

NIDIS Philosophy and Metrics of Success

NIDIS Missouri Basin Project Kickoff Meeting

February 26-27, 2014

Chad McNutt, Roger Pulwarty, Lisa Darby, Veva Deheza, Jim Verdin, Kathleen Bogan, Claudia Nierenberg, and Robert Webb
NOAA, National Integrated Drought Information System (NIDIS)

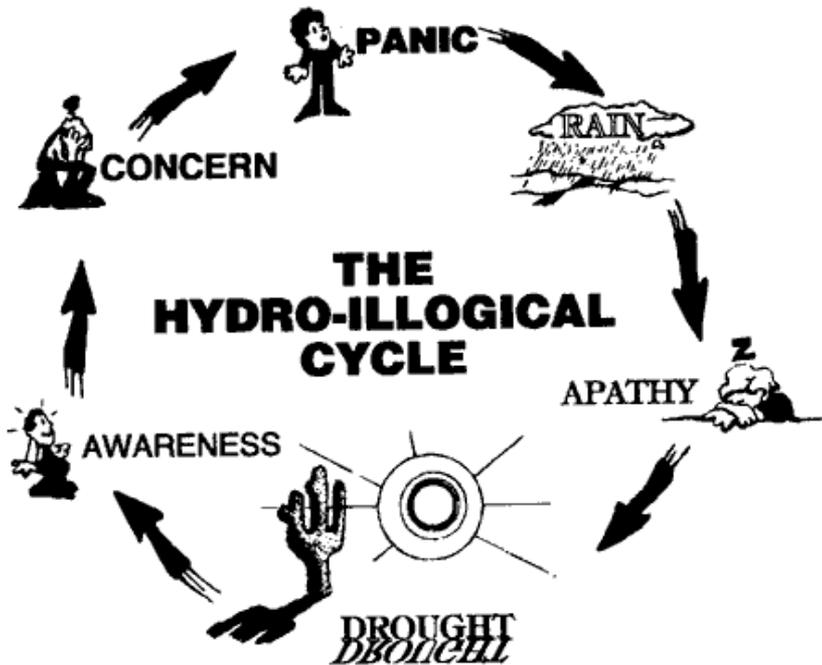
Event	Begin Date	End Date	Estimated Cost <i>in Billions USD</i>	Deaths
Hurricane Katrina	8/25/05	8/30/05	\$125.0 (148.8)	1833
Sandyt	10/30/12	10/31/12	\$65.0 (65.7)	159
Drought/Heat Wave <i>Summer 1988</i>	6/1/88	8/31/88	\$40.0 (78.8)	7,500
U.S. Drought/Heatwave†	1/1/12	12/31/12	\$30.0 (30.3)	123
Hurricane Andrew†	8/23/92	8/27/92	\$27.0 (44.8)	61
Hurricane Iket <i>Sep-08</i>	9/12/08	9/14/08	\$27.0 (29.2)	112
Midwest Flooding†	6/27/93	8/15/93	\$21.0 (33.8)	48
Drought/Heat Wave	6/1/80	9/30/80	\$20.0 (56.4)	10,000
Hurricane Wilmat	10/24/05	10/24/05	\$16.0 (19.0)	35
Hurricane Rita†	9/20/05	9/24/05	\$16.0 (19.0)	119

Historical Response to Drought

It crept out of Mexico, touching first along the brackish Pecos and spreading then in all directions, a cancerous blight burning a scar upon the land. Just another dry spell, men said at first. Ranchers watched waterholes recede to brown puddles of mud that their livestock would not touch.

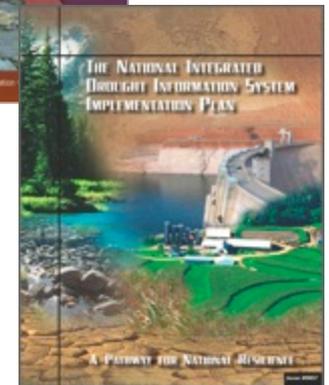
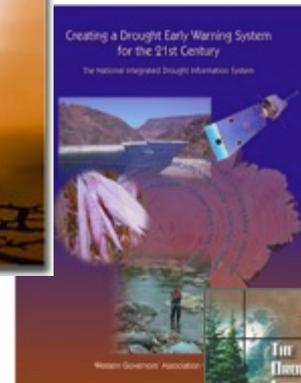
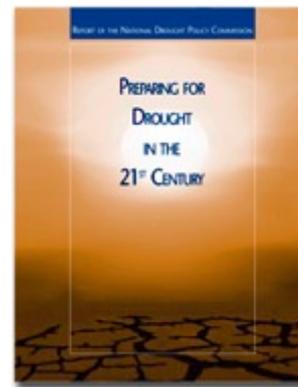
Why worry they said. It would rain this fall. It always had. But it didn't 't. And many a boy would become a man before the land was green again.

--Elmer Kelton, *The Time it Never Rained*



NIDIS: Creating a drought early warning information system

- Public Law 109-430
(The NIDIS Act 2006)
 - “Enable the Nation to move from a reactive to a more proactive approach to managing drought risks and impacts”
 - “better informed and more timely drought-related decisions leading to reduced impacts and costs”



NIDIS Act of 2006

Provide an effective drought early warning system that:

- collects and integrates information on the key indicators of drought in order to make usable, reliable, and timely drought forecasts and assessments of drought, including assessments of the severity of drought conditions and impacts;
- communicates drought forecasts, drought conditions, and drought impacts on an ongoing basis to – decisionmakers at the Federal, regional, state, tribal, and local levels of government; the private sector; and the public

NIDIS Act of 2014

- H.R. 2431: National Integrated Drought Information System Reauthorization Act of 2014
 - Passed in the House February 10, 2014
- S. 376: Drought Information Act of 2013
 - Passed in the Senate on February 3, 2014

Report to Congress

- (A) An assessment of the implementation of the NIDIS: how the information, forecasts, and assessments produced are utilized in drought policy planning and response activities.
- (B) Specific plans for continued development
- (C) ID research, monitoring, and forecasting needs to enhance the predictive capability
- (D) A list of partners with whom NIDIS collaborates
- (E) A description of the outreach activities
- (3) Consultation: In developing the report NIDIS shall consult with relevant Federal, regional, State, tribal, and local government agencies, research institutions, and the private sector.

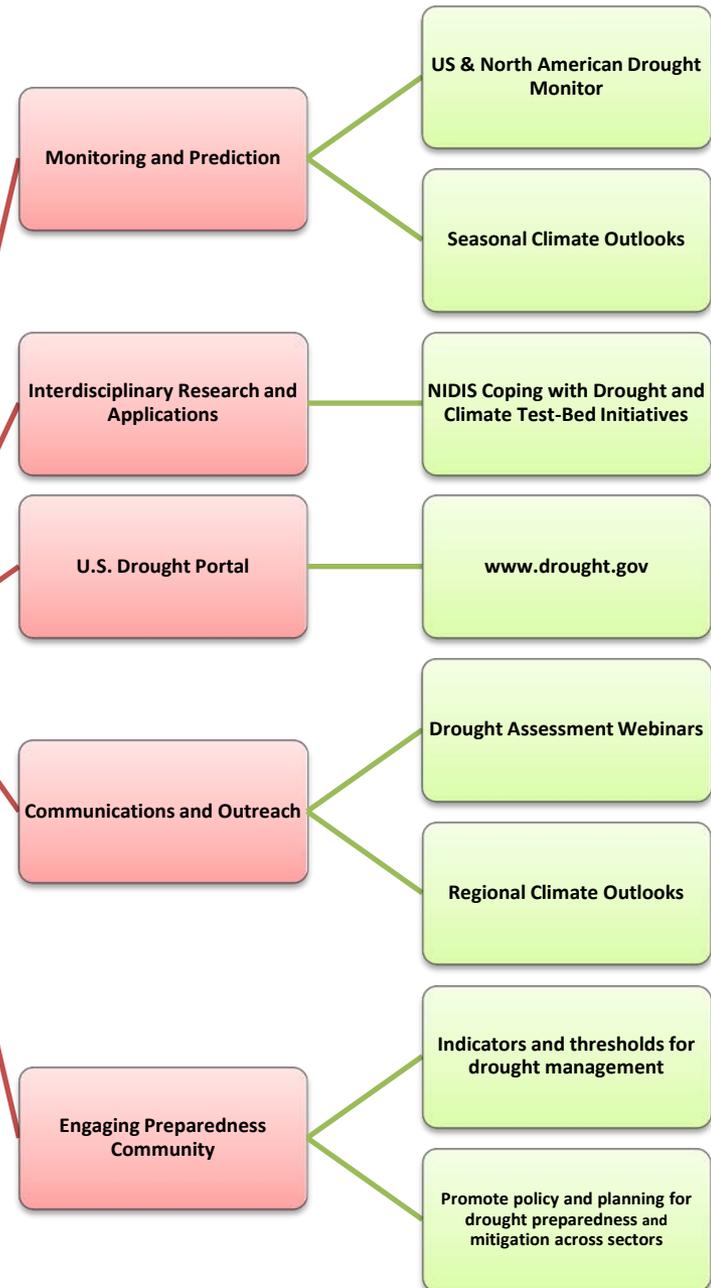
Drought Early Warning?

