



The State of the NIDIS

Roger Pulwarty and Philip Mote





WGA (2004), NIDIS Act (2006), USGEO (2006)

Preceded by: Western States Water Policy Commission (1998), National Drought Policy Commission (2000)

Creating a Drought Early Warning System for the 21st Century

The National Integrated Drought Information System

RESERVOIR LEVELS • SATELLITE DATA
 STREAMING DATA • FORECASTS
 HYDROLOGIC DATA • FIRE DANGER • SNOWMELT STRESS
 PRECIPITATION DATA • GROUNDWATER • STREAM FLOW
 AND EXHAUSTION • RAINFALL PATTERNS • SOIL MOISTURE
 AND TEMPERATURE

Western Governors' Association • June 2004

DRAFT - FOR DISCUSSION PURPOSES ONLY

U.S. Integrated Earth Observations System:
National Integrated Drought Information System
 Draft Integration Framework

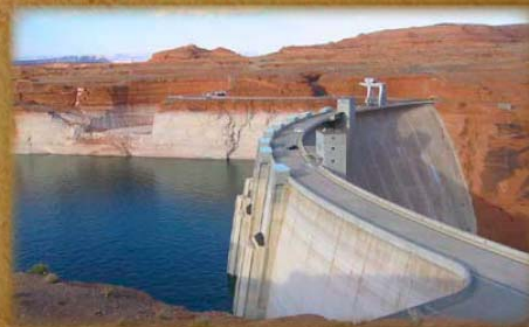
UNITED STATES GROUP ON EARTH OBSERVATIONS

4/27/2005 1 Framework_Drought v1 0[1].doc

Federal, State, Local, Tribal, Regional/Watersheds



THE NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM IMPLEMENTATION PLAN



A PATHWAY FOR NATIONAL RESILIENCE

June 2007



NIDIS VISION and GOALS



“A dynamic and accessible drought information system that provides users with the ability to determine the potential impacts of drought and the associated risks they bring, and the decision support tools needed to better prepare for and mitigate the effects of drought.”

Implementation requires:

- Coordinate a national drought monitoring and forecasting system
- **Foster, and support, a research environment that focuses on risk assessment, forecasting and management**
- Creating a drought early warning system
- Providing an interactive drought information delivery system for products and services—including an internet portal and standardized products (databases, forecasts, Geographic Information Systems (GIS), maps, etc)
- Designing mechanisms for improved interaction with public (education materials, fora, etc)



Challenge: Diverse Temporal and Spatial Scales



TIME SCALES OF CLIMATE VARIABILITY

Droughts

- Heat waves, droughts
- Floods
- Storm track variations
- Madden-Julian Oscillation

- El Niño-Southern Oscillation
- Other climate modes

- Decadal variability
- Solar variability
- Deep ocean circulation
- Greenhouse gases



