

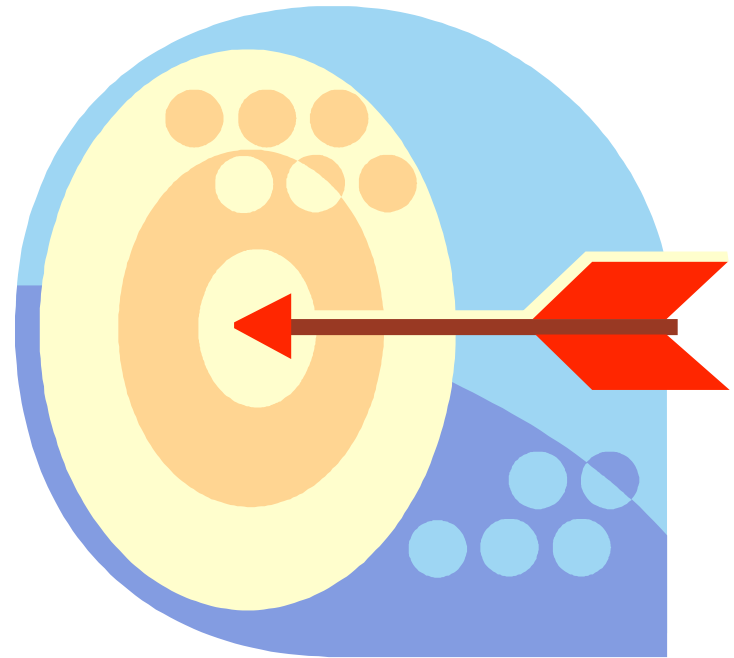
The Impact of Land Cover and Land Use Changes on the Hydroclimate of the La Plata Basin: Risk Reduction in Agriculture



Asunción, Paraguay
March 23, 2010

Meeting Goal and Objectives

- Our main goal today is to plan 2010 activities. Specific objectives include:
 - Review project deliverables and progress made during 2009
 - Reevaluate project deliverables
 - Assign tasks to project participants for the next 6 months



Project Deliverables

- 1. *Establishment of weather monitoring sites in Paraguay:*** Five (5) meteorological stations will be established by agricultural cooperatives.
- p *Development of a drought monitoring system for the region:*** Agricultural Reference Index for Drought (ARID) based on a daily soil water balance

Project Deliverables

- 3. Calibration and validation of corn and wheat crop models:** Crop modeling activities would be conducted in cooperation with cooperatives that will be responsible for establishing wheat and corn research plots for data collection during the winter season of 2009 (wheat) and the summer cropping season of 2009/10 (corn).

Under this objective we will also propose the inclusion of a plant disease modeling component primarily targeting wheat production systems.

Project Deliverables

4. **Implementation of a web-based decision support system:** *Open AgroClimate.org* system including the following tools:
- Climate risk tool
 - Yield Risk Tool
 - Drought Index tool

The screenshot shows the AgroClimate website interface. At the top, there is a navigation bar with links for 'Join Our Mailing List', 'Contact', and 'Site Report'. The main header features the 'AgroClimate' logo and the text 'A Service of the Southeast Climate Consortium'. A 'Current Climate Phase: El Niño' alert is displayed, stating 'El Niño reaches moderate strength and continues to build in the Pacific Ocean'. The left sidebar contains a menu with categories like 'Home', 'AgroClimate Tools', 'Forecasts and Outlooks', 'Monthly Climate Summary', 'Crops', 'Fruits', 'Forestry', 'Forage & Livestock', 'Climate and El Niño', 'Climate Change', 'Links', and 'About'. The main content area is divided into 'News' and 'Outlooks' sections. The 'News' section includes articles such as 'El Niño's impact on South's weather - (Feb. 16, 2012)', 'Senators approve EPA on greenhouse gases - (Jan. 26, 2012)', 'Congress, climate and science - (Dec. 22, 2011)', and 'House tackles climate change, ag efforts - (Dec. 21, 2011)'. The 'Outlooks' section includes 'Monthly Climate Summaries (Feb. 7, 2012) for Florida, Georgia and North Carolina now available', 'Climate Phase Forecast (Nov. 13, 2011): El Niño reaches moderate strength and continues to build in the Pacific Ocean', 'SECC Winter Climate Outlook (Nov. 13, 2011): El Niño in charge in the Pacific Ocean', and 'SECC Agricultural Outlook (Oct. 30, 2011): El Niño May Bring a Wetter Winter and Spring to the Southeast'. A 'CSREES' logo is visible in the bottom left corner. On the right side, there is a 'Climate Phase Forecast for Mar-Apr-May' section with a pie chart showing the distribution of phases: Neutral (15%), La Niña (7%), and El Niño (82%). Below this is a section for 'AgroClimate Español' and a photo of a meeting.

