Poster 1

Risk Quantification for Sustaining Coastal Military Installation Assets and Mission Capabilities

Kelly A. Burks-Copes
Factors Facilitating Sea Level Rise
Adaptation Planning
Kathryn I. Frank
Developing Regional Policies and Strategies for Climate Change Adaptation

**Goal:** Reduce the Consumption of Energy and Prepare the Region for the Impacts of Climate Change
3 Steps for Developing Policies and Strategies

1: **Assess** Vulnerability

2: Identify and **Analyze** Impacts

3: **Develop and Create** Policies and Strategies
Objectives of the Research

- To analyze the current issues in climate risks
- To assess the risks posed to the South East region
- To evaluate the potential climate hazards in the region
- To identify mitigation measures
- To design a decision support tool for policy makers.
Summary and Findings

- This research assesses the vulnerability of coastal areas in the Southeastern states of Mississippi and Louisiana using climate risk information.

- Emphasis is on the issues, and evaluation of the trends.

- The vulnerabilities stem mostly from storms, coastal land loss, loss of barrier islands, flooding and extreme temperatures.

- Others include sea level rise, damages to fresh water ecosystem due to salt water intrusion, water scarcity in agriculture, threats to human health and coastal development hazards.

- The preliminary results show a spatial diffusion and a growing risk in vulnerable coastal areas in the two states.
Poster 5

Using Surface Population Models to Improve Spatial Accuracy of Sea Level Rise Vulnerability Assessment

Diana Mitsova
Poster 6

Vegetation Change Detection Using Remote Sensing in the Florida Everglades

Shimelis G Setegn
Impact of Biofuels on the Propensity of Land-Use Conversion among Non-Industrial Private Forest Landowners in Florida

Daniel Solis
Poster 8

Assessing the Value of Climate Information in Agriculture Using the Stochastic Production Frontier Approach

Daniel Solís

CIMR
CLIMATE INFORMATION FOR MANAGING RISKS
Poster 9

Agricultural Applications for a Linear Inverse Model Describing Midsummer Dry Spell Variability within the Intra-Americas Sea

Teddy Allen
Poster 10

Climatic Elements Variability Affecting Maize Yield in Northern Minas Gerais, Brazil

Maria Emilia B. Alves
Farming appears like gambling without any knowledge of the season ahead.
The odds change with a seasonal forecast.

Applying a seasonal forecast can increase economic return from farming.
Poster 12
The Impact of Climate Change on Soybean Production in the Southeastern USA and Potential Adaptation Strategies
Yawen Bao
Poster 13
Climate Decision Support Research to Foster Resilience in Agro-socio-ecosystems
Norman E. Breuer
Climate Change and Agriculture: Perspectives from Michigan Farmers

Julie E. Doll & Claire N. Layman
“...more concerned with something catastrophic happening than I am a slow change, like we have with the carbon dioxide.”

“Agriculture is affected more by climate change than climate change is affected by agriculture.”

“We are the world’s first environmentalists...”
Poster 15

FAWN: Providing Weather-related Information to a Wide Variety of Users Since 1998
Brent Ferraro
AgroClimate: Climate Information and Decision Support Tools for Reducing Risk in Agriculture

AgroClimate Development Team
Southeast Climate Consortium

Climate Information for Managing Risks Conference
Orlando, FL
May 23-27, 2011
**News**

A Rebound in World Grain Production Expected (May 16, 2011)

Texas cotton producers facing dustbowl-like conditions (May 13, 2011)

Flooded farmers need to examine insurance policies, delivery contracts (May 11, 2011)

Funding cut may jeopardize satellite for weather, flood, drought forecasts (May 5, 2011)

Southeast soil conditions good at planting time (May 5, 2011)

Floods, disaster legislation and cutting red tape (May 4, 2011)

News Archive

**Outlooks**

Spring Climate Outlook is now available (April, 4th 2011)

Climate Phase Forecast (April 4th, 2010)

La Niña weather in Florida should be warm! (Jan. 29, 2010 - PDF)

Monthly Climate Summary for Georgia and North Carolina now available (Feb. 7th, 2011)

Outlook Archive »
Poster 17

Risk Mapping to Support Decision Making on Plant Disease Management in Brazil

Willingthon Pavan
Drought is a pervasive natural hazard that is a normal part of the climate.

ENSO has a strong influence during cold months in the Southeast U.S.A.

El Niño – above average rainfall and lower temperature

La Niña – below average rainfall and higher temperature

Agricultural drought is the result of the interaction of weather parameters (rain, temp., solar rad. etc), soil and plants.

What are the effects of all this on the spatial and temporal variability of ARID??
ARID = 1 – $\frac{TR}{ETo}$

Objectives

- Spatial and temporal analysis of the Agricultural Reference Index for Drought (ARID) in Florida
- Identify the influence of the El Niño Southern Oscillation (ENSO) phenomenon on ARID

Results

[Image of a map showing the ARID values for January in Florida.]
Poster 19

Climate Scenario Generation for the Agricultural Model Intercomparison and Improvement Project (AgMIP)

Radley Horton
Monitoring and Managing Effects of Climate Change on Rangeland Ecosystem Goods and Services

- Climate change is bringing increased uncertainty for rangelands and rangeland management.
- To evaluate effects of changing climate on rangeland ecosystems, and to develop adaptive management strategies, monitoring is needed to characterize soils, water, plants, animals, and productive capacities of landscapes.
- Changes in rangeland ecology should instigate changes in business planning and land management.
- By incorporating ecological and socio-economic monitoring into conservation and business plans, land managers can more readily identify and respond to change.

http://sustainable.rangelands.org
Monitoring and Managing Effects of Climate Change on Rangeland Ecosystem Goods and Services

- The connectivity among ecological, socio-economic systems is embodied in rangeland ecosystem goods and services. These inter-relationships must be considered in development of effective management and mitigation strategies to adapt to climate change.

