



ENVIRONMENTAL & WATER PROGRAMS

at Kentucky State University –
College of Agriculture, Food Science, and
Sustainable Systems



Dr. Maifan Silitonga
Associate Dean
400 E. Main Street, Frankfort, KY 40601
maifan.silitonga@kysu.edu

Kentucky
Agricultural
Science and
Monitoring
Committee

Executive
Meeting

Murray State
University
Freed Curd
Auditorium

Martha Collins
Industry and
Technology
Center

July 23-24, 2013

ACADEMIC

- **Division of Environmental Studies and Sustainable Systems**
- **Degree in Masters in Environmental Studies**

■ **Relevant Courses:**

- Environmental Hydrology
- Watershed Assessment
- Environmental Soil Toxicology
- Introduction to Geographic Information Systems
- Remote Sensing and Environment
- Application of Remote Sensing in Natural Resources
- Climate Change Studies
- Soil Science
- Bioremediation
- Environmental Policy and Regulations
- Environmental Risk Assessment and Management

RESEARCH AREAS

- **Soil and Water sub-surface transport**
 - Nutrient leaching
 - Pesticide leaching
- **Watershed Assessment and Education**
 - Physical, Chemical, and Biological (pathogens: total coliform and E. coli, chlorophyll, and Heavy metals)
- **Environmental Ecology & Limnology**
 - Bioindicators to measure environmental impacts
 - Aquatic bioindicator for water pollution
- **Application of GIS in Watershed Assessment and Management**
 - Landuse/land cover assessment



EXTENSION AND OUTREACH

■ Water Conservation and Preservation

- 40 gallon challenge
- Rain water harvesting

■ Watershed education

- Non-point Source Pollution
- Groundwater & Hydrology

■ Drinking water and human health

- Bottled water vs. tap water (regulations, chemical contents, etc.)



CAFSSS INSTITUTIONAL CAPABILITY

- Agriculture Experiment Station – Research and Demonstration Farm
- KY River Interpretive Center (Old Federal Building – Downtown)
- Environmental and Aquatic Science Vessel
- Environmental Education and Research Center
 - Henry County, 300 acres + adjacent property, funded by the KY Heritage Board about 352 ac.



INSTRUMENTATIONS

■ YSI Sonde Environmental Monitoring System

- Temperature
- Conductivity
- Salinity
- Specific Conductance
- Depth
- TDS
- Shallow Vented Level
- Optical Dissolved Oxygen, Blue-green Algae, Turbidity, Chlorophyll or Rhodamine



■ Thermo Scientific Portable X-Ray Fluorescence (XRF)

- Site characterization and conceptual site modeling
- Risk assessment
- On-site clearance screening
- Soil stabilization
- Remediation quality control



EDDY FLUX



KY RIVER INTERPRETIVE CENTER



KY INTERPRETIVE CENTER

TO THE FUTURE

River Dimensions Overlay

Postmaster's Office

Action Center
with the action

Action Center

Interactive Kiosk

ENVIRONMENTAL AND AQUATIC SCIENCE VESSEL

