

# DWR DFM Gage Maintenance

California Department of Water Resources

Division of Flood Management

*Sam DeSarno and Rick Louie*



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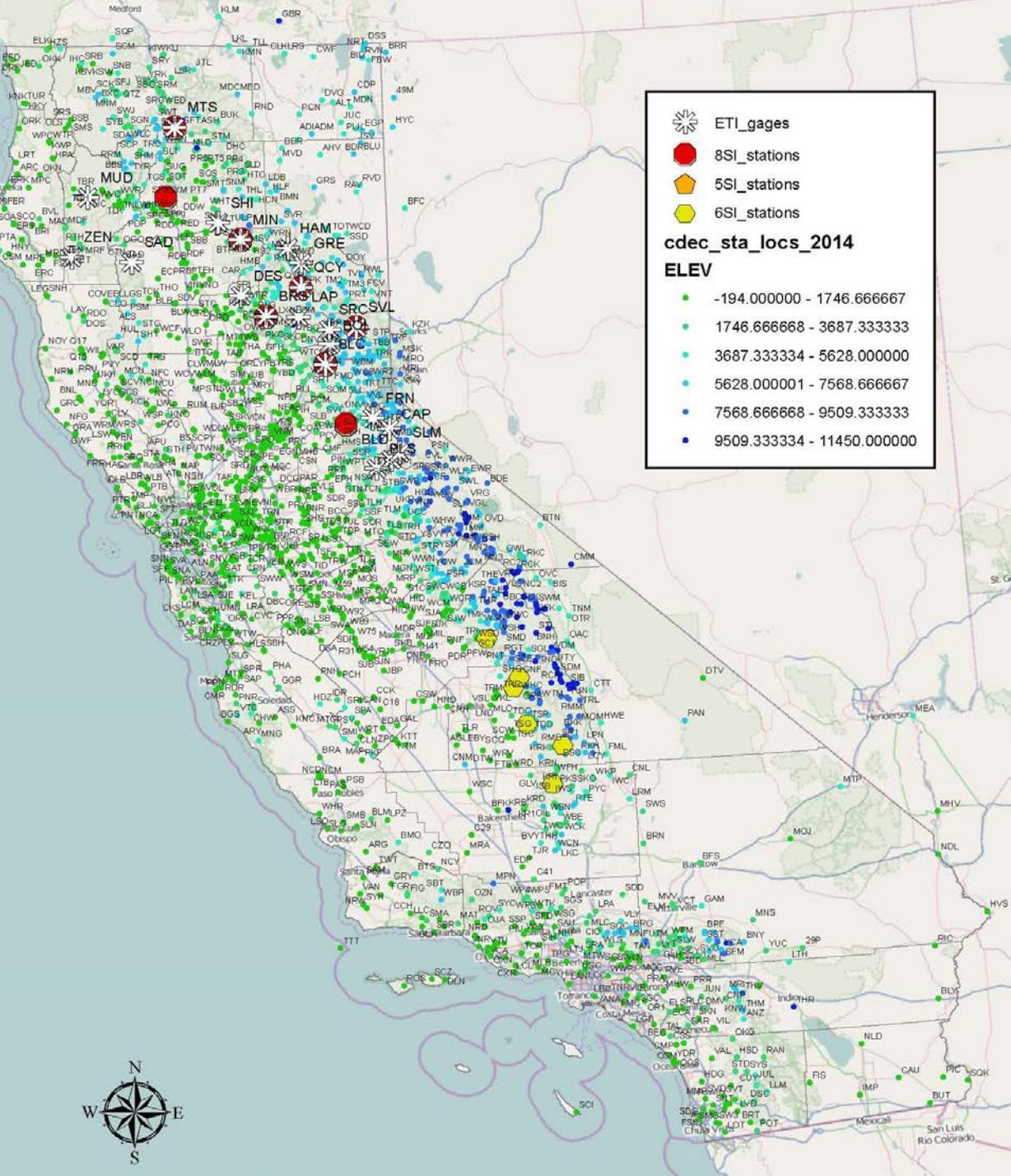
*Sam DeSarno and Rick Louie*

- Gage networks
- Gage Maintenance

# Current Network

CDEC station locations  
<http://cdec.water.ca.gov>

- 2467 CDEC site locations
- Regional precip index stations
- ETI gage replacements