- The Sustainable Rangelands Roundtable (SRR) has created a set of monitoring elements, and a conceptual framework illustrating linkages of ecological and socio-economic systems through ecosystem goods and services.

- This framework enables a more meaningful evaluation and discussion of how climate change will impact availability, quality and quantities of rangeland ecosystem goods and services.

Please visit Poster No. 20 for additional information
Monitoring and modeling leaf wetness duration for optimizing fungicide use in strawberry production

Verona Montone
Dr. Natalia Peres
Dr. Clyde Fraisse
Sustainable agriculture ➔ Rational use

Disease forecasting systems ➔ fungicides
- Application only under favorable environmental conditions
- Requires leaf wetness duration as one of its inputs

LWD can be obtained using:
- Sensors
- Models
  - physical – Penman-Monteith
  - empirical – CART, DPD, NHRH≥90%

Objective: Evaluate the potential of the four models to estimate LWD
Poster 22

Financial Management of Beginning Farmers and the Use of Climate Information

Denis Nadolnyak
Poster 23
Long-Term Climate Variability and Rainfall Index Insurance
Denis Nadolnyak
Effect of ENSO on Corn Aflatoxin Contamination in South Georgia


- Aflatoxin is produced by *Aspergillus flavus* or *Aspergillus parasiticus* when the crop is exposed to drought or high ambient temperature.
- ENSO, driver of climate variability in the Southeast, was evaluated for its relation to aflatoxin contamination.

**Objectives**

1. Evaluate rainfall and maximum temperature changes by ENSO phase in South Georgia.
2. Identify changes in aflatoxin risk (> 20 ppb) by ENSO phases using MEI and Niño 3.4 classifications.

**Data**

- Corn Aflatoxin Contamination Data from a county level survey (1977-2004). A total of 19 years of data.
- Historical weather records from 21 weather stations covering the 53 sampling sites – COAPS data.
- ENSO phases using the MEI and Nino 3.4 classifications.
Probability of Aflatoxin Contamination by ENSO Phase

Month of June

- Predicted probability of aflatoxin contamination above threshold is significantly different by ENSO classification
  - MEI classification - Higher probabilities during Neutral years
  - Niño 3.4 classification - Higher probabilities during La Niña and Neutral years
Poster 25

Soil Temperature: Indicator of Earlier Shifts in Planting Season for Agronomic and Horticulture Crops

Tapan B. Pathak
Poster 26

Some Edafi-Climatic Effects on Variability of S and B in an Argentine Republic Soil

Emilia Rivero
Poster 27

Edafo-climate Factors in the Variability of Nutrients in an Argentine Republic Soil – Emilia Rivero
Carbon Footprint Calculator

Strawberry Production Systems

Clyde Fraisse
Oxana Uryasev
A carbon footprint is the total amount of greenhouse gas (GHG) emissions in carbon dioxide equivalent (CO2e) that were emitted as a result of growing, manufacturing, transporting and storing a product, or resulting from preparing or using a product or disposing of any waste.

Our web-based tool, **Carbon Footprint Calculator**, allows strawberry producers to calculate the carbon footprint in each phase of the production cycle and evaluate potential emission reductions by adopting alternative management practices. Producers can also estimate GHG emissions for storage, packaging and transport of the fruit to the market.

An Approach For Encapsulating Fortran Coded Models Into a R Package

- Fortran and Simulations
- R Language
- R Packages
- R Structure allows integration and flexibility.
Case Study: RCropgro

Integration of Cropgro-Soybean model of DSSAT suite.

Thank You!

Tiago Zortea
University of Florida, IFAS
Agricultural & Biological Engineering
zortea@ufl.edu
Poster 30

Drought Forecasts for Managing Water Resources in the Face of Climate Variability

Jonathan Alldridge
Perils of a Rising Ocean

- Beach erosion
- Encroachment by seawater
  - Waterfront and low lying property
- Inundation by seawater
  - Coastal wetlands
  - Lower Everglades
- Saltwater intrusion threatening water supply
- Increased inland flooding during heavy rains
- Hurricane storm surge and wave action increased
Potential Coastal Flooding – Broward County

Figure 1 - Broward County Elevation Map. This is LiDAR elevation data from 2008. Elevations less than 5 feet above sea level are shown in purple.
Poster 32
Assessing Perceptions, Uses, and Needs for Climate Information among Water Managers in the ACF River Basin
Jessica Bolson
Overview:

• Risk = Uncertainty + Consequences

• Consider uncertainty (probability) of number of heavy rain “events”

• Focus on events of two or more inches during cool season for ENSO phases
Probabilities of two or more two-inch February events for (a) warm phase and (b) cold phase

Exceedance probabilities for number of events of two inches or more
Poster 34

Optimized Climatic Indicators to Provide Probability of Exceedance Streamflow Forecasts

Susan Risko
Poster 35
Assessment of Precipitation Reforecast Analogs in the Tampa Bay Region
Robert W. Rooney