- Early warning: provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response-
ISDR
 - A practical tool for implementing timely and appropriate responses to droughts and famine in the form of food aid and other mitigation strategies
 - Early warning involves forecasts based on climate projections and the area's drought history, possible outcomes of developing drought events, and answering questions about how long a drought might last and how severe it might be.
 - Effective early warning systems should involve both technology and all interested parties in drought planning and response.

NIDIS/Early Warning Framework



- Drought assessments
- Climate outlook forums
- Education and outreach webinars
- Engaging the preparedness community



Approach

- Working with communities and existing networks through:
 - **Drought assessment/monitoring groups**
 - Climate outlook forums
 - Education and outreach webinars
 - Engaging the preparedness community

Drought Assessment Groups

States

- Arizona
- Hawaii
- Texas
- New Mexico
- Alabama
- Colorado
- North Carolina
- Florida
- South Dakota

- Oklahoma

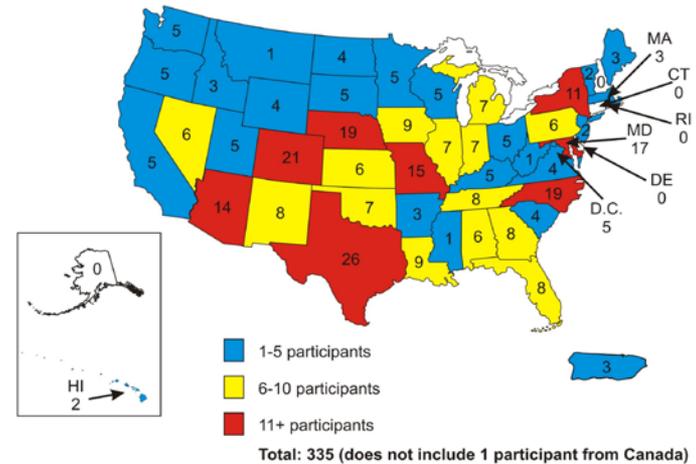
River Basins

- Upper Colorado
- Apalachicola-Chattahoochee-Flint

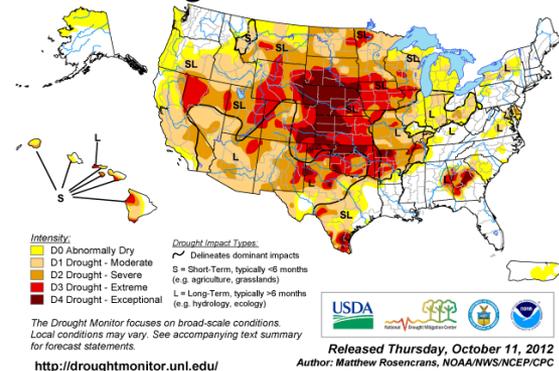
Tribes

- Navajo Nation

USDM Listserve Subscribers
(as of August 10, 2012)

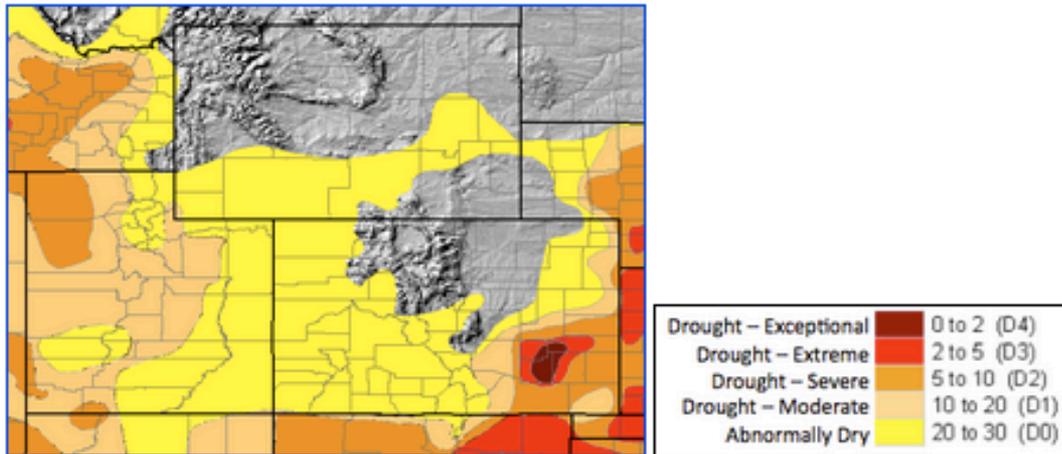


U.S. Drought Monitor October 9, 2012
Valid 7 a.m. EDT



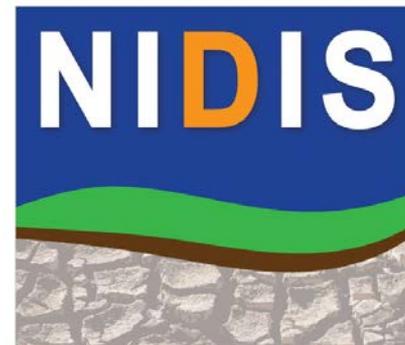
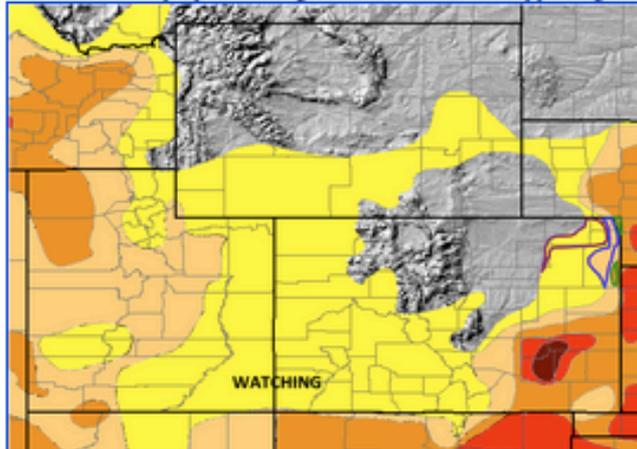
Colorado Drought Status Briefing

Precipitation SNOTEL SPI Streamflow Surface Water Temperature Outlook US



Above is the most recent release of the U.S. Drought Monitor map for the UCRB region.

Below shows the proposed changes for this week, with supporting text.

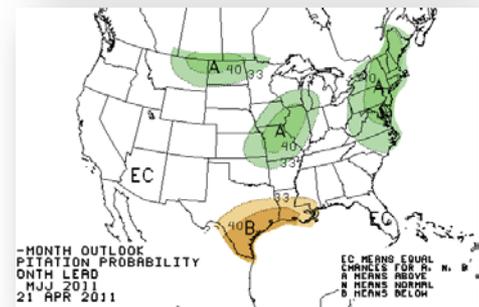
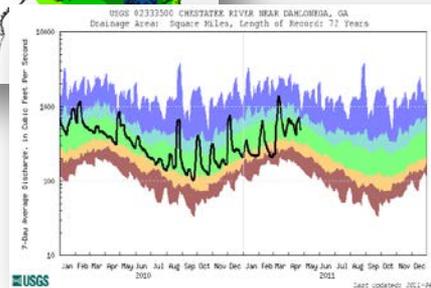
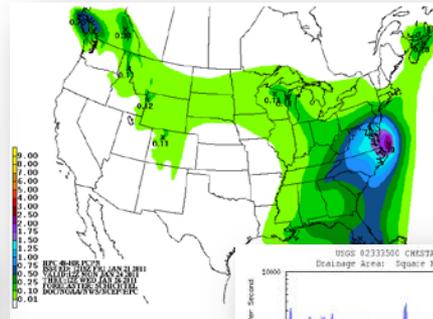
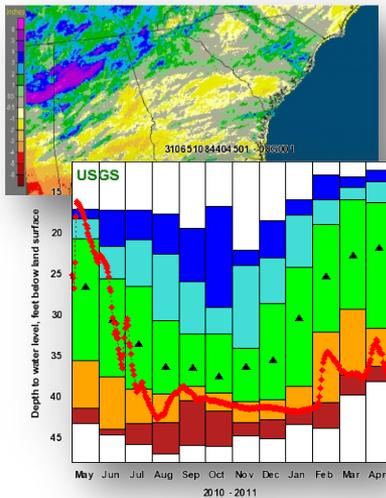
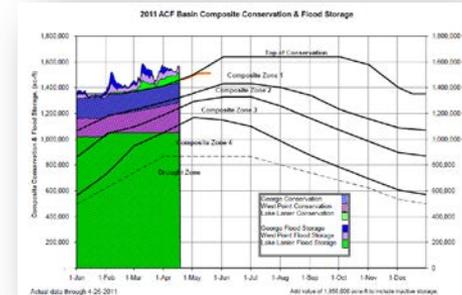
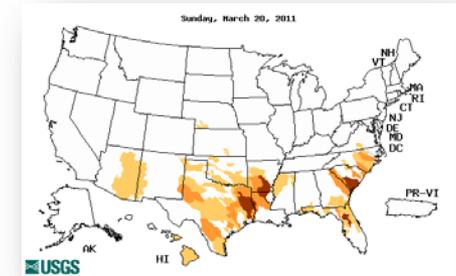


