"Targeted Seasonal Climate Information Delivery in THE Southeast USA
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THE SOUTHEAST CLIMATE CONSORTIUM

• FLORIDA STATE UNIVERSITY
• UNIVERSITY OF Florida
• UNIVERSITY OF MIAMI
• UNIVERSITY OF GEORGIA
• AUBURN UNIVERSITY (ALABAMA)
• UNIVERSITY OF ALABAMA AT HUNSTVILLE
• NORTH CAROLINA STATE UNIVERSITY
• CLEMSON UNIVERSITY (SOUTH CAROLINA)
SECC Mission

Use advances in climate sciences, including improved capabilities to forecast seasonal climate and long-term climate change, to provide scientifically sound information and decision support tools for agricultural ecosystems, forests and other terrestrial ecosystems, and coastal ecosystems.
How the SECC works

• Build multi-disciplinary teams of the best scientists in the region
• Use climate information to manage climate related risks – both seasonal and longer term
• SECC structures
  – Executive committee
  – Theme leaders
  – Task forces
  – Working groups
  – Project teams
Advantages of the SECC

- Network of multidisciplinary scientists in the region
- Structure and programmatic support for projects
- Higher probability of success in grants
Three dimensions of the SECC

The key is collaboration. SECC projects are multi-disciplinary, multi-institutional, and address all three dimension of the organizational cube.
• Southeastern focus
  – ENSO signal
  – Regional diversity
  – Unique regional challenges
• Collaboration
  – Multi- or trans-disciplinary
  – Multi-institutional
  – Multi-state
• Competitive
  – Involve top scientists and rising stars
  – Become leaders in your institutions
  – Cooperate with other competitive programs
Probabilistic Nature of Forecasts

January Precipitation for Lake City, FL

Histogram

Probability of Exceedence
In the SE USA we have been learning to communicate with stakeholders for over 15 years. Our principle clients are the entire agricultural community in our footprint. We have a large ENSO impact. Thus our “signal” is dependable. From the beginning social scientists have been a backbone to our approach. Extension specialists are our boundary organization. We have developed very advanced rules for information delivery.
SOME RULES FOR USING CLIMATE

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Third: Trust will only be built over a long time.
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First: only probability forecasts are allowed-no matter how insistent the users are.
Second: information needs to be delivered in time to influence decisions.
Third: Trust will only be built over a long time.
Fourth: A climate person always goes with a social scientist on each field encounter.
ENSO effects on production of crops in Florida

Winter Tomato
Field Corn
Tangerine

El Niño  Neutral  La Niña

Percent yield change
Managing Risks Associated with Climate Variability using Forecasts

- Irrigation and drainage
- Change variety, planting date, fertilizer program, irrigation
- Winter pasture vs. hay purchase
- Scheduling operations
- Crop insurance decisions
- Marketing decisions
- Wildfire management, burning
- Reducing environmental risks
Welcome to AgClimate
A Service of the Southeast Climate Consortium

Why...
Climate is a major factor in virtually all aspects of food, feed, and fiber production and marketing.

What...
AgClimate gives the latest forecasts showing how El Niño and La Niña could affect agricultural production and natural resources in the Southeast.

How...
AgClimate provides important new tools to help producers understand and plan for climatic conditions.

Seasonal Outlooks
Fall Climate Outlook  Winter Pasture Outlook  Peanut Outlook  Citrus Outlook - NEW

Consortium Members  Supporting Organizations
COAPS  University of Florida IFAS  Miami  USDA  USDA  USGS  RMA  USDA

Florida Automated Weather Network  Georgia Automated Environmental Monitoring Network
Some Tools in AgClimate

- Climate Forecast
  - Rainfall
  - Temperature (max and min)
  - Frost

- Drought
  - KBDI (Forest fire risk, mosquito control)
  - LGI (research in progress)

- Crop Yield

- Crop Development
ENSO-Based Climate Forecast

Maximum Temperature Monthly Averages

El Nino

La Nina

Alachua County, Florida
ENSO-Based Climate Forecast

Deviations in Monthly Rainfall Averages

El Nino

Neutral

Polk County, Florida
Chill Unit Accumulation

- Blueberries
- Strawberries
- Peaches
- Wheat
Chill-Hour Forecasts for Fruit Production

Chill Accumulation Maps: The expected amount of chilling in individual counties can be examined across the Southeast region. Maps can be viewed for specific fruits (Almond and Tifblue Blueberry, Peach, Strawberry) for a range of time periods from October 1st through April 30th.

"Chilling" or "chill accumulation" is a measure of the cold conditions that are experienced by perennial fruits and other plants during the winter season when the plants are dormant or quiescent. The accumulation of sufficient chilling by the plant is associated with good flowering and growth in the spring. Plants that do not receive enough chilling, may have delayed or early flowering, may flower over an extended period, show erratic growth of leaves and branches, and have poor fruit set and/or quality. The temperatures that are required for chilling to occur are different for different plants.

Historically, "chill hours" (defined as the number of hours during which the temperature was below 45 °F) were used. This measurement has become widespread, however, in the Southeast U.S. and in warmer climates, it is recognized that a great deal of chill can accumulate above this temperature, while none at all accumulates when temperatures dip below 32 °F. The chill accumulation maps show the probability that the amount of chill that will be accumulated during the forecast period will be greater than the amount that is normally expected for each county.
Chill Units – Peach, Alachua County, FL

El Nino Years
1,261 Chill Units on average

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<td>Avg</td>
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<td>61.8</td>
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<td>5.5</td>
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<td>4.5</td>
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<td>25.3</td>
<td>-4</td>
<td>-12.9</td>
<td>6</td>
<td>13.7</td>
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Statistics are calculated for selected county.

Average, County ALACHUA

[Graph showing average chill units for different months and years]
Chill Units – Peach, Alachua County, FL

La Nina Years
1,058 Chill Units on average
Climate Extension in Florida

AgClimate.org

Climate Extension

Publications

Outreach

Applied Research

Climate Forecast a in Agriculture

Clyde Fraisse, David Zierden, Norm

1 Learn how the temperature of the Earth
Ocean changes, ag and climate.
Winter Climate Outlook

VISIT AGCLIMATE.ORG FOR MORE DETAILS!
Future

- Climate risks will gain more recognition as societies’ understanding of and interest in climate grows
- Increasing awareness that risks associated with climate can be reduced in many cases
- Implement now new technology and you are preparing
- For CLIMATE CHANGE
For More Information:

Visit Our Websites

COAPS: www.coaps.fsu.edu/SECC

Florida Climate Center:
www.coaps.fsu.edu/climate_center

AGCLIMATE.ORG
www.agroclimate.org

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ANY QUESTIONS?