PINEMAP

Welcome!

Pine Plantation Research and Decision Support Tool Rollout

May 16-17, 2017 Athens, GA

What are our objectives for this meeting?

- Share PINEMAP results
- Provide context for PINEMAP science and application
- Discuss future directions for pine plantation research and management

What did NIFA, the funding agency, want?

- Large, 5 year, $20 million commodity-focused projects
- Inter/transdisciplinary
- Include research, education, outreach
- Focus on climate mitigation and adaptation in important agricultural commodities

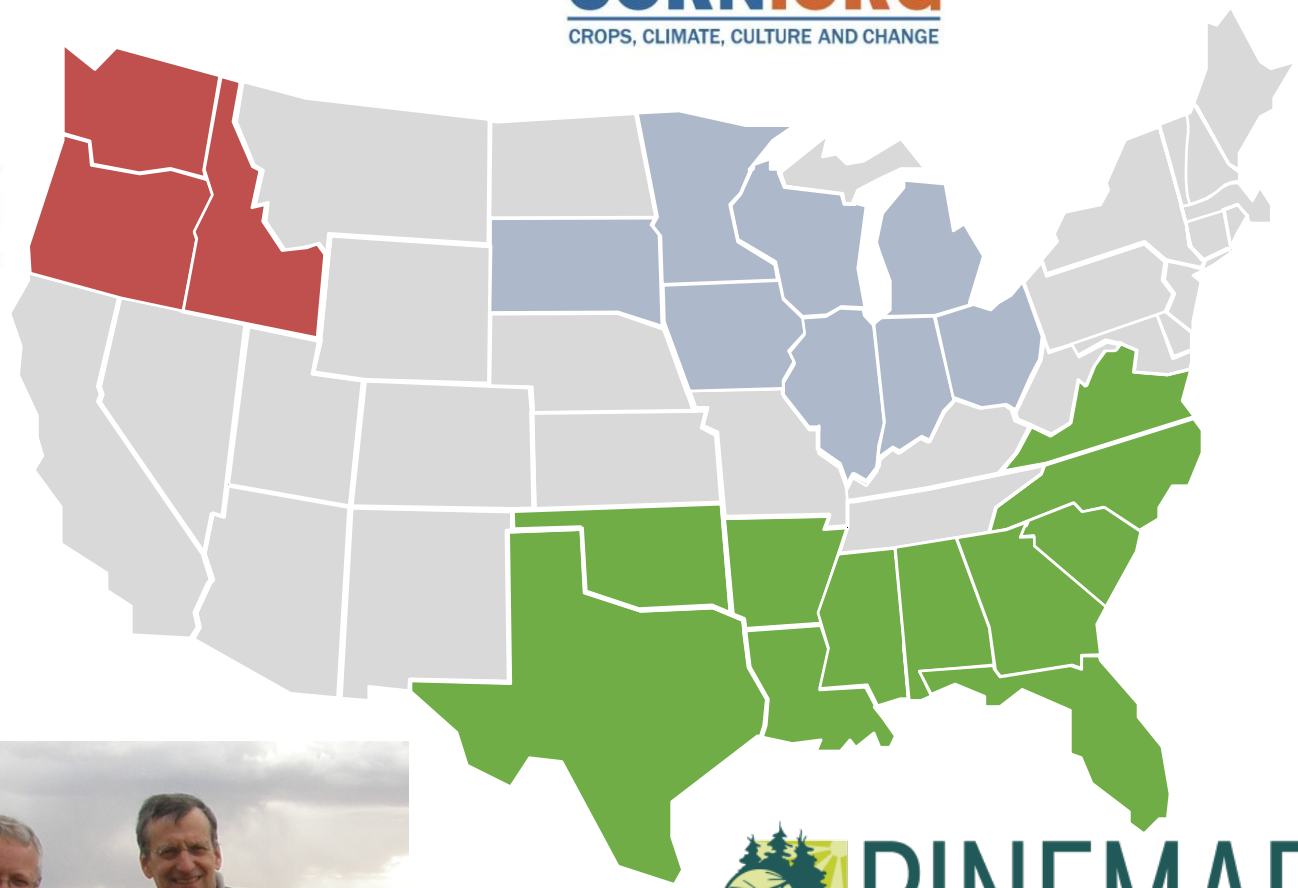
PINEMAP

SUSTAINABLE CORN.ORG

CROPS, CLIMATE, CULTURE AND CHANGE

REACCH

Regional Approaches to Climate Change – PACIFIC NORTHWEST AGRICULTURE



PINEMAP

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Pine INtegrated Network:
Education, Mitigation, and Adaptation Project

Research Needs: Impacts of climate variability & climate change

Please rate the importance to your organization of research on the following potential impacts of climate variability and climate change.

