



United States Department of Agriculture

# USDA NRCS Snow Surveys

Jolyne Lea, Forecast Hydrologist

National Water and Climate Center

Jeff Anderson, Water Supply Specialist

Nevada State Office

CA- DWR Annual  
Cooperative Snow  
Survey Meeting

November 3-5, 2015



United States Department of Agriculture

# NRCS Contact for CA

- Greg Norris

- NRCS, USDA  
430 G Street, Suite 4164  
Davis, California 95616
- 530-792-5609
- [Greg.norris@ca.usda.gov](mailto:Greg.norris@ca.usda.gov)

Jolyne Lea, Forecast Hydrologist  
USDA NRCS  
National Water & Climate Center  
1201 NE Lloyd Blvd., Suite 802  
Portland, OR 97232  
[Jolyne.lea@por.usda.gov](mailto:Jolyne.lea@por.usda.gov)

- NRCS contact for:

- Snotel/snow course data, forecasts and products.
- NRCS Climate information and products.

- Water supply forecasts and products



November 3-5, 2015



# SNOTEL and Data Contacts

- **Jeff Anderson**, Nevada Water Supply Specialist.
- 1(775) 857-8500 ext. 152

Nevada Snow Surveys

Natural Resources Conservation Service

1365 Corporate Blvd.

Reno, NV 89502

***All California sites - local contact.***

- NRCS Data Collection Offices:

Oregon Data Collection Office

USDA NRCS

1201 NE Lloyd Blvd., Suite 900

Portland, OR 97232

**SNOTEL Sites in Northeast CA**

Utah Data Collection Office

Oregon Snow Surveys

1201 NE Lloyd Blvd., Suite 900

Portland, OR 97232

**SNOTEL sites in Central Sierras.**



United States Department of Agriculture

# New SNOTEL site in NE CA

Proposed **Fredonyer Peak SNOTEL**

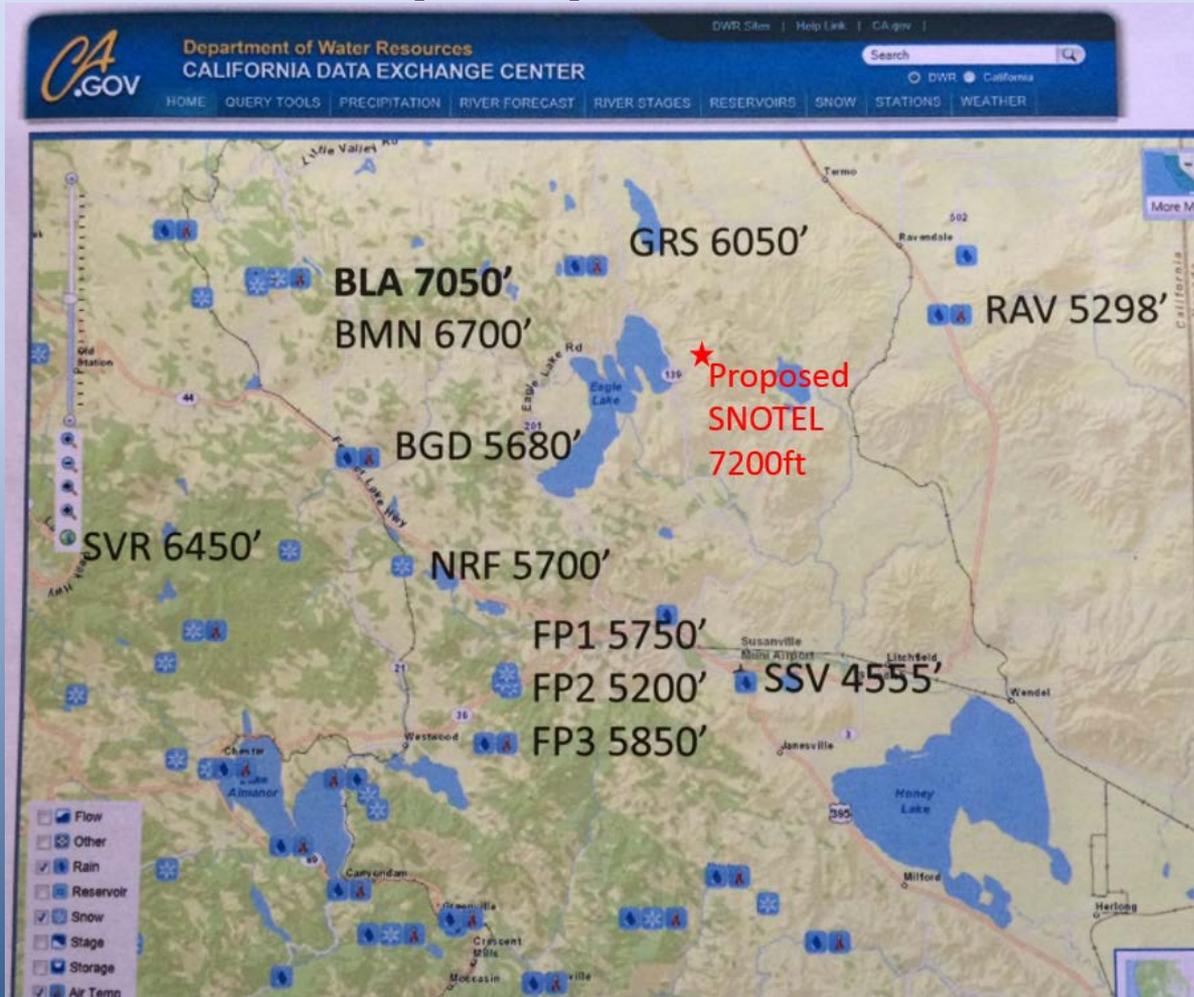
Location: Directly east of Eagle Lake and ~19 miles north of Susanville