Upper Colorado River
Regional Drought Early Warning System

Summary: February 25, 2014

Apalachicola-Chattahoochee-Flint River Basin Drought Assessment Webinars

- SECC RISA
- State Climatologists
- USGS
- GA Environmental Protection Division
- NW FL Water Management District
- AL Department of Water Resources
- NWS S. Region
- SERFC
- S. RCSD
- SERCC
- ACF-S
- Habersham County Water Authority

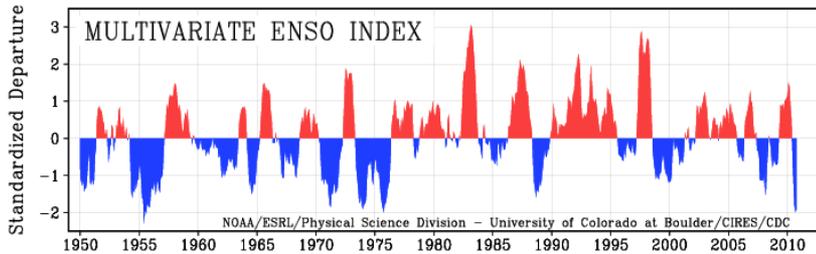


Approach

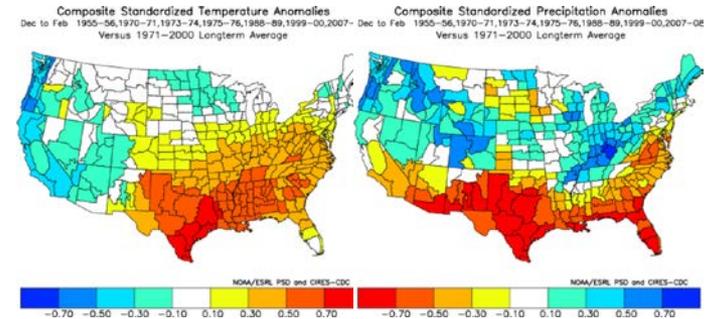
- Working with communities and existing networks of people through:
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 - Education and outreach webinars
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Seasonal Climate Outlook Forum

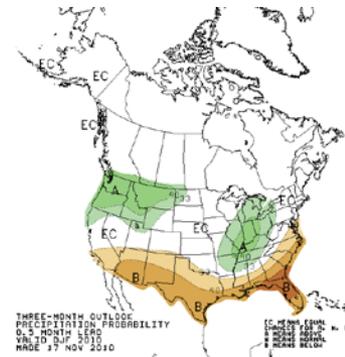
ENSO Status



Effects of ENSO

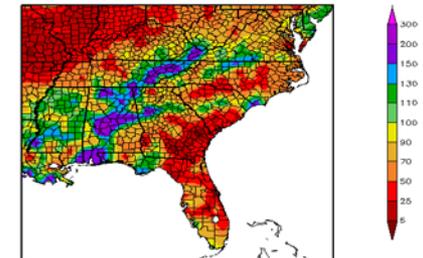


Impacts & Vulnerability



3-Month Seasonal Forecast

Percent of Normal Precipitation (%)
10/18/2010 - 11/16/2010



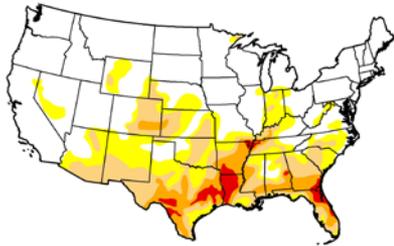
310 at HPRCC using provisional data.