Project Deliverables

- 5. *Assessment and evaluation activities:***
Assessment will directly involve agricultural producers and producer groups. We will incorporate end-user feedback on programmatic agendas and tool development into research , design, production, and format of web-based climate risk tools

Tools



□ Climate

- Climate Risk
- Freeze Risk Maps
- Cooling/Heating Degree Days

□ Drought

- Keetch-Byram Drought Index
- Lawn & Garden Index
- ARID Drought Index

□ Carbon Tools

- Footprint Calculator

□ Crop Yield

- County Yield Database
- Yield Risk Simulator

□ Crop Development

- Growing Degree Days
- Chill Accumulation

□ Pests & Diseases

- Strawberry Disease Forecasting
- Tomato Spot Wilt Virus Forecasting

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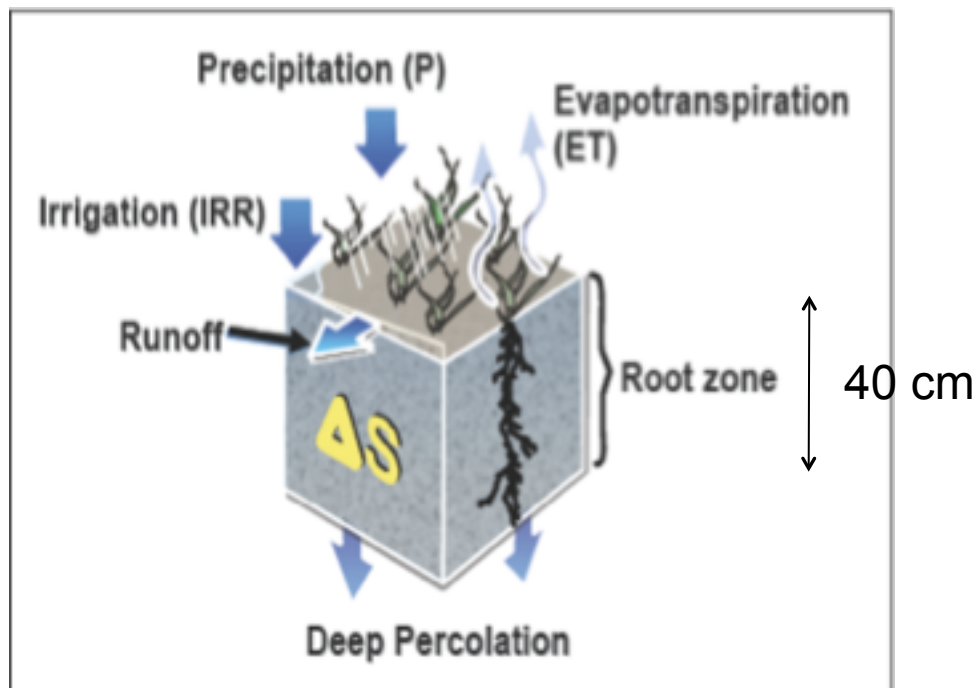
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Agricultural Reference Index for Drought: ARID



$$ARID = 1 - ET/ET_p$$

$$Y = P \prod (1 - ARID_m)^{\lambda_m}$$

Need daily weather data!



ARID: Agricultural Reference Index for Drought



Drought Index Tool

Select the station/county:

Draw the limits of County

News: 2009-07-15 22:26:59
ARID - Agricultural Reference Index for Drought

Drought is the shortage of water with respect to a specified need. An agricultural drought occurs when the amount of water in the root zone is not sufficient to meet the need of a crop at a particular time. Generally, agricultural drought indices are developed to monitor crop water stress. However, ARID has been designed not merely to quantify crop water stress at a particular time or period but to estimate yield loss due to drought, in which farmers are ultimately interested...
[» more details.](#)

Can't you see the map?
Use [Firefox Browser](#)

Map Satellite Hybrid Terrain

The map displays the state of Florida with numerous green triangle icons representing ARID stations. Major cities and counties are labeled, including Panama City, Lake City, Middleburg, Palm Bay, Orlando, Tampa, and Miami. A legend at the bottom right indicates 'Key: ARID data ©2010 Google - Terms of Use'. The map interface includes navigation controls on the left and a 'Back to Tools' link at the top right.

