Mission: To lessen societal vulnerability to drought by promoting planning and the adoption of appropriate risk management techniques.
NDMC Program Objectives

- Improve the science of drought monitoring, planning, and mitigation
- Build awareness of drought and its impacts on society and the environment, and how human actions affect our vulnerability to drought
- Focus the attention of policy makers on the importance of drought policy and planning in the wise stewardship of natural resources

“End-to-End”: Research-Applications-Operations-Outreach Continuum working w/ our users…….
“You can’t manage what you don’t measure.....and you can’t measure what you don’t monitor....”

(An old business adage applied to drought early warning!)
Why Track Drought Impacts?

- Establish an impacts **baseline** for monitoring now and in the future
  - The “face” of drought (vulnerability)
  - Climate change
- To know where to direct **relief**
- To reduce **vulnerability** in advance of the next drought
  - incorporate assessment into risk management planning
- **“Ground truth”** indices, models, USDM
- No single method exists for collecting and/or **quantifying** drought losses
- Very little in the way of **environmental** or **qualitative** collection
Components of Drought Risk Assessment

\[
\text{Risk} = \text{Hazard} \times \text{Vulnerability}
\]

(natural event) (social factors)
Components of Drought Risk Assessment

- Population growth
- Population shifts
- Urbanization
- Technology
- Land use practices
- Environmental degradation
- Water use trends
- Government policies
- Environmental awareness

Vulnerability

(ability to anticipate, cope with, and recover from drought)
Some DIR Facts

- Established in 2005
- DIR DB now contains >14,000 impacts

[(http://droughtreporter.unl.edu)](http://droughtreporter.unl.edu)
USDM Listserve Subscribers
(as of August 10, 2012)

Total: 335 (does not include 1 participant from Canada)
USDM Listserve Subscribers
(as of August 10, 2012)

- EDU: 87 subscribers (26%)
- Other: 10 subscribers (3%)
- USDA: 16 subscribers (5%)
- USDA: 6 subscribers (2%)
- State govt.: 13 subscribers (4%)
- NOAA: 204 subscribers (60%)
- USGS: 13 subscribers (4%)

Total subscribers: 300
Drought grips area: El Paso County commissioners ban aerial fireworks, water restrictions take effect - El Paso Times (TX)

Publication Date: 05-22-2012

Water: Notch up conservation efforts - El Paso Times (TX)

Publication Date: 05-23-2012

Texas farmers use business wile to weather drought - El Paso Times (TX)

Publication Date: 05-25-2012

Texas Crop Report - El Paso Times (TX)

Publication Date: 05-30-2012

El Pasoans heed water utility's call to conserve; no mandatory
Promoting the “drought impact reporting” idea to their volunteers...

* 14,000+ volunteers covering all 50 states!!

* CoCoRaHS “Message of the Day”

* Monthly e-mail reminders

* Guide to reporting drought impacts

* Banners on the Web

Courtesy: Henry Reges, Colorado State University
The U.S. Drought Monitor

Since 1999, NOAA (CPC, NCDC, WRCC), USDA, and the NDMC have produced a weekly composite drought map -- the U.S. Drought Monitor -- with input from numerous federal and non-federal agencies

- Western Region Climate Center on board 2008
- 11 authors in all
- Incorporate relevant information and products from all entities (and levels of government) dealing with drought (RCC’s, SC’s, federal/state agencies, etc.) (~350 experts)
The Importance of Local Expert Input

- The U.S. Drought Monitor Team Relies on Field Observation Feedback from the Local Experts for Impacts Information & "Ground Truth"

  - Listserver (~350 Participants: 2/3 Federal, 1/3 State/Univ.)

Local NWS & USDA/NRCS Offices
State Climate Offices
State Drought Task Forces
Regional Climate Centers
Some Examples of Decision Making Using the DM

- **Policy**: 2008 Farm Bill/IRS/USDA/NOAA DGT/EPA/State drought plan triggers
- ~3.5M+ page views and ~2M+ visitors/year
- **Media**: The Weather Channel/USA Today and all major newspapers/Internet Media/ Network News/ CNN/NPR/etc.
- Presidential/Congressional *briefings*
- NIDIS portal (*drought.gov*)
Thoughts on Drought Impacts

- All droughts and their **impacts** are **LOCAL**!
  - Monitoring local/state/basin/regional/tribal/national/global (bottom-up or top-down or a combination of both)
  - Planning local/regional/national (**Vulnerability assessment critical**)
  - Connected **globally** (import/export) however...

- Droughts are one of the globe's **leading causes of economic loss**...
  - Large spatial footprint, long duration, many affected
  - Water and food security issues at play
  - Indirect impact: loss of life via famine, ecosystem services

- **Impact collection/monitoring must be an integral part** of any drought early warning information system

- **The Drought Impact Reporter**: (http://droughtreporter.unl.edu)
Summary

Drought is **NOT** just a physical event
Like drought, impacts recognize **no borders**!
**Vulnerability** matters (where’s the risk?)
Impacts (establish a **baseline**)
Much more work needed to **tie impacts to drought indicators/indices**

Promote and Encourage **Citizen Science**
- Capitalize on social media and cellular technology/culture
  - **Push geocoded impacts/photos to the DIR**...
- **What you are doing matters!**
Please visit the NDMC website for more information: http://drought.unl.edu

Thanks!

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