Regional Climate Center

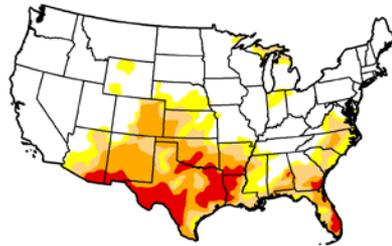
Current Conditions

Southern Plains Drought

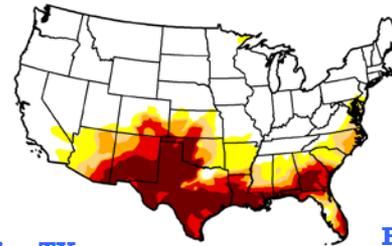
January 2011



April 2011

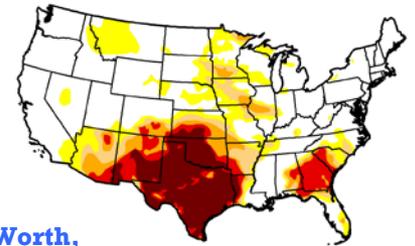


July 2011



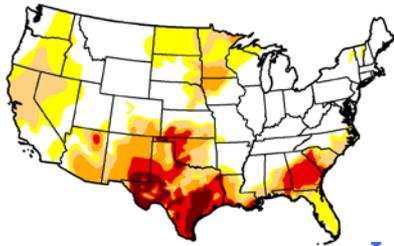
Austin, TX
July 2011

October 2011



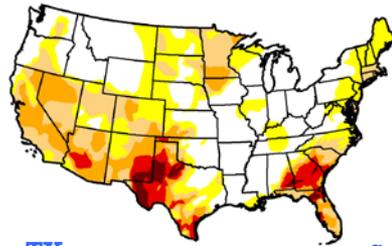
Fort Worth, TX
November 2011

January 2012



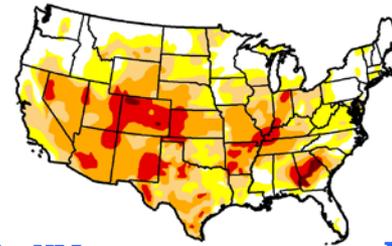
Lubbock, TX
April 2012

April 2012



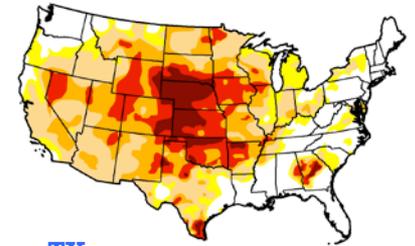
Santa Fe, NM
June, 2012

July 2012

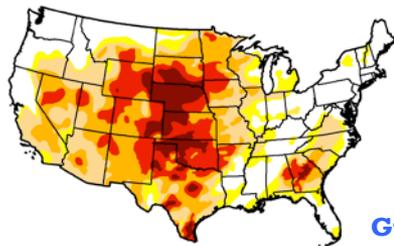


Abilene, TX
November, 2012

October 2012

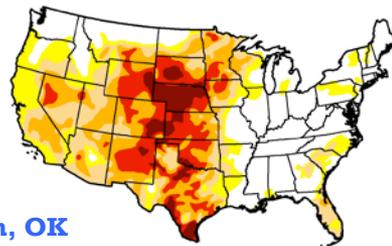


January 2013



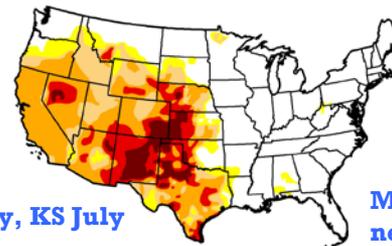
Guymon, OK
March 2013

April 2013



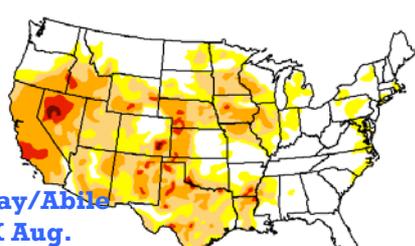
Colby, KS July
2013

July 2013



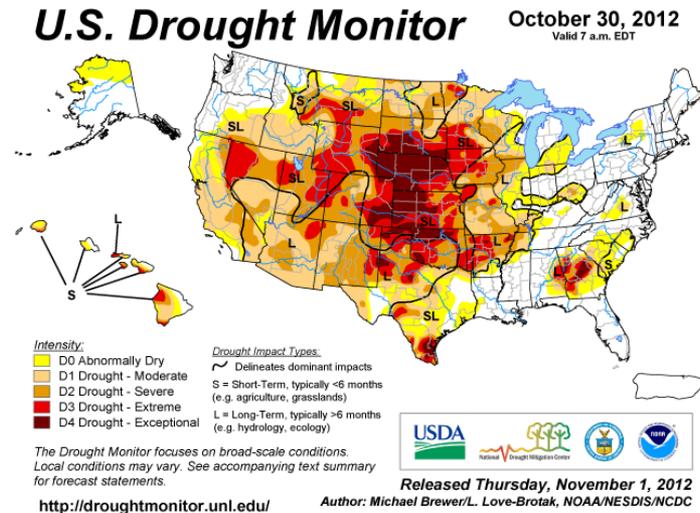
Munday/Abilene, TX Aug.
2013

October 2013



Setting the Stage: Purpose of the Meeting

- What are current conditions?
- What can we say about the drought continuing into 2013?
- What can we say about long-term trends?
- What are information needs going forward?



Southwest drought ending with onset of El Niño

Southwest Farm Press

Aug. 28, 2012

Limping El Niño Offers Little Hope for Drought Relief

By John Fleck / Journal Staff Writer on Thu, Oct 4, 2012

Were these effective?

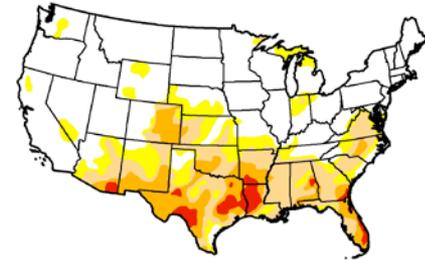
- Survey Currently Being Administered
- Content of forums and webinars was consistent with stakeholder needs
- Most interest in agriculture and water resources; least in energy
- Most used information (products or referrals) mentioned in the forums & webinars
- Some improvement in being able to use information but substantial improvement in understanding
- Information used to communicate with or persuade others

Approach

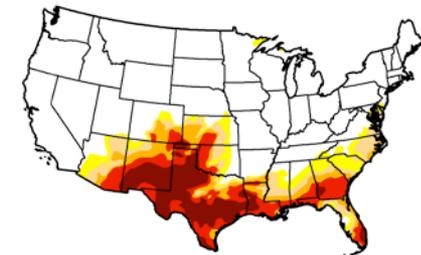
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Education and Outreach

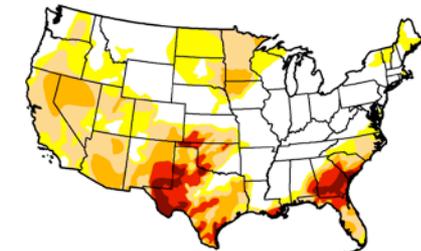
- Sustain information and processes that will reduce or mitigate impacts for the next drought
 - Managing drought webinars
 - Quarterly Climate Outlook Products
 - Managing Risk on the Ranch



March 8, 2011



June 7, 2011



February 28, 2012

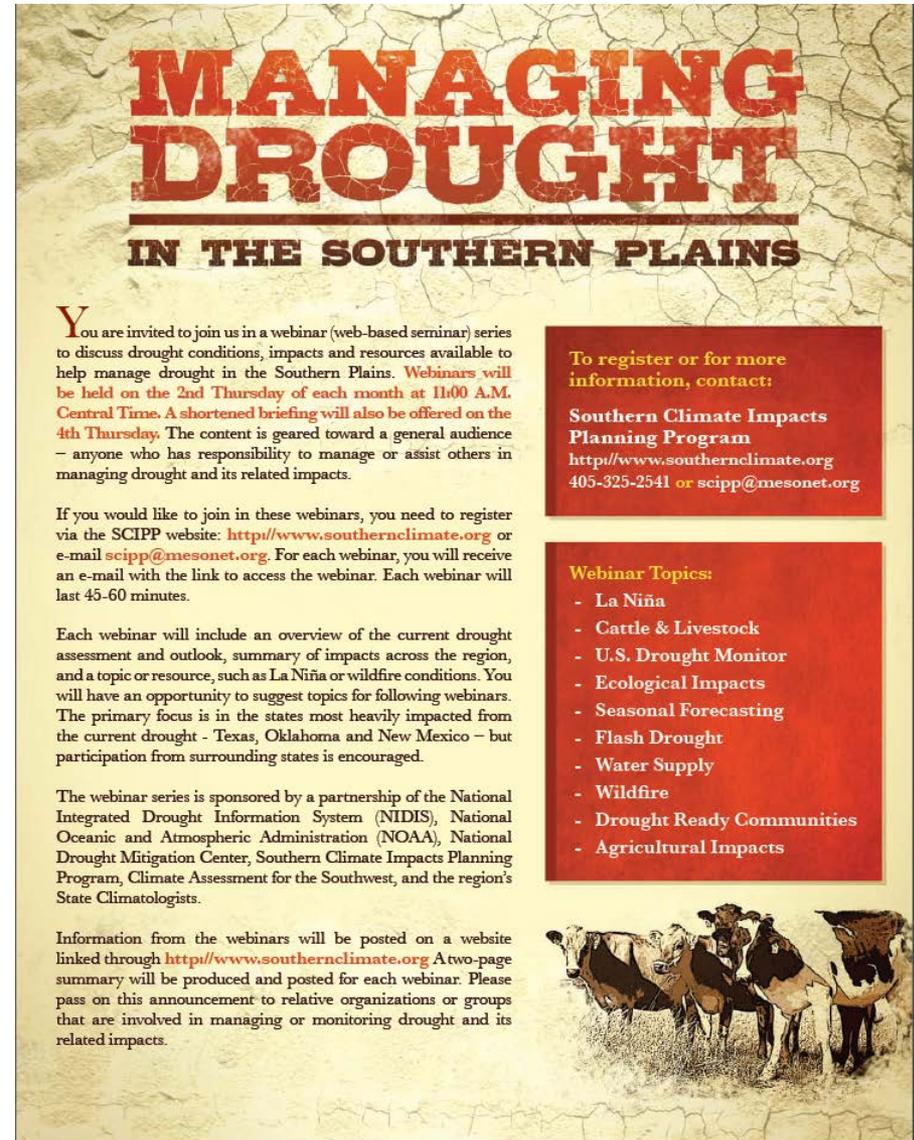
Response to emerging drought conditions:

Southern Climate Impacts Planning Program (SCIPP) & NIDIS

- ❖ Climate Outlook Forums
- ❖ Webinars on various drought topics
 - La Niña
 - Flash Drought
 - Water Resources
 - Cattle Industry
 - Seasonal Forecasts
 - Wildfire
 - U.S. Drought Monitor
 - Wildlife

Webinars are posted on YouTube

Some webinars were geared to the press, others to stakeholders in general



MANAGING DROUGHT

IN THE SOUTHERN PLAINS

You are invited to join us in a webinar (web-based seminar) series to discuss drought conditions, impacts and resources available to help manage drought in the Southern Plains. Webinars will be held on the 2nd Thursday of each month at 11:00 A.M. Central Time. A shortened briefing will also be offered on the 4th Thursday. The content is geared toward a general audience – anyone who has responsibility to manage or assist others in managing drought and its related impacts.

If you would like to join in these webinars, you need to register via the SCIPP website: <http://www.southernclimate.org> or e-mail scipp@mesonet.org. For each webinar, you will receive an e-mail with the link to access the webinar. Each webinar will last 45-60 minutes.

Each webinar will include an overview of the current drought assessment and outlook, summary of impacts across the region, and a topic or resource, such as La Niña or wildfire conditions. You will have an opportunity to suggest topics for following webinars. The primary focus is in the states most heavily impacted from the current drought - Texas, Oklahoma and New Mexico – but participation from surrounding states is encouraged.

The webinar series is sponsored by a partnership of the National Integrated Drought Information System (NIDIS), National Oceanic and Atmospheric Administration (NOAA), National Drought Mitigation Center, Southern Climate Impacts Planning Program, Climate Assessment for the Southwest, and the region's State Climatologists.

Information from the webinars will be posted on a website linked through <http://www.southernclimate.org>. A two-page summary will be produced and posted for each webinar. Please pass on this announcement to relative organizations or groups that are involved in managing or monitoring drought and its related impacts.

