USDA Southeast Regional Climate Hub (SERCH)

Adaptation and Mitigation to Climate Change

globalchange.ncsu.edu/serch

Sarah Wiener
Project Coordinator, USDA SERCH

Steve McNulty
Director, USDA SERCH
Where are the Hubs?

- 7 hubs
- 3 sub-hubs
  - Northern Forests
  - California
  - Puerto Rico
SERCH Team

Steve McNulty
Lead, USFS

David Marshall
Co-Lead, ARS

Darren Hickman
Co-Lead, NRCS

Sarah Wiener
Project Coordinator

Lisa Fouladbash
Partnership Facilitator
What are the Hubs?

• Provide climate change adaptation information and technologies to extension and agricultural and forest land managers
Working Lands vs. Working Lands?

• Lands that produce commodities
• Benefit to ecosystem is *not* a requirement
  – Tools and practices we recommend often increase ecosystem benefit
• Cropland, forests, grazing land, livestock
Adaptation vs. Mitigation

Image Credit: e-education.psu.edu
Climate Change in the Southeastern United States

“Sea level rise poses widespread and continuing threats to the region’s economy and environment. Extreme heat will affect health, energy, agriculture, and more. Decreased water availability will have economic and environmental impacts,” (National Climate Assessment, 2014).
What are the Hubs Doing?

• Develop and deliver Tools
  – Connect land managers with useful tools to assist with adaptation and mitigation

• Regional Vulnerability Assessment
  – Connect land managers to the science

• Partner with LGUs

• Outreach and Education
  – Leading workshops and continuing education
  – Outreach to extension, Farm Groups, Forestry Groups, Tribal Groups

• Close the loop on science
Develop & Deliver Decision Support Tools

Proposed Projects (2015-2016)

- Amend NRCS Conservation Planning Process
  - And Service Forester’s Handbook App

- Tool Shed
  - Extend TACCIMO to agriculture
    - And AgroClimate to SERCH region
  - Integrate to generate seasonal drought forecast alerts with adaptation actions

Approach
- Amend
- Deliver
- Create
- Extend
Tool Shed

- Inventorying and assessing tools from across the country
- Compiling tools on public-facing, searchable database
- Gap analysis
  - New tool creation
  - Expand existing tools
  - Update existing tools
- serch.us/tools
<table>
<thead>
<tr>
<th>Tool Type:</th>
<th>Pest, Disease, and Weed Scouting (Farm/Forest Level)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Irrigation and Water Planning</td>
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<tr>
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<td>Degree Days/Chill Hours</td>
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<td>Livestock</td>
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<td>Forestry</td>
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<tr>
<td>Regions:</td>
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<td>Midwest</td>
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<td></td>
<td>Northeast</td>
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<td></td>
<td>Northern Plains</td>
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<tr>
<td>Audience:</td>
<td>Manager</td>
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<td></td>
<td>Researcher</td>
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<td>Technical Information Provider</td>
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<tr>
<td>Website</td>
<td>Tool Type</td>
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<tr>
<td>AgroClimate</td>
<td>Climate Projections, Drought, Greenhouse Gas Emissions, Growing/Cooling Degree Days, Information Clearinghouse, Irrigation and Water Planning, &quot;Pest, Disease, and Weed Tracking and Prediction (State/Regional/National Level)&quot;</td>
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<td>Aphid Speed Scout</td>
<td>&quot;Pest, Disease, and Weed Scouting (Farm/Forest Level)&quot;</td>
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<td>MyTraps.com</td>
<td>&quot;Pest, Disease, and Weed Scouting (Farm/Forest Level)&quot;</td>
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<td>Insect Forecast</td>
<td>&quot;Pest, Disease, and Weed Tracking and Prediction (State/Regional/National Level)&quot;</td>
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<td>Crop Fertilization</td>
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<tr>
<td><strong>Developer</strong></td>
<td>University of Florida; USDA; Southeast Climate Consortium</td>
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<tr>
<td><strong>Description</strong></td>
<td>&quot;AgroClimate is an innovative web-resource for decision-support and learning, providing interactive tools and climate information to improve crop management decisions and reduce production risks associated with climate variability, climate change, and ext</td>
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<tr>
<td><strong>Cost</strong></td>
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<td><strong>Format</strong></td>
<td>App, Web</td>
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<td><strong>Time Scale</strong></td>
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<td><strong>Spatial Scale</strong></td>
<td>State, Regional, County or Weather Station</td>
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<td><strong>Hub</strong></td>
<td>Southeast</td>
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<td><strong>States</strong></td>
<td>Alabama, Florida, Georgia, North Carolina, South Carolina</td>
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<td>Manager, Researcher, Technical Information Provider</td>
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<td><strong>Relevance to Climate Change</strong></td>
<td>Direct</td>
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Amend existing tools to address climate change
Service Forester’s Handbook App

• Originally 135 pg pocket field guide
• Helps foresters calculate volumes, determine site index, soil texture, basal area, and more
• Recently came out in app form, allowing users to calculate exact volumes
• SERCH is working with Southern Regional Extension Forestry (SREF) to incorporate climate change
NRCS Conservation Practices

• Following greenhouse gas mitigation tool
• 163 practices addressing 44 resource concerns
• Aimed at delivering technical assistance
• Assessing the 44 resource concerns in the context of climate change and climate variability
Extend existing climate change tool across sectors and scales
TACCIMO

• Template for Assessing Climate Change Impacts and Management Options (TACCIMO)
• Searchable database of scholarly literature
• Region, ecosystem, and species specific adaptation information
• Currently forest and ecosystem focused – expanding to include other sectors

www.taccimo.info
Contact: Emrys Treasure, USFS (etreasure@fs.fed.us)
Create new tool that integrates existing tools and information
SERCH LIGHTS;
Drought Alert Subscription Service

- Consumes National Drought Monitor’s monthly reports
- Receive email notifications when drought prediction changes
- Coupled with science from TACCIMO, AgroClimate, NRCS Conservation Planning Process, and Service Foresters’ Handbook

serch.us/lights/subscribe
Drought is our prototype. What would you like to see next?
Regional Vulnerability Assessments

- Connect changing climate to impacts on specific land uses
- Compiled in conjunction with National Climate Assessments
- Release set for later this year
Cooperative Projects with LGUs

- University of Arkansas
  - Women in Woodlands
- University of Florida
  - Expansion of AgroClimate + outreach
- University of Georgia
  - Extend Service Forester’s Handbook App
  - Develop climate science modules for extension
- North Carolina State University
  - Expand TACCIMO
  - Technology infrastructure
Workshops

• Greenhouse Gas Mitigation
• Tools for Climate Change Adaptation
How to Reach Us

• Subscribe to the newsletter: globalchange.ncsu.edu/serch
• Visit the national site: climatehubs.oce.usda.gov/southeast
• Check out the Tool Shed: serch.us/tools
• Subscribe to SERCH LIGHTS: serch.us/tools/subscribe
• Visit TACCIMO: taccimo.info
Thank You

Photo: Alan Franzluebbers