

Dr. Amelia K. Ward
Professor, Department of Biological Sciences
Director, Center for Freshwater Studies
University of Alabama
Tuscaloosa, AL



Mobile River Basin

112,000 km²

Ancient

Geologically diverse

Biologically diverse

Dissertation: W.K. Kellogg Biological Station, Michigan State University

Interactions of carbon and nitrogen metabolism with changing light intensity in natural populations and cultures of planktonic blue-green algae

Ward and Wetzel 1980: Interactions of light nitrogen source among planktonic blue-green algae

Compared atmospheric nitrogen, nitrate-N, and ammonium-N as sources of N for *Aphanizomenon flos-aquae*, *Microcystis aeruginosa*, and *Anabaena flos-aquae*

Ammonium always resulted in highest growth

***Microcystis* grew well on both nitrate and ammonium**

Lowest light intensity at which growth could occur determined by N source

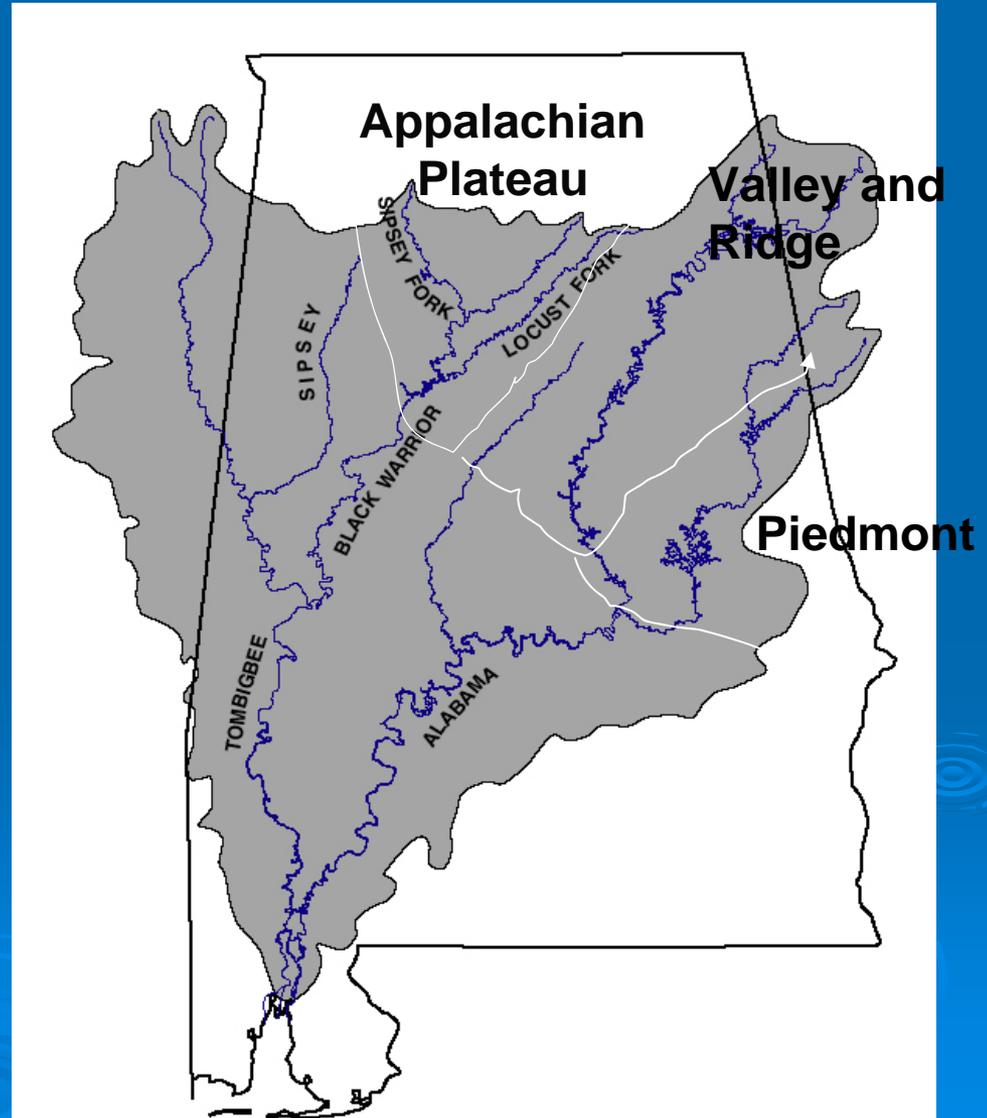
Interdisciplinary Projects in Mobile River Basin