Research	Important or Very important
Changes in ***forest growth and productivity***	91.67%
Changes in ***timber supply***	79.31%
Changes in ***land values and land use options***	70.00%
Changes in forest management risk associated with the ***intensity, severity, or magnitude of forest insect or disease outbreaks***	64.41%
Changes in ***abundance and ranges of invasive species***	49.15%
Changes in forest management risk associated with ***intensity, severity, or magnitude of forest fires***	44.06%
Changes in ***phenology***	41.38%
Changes in forest management risk associated with ***extreme weather events (heavy winds, lightning, hurricanes, drought)***	33.89%

Research Needs: Silvicultural activities

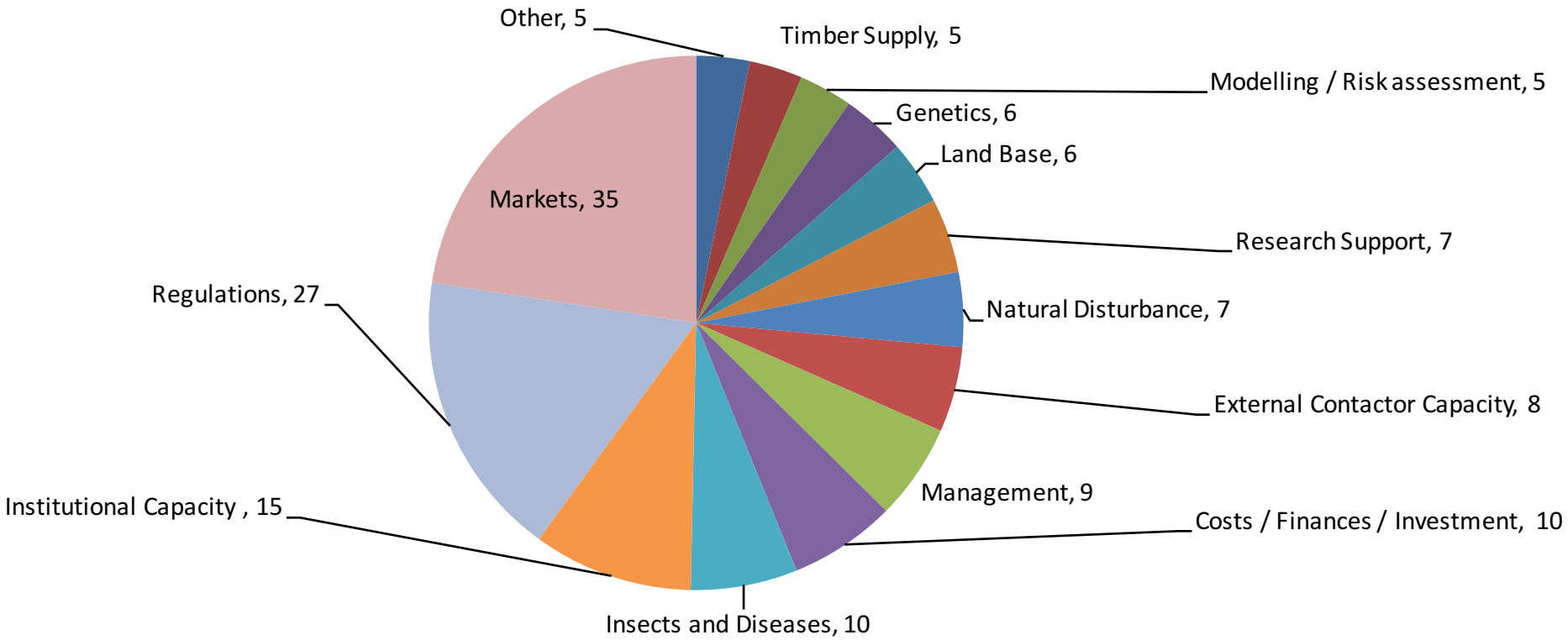
PINEMAP research aims to support preparedness for climate variability and climate change.

Please rate the importance to your organization of research on the following silvicultural activities.

Research	Important or Very important
Planting genotypes that are tolerant of drought, insects, and/or disease	74.57%
Breeding for enhanced yield	71.67%
Silvicultural techniques to promote forest productivity and increase stand vigor (i.e., partial cutting or thinning) to lower the susceptibility to insect attack or disease outbreaks	71.66%
Species and/or genotype selection	68.34%
Fertilization to enhance forest growth	67.80%
Breeding for pest resistance and for a wider tolerance to a range of climate stresses and extremes	66.67%
Managing forest insects and diseases	65.00%
Long-term seedlot trials to test improved genotypes across a more diverse array of climatic environments than in previous tests	52.54%
Control of undesirable plant species that will become more competitive in a changed climate	51.72%
Movement of seed stocks from one area to another	50.00%
Vegetation management to offset drought impacts	47.46%
Selective removal of suppressed, damaged, or poor-quality trees to increase resource availability to the remaining trees (precommercial thinning)	44.06%
Density management through initial planting spacing or thinning to offset drought impacts	42.37%
Inclusion of climate variables in growth and yield models	40.67%
Adjusting schedules to harvest stands most vulnerable to natural disturbances (e.g., insect or disease outbreaks or fire)	39.65%
Sanitation cuts that remove infected trees to reduce disease losses	28.81%

Concerns

From a broad perspective (not just considering climate variability and climate change), what are your 4 main concerns regarding the ability of your organization to successfully manage its forest resources over the next 10-20 years?