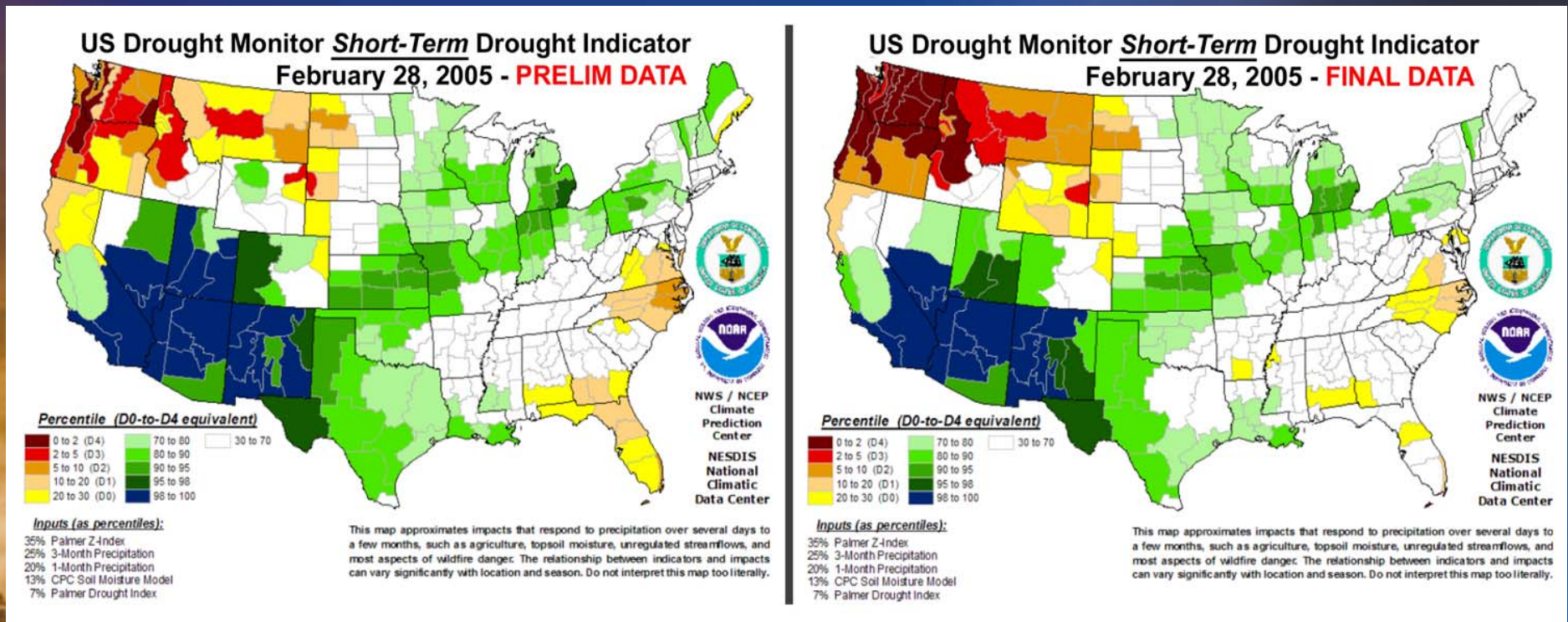
Droughts span an enormous range of time scales, from short-term “flash droughts” that can have major agricultural impacts to multi-year or even decadal droughts (1930s, 1950s, etc.) Paleoclimate evidence suggests that in the last 1000 years parts of the U.S. have experienced “mega-droughts” that persisted for decades.



NIDIS Operations: Improved Monitoring



- Drought indicators based on available preliminary data differ greatly from final data in some areas.





Making NIDIS Operational



- The **NIDIS Project Office**: Structure, implementation teams and governance (incl. Exec. Council)
- **National**
 - *Engaging the preparedness communities*
 - *Monitoring and forecasting: gaps and capacity*
 - *Education and Outreach*
 - *Integrated research for generating drought risk scenarios*
 - *The Drought Portal*
- **Regional/State DEWS Pilots**: Goals, Design, Implementation, Evaluation, Transferability
- **Partnerships**: Federal, State, Tribal, Local, Watersheds



Governance Structure for NIDIS Implementation



NIDIS Executive Council

Co-chairs: Director, NOAA Climate Program Office (or designee)
Director, National Drought Mitigation Center (or designee)

NIDIS Program Office (NPO Director)

- Coordinate NIDIS-relevant cross-NOAA and Interagency drought-related activities
- Develop a national presence for NIDIS (e.g. formal links to National Governors Ass'n)
- Participate in GEOSS / IEOS

NIDIS Program Implementation Team (NPIT)

Working-Level Partner Representatives
Coordinate and develop evaluation criteria for all NIDIS activities including pilot project selection
Chair: NPO Director

NIDIS Technical Working Groups

Federal, Regional, State, Tribal and Local Partner Leads
Embedded in national and regional, and local NIDIS Activities
Develop pilot implementation and transferability criteria
Co-Chairs selected by NPIT

Public Awareness
And Education

Engaging
Preparedness
Communities

Integrated
Monitoring and
Forecasting

Interdisciplinary
Research and
Applications

U.S.
Drought Portal

National Integrated Drought Information System

Drought Early Warning System Design, Pilots, and Implementation

NIDIS Project Implementation Team

(authors of the implementation plan)

- Deborah Bathke New Mexico State University
- Michael Brewer NOAA/NWS
- Mark Brusberg USDA/OCE
- Heidi Cullen Weather Channel
- Art Degaetano RCC/Northeast
- Michael Hayes NDMC
- Wayne Higgins NOAA/NWS
- Doug Kluck NOAA/NWS
- Harry Lins USGS
- Shaun McGrath WGA
- Hope Mizzell RCC/Southeast
- Phil Mote University of Washington
- Rolf Olsen USACE
- Tim Owen NOAA/NCDC
- Phil Pasteris USDA/NRCS
- *Roger Pulwarty (Chair, NOAA/OAR)*
- Kelly Redmond RCC/Western
- David Robinson Rutgers University
- Siegfried Schubert NASA
- Mark Shafer University of Oklahoma
- Anne Steinemann University of Washington
- Jean Steiner USDA/ARS
- Mark Svoboda NDMC
- Dennis Todey South Dakota State U.
- Jim Verdin USGS
- Robert Webb NOAA/OAR