# Gage Maintenance

DWR/DFM staff are responsible for many different types of sites and equipment



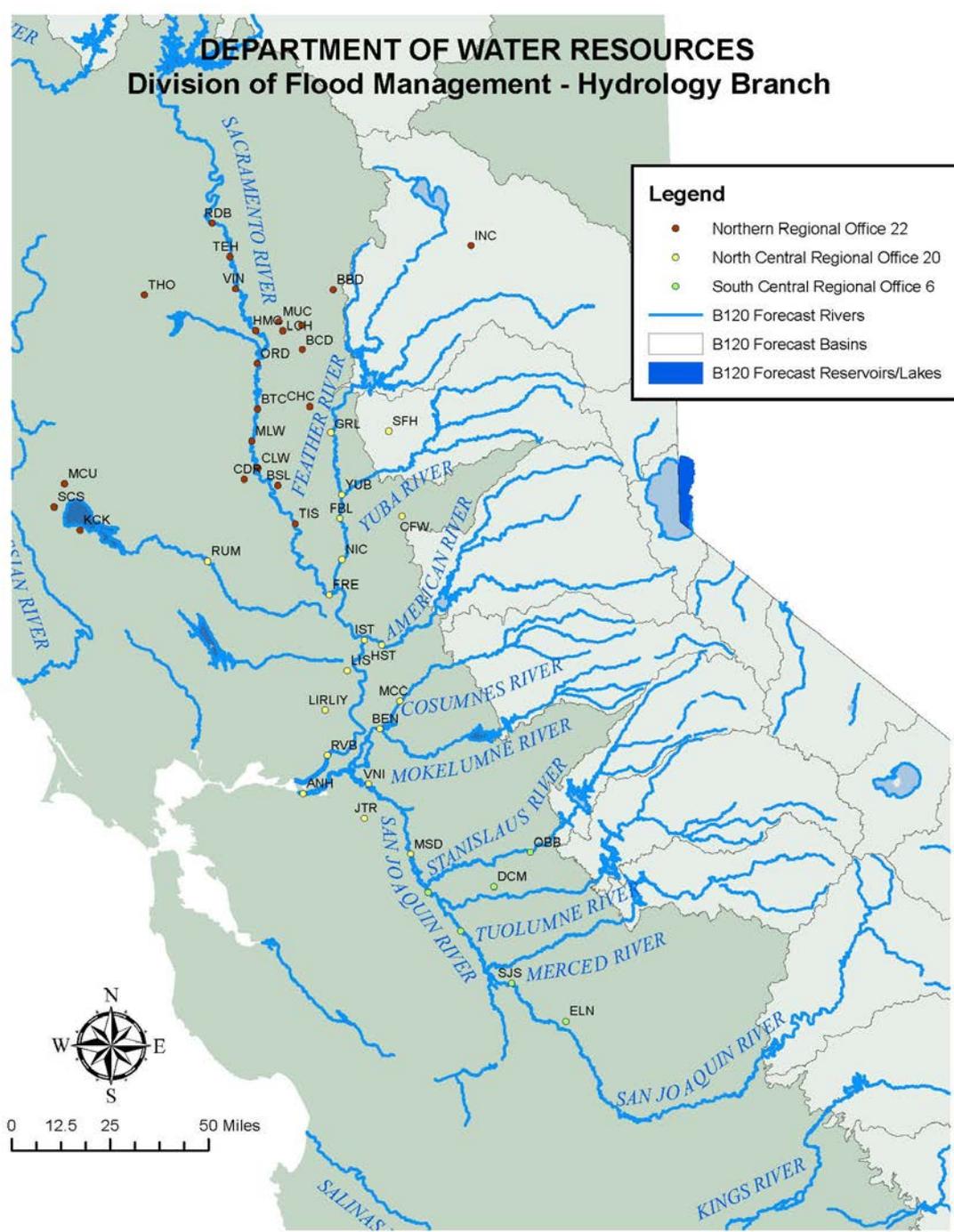
Streamgage/precip, precip/temp, rain/snow, snow water equivalent, wilderness installations, cork high stage, etc.

## Stations



- 48 USBR sites
- 27 USGS sites
- 19 Army Corps sites
- 65 Snow Survey sites
- 20 F-CO sites...
- IRWM Regional Offices (48 sites)
  - NRO 22
  - NCRO 20
  - SCRO 6