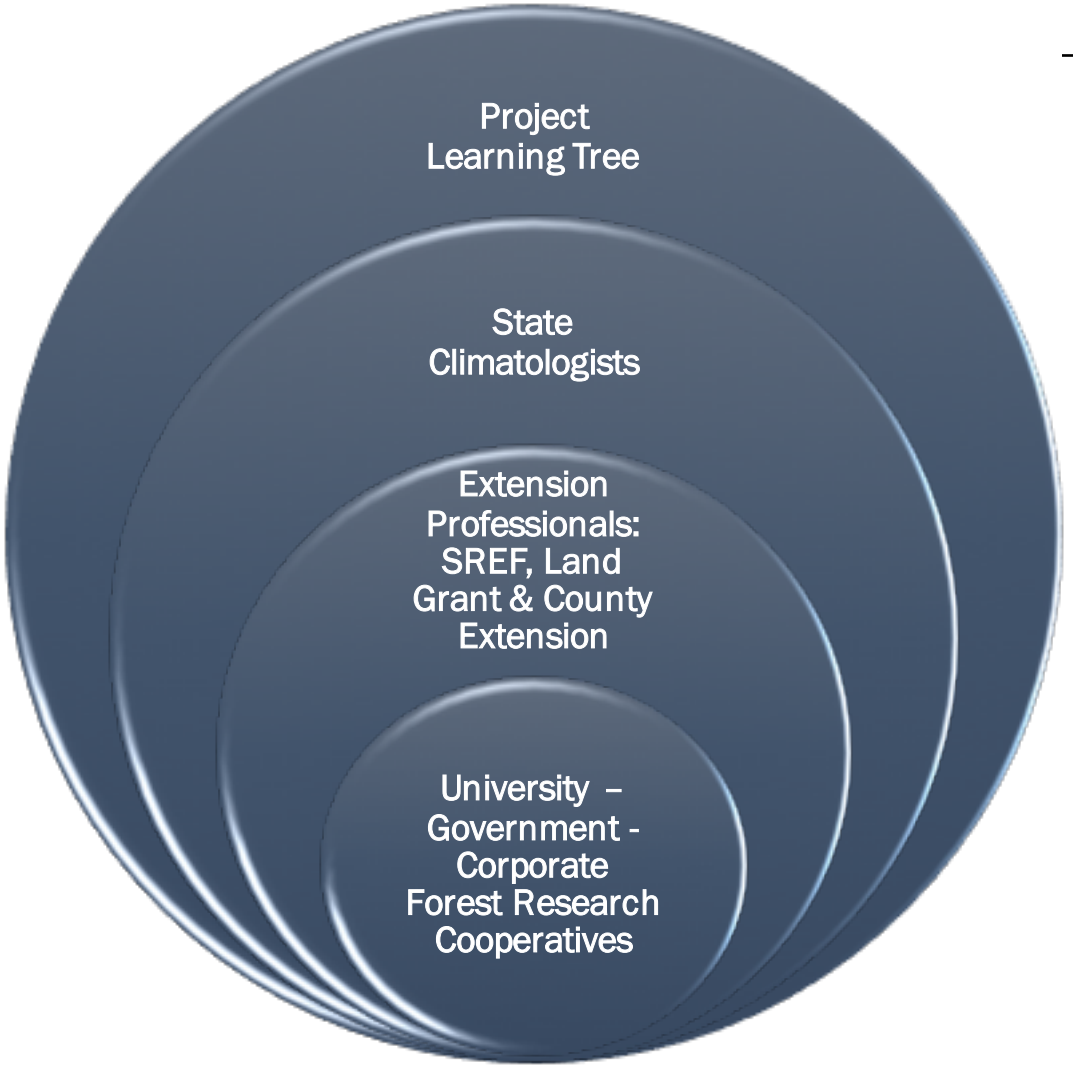


PINEMAP Goals

To create, synthesize, and disseminate the necessary knowledge to enable southern forest landowners

- to harness pine forest productivity to mitigate atmospheric CO_2,
- to more efficiently utilize nitrogen and other fertilizer inputs,
- and to adapt their forest management approaches to increase resilience in the face of changing climate.