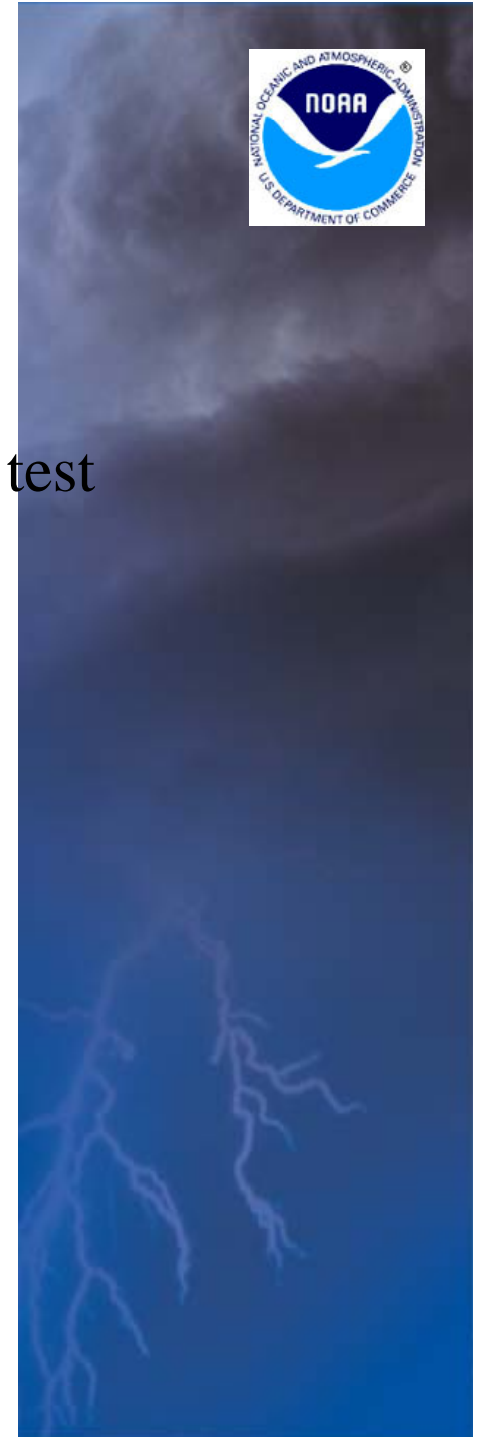
Portal

Climate test
beds

Coping
with
drought

Pilots

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

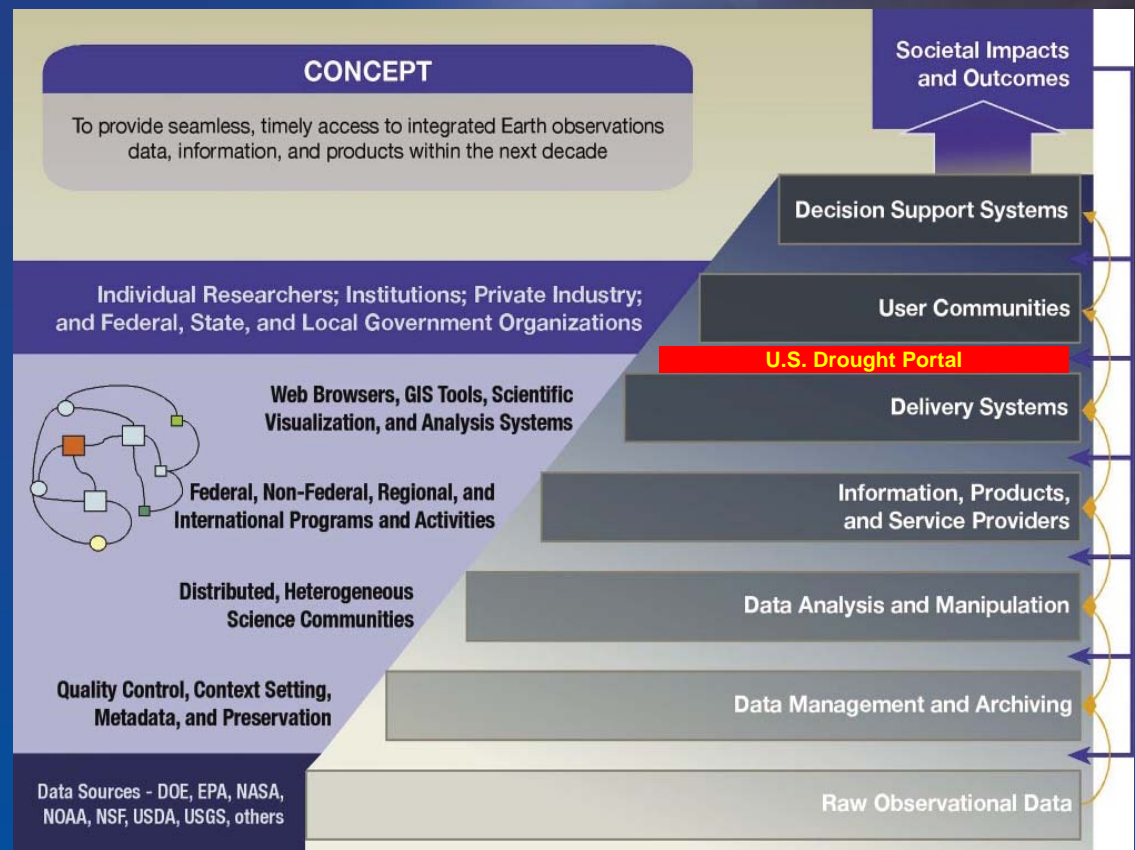


NIDIS Data information and assimilation and model: U.S. Drought Portal

The USDP will provide county, regional and national drought-related products (analysis, forecasts, and research) to a variety of users, ranging from individuals whose livelihood is impacted by drought to large corporations, water managers and the research community through a dynamic, Internet-based drought portal.

What is a Portal?

Sites on the World Wide Web that typically provide personalized capabilities for their visitors.



US GEO Context:





NIDIS Pilots first series FY09 (selected by the Project implementation Team)



Timeline? Funding? Transferability?



"The one thing that missing is the location of the second round of NIDIS pilots, one of which should be in the PNW building off of the work in Montana and the RISA Coping with Drought efforts." - email from Roger 6/14/07