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**Legend**

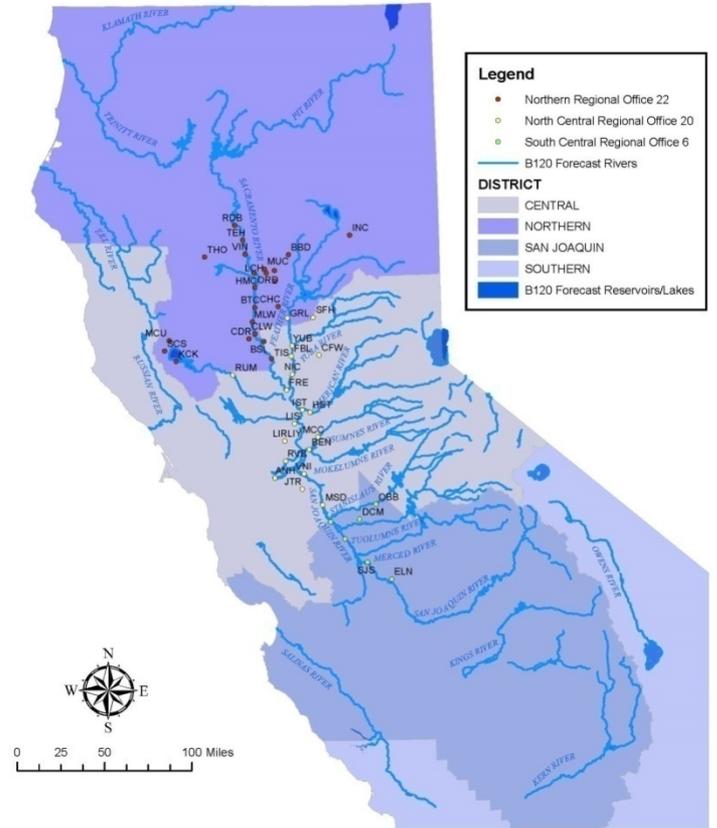
- Northern Regional Office 22
- North Central Regional Office 20
- South Central Regional Office 6
- B120 Forecast Rivers
- B120 Forecast Basins
- B120 Forecast Reservoirs/Lakes

# Field Work

## IRWM Regional Offices

- NRO 22
- NCRO 20
- SCRO 6

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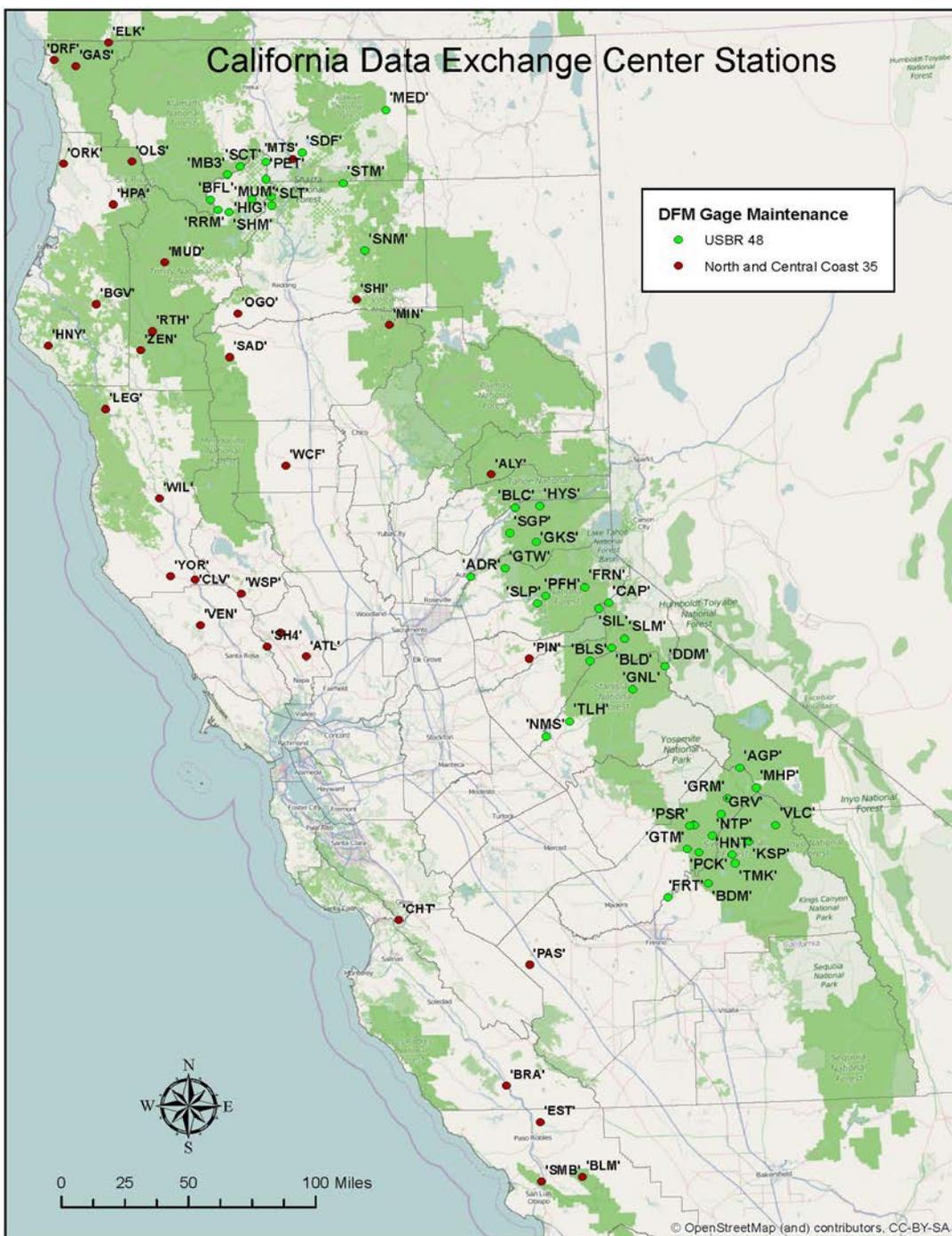
**Legend**