POWERED BY Google



Strawberry Disease Tool

[« Back to Tools](#)

Select the station/county:

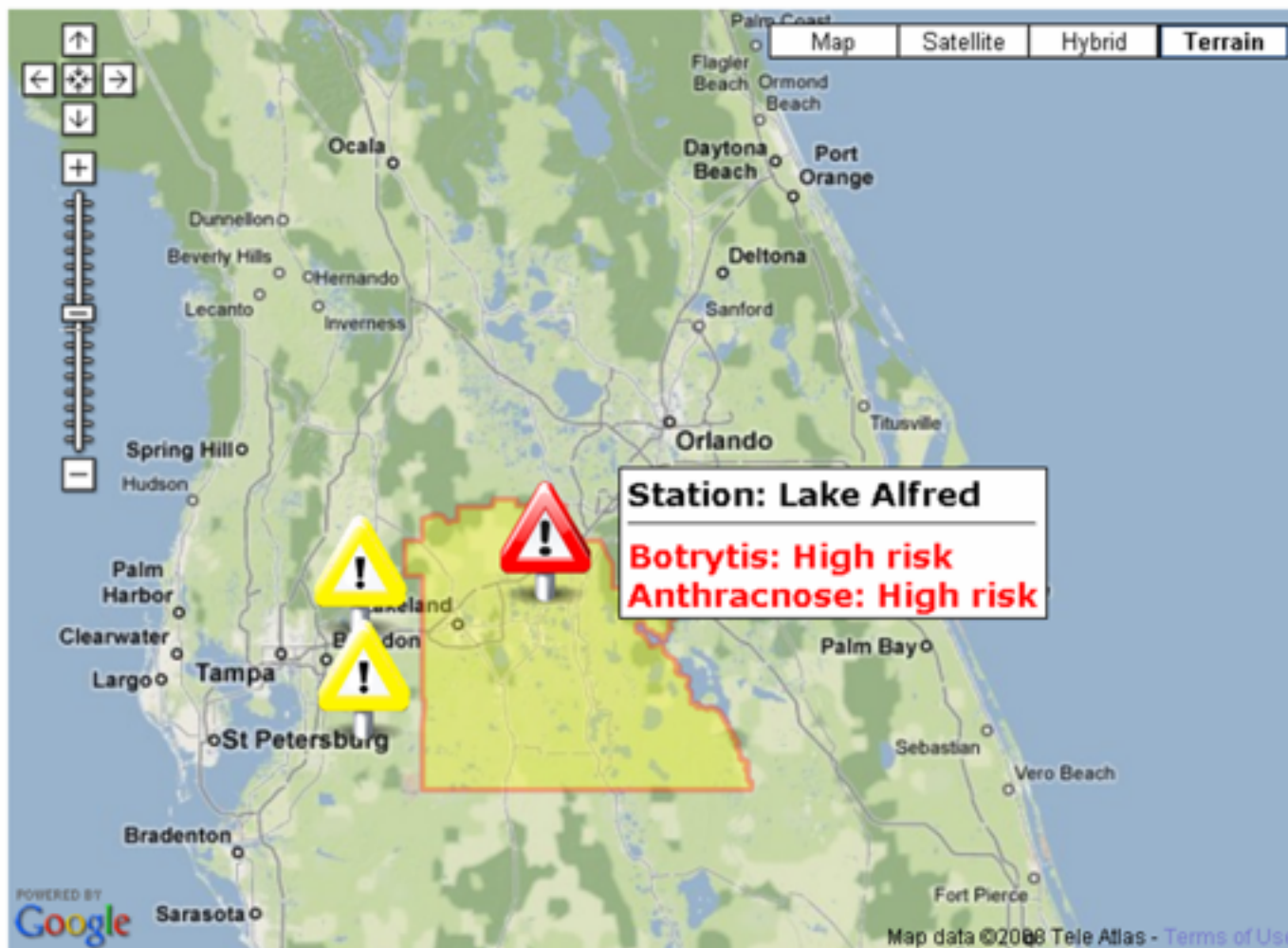
Lake Alfred/Polk

News: 2008-11-04 11:30:29
Controlling Powdery Mildew on Strawberry

Powdery mildew, caused by the fungus *Podosphaera macularis*, is one of the first diseases that appear after strawberries are planted. It is also the first disease that requires adding additional fungicides to the spray tank. Powdery mildew is a sporadic problem that is damaging some seasons, but not others. Disease severity depends on three main factors...

[> more detail.](#)

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Modified CropGro-Soybean Model

