DROUGHT MONITORING EFFORTS
AS PART OF THE NIDIS
INTERMOUNTAIN WEST DEWS

By Dr. Becky Bolinger
Colorado Climate Center, Colorado State University

April 4, 2017
THE FUTURE FOR DROUGHT EARLY WARNING IN THE INTERMOUNTAIN WEST

- Improving effective communication with our user community
- Enhancing delivery and dissemination of drought information
- Developing products to improve drought early warning
NIDIS Intermountain West
Regional Drought Early Warning System
March 28, 2017

Precipitation

These images are produced by the Colorado Climate Center and use precipitation data from NWS COOP, NCS SNOTEL, CoCoRaHS, and CoAgMet stations to generate the gridded products. Images are generally updated every Tuesday. When maps are unable to be updated, AHPS precipitation is shown, courtesy of the National Weather Service.

Standardized Precipitation Index (SPI)

SPI standardizes precipitation accumulations for a specified period of time. It transforms precipitation amounts into percentile rankings, which makes it easier to determine how the precipitation accumulations rank compared to the historical record. -1.6 to -1.5 is equivalent to a D1 to D2. -1.5 to -2.0 is equivalent to a D2 to D3. -2.0 and worse is equivalent to a D3 to D4. 30- and 60-day SPIs focus on short-term conditions while 6- and 9-month SPIs focus on long-term conditions.

SNOTEL Precipitation Percentile

SNOTEL Precipitation Percentile Ranking for 14 March 2017 (stations with 15+ years of data only)

updated website!
OUR ESTABLISHED PROCEDURES...

- Weekly assessments with recommendations
- Webinars brief audience on current conditions and discuss recommendations
- Short-list email seeks feedback about possible recommendations
- Webinars and short-list email encourage impact reports from those “on the ground”
- Large email blast announcing weekly assessment and webinars
The future for drought early warning in the Intermountain West

- Improving effective communication with our user community
- Enhancing delivery and dissemination of drought information
- Developing products to improve drought early warning
Drought Indicator Education Webinars

- Periodic live and archived recordings
- What do certain drought indicators mean specifically for the IMW?
- Why do we look at these variables, and what do they tell us?
- A casual course on a variety of our important indicators:
  - Standardized Precipitation Index
  - Reference Evapotranspiration
  - Snow Water Equivalent (aka Snowpack)
  - Evaporative Demand Drought Index, EDDI
  - Agricultural vs. Hydrologic, Short-term vs. Long-term
  - Return frequencies, drought categories, and analog years
DIGITAL DROUGHT SUMMARY SERIES

- Very brief summary of current conditions
- Approximately 2 to 5 minutes in length
- Casual, conversational, more “big picture” instead of describing specific details
- Perhaps test as a “live feed” on social media

- People are demanding information in efficient ways
- Do we limit widespread interest with our current format, providing all the technical details?
- It’s our responsibility to consider additional communication avenues that seek participation from a more representative audience.
THE FUTURE FOR DROUGHT EARLY WARNING IN THE INTERMOUNTAIN WEST

- Improving effective communication with our user community
- Enhancing delivery and dissemination of drought information
- Developing products to improve drought early warning
A "composite" method of monitoring drought currently a manual, experimental process
consideration of automation if successful
Eliminates need for going back and forth between multiple products
Helps identify areas that could be overlooked
Points to areas that may need degradations or improvements
## CODEX — COMPOSITE DROUGHT EVALUATOR EXPERIMENT

### South Platte

<table>
<thead>
<tr>
<th>HUC 4</th>
<th>1019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>D-Category</td>
</tr>
<tr>
<td>Current USDAM</td>
<td>D1</td>
</tr>
<tr>
<td>Blended CoDEX</td>
<td>D0</td>
</tr>
<tr>
<td>30-Day SPI</td>
<td>-</td>
</tr>
<tr>
<td>90-Day SPI</td>
<td>D0</td>
</tr>
<tr>
<td>180-Day SPI</td>
<td>D1</td>
</tr>
<tr>
<td>Snowpack</td>
<td>-</td>
</tr>
<tr>
<td>Soil</td>
<td>D0</td>
</tr>
<tr>
<td>Streamflow</td>
<td>-</td>
</tr>
<tr>
<td>1mo EDDI</td>
<td>D3</td>
</tr>
<tr>
<td>3mo EDDI</td>
<td>D3</td>
</tr>
<tr>
<td>Impacts</td>
<td>D0</td>
</tr>
</tbody>
</table>
Great Lakes Seasonal Climate Forecast Tool (Version 2)

Target Basin: Superior | Forecast Initiation Year: 2017 | Month: 4

CFSv2 (32) • CMC1 (10) • CMC2 (10) • GFDL (10) • GFDL_FLOR (24) • NASA (11) • NCAR_CCSM4 (10)

Select All | Clear All

NMME Model Forecasts

Historical Data
above normal (+μ + s)
near normal (μ ± s)
below normal (<μ - s)
1981 - 2010 mean
Provisional/Verification Observation

Month 2:
NMME
CFSv2
CMC1
CMC2
GFDL_FLOR
GFDL
NASA
NCAR_CCSM4

GFDL_FLOR

Anomaly Forecast for May 2017
THANK YOU!!

Becky.Bolinger@colostate.edu
http://climate.colostate.edu/

Questions?