- Northern Regional Office 22
- North Central Regional Office 20
- South Central Regional Office 6
- B120 Forecast Rivers

**DISTRICT**

- CENTRAL
- NORTHERN
- SAN JOAQUIN
- SOUTHERN
- B120 Forecast Reservoirs/Lakes

# California Data Exchange Center Stations

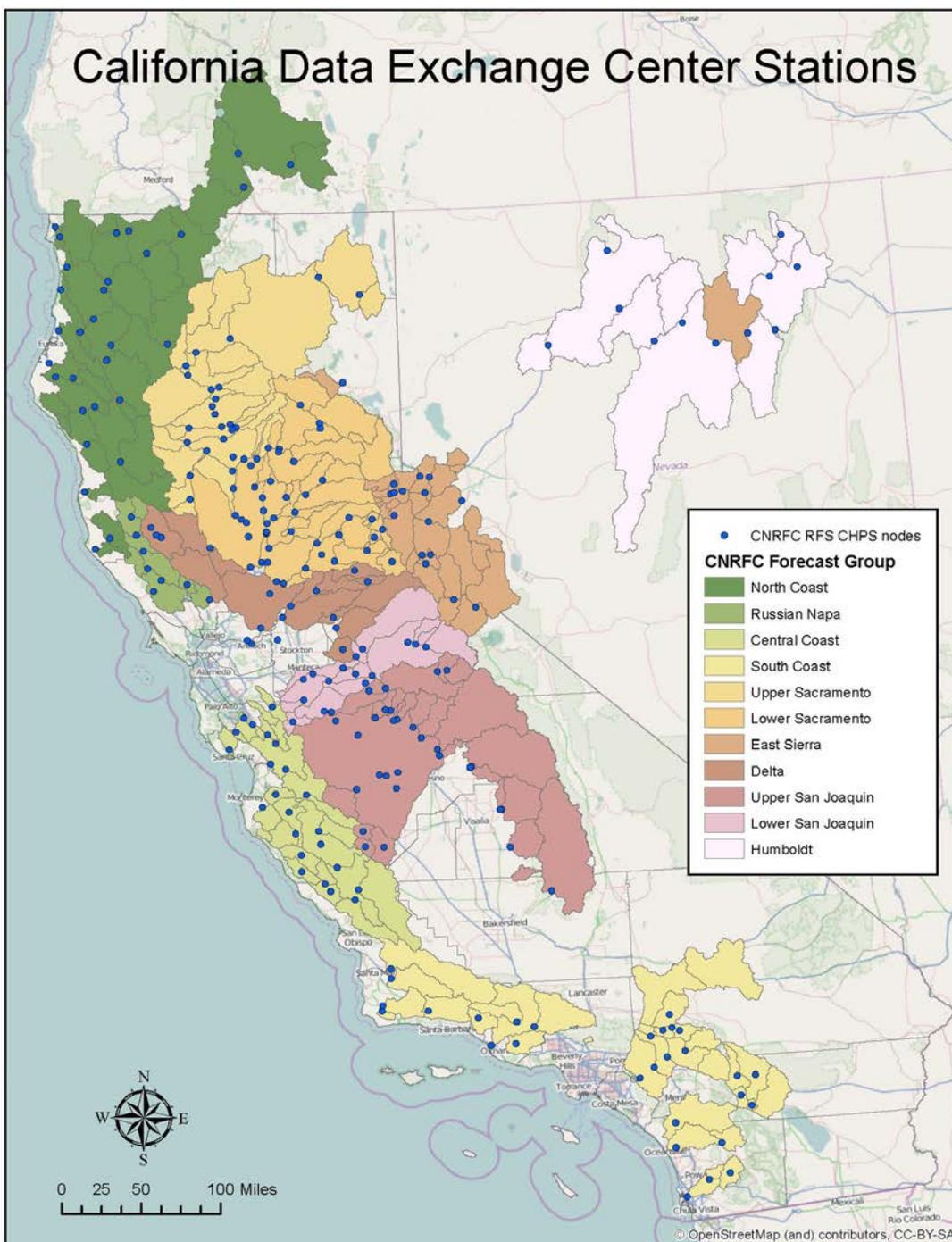