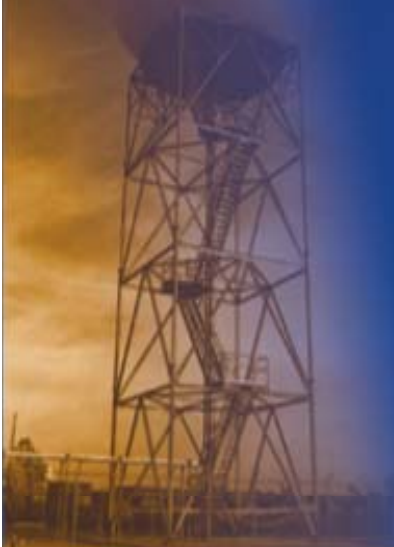




CONCLUSIONS relevant to eWaCH.net



- NIDIS provides little money for observations but some prospect for leverage on “enhancement”
- Prospect of PNW 2nd-round pilot
- Links between observations/monitoring and forecasts





Sub-Committee on Natural Disasters Grand Challenges: National Drought Preparedness:

#1: *Develop a National Drought Information system*

#2: *Enhance Hazard Understanding*

#3: *Develop Mitigation Technologies and Strategies*

#4: *Protect Critical Infrastructure Systems*

#5: *Assess Disaster Resilience*

#6: *Promote "Risk-Wise" Behavior*



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National Integrated Drought Information System

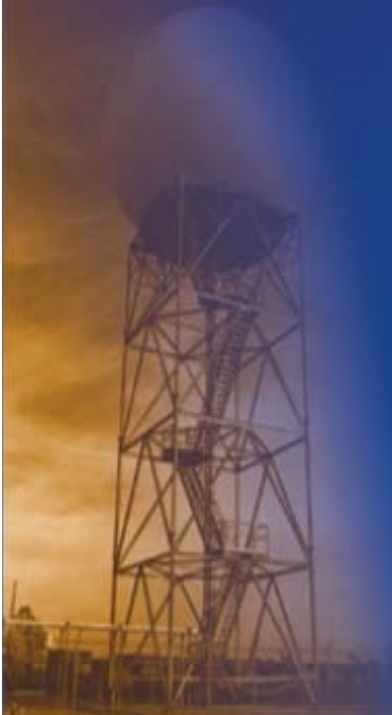
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National Integrated Drought Information System