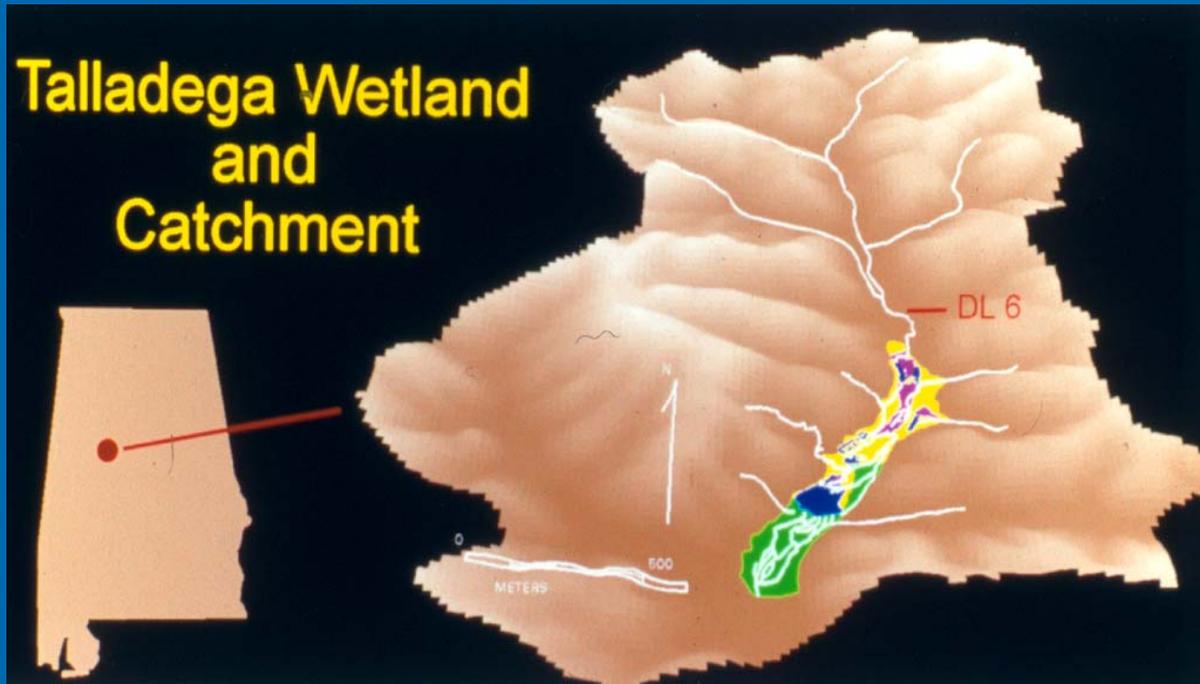
Effects of geology on
stream ecosystems

Talladega Wetland
Ecosystem: Evaluation
as land-water interface

Mercury in the Mobile
River Basin: Linking
science with social
assessment

Sipsey River: Main
channel/floodplain
interactions





- 384 ha catchment
- Mixed deciduous/conifer forest
- beaver impounded lotic wetland (15 ha)

