



Extension and the Climate Change Challenge: Providing Climate Services to Citizens and Communities

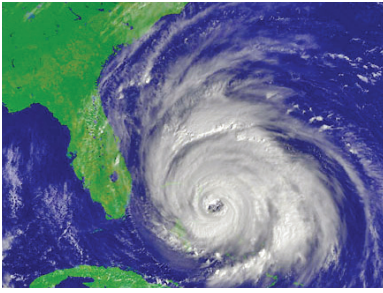
The Climate Change Challenge

Natural phenomena such as solar radiation, volcanic activity and ocean circulation influence our climate and contribute to its variability. Evidence suggests that climate is now also changing as a result of human activities, such as the emission of greenhouse gases and changing land uses. The fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC, 2007) concluded that the global average mean temperature and the frequency of hot extremes, heat waves, and heavy precipitation will very likely increase in response to increased concentrations of greenhouse gases in the atmosphere. The IPCC report also concluded that the globally averaged net effect of human activities since 1750 has been one of warming.

Society will have to make decisions in the coming years about how to adapt to a changing climate. Climate variability and climate change create risks to all sectors of the economy. Climate is already a prime factor in 9 out of 10 disasters, many of which cost billions of dollars and thousands of lives. Effective preparation for the possible effects of climate change requires the engagement of resource managers, planners, public works officials, local managers, community development specialists, businesses, residents, and property owners. The challenge is to provide these diverse stakeholders with trusted, useful, science-based information so that they in turn can make informed decisions.

About the Southeast Climate Consortium

The Southeast Climate Consortium (SECC) is one of eight Regional Integrated Science Assessment (RISA) Centers sponsored by the National Oceanic and Atmospheric Administration (NOAA). The SECC is also supported by the U.S. Department of Agriculture Risk Management Agency (RMA) and Cooperative State Research Education and Extension Service (CSREES). Research and extension faculty from the Consortium's 7 member universities have developed climate variability and forecast information and systems for delivering climatic risk management outlooks and advice to agricultural producers and water resources managers. Over the past 10 years, the SECC has become recognized as a world-class leader in adaptive research that addresses stakeholders' climate information needs and effectively integrates trusted stakeholder advisors in the delivery and use of that information. The SECC's success is due in part to a strong partnership with Extension in each state and the involvement of clientele from the beginning of the development process.



Much of the Southeast is vulnerable to climate-related coastal hazards, including hurricanes and sea level rise. Photo credit: NASA

Who Does Extension Serve?

- County and city governments
- Community residents
- Agricultural and natural resource managers
- Water management authorities
- Ecological resource managers
- Federal, state, and local agencies
- Electric, gas, water, and wastewater utility companies
- Developers and construction companies

How Does Extension Operate?

- Operate offices in all counties
- Partnership of federal, state, and county governments
- Assist and educate groups to address problems that are relevant to the local communities
- Work in conjunction with Sea Grant to address problems impacting coastal communities
- Assess stakeholders' perceptions, attitudes, and long-term goals
- Develop adaptation and mitigation strategies targeting an end-goal of economic, environmental, and ecological sustainability
- Identify knowledge gaps and inform the research community of needs at the local, state, regional, and national levels
- Ensure implementation of solutions and strategies through continuing education and community involvement

The Southeast Climate Consortium and Extension

Today's multi-sectored and over-arching problems need multidisciplinary approaches, and the Extension Service as part of the Land-Grant Institutions is the most cost-effective way to provide outreach and educational programming to local and regional constituents. Through a cohesive network of county agents and specialists providing community-based education, Extension forms a link between the research community and those who must develop local adaptation and mitigation strategies for responding to climate change.

The SECC Extension programs contribute to and advance the decision-making processes and outcomes of stakeholders through the provision of high-quality science-based information. Extension programs are stakeholder-driven and address the issues that are most frequently brought to the attention of Extension agents, such as the causes and potential impacts of climate change, extreme event frequency, sustainability, carbon resource management, public policy, community development, water resource management, and public health. By identifying needs, vulnerabilities, strategies, and information, Extension facilitates and ensures the implementation of science-based solutions to the climate challenge.

Climate Change Extension Activities

- Develop climate action plans for cities and counties in the Southeast
- Conduct community-wide greenhouse gas inventories of counties and municipalities
- Develop methodologies to incorporate climate information and forecasts into Water Management Districts and their decision-making processes for water withdrawals and allocations
- Operate web-based climate information and decision support systems (<http://www.agroclimate.org>) to reduce agricultural production and natural resource management risks related to climate variability and change
- Determine carbon footprint of agricultural and food systems
- Forecast forest fire risks
- Address public health issues related to climate variability and change
- Provide climate education professional development opportunities for county extension faculty
- Provide climate educational programs and curricula for 4-H and youth
- Design energy-efficient, low-impact communities



Extension activities encourage the use of energy-efficient, wind-resistant construction materials such as insulating concrete forms (ICFs).

Photo credit: Thomas Wright, UF/IFAS

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