BLM funding site to help with resource management, specifically endemic Eagle Lake Rainbow Trout and Climate Change Monitoring.



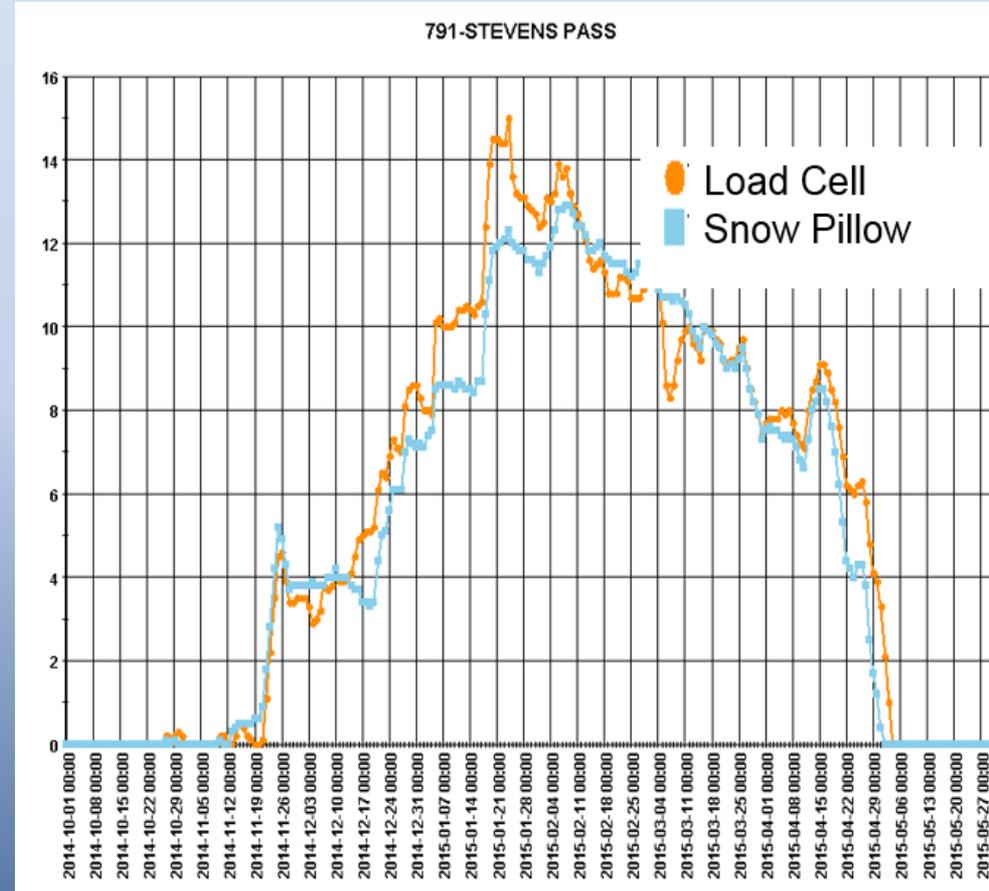
November 3 – 5, 2015

# Location of proposed SNOTEL site



# Experimenting with Load Cells

Stevens Pass, WA



# Experimenting with Load Cells

Sheldon, NV



- Experimental Design custom made by CRREL
- Center cell weighs snow.
- SWE is average of 4 load cell measurements



# Aerial Marker Automation

2012-2013 we automated 17 aerial markers in NV temp and snow depth, 6hr data via Iridium modem.



