



University of Florida

OVERVIEW OF WATER RELATED RESEARCH, EDUCATION AND EXTENSION PROGRAMS

DEVELOPING INNOVATIVE KNOWLEDGE AND SOLUTIONS FOR A SUSTAINABLE AND EQUITABLE WATER FUTURE



Mission: to build a diverse community that conducts interdisciplinary research, education and outreach to understand and solve complex water challenges

Goals

A photograph of a riverbank. In the foreground, there are several large, weathered tree stumps or roots protruding from the grassy bank. The river is calm, reflecting the surrounding green trees and foliage. The background shows a dense line of trees with bright green leaves, suggesting a spring or summer setting.

People: Foster strategic internal and external partnerships to accelerate water-related research, education, and outreach programs.

Knowledge: Deliver high-impact, interdisciplinary research and education programs that confront critical water challenges at state, national, and global levels.

Action: Inform water management through actionable research, expert guidance, and robust stakeholder engagement and outreach

Interdisciplinary Excellence

417 Affiliated Faculty

80 departments across 11 colleges.



**Interdisciplinary
Research
Projects**



**Peer Review
Services & Expert
Assistance**



**Scientist-
Stakeholder
Partnerships**



**UF Water
Scholars
Program**



**Biennial
Symposia**



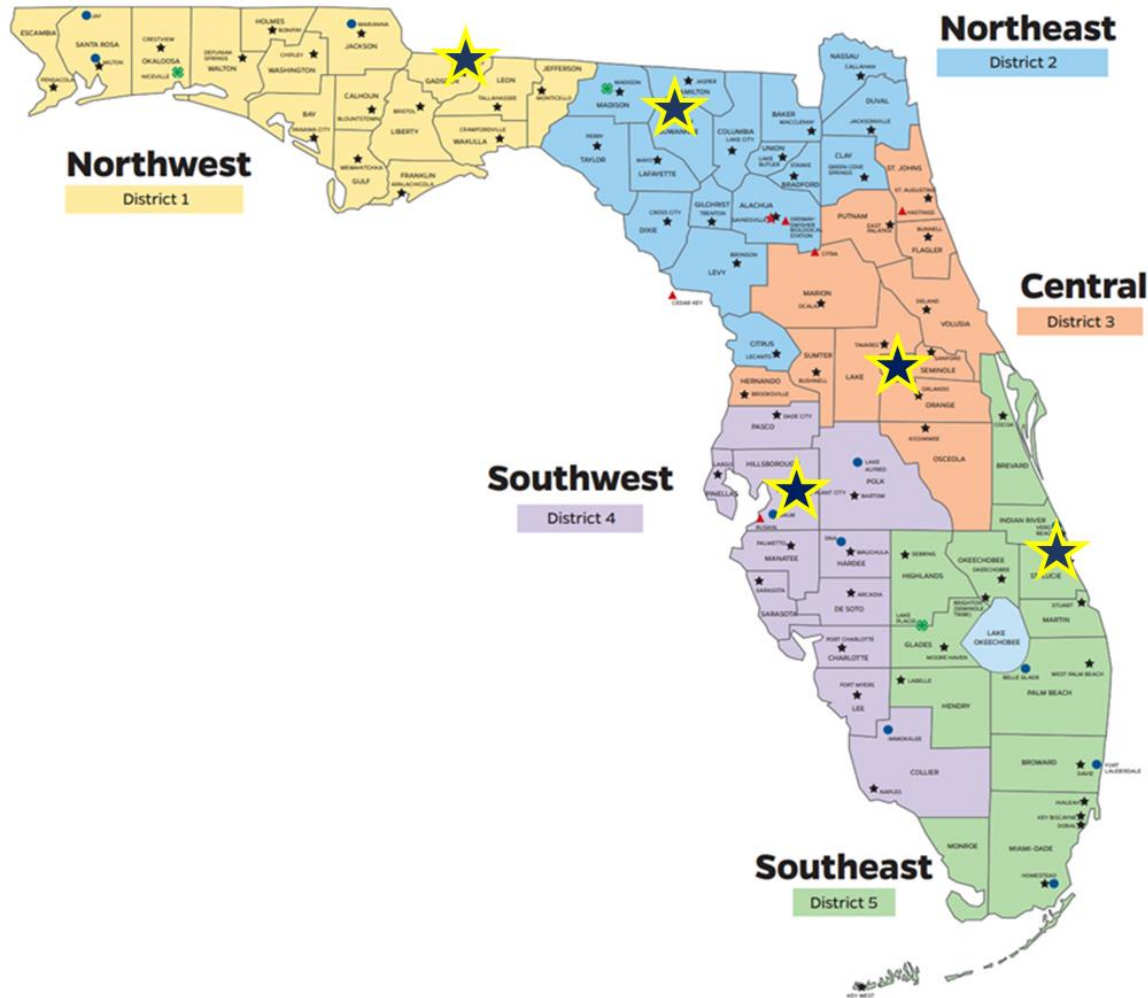
A PARTNERSHIP BETWEEN STATE, FEDERAL, AND COUNTY GOVERNMENTS TO PROVIDE **SCIENTIFIC KNOWLEDGE TO THE PUBLIC**