To register or for more information, contact:

Southern Climate Impacts Planning Program
<http://www.southernclimate.org>
405-325-2541 or scipp@mesonet.org

Webinar Topics:

- La Niña
- Cattle & Livestock
- U.S. Drought Monitor
- Ecological Impacts
- Seasonal Forecasting
- Flash Drought
- Water Supply
- Wildfire
- Drought Ready Communities
- Agricultural Impacts





WESTERN GOVERNORS' ASSOCIATION

Serving the Governors of 19 States and 3 US-Flag Pacific Islands

West sees record low temps, persistent drought,
according to 'Outlook' from WGA and NOAA

FOR IMMEDIATE RELEASE
June 27, 2013

Last year's drought covered two-thirds of the U.S. at its height, but has since receded from the East and remained severe across much of the West, according to the most recent [Quarterly Climate Impacts and Outlook](#).

The publication also shows that the spring of 2013 set records for low temperatures in many states represented by the Western Governors' Association, including Alaska, Hawaii and the Dakotas.

[The Outlook](#) features a synopsis of drought conditions over the past three months as well as a glimpse of potential conditions through September. Though drought is receding in much of the Central Plains, it is likely to persist across much of the Central West and the coastal states. Additional information, such as reservoir levels, areas of above-average wildfire potential, is also included in the Outlook.



Contacts

Carlee Brown (WGA)
cbrown@westgov.org
(386) 559-0171

Quick Links

www.westgov.org
www.drought.gov



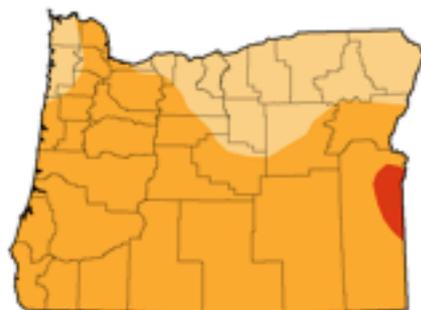
Twitter facebook
YouTube



Oregon Drought Briefing

While water year 2013-14 began as the second driest on record for Oregon through January, a more active weather pattern returned in February. The purpose of this one-hour briefing is to provide an update on current statewide climate and snowpack conditions. After the statewide update, we will focus in on some impacts and the forecast in southwest Oregon.

Panelists from the [Oregon Climate Service](#), [Natural Resources Conservation Service](#), and the [National Weather Service in Medford, OR](#)



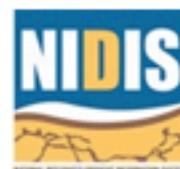
Day: Friday, February 28, 2014

Time: 11am-noon PST

Format: 3 short presentations then discussion

[Register Here](#)

Co-sponsored by the Climate Impacts Research Consortium (CIRC) and the National Integrated Drought Information System (NIDIS)



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Drought updates*

Our mailing address is:
Oregon State University
326 Strand Ag Hall
Corvallis, OR 97331

Tri-County Risk Management

Workshop: Tuesday, February 4, 2014



Create a risk management plan for your own operation.

This workshop will focus on opportunities and challenges of weather and climate-related risk management.

- Cody Knutson, UNL National Drought Mitigation Center: Why you need a written drought plan, and how to do it
- Laura Edwards, SDSU Extension Climate Field Specialist: Weather and climate monitoring
- Pete Bauman, SDSU Extension Range Field Specialist: Measuring grassland productivity
- Dr. Matt Diersen, SDSU Risk/Business Management Specialist: Using Pasture, Rangeland, Forage - Rainfall Index Insurance & Market outlook
- NRCS: SD Drought Tool and efficiency of soil infiltration, and NUTBAL program
- Roger Gates & Dave Ollila, SDSU Extension Range Specialist and Sheep Field Specialist: Best management practices for range

Location: SDSU Extension Center, Winner

Time: 9 am – 3 pm

No pre-registration required, but encouraged. Contact Bob below. Lunch will be provided.

For more information:

Bob Fanning, SDSU Extension in Winner,
842-1267

or Steve Higgins, NRCS in Winner,
842-0803

or Shane Reis, NRCS in Kennebec,
869-2216

or Brandon Walter, NRCS in Burke,
487-7501 x.3

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NORTH CENTRAL
RISK MANAGEMENT
EDUCATION CENTER



United States Department of Agriculture
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of America

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Kennebec, and Statewide Ag Insurance



NRCS Natural Resources
Conservation Service

SDSU
Extension

This program is based upon work supported by USDA-NIFA under Award Number 2012-49200-00032, with support from National Integrated Drought Information System and Farm Credit Services of America. South Dakota State University, South Dakota counties, and USDA co-operating. South Dakota State University adheres to AA/EEO guidelines in offering educational programs and services.

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Managing Extreme and Extended Drought on the Farm and Ranch

January 9, 2014
8 a.m.-5 p.m.
4H Building
Garden City, Kansas



This one day workshop will feature information for ranchers and irrigated crop producers who are dealing with long-term choices associated with declining aquifer levels. Hear from experts in the field on planning for drought. The workshop is free and open to the public.

Morning

- Current Status of Drought in the High Plains
- Long-Lead Climate Outlook and the Role of La Niña in High Plains Drought
- Long Term Management of the Ogallala Aquifer
- Can You Plan for Drought?

Afternoon

Ranching Session

- Managing Risk on the Ranch
- Precipitation and Pasture Growth
- Long Term Effects of Drought and Planning for Recovery
- Producer Experiences Implementing the Drought Plan
- Adaptive Management for an Uncertain Climate

Irrigation Session

- Managing Limited Irrigation
- Irrigation Efficiencies
- Programs for Irrigators
- Financial Considerations
- Producer Experiences

Register by January 3 at:
<http://go.unl.edu/68tg> or 402-472-6776

Lunch will be provided for \$10.
Please pay at the door.

For more information:
www.drought.unl.edu/ranchplan

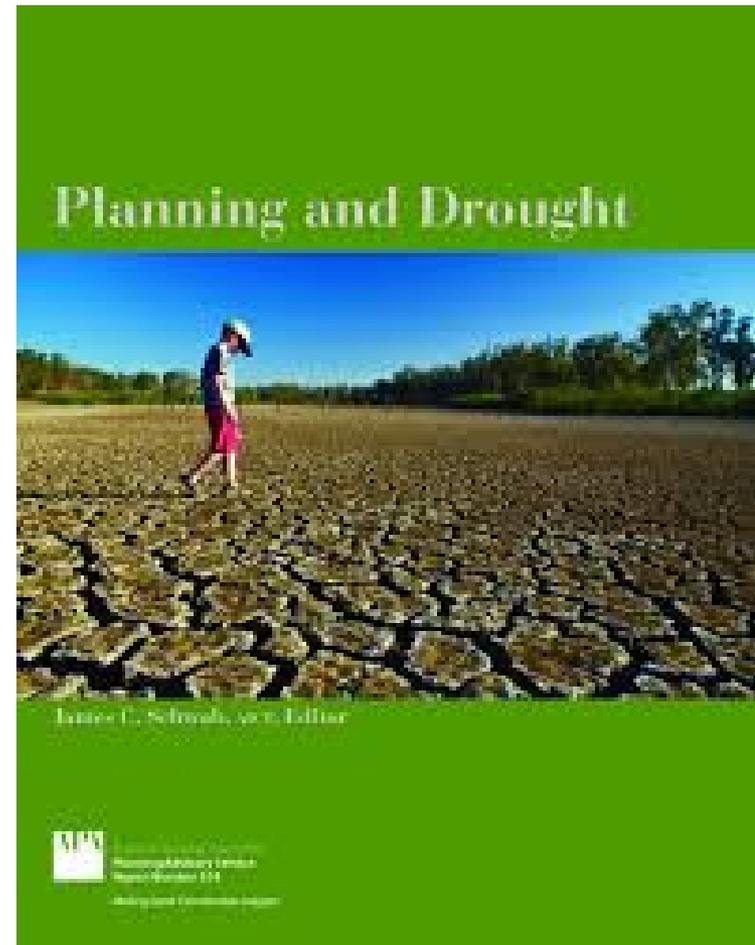


Approach

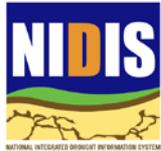
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Engaging the Preparedness Community