In 2014 - 11 were upgraded with precipitation gage, soil moisture and YSI Temp



# NWCC News



# New Products

United States Department of Agriculture  
**NRCS** Natural Resources Conservation Service

National Water and Climate Center

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Search

>Welcome to the NRCS  
**National Water & Climate Center**

**NEW Items**

- ▶ Basin Data Reports
- ▶ Interactive Map

**Water Supply**

- ▶ Forecasts
- ▶ Reservoirs
- ▶ Surface Water Supply Index

**Climate Monitoring**

- ▶ SNOTEL & Snow Course Data
- ▶ SCAN Data
- ▶ Other Climate Data
- ▶ 30 Year Normals

**Quick Links**

- ▶ Report Generator Data Search
- ▶ SNOTEL Update Report
- ▶ Weekly Water & Climate Update

**Help Centers**

- ▶ Report Generator Help

**NEW! Interactive Map Release 2.0 includes current conditions, more reports**



[Open the Map](#)  
[Map Help](#)

Check out Release 2.0 of our [interactive map](#). In addition to providing easy navigation to NRCS and other network monitoring stations, **the map now displays current and historical conditions** for snow water equivalent, snow depth, precipitation, streamflow, and reservoir storage. Simply click on a site to get station information, summary statistics, and access to reports. Use the 'Give us feedback' button if you have comments or suggestions. Or for more information, go to the [Interactive Map Help Center](#).

**SnowNews summer issue now available**



The summer issue of **SnowNews** features articles on eastern SCAN stations converting to cellular technology, "fluidless" snow scale testing and tower safety training. [Open SnowNews >>](#)

[System Downtime Schedule](#)



# Interactive Map

## Access to Data and Products

United States Department of Agriculture  
**NRCS** Natural Resources Conservation Service  
 National Water and Climate Center

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Map Help | Give us Feedback

Selected Stations: 1111

MAP CONTROLS  
 View: Station Inventory | Conditions

Station Selection  
 Elements  
 Stations with all checked elements  
 Stations with any checked elements

Check All | Uncheck All

**Snow**  
 Snow Water Equivalent  
 Snow Depth

**Precipitation**  
 Precipitation

**Soils**  
 Soil Moisture  
 Soil Temperature

**Reservoir**  
 Reservoir Storage

**Streamflow**  
 Adjusted Volume  
 Observed Volume  
 Diversion Discharge  
 Forecast Point

Location  
 States: All None | Counties: All None

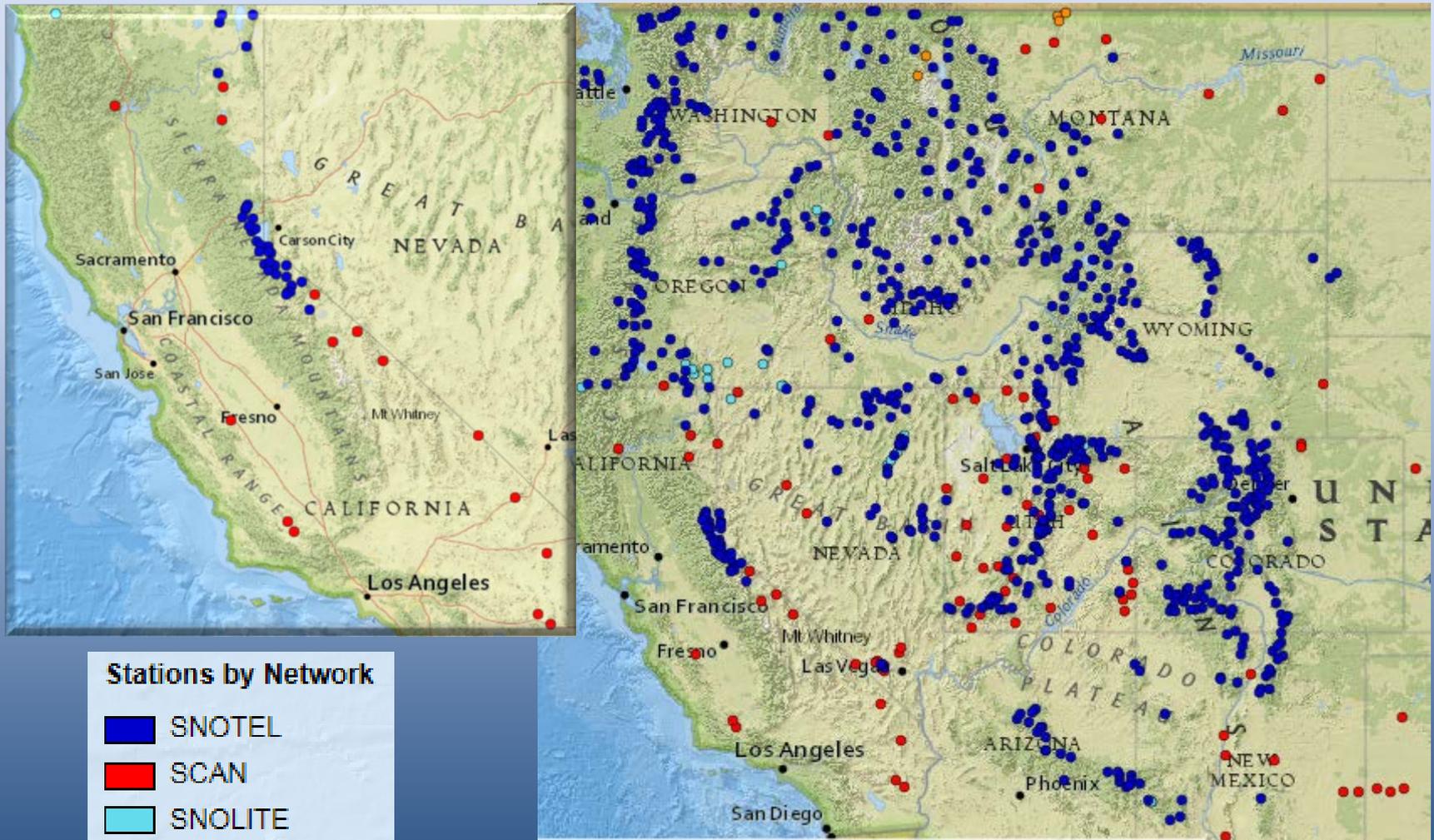
Alabama  
 Alaska  
 Arizona  
 Arkansas  
 California  
 Colorado  
 Florida  
 Georgia  
 Hawaii  
 Idaho  
 Illinois  
 Indiana  
 Iowa  
 Kansas  
 Kentucky  
 Louisiana  
 Maine  
 Maryland  
 Massachusetts  
 Michigan  
 Minnesota  
 Missouri  
 Montana  
 Nebraska  
 Nevada  
 New Hampshire  
 New Jersey  
 New Mexico  
 New York  
 North Carolina  
 North Dakota  
 Ohio  
 Oklahoma  
 Oregon  
 Pennsylvania  
 Rhode Island  
 South Carolina  
 South Dakota  
 Tennessee  
 Texas  
 Utah  
 Vermont  
 Virginia  
 Washington  
 West Virginia  
 Wisconsin  
 Wyoming