PINEMAP Approach: Integrating & Leveraging Existing Networks



Research Cooperative	Host University (year founded)
Cooperative Forest Genetics Research Program	University of Florida (1953)
Cooperative Tree Improvement Program	North Carolina State University (1955)
Forest Biology Research Cooperative	University of Florida (1996)
Forest Modeling Research Cooperative	Virginia Polytechnic Univ. (1979)
Forest Productivity Cooperative	Virginia Polytechnic Univ. / NC State Univ. (1969)
Plantation Management Research Cooperative	University of Georgia (1975)
Southern Forest Resource Assessment Consortium	North Carolina State University (1994)
Western Gulf Forest Tree Improvement Program	Texas A&M Univ. / Texas Forest Service (1969)

PINEMAP Project Team

57 Principal Investigators

23 Research and Technical Staff

38 Grad Students

7 Postdocs

At 11 land grants universities + USFS

We're not going to be able to cover everything here: PINEMAP Outcome Themes

Engaged and literate public

Increased C Sequestration

Public policy supporting sustainable forest management

Enhanced capacity for collaboration

Enhanced connections

Robust/resilient regional forest-based economy

Education audiences & activities

Forest landowners Forest managers Forest agencies	Cooperative Research Programs
	State Extension Programs
	Decision Support System
Undergraduate students Graduate students	UG Fellowship Program
	Graduate Course & Activities
High school science teachers Secondary students	Southeastern Forests and Climate Change – Project Learning Tree Module
	Teacher Workshops & Website

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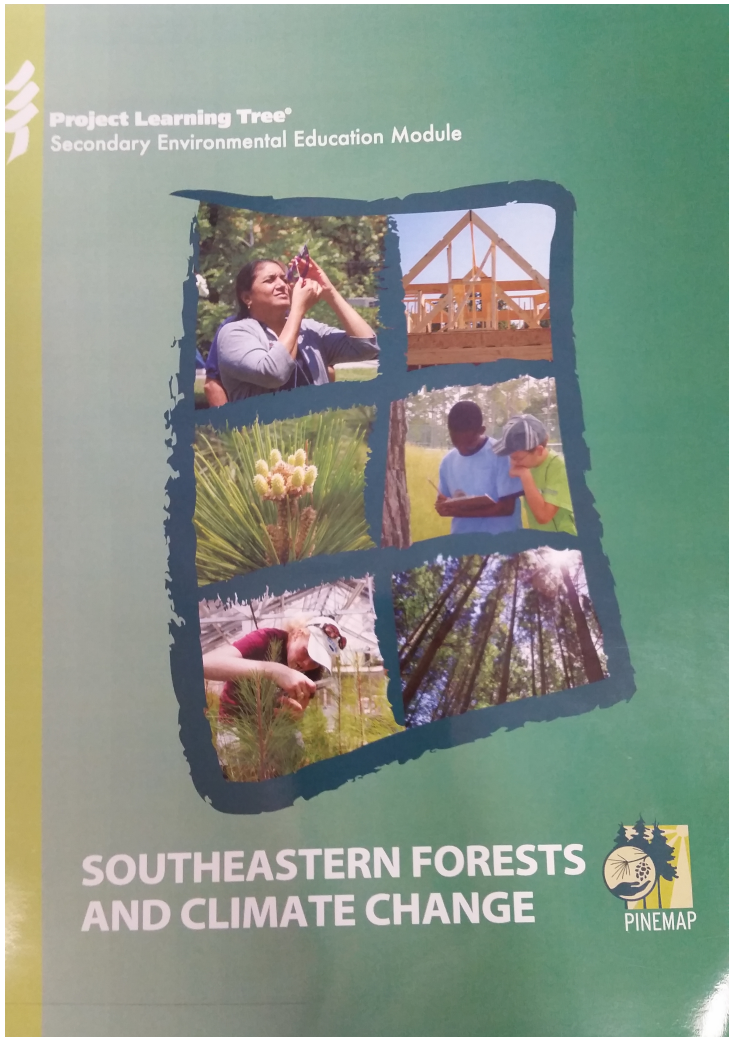
Secondary School Education

- Project Learning Tree Secondary School Module, "Southeastern Forests and Climate Change"
- Module topics relate to PINEMAP research
- Connects climate change with Life Science curriculum
- Separate Advisory group, pilot testing, expert review
- Rich website for support and additional materials: http://sfrc.ufl.edu/extension/ee/climate/



Enhanced infrastructure for regional, collaborative research

- New and/or improved models
- Large pine productivity and soils datasets
- Faculty and students trained in and familiar with multi-disciplinary research and engagement with education and extension
- Common protocols
- High quality, expandable Decision Support System