Initiative 2

Enhance and protect water quality, quantity, and supply



Water Resources Regional Specialized Agents



Create and Deliver: Develop engaging educational materials to inform and inspire communities about water resources.

Build Partnerships: Build Partnerships: Forge strong connections with federal, state, and local stakeholders to collaboratively tackle local and regional water challenges

Unite Efforts: Coordinate a statewide initiative to integrate and amplify successful water programs, enhancing water quality, quantity, and supply across regions.

Extension Water Programs





Providing **science-based solutions** to protect and conserve Florida's valuable water and other natural resources by promoting policies and practices that lead to measurable impact.

Research and Extension programs largely relate **to water quality and quantity and various best management practices (BMPs)** in the following areas:

- Agriculture
- Urban and suburban landscapes
- Large-scale development

Turning Research into Practice



Conduct research and educate on **how people form and act on opinions** regarding complex agricultural and natural resources issues.

Encourage informed decision-making in three important areas:

- Exploring emerging issues impacting food and agriculture
- **Advancing the responsible use of water and conservation of natural resources**
- Helping communities and organizations understand and adapt to changing agricultural and natural resources issues

Turning Research into Practice



Water-Related Projects



Impacting coastal communities

- Evaluated the response efforts of governmental agencies and nonprofit organizations after the 2010 Deepwater Horizon oil spill