# 2015 Field Work

## DFM Gage Maintenance

- 48 USBR HydroMet sites
- 35 DFM precipitation sites

## California Data Exchange Center Stations



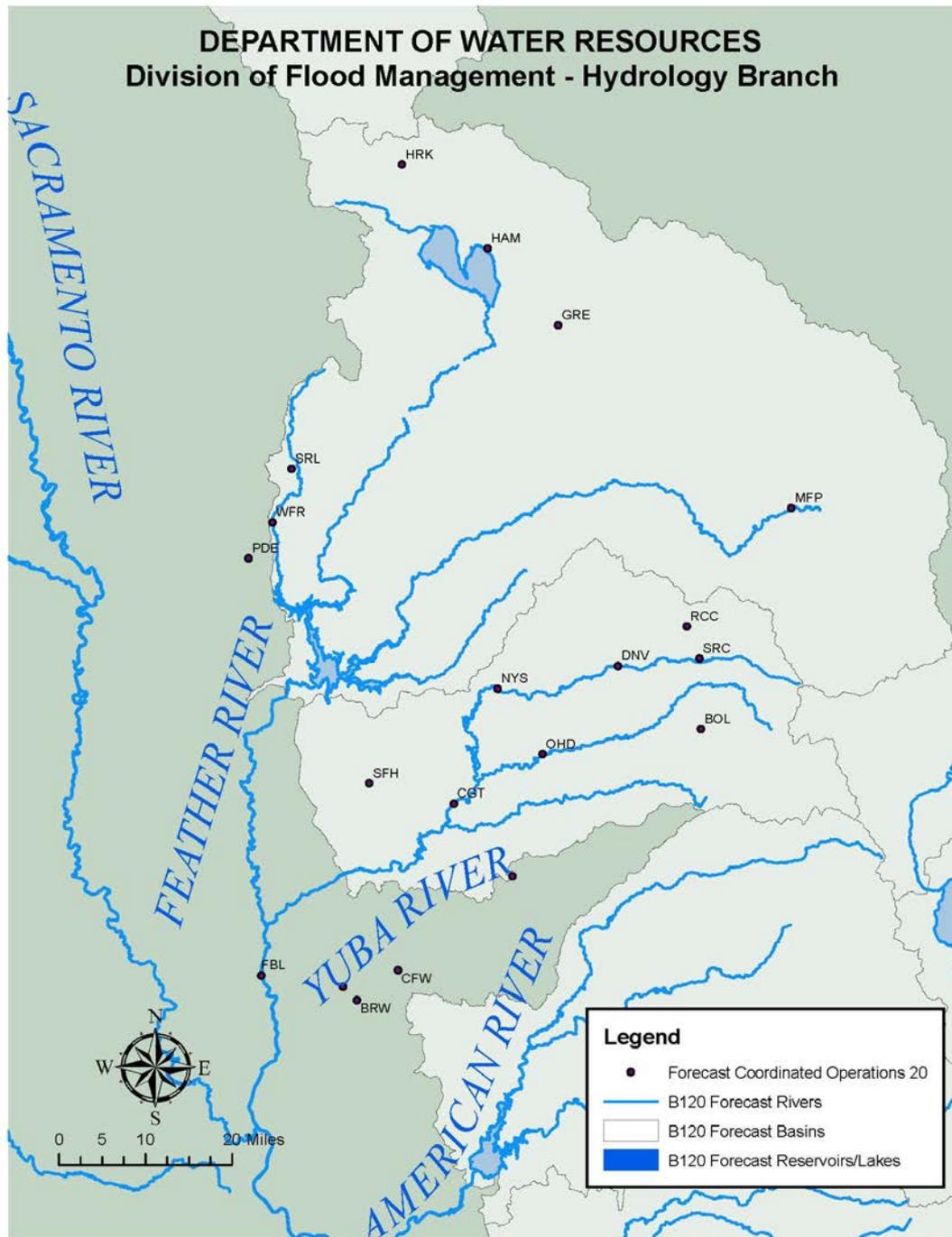
# What Field Work Supports

## Flood Forecast Network

- 170 CNRFC flow node points

