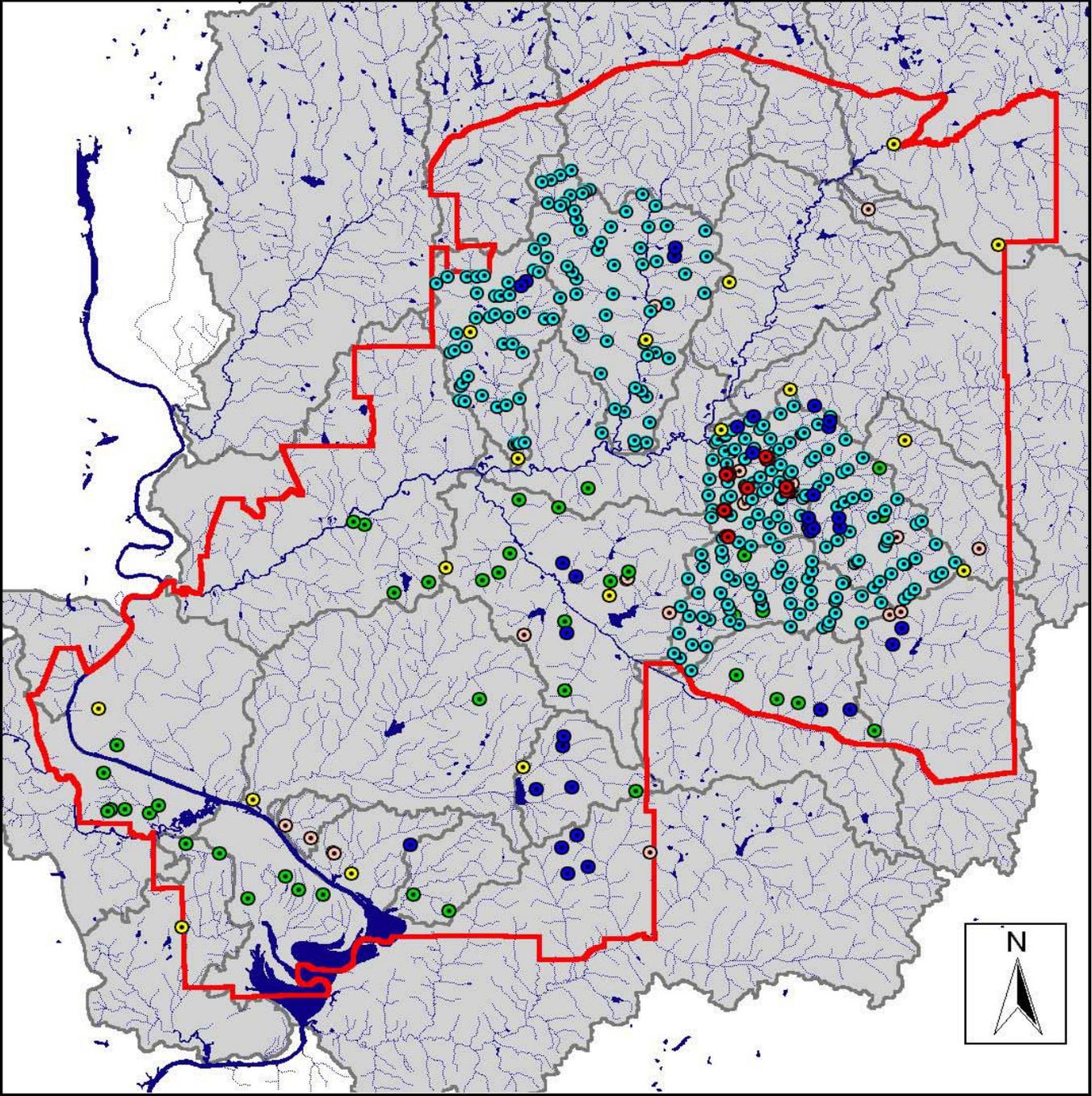
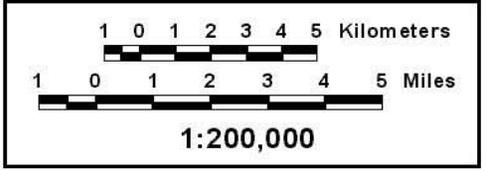
- Inventory and Document Existing Data and On-going Monitoring Programs
- Design the Baseline Monitoring Program
- Implement the Baseline Monitoring Program
- Establish and Maintain a Data Repository
- Adapt the Monitoring Program



US Army Engineer Research and Development Center

SEMP Field Site Locations Fort Benning, GA

- SEMP Research Sites**
- CERL
 - ECMI
 - ORNL2
 - ORNL1
 - SREL
 - UFLG
- Current as of 09NOV00





01 TARA Review

Along the Fall Line Workshop

- Savannah River Ecology Lab (SREL) Hosted this Workshop
- Held March 6-7, 2001
- 50+ persons from 30+ installations and groups
- Focus of Meeting
 - Share ecosystem management approaches and technologies among participating land managers
 - Explore potential for shared ecoregional planning along the fall line
- Informal groups created to follow up on needs and interests