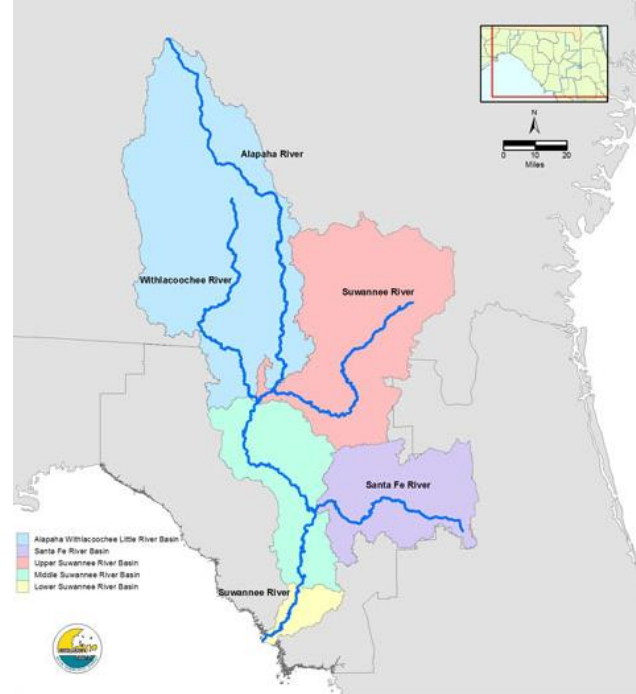
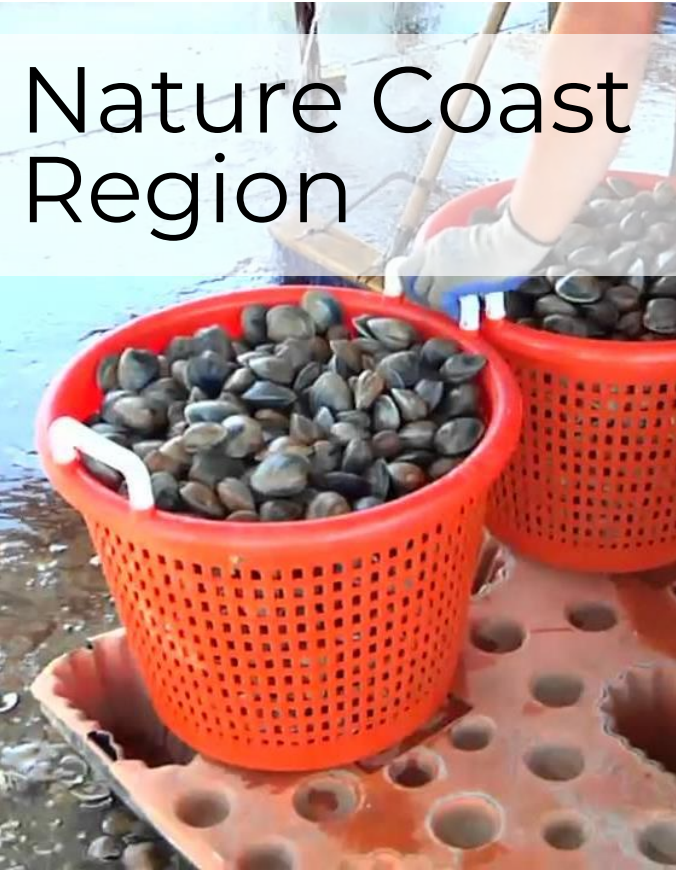
Increasing the awareness of and engagement in the use of water

- Impacted at least 9,000 homes in the Orlando area to alter their water use and landscaping policies

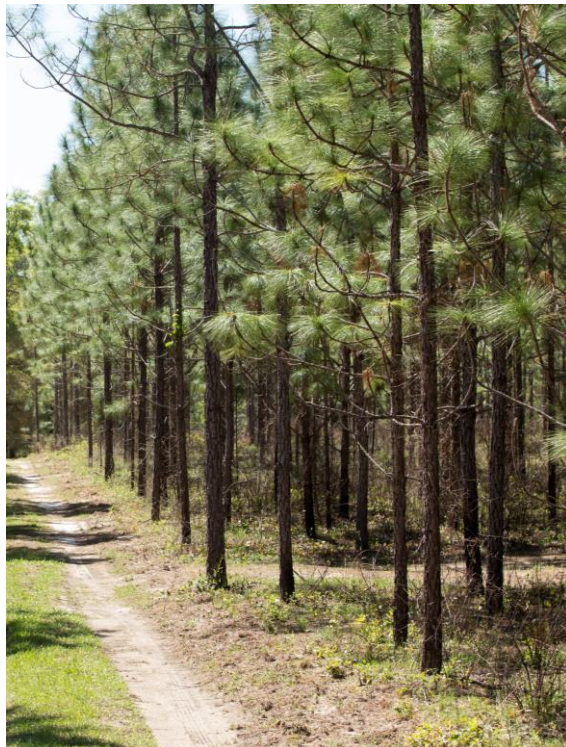
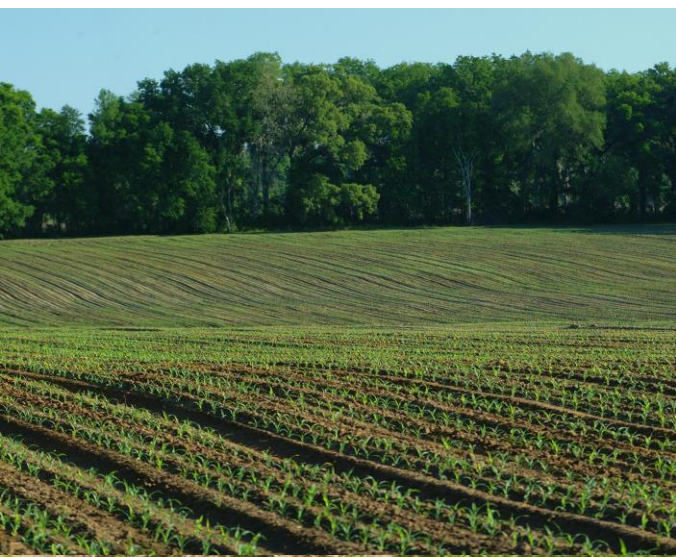