<http://www.cnrfc.noaa.gov/>

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# F-CO Sites

DWR Gage Maintenance  
20 sites worked on

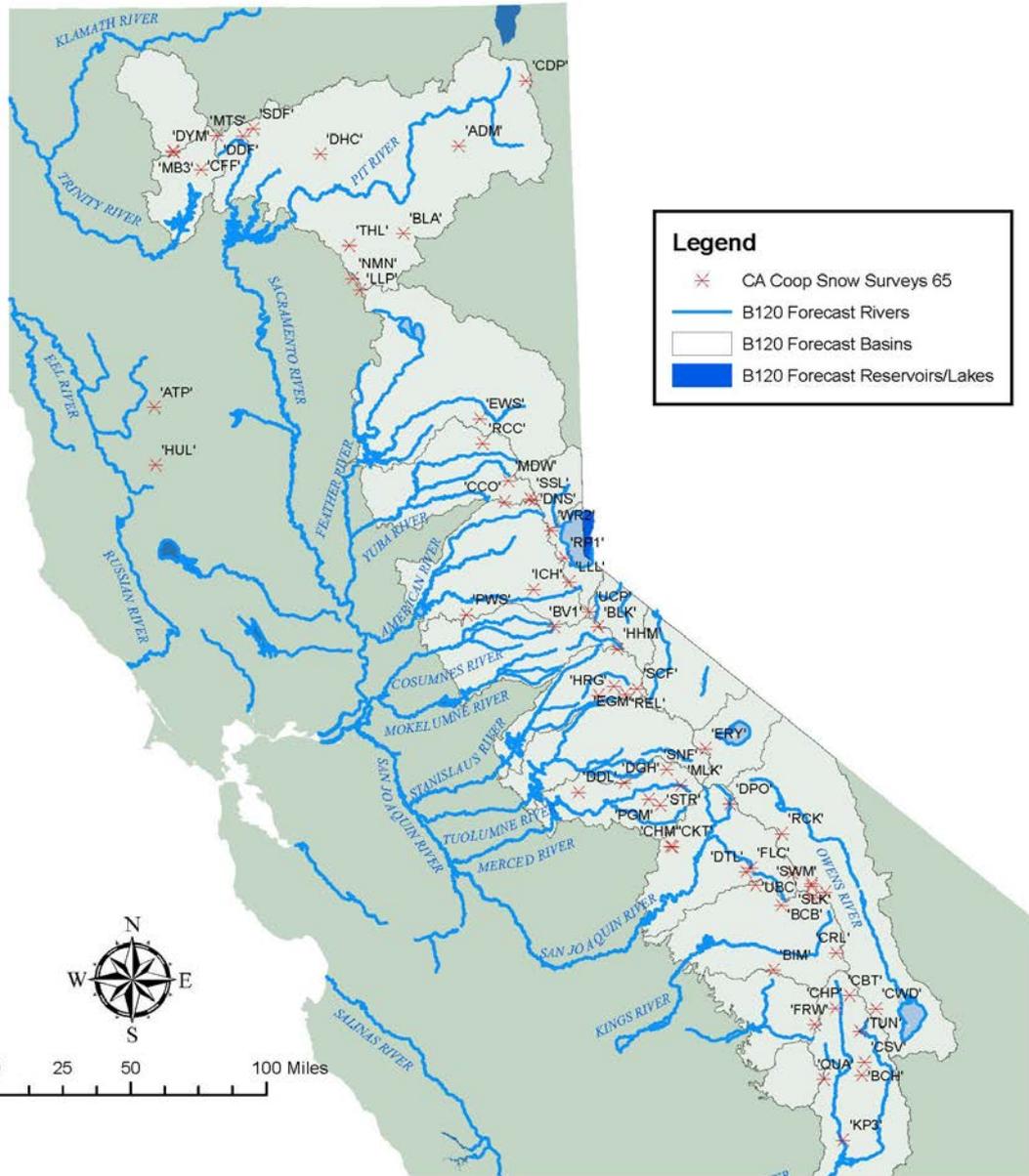
- Shared maintenance with Oroville Field Division
- More to come for other basins...