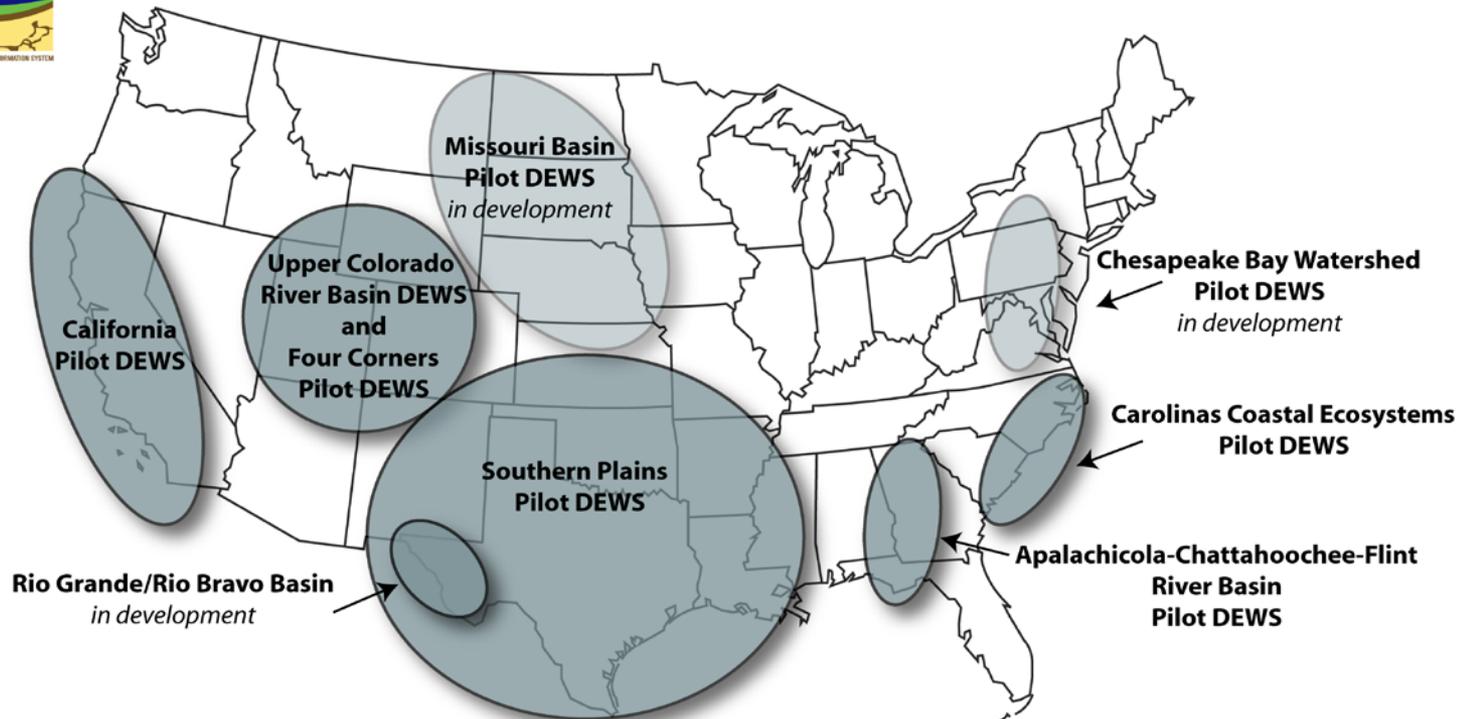
- Drought planning:
American Planning Association-Public Advisory Service
- EPC Webinars
- Developing drought coordinator network



NIDIS Pilots Areas



National Integrated Drought Information System (NIDIS)
Regions in the US where NIDIS is currently developing drought early warning information systems



NIDIS is working toward a fully national drought information system through national, tribal and state partnerships

NIDIS-supported research and monitoring is conducted across the nation

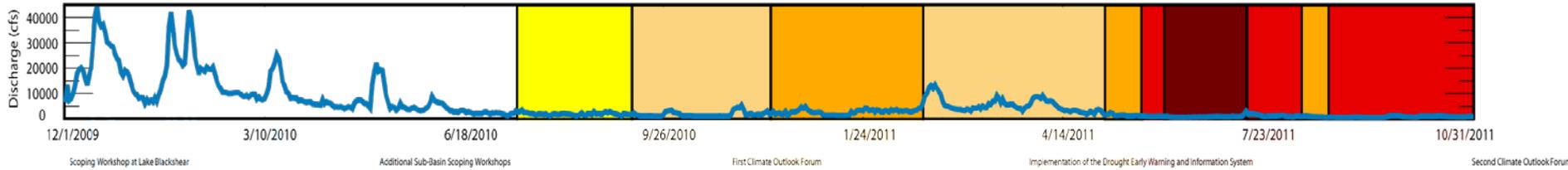
For monitoring, forecasting, data products, research activities and information on NIDIS webinars and meetings, visit the drought portal - www.drought.gov

Why use pilot studies...and why so many?

- Enables innovations and new information to be introduced and tested
- Roles can be defined over time
- Buy-in and ownership through participation in design and implementation
 - Existing barriers to cross-agency collaboration to be overcome
- Drought and its impacts highly variable, and how we plan and respond is also variable

Apalachicola-Chattahoochee-Flint (ACF) Pilot in Review

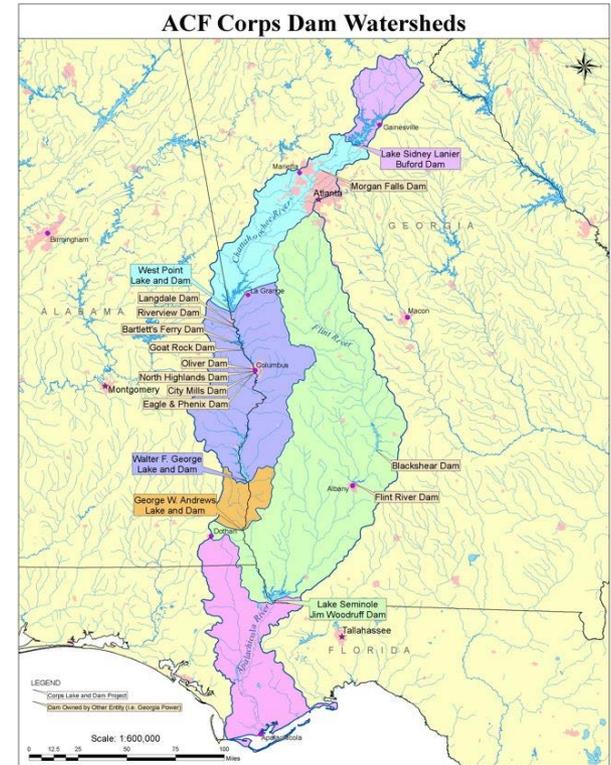
Evolution of discharge (cfs) on the Flint River in Albany, GA and Drought Monitor Categories for Dougherty County (home of Albany) GA from 1 Dec 2009 to 8 Nov 2011



Issues & Commonalities

ACF Pilot

1. Education and Communication
2. Forecasting improvements
3. Improved interactions with the Army Corps
4. Data integration
5. Consistency in drought planning among the three states
6. ACF Basin webinars and Climate Outlooks
7. Water Supply Drought Index
8. Resolve discrepancies in our understanding of groundwater
9. Presentation of Information

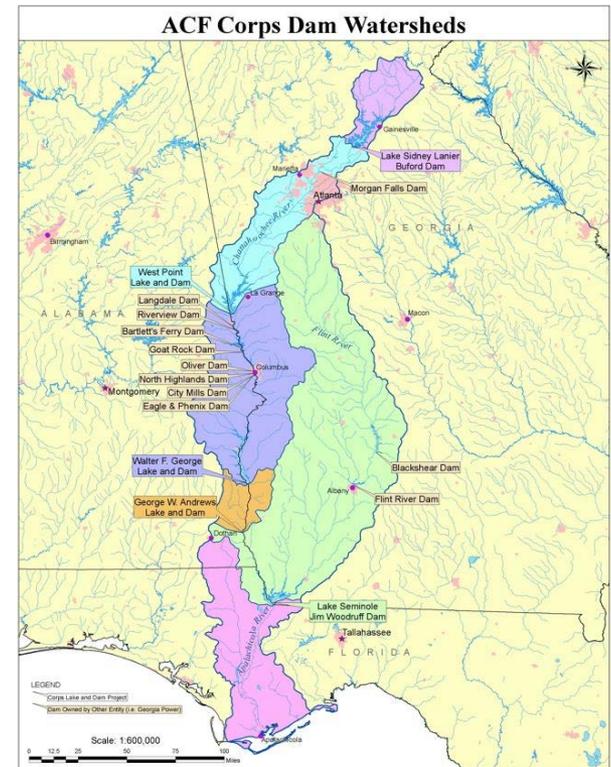


ACF Pilot

1. Education and Communication

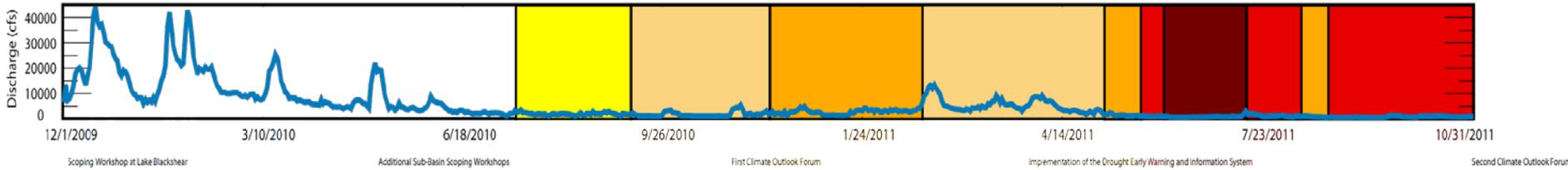
6. ACF Basin webinars and Climate Outlooks