HUCs:

1000 km  
 500 mi

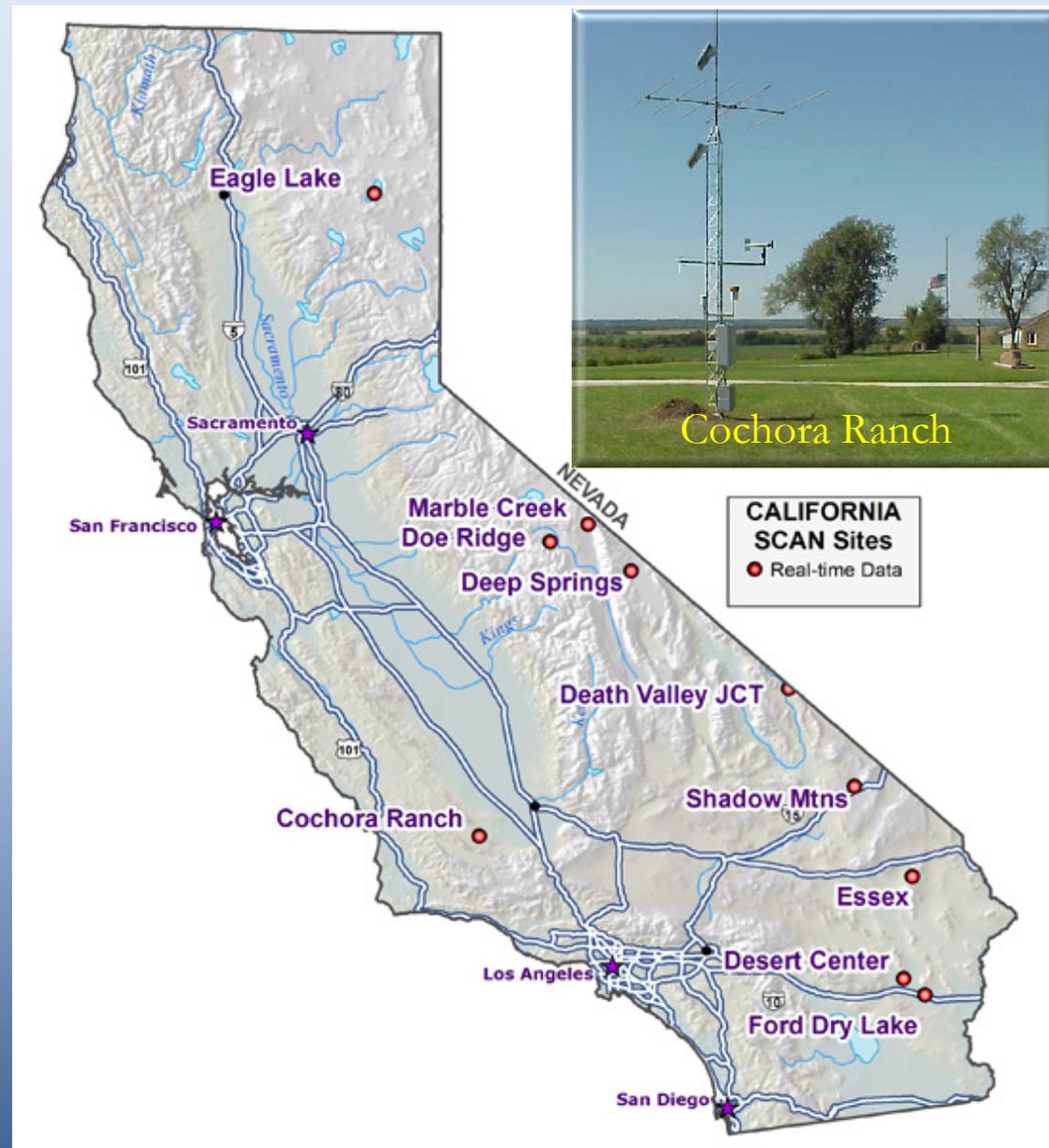
Leaflet | Tiles © Esri — National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC

# Interactive Map Access to Data and Products



**NRCS SCAN Sites  
(Soil – Climate  
Analysis Network).  
Maintaining current  
stations in CA.**

**BLM is interested in  
possibly adding 8 more  
SCAN stations to the  
network in the state.**



# SNOTEL Sites have snow, climate and soil sensors

- Soil Moisture/Temperature Monitoring
  - Vitel Hydra Probes located in a vertical profile at 2", 4", 8", 20" and 40"
  - Complete soil descriptions, lab sampling, and bulk density measurements at monitoring sites



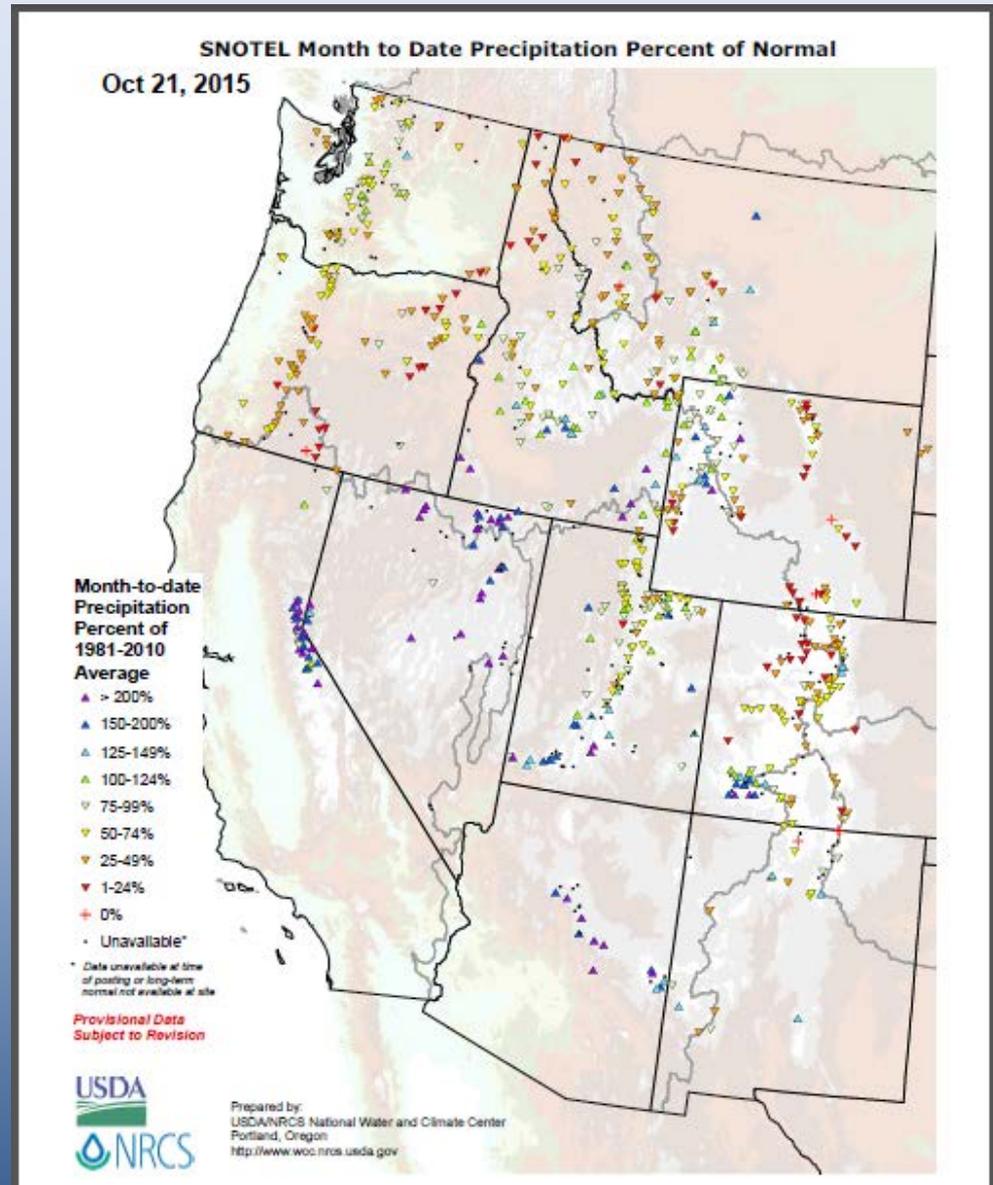
- **Climate Monitoring**

- Air Temperature
- Relative Humidity
- Solar Radiation
- Wind Speed & Direction
- Vapor Pressure

# GIS Products:

- Current daily data maps.
- Changes over different selectable timeframes maps.
- State, basin and West maps.
- Data and percent of normal.