ENHANCING CONSERVATION THROUGH COLLABORATIVE RESEARCH AND EXTENSION

We conduct science and public outreach that can be used to improve the conservation and management of coastal and marine resources.



- Row Crop
- Agriculture
- Fisheries
- Forestry
- Shellfish
- Aquaculture
- Tourism
- Wildlife



NCBS Research Focus Areas



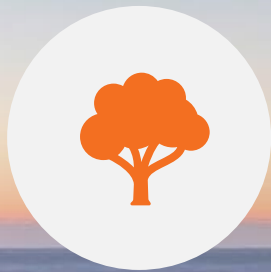
- Natural resource work including habitat (seagrass, oyster, salt marsh, mangrove)
- Fish and wildlife studies (sport fish, wading birds, reptiles, etc.)
- Shellfish aquaculture
- Living shorelines and coastal community resilience measures
- Impacts of land use and climate change on estuary natural resources – critical goal!

The Center for Coastal Solutions

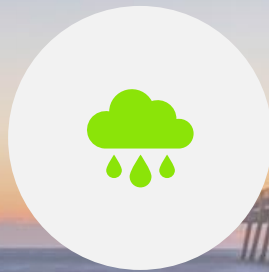
MISSION:

To develop and deliver the best available science and tools that support decision-making for a healthy and resilient coastal future.

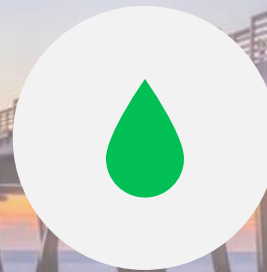
Research Pillars



NATURE-BASED
SOLUTIONS



FORECASTING
COASTAL HAZARDS



OPTIMIZING WATER
QUALITY DECISIONS



FLORIDA'S DIGITAL
TWIN



Areas of Expertise

\$27 M | 32 projects
51 partners | 140+ Pubs
21 Alumni | 40 Affiliates
**4 Novel Decision
Support Tools**

- AI | machine learning | supercomputing
- Advanced forecasting capabilities for tropical cyclones, red tide detection
- Earth system modeling, which incorporates physical, chemical, and biological processes
- Digital Twin technologies
- Radical collaboration toward solutions



Resources

- Robust field operations – boats, equipment, tools, experienced technicians
- Diverse multidisciplinary expertise
- Strong network of partners / collaborators
- In-house technical, project management and stakeholder engagement expertise
- Effective communications and products, including newsletter & social media channels
- Professional facilitation & event management



Florida Sea Grant



Mission:

“... to support *integrated* research, education and extension to conserve coastal resources and enhance economic opportunities for the people of Florida”

National Focus Areas

Leverage expertise of coastal and ocean scientists through Campus Coordinators at 19 universities and research laboratories across the state