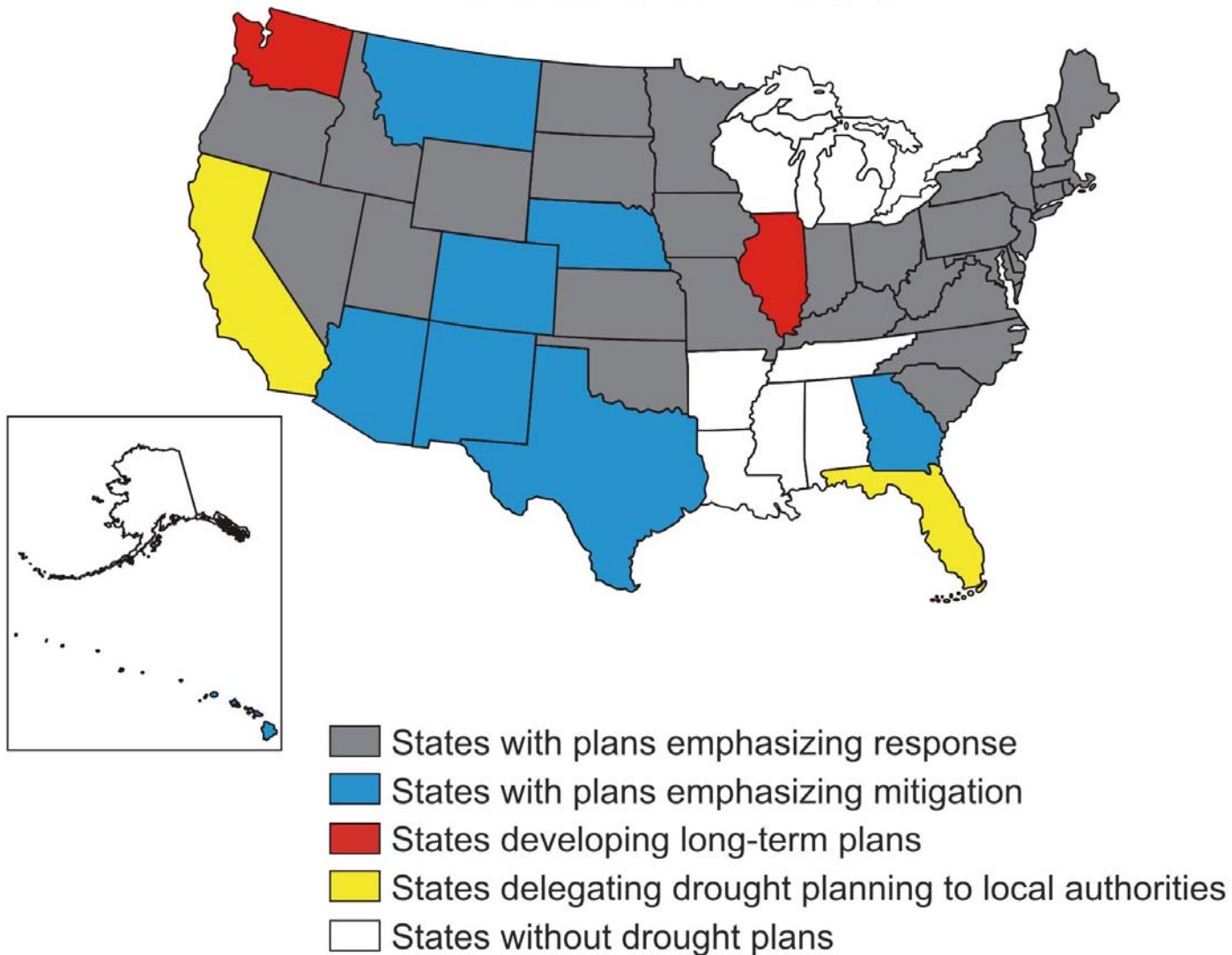


What are the "pieces"?
Where are the gaps?





Status of Drought Planning October 2006





The United States Drought Portal within NIDIS