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# Field Sites

## DWR Snow Surveys Gage Maintenance

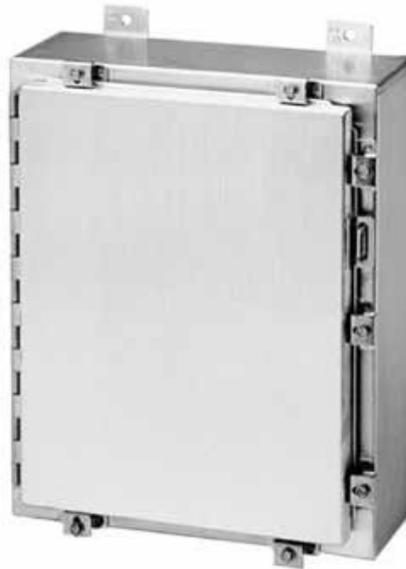
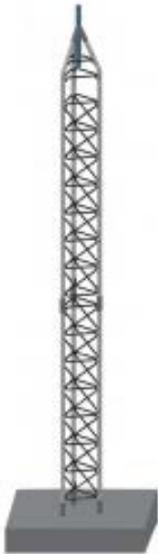
- 65 Snow Sensor sites



# What is being updated?

## Towers

- *Replace* threaded 2" pipe monopole setup
- Replacing with 20 to 30 feet self-supported tower



## Enclosures:

- *Replace* old and weathered fiberglass enclosures
- Replacing with brand new Stainless steel enclosures
- Stainless steel back-panel

## Pressure Transducer - Venting Setup

- *Replace* buried pipe, enclosed with the pressure transducer, setup
- Replacing with a new vinyl tubing seal – vented into the enclosure
- Results pending...!



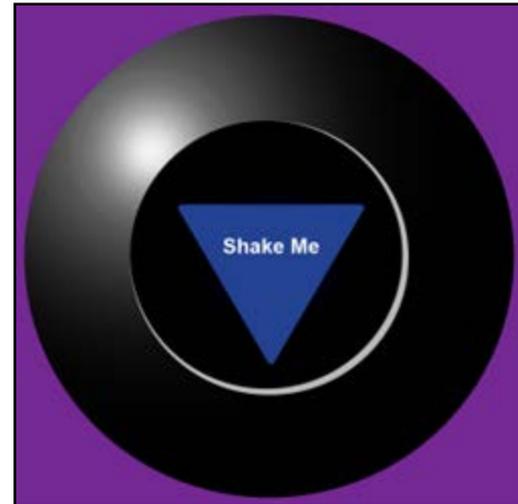
# What Else?

## Near Future:

- DCP's – Data Collection Platform
- Sensors – new models, additional measurements