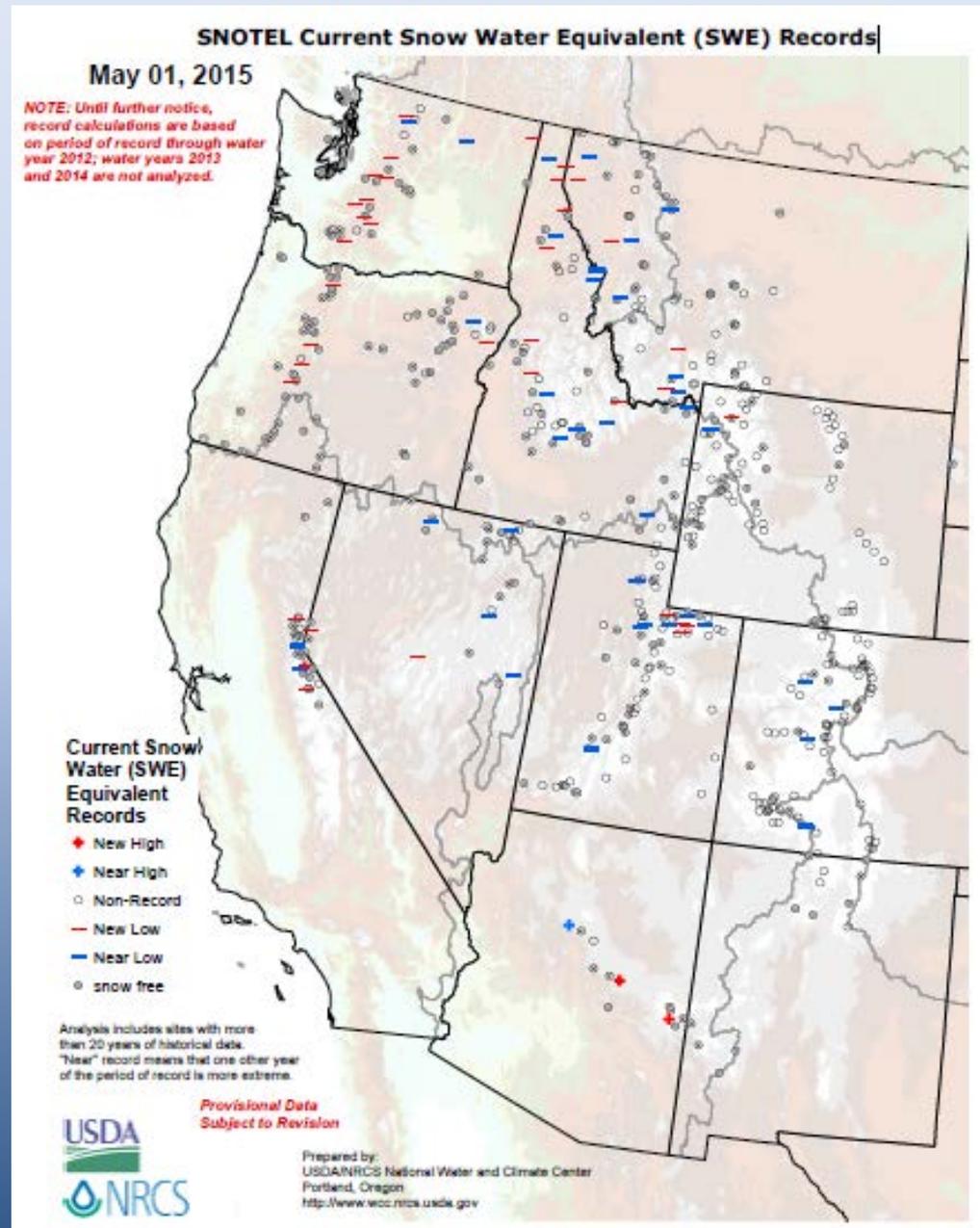
<http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/WestwideMTDPrecipPercent.pdf>