Healthy Coastal Environments



Sustainable Fisheries & Aquaculture

34 Affiliate Faculty
21 Extension Agents
17 Campus coordinators



Resilient Communities & Economies



Environmental Literacy & Workforce Development



BEBR

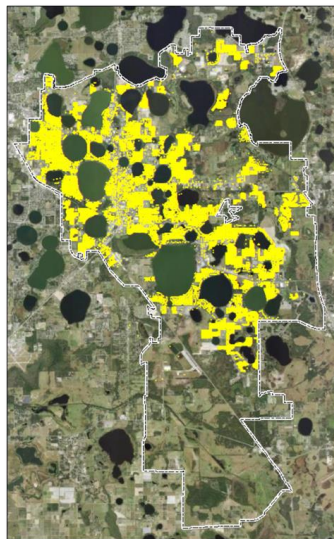
Bureau of Economic and
Business Research

- Conducts **economic, demographic, survey, and social network research** that will inform public policy and business decision-making
- Produces official **population estimates & projections** for Florida
- Conducts Monthly Statewide **Consumer Attitude Surveys**

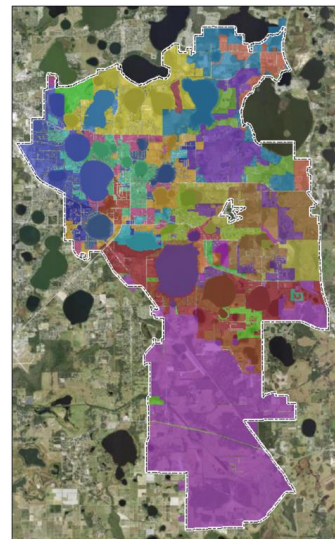


BEBR Water Resource Modeling Expertise

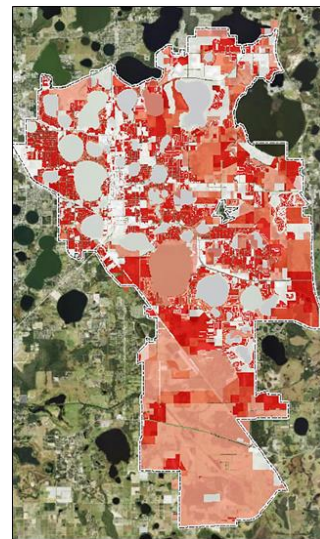
- Population Growth and Water Demand Forecasting
- Utility Customer Geocoding & Data Mining
- Water Supply Planning & Water Use Permitting Support
- Water Conservation Tools, Databases & Studies
- 30+ years of forecasting, GIS, database, and expert witness services for Florida's Water Management Districts and utilities



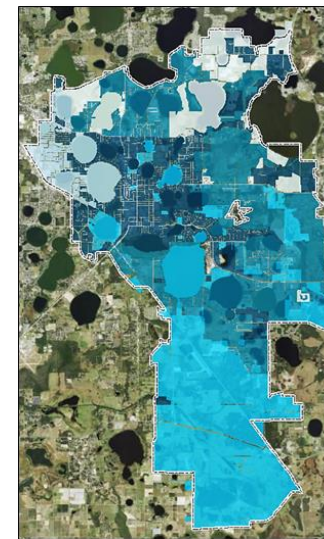
Customer-level Water Use Mapping



Neighborhood-level Water Conservation Demographic & Economic Analyses



2070 Population Forecast (Property Parcels)



2070 Water Demand Forecast (Property Parcels)

University of Florida



UF | Water Institute
UNIVERSITY of FLORIDA

UF | IFAS Extension
UNIVERSITY of FLORIDA

UF | IFAS
UNIVERSITY of FLORIDA

 | **CLUE** | CENTER FOR LAND
USE EFFICIENCY

 Center for
Public Issues
Education

UF | IFAS
UNIVERSITY of FLORIDA

 | NATURE COAST
BIOLOGICAL STATION



 **Sea Grant**
FLORIDA

UF | **BEBR**
Bureau of Economic and
Business Research

Questions?