Major Rivers

Upper Tombigbee

Lower Tombigbee

Black Warrior

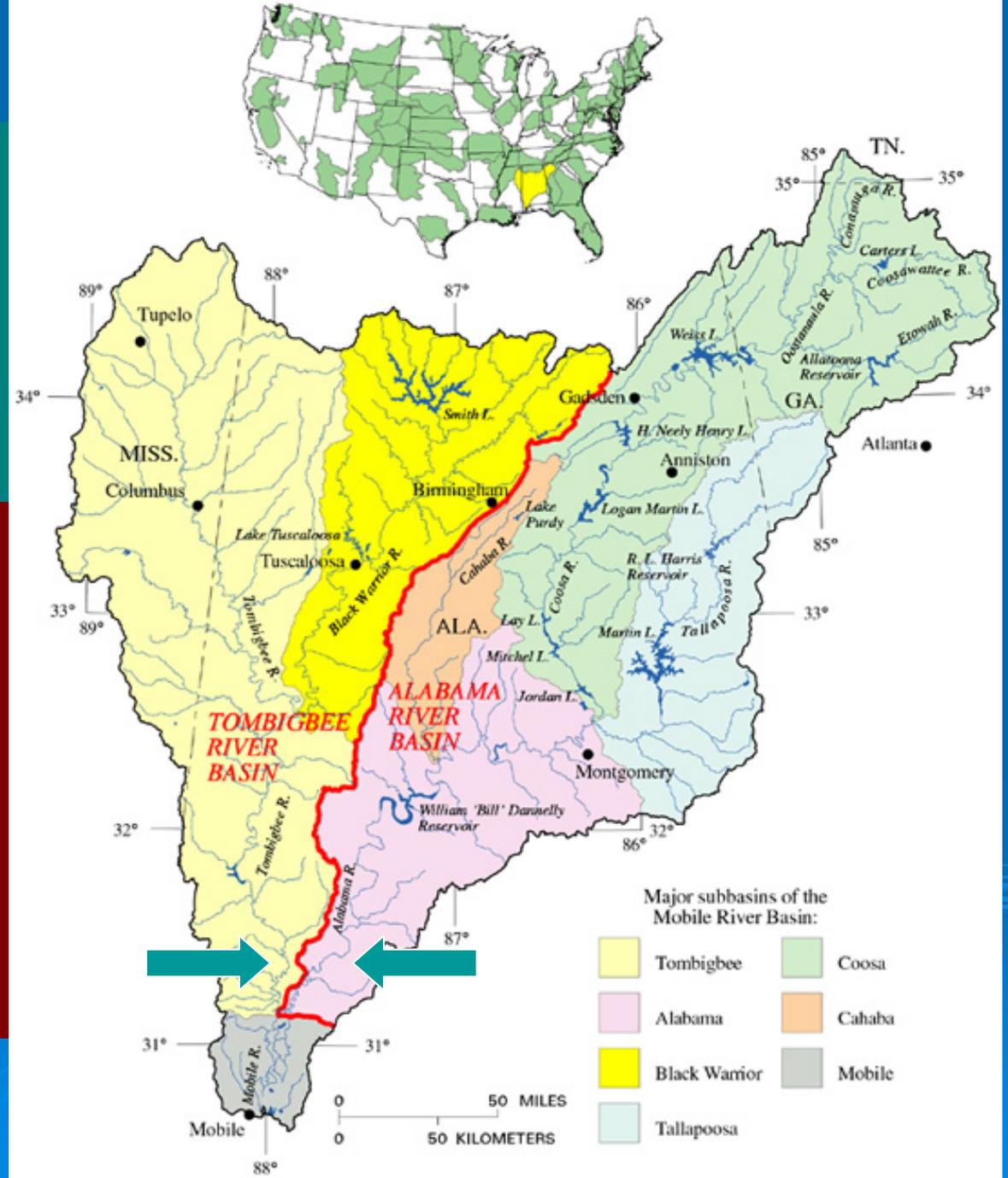
Cahaba

Coosa

Tallapoosa

Alabama

Map from USGS
Nawqa website



Summary

Interaction of N source, light, and cyanobacteria

Nitrogen fixation in Oregon streams

Nitrogen cycling, transport and fate in southeastern wetlands

Nitrogen flux and retention in medium to large rivers