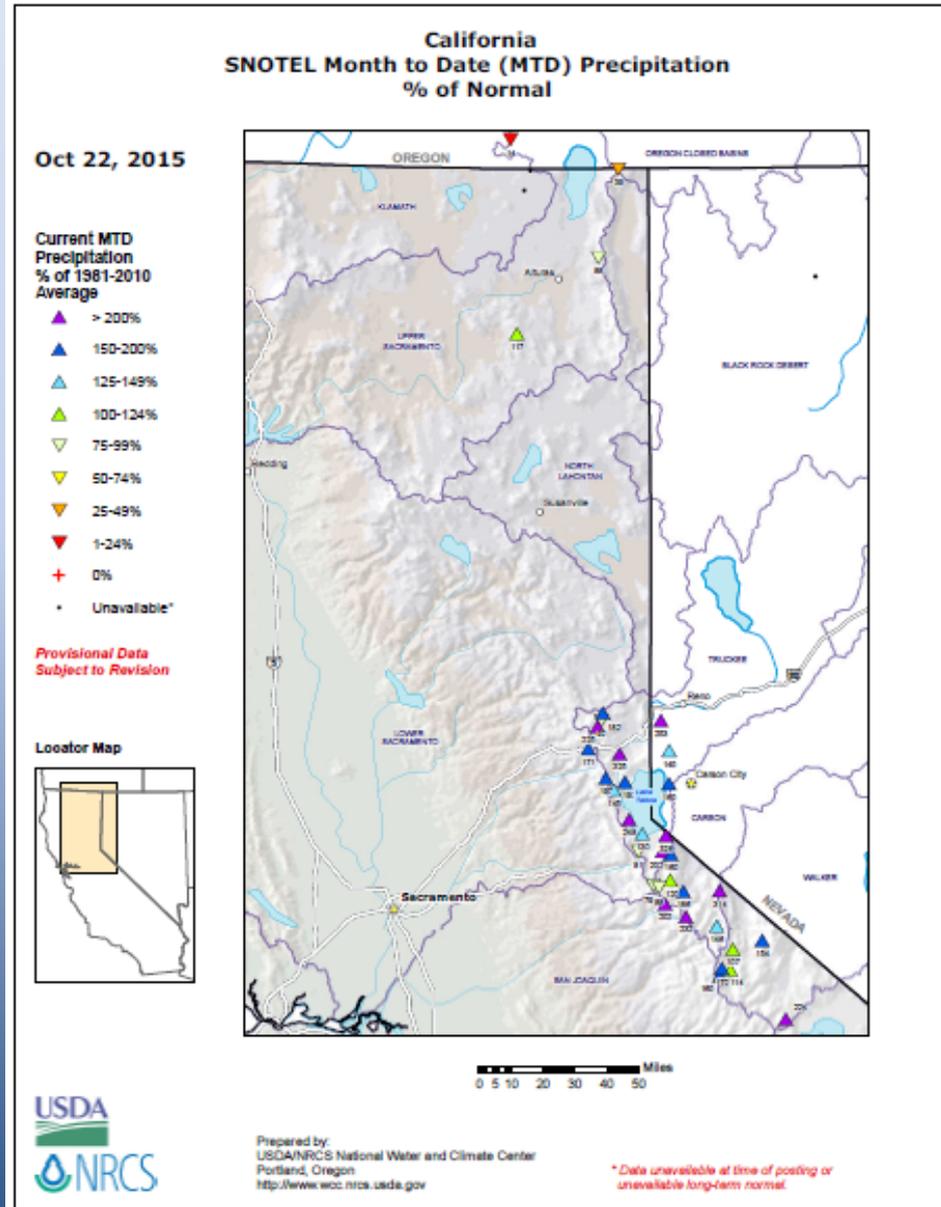
## Where We Are:

Snowpack at the end of last year :

Many near low or record low conditions on May 1.

