

# Coastal Plain Agricultural Research Cluster Tifton, GA

- **Crop Genetics & Breeding**
- **Crop Protection & Management**
- **Southeast Watershed Research**

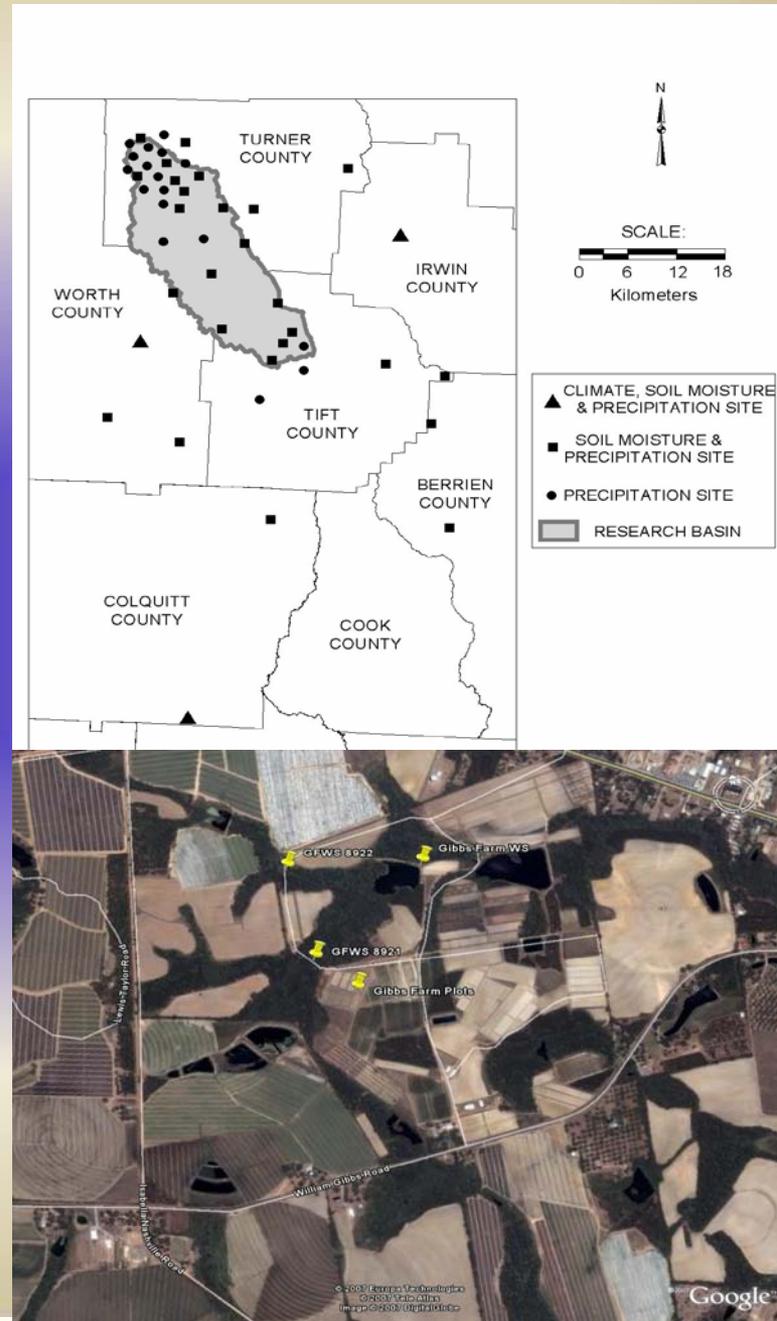


**Agriculture Research Service  
United States Department of Agriculture  
South Atlantic Area**



# Resources Contributing to Agroforestry Management

- Located in highest NPP region of the U.S.
- Facilities and Land: 160,000 Sq. Ft. of buildings, labs, barns and greenhouses along with three leased farms including Belflower (55 acres), Sanders (15 acres), and Jones (24 acres).
- Research laboratories equipped for genetic marker selection, insect breeding, nutrient and pesticide analysis, and soil analysis.
- Watershed hydrology and chemistry monitoring network that includes 46 rain gage sites, 29 with soil moisture and temperature measurements, 3 with instrumentation for estimation of potential evapotranspiration.



# Scientists Who Could Contribute to Agroforestry Management

## **Entomology/Insect Management:**

- Dawn Olson, Glynn Tillman, Jim Carpenter

## **Plant Pathology/Nematology:**

- Patti Timper, Richard Davis

## **Weed Science:**

- Carroll Johnson, Ted Webster

## **Agronomy and Crop/Grass Breeding:**

- Brain Scully, Corley Holbrook, Bill Anderson, Baozhu Guo, Xinzhi Ni, Jeff Wilson, Karen Harris

## **Water Quantity, Quality, and Ecosystem Modeling:**

- David Bosch, Richard Lowrance, Tom Potter, Reza Savabi

## **Soil Science and Carbon Accretion:**

- Bob Hubbard, Clint Truman, Tim Strickland

## **Specialty Crops/ IR4:**

- Tom Hendrix

# Biomass Accomplishments – Tifton, GA

No fertilizer or irrigation, Planted 2005

Species	Genotype	DM yield (kg/ha) 2006	DM yield (kg/ha) 2007
Napiergrass	N 51	34,600 a	23,400 a
Napiergrass	Merkeron	28,500 b	25,400 a
Energy Cane	L 79-1002	27,100 b	21,700 a
Switchgrass	GA-993	8,800 c	11,200 b
Switchgrass	GA-001	8,600 c	10,800 b
Giant Reed	ADF	6,700 c	10,800 b
Giant Reed	ADE	6,500 c	10,300 b
Giant Reed	ADS	5,000 c	7,300 b

## Existing experiments:

- Selection shade tolerant perennial grasses
- Napier grass fertilization trials
- Napier grass as the first row of riparian buffers.



# Complimentary Collaboration/Resource Needs

## **Agroforesters:**

As multiple and mixed cropping system models are explored and new crops integrated into these systems intensive research will be needed to determine the most productive, most profitable and most environmentally sound production practices. This will require intensive collaborative research by agronomists, foresters and agroforesters with other disciplines.

## **Economists/Economic Modeling:**

Opportunities exist in modeling tradeoffs between production potentials, conservation payment/credits options, shifts in water demand/cost, impacts to wildlife and associated recreational income, transport versus energy yield cost balances, and regional economic sector shifts/impacts.

## **Energy Yield/Conversion Analysis:**

We will need collaboration to quantify energy yield potentials from perennial grasses for comparison to typical woody species.

## **Remote Sensing:**

Will be needed to integrate production potential data with environmental impacts assessments, and to develop spatial analysis for integration with environmental and economic modeling.