9. Presentation of Information

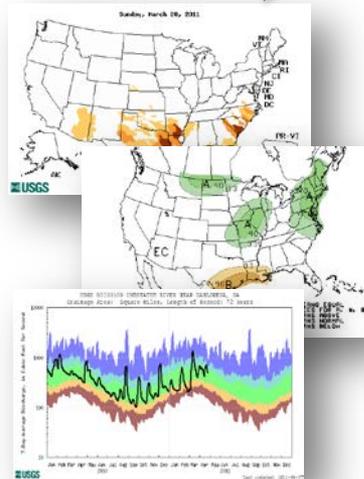


NIDIS ACF Pilot in Review

Evolution of discharge (cfs) on the Flint River in Albany, GA and Drought Monitor Categories for Dougherty County (home of Albany) GA from 1 Dec 2009 to 8 Nov 2011



Issues & Commonalities



A summary of drought conditions based on the Apalachicola-Chattoahoochee-Flint River Basin Drought Assessment Webinar of March 12th, 2013

Droughted Climate Consortium (DCCC) and the National Integrated Drought Information System (NIDIS)

Webinar Objectives:
 - Provide a Summary
 - Assess Drought Conditions
 - Discuss Mitigation Options
 - Review Drought Assessment

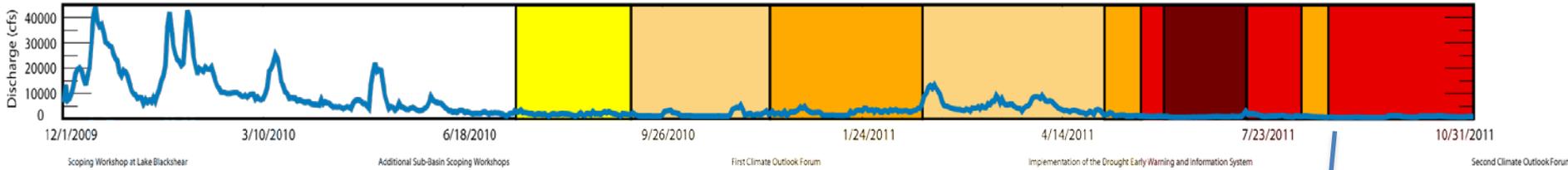
Due to the ongoing drought conditions in the ACF Basin and surrounding areas, we have decided to disseminate the highlights of the recent NIDIS-DCCC ACF Drought Assessment Webinar to all of our stakeholders.

Our next briefing will be Tuesday, April 2, 2013, 2 pm ET.
 Webinars from this briefing will be posted here:

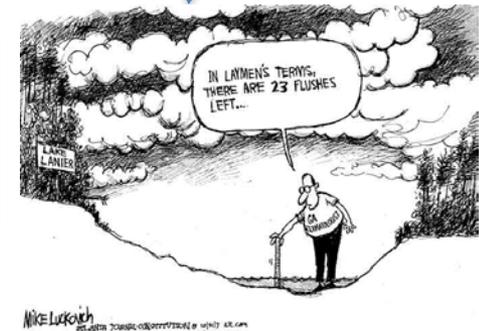
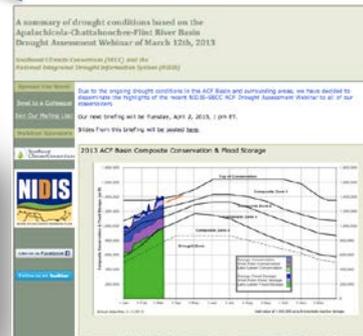
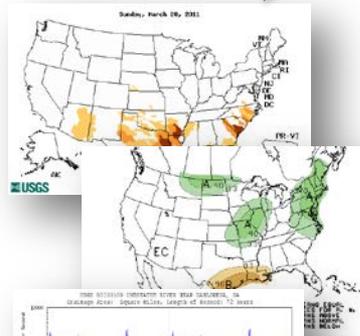
2013 ACF Basin Composite Conservation & Flood Storage

NIDIS ACF Pilot in Review

Evolution of discharge (cfs) on the Flint River in Albany, GA and Drought Monitor Categories for Dougherty County (home of Albany) GA from 1 Dec 2009 to 8 Nov 2011

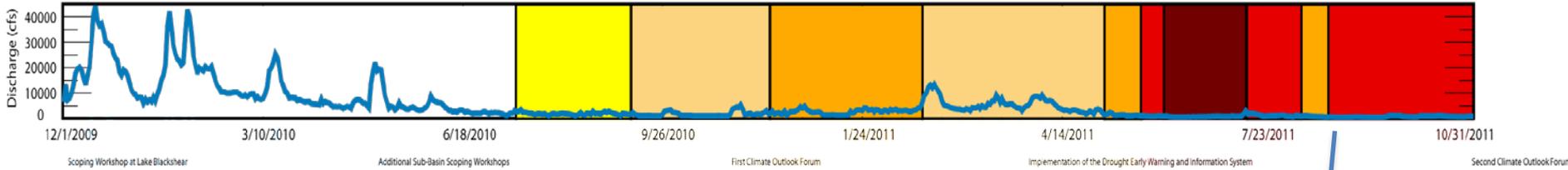


Issues & Commonalities

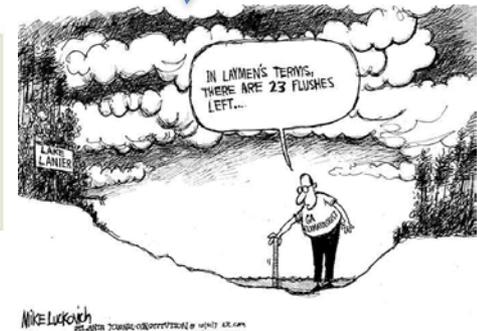
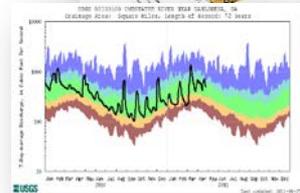
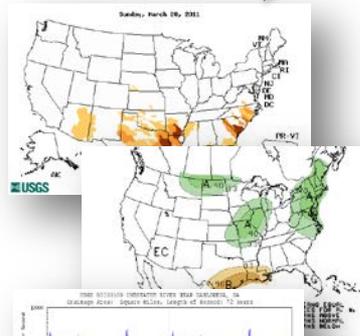


NIDIS ACF Pilot in Review

Evolution of discharge (cfs) on the Flint River in Albany, GA and Drought Monitor Categories for Dougherty County (home of Albany) GA from 1 Dec 2009 to 8 Nov 2011



Issues & Commonalities



MIKE LUKOVICH
www.mikelukovich.com

Post 2011 Outlook Forum

Experts say Lanier unlikely to rebound in 2012

Climate, water officials pessimistic lake can reach full pool next year

By Ashley Fielding

afelding@gainesvilletimes.com

POSTED: December 2, 2011 1:15 a.m.

Region's drought risk is serious, scientists say

Climate forum members say awareness lacking, stress river basin's troubles

By Ashley Fielding

afelding@gainesvilletimes.com

POSTED: December 3, 2011 12:19 a.m.

Drought predicted for this area

Published 6:59am Monday, November 22, 2010

[Email](#) [Print](#) [Comments](#)

0 [tweet](#) | [Like](#) | [Sign Up](#) to see what your friends like.

Participants at a forum held in Albany on Thursday are tentatively predicting a drought for the region.

Georgia drought likely to continue or worsen

By David Stooksbury, University of Georgia

May 9, 2011 7:57am

[RSS](#) [Comments](#)

[PRINT](#) [SAVE](#) [EMAIL](#) [SHARE](#)

- The dry La Niña winter and spring for southern Georgia means that the typical moisture recharge for the region did not occur this year.
- As the heart of the agricultural growing season begins this month, there is minimal moisture reserve at this time.