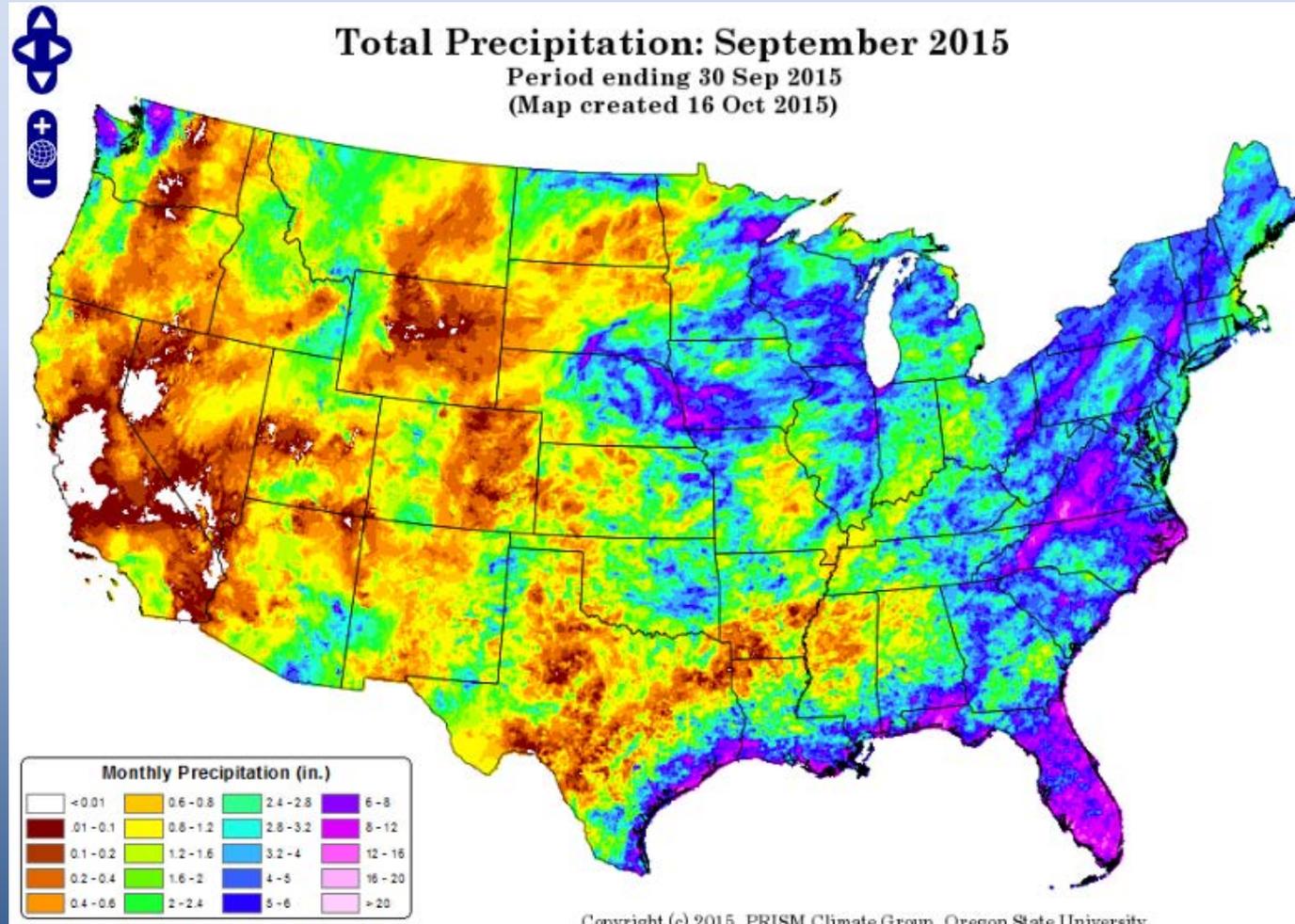


# October 2015 Month to Date Precipitation



# PRISM – Precipitation for the start of 2015 water year.

*Precipitation Products supported by the NRCS.*



<http://www.prism.oregonstate.edu/>

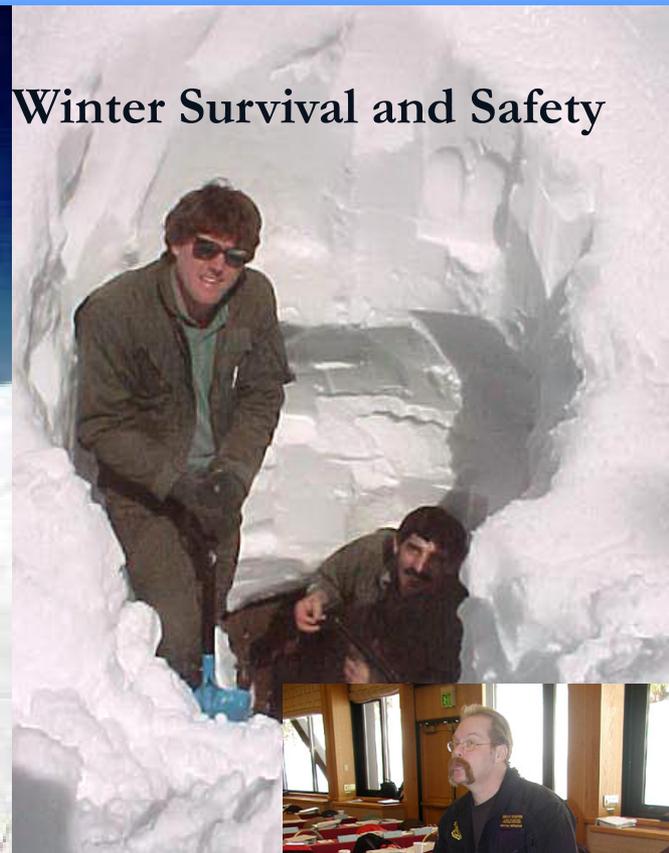
# NRCS WESTWIDE COOPERATIVE SNOW SURVEY TRAINING SCHOOL



Avalanche Training



Snow Measurement Training



Winter Survival and Safety



Winter travel



# NRCS 2014 Westwide Snow Survey Training School

- **January 10-16, 2016**

- Bend, Oregon

- More information is at:

<http://www.wcc.nrcs.usda.gov/snowschoo/index.htm>

- Copies of the invitation letter are available.

- See Greg or the CA-DWR folks for more info.

- Please contact Jo at the NWCC office to make sure you are registered for the class before making any other plans.