Will 2011 Be A Drought Year?

By David Chandley

Severe Weather Team 2 meteorologist

Posted: 10:48 am EST November 22, 2010

Updated: 11:01 am EST November 22, 2010

ATLANTA -- Wait and watch.

Drought operations begin on Apalachicola-Chattahoochee-Flint River basins

1:49 AM, May 2, 2012 | [0](#) comments

Drought Persists, Lakes Drop

By Joshua Stewart

Updated: 11 months ago

Disaster Hits Oyster Harvesting, Leaves Apalachicola Families in Dire Straits

By: JIM TURNER | Posted: October 1, 2012 3:55 AM

Florida Oyster Harvest Suffers As Drought Intensifies Water Battle with Georgia and Alabama

State senators push litigation in Tenn. border dispute

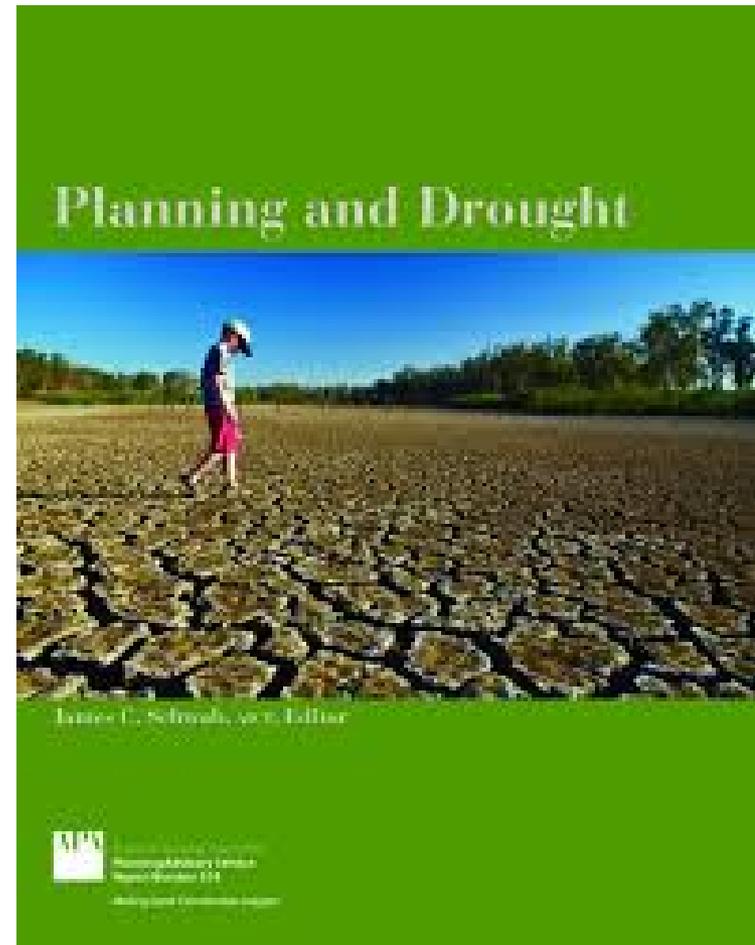
By Jeff Gill

jgill@gainesvilletimes.com

POSTED: March 25, 2013 3:50 p.m.

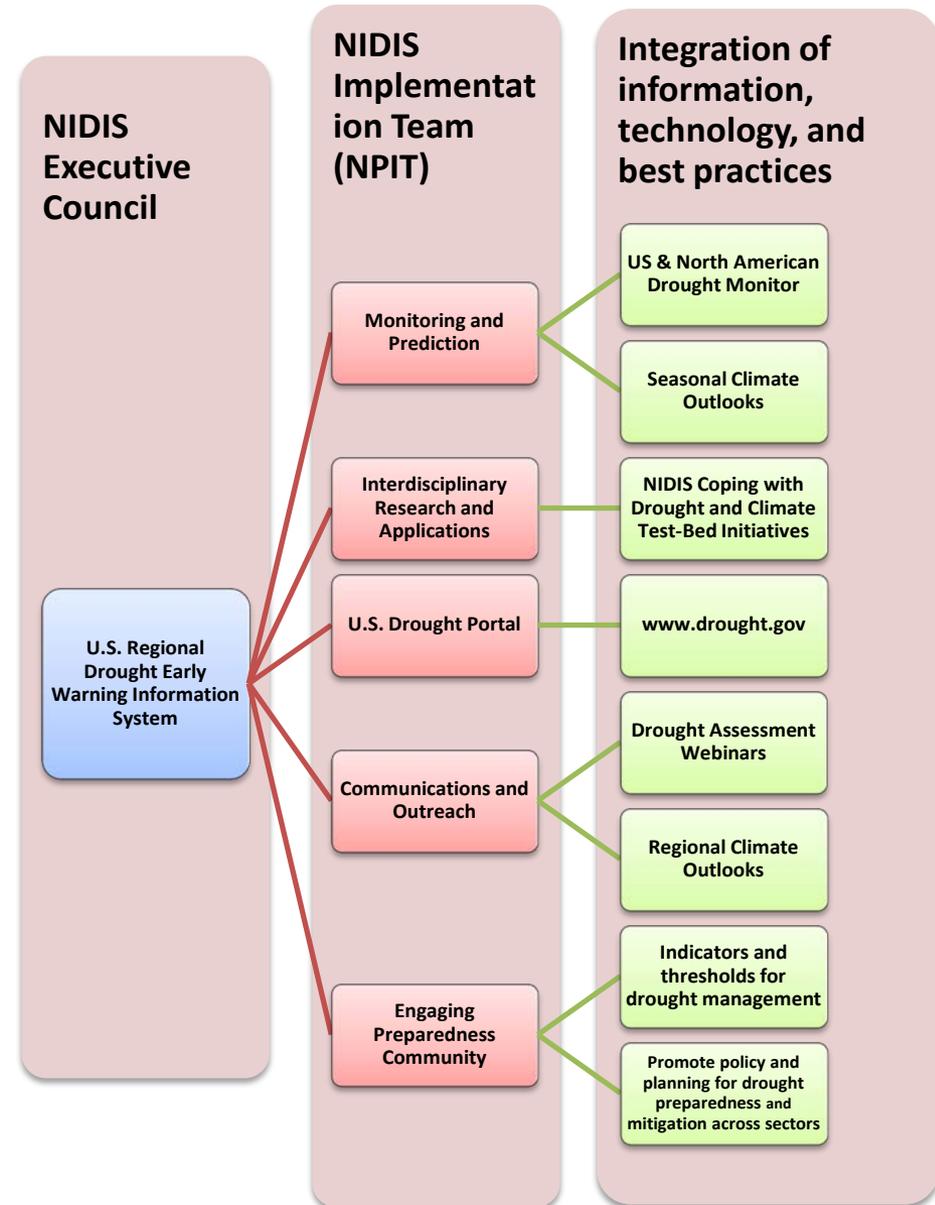
Engaging the Preparedness Community

- EPC Webinars
- Drought planning: American Planning Association-Public Advisory Service
- Developing drought coordinator network



Summary

- NIDIS serving as coordination/collaboration mechanism for drought risk reduction discussion: planning, data and information needs, sharing information/best practices
- Leadership and early adopters important
- Monitoring and Early Warning Information starting point for the engagement of stakeholders for risk management.



Pilot Project General Guidelines

- Feasibility: Can be completed within the approximate 2-year period, availability of existing resources and capacity
- Participation: Builds partnerships, includes or engages multiple partners
- Regional focus
- Potential to be self-sustaining
- Replicable / Transferable
- Uses & benefits from existing resources
- Produces measureable results, tangible products
- Produces long-term benefits, minimizes potential losses
- Contributes to an existing decision-making tool or process
- Discussion may generate other ideas

Metrics for Success

- Project has been extended to decision makers or users and it is perceived as effective, “worth it”
- Not tied to having a drought (won't be able to measure if there is no drought)
- Outcome: do we have more knowledge at end of the project, can we use that knowledge
- Reduced impacts and costs
- Improve institutional capacity
- Provider or drought information has changed decision-making capacity
- Demand for expansion
- Quantified measures of increased use of data, products, resources
- Influence content on the national drought portal, in the drought monitor, or the drought outlook

Measuring where we are at...

- Paper survey to assess the current state of drought readiness in the basin
- Clicker Questions throughout meeting to
 - provide feedback on the meeting itself and
 - gauge knowledge of NIDIS and drought-related tools and resources
- World Café to identify
 - Resources
 - Risks and vulnerabilities
 - Gaps and information needs
- Final break-out discussions to think about next steps and how we define success for this project