## Further out:

- Radios
- Antennas



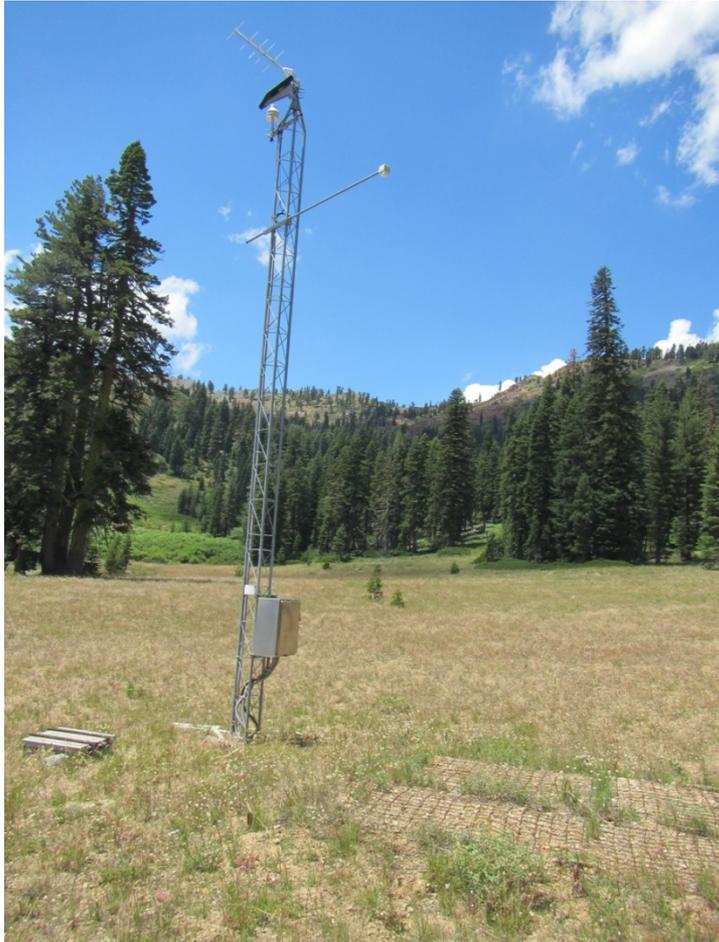
# ETI

<http://www.etisensors.com/ETIcompany.htm>

## Snow zone rain and snow precipitation measurement



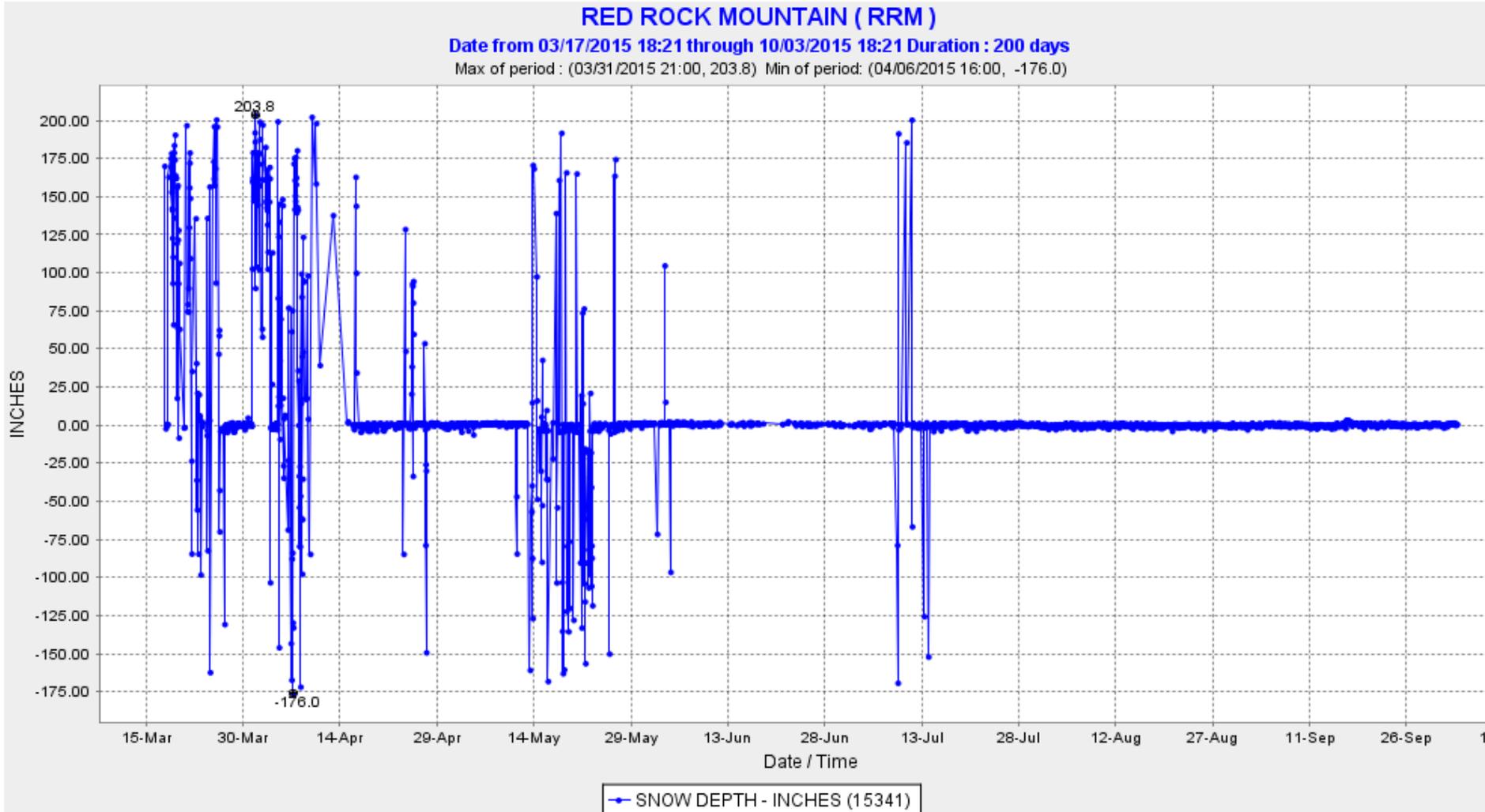
# Trinity Alps, Red Rock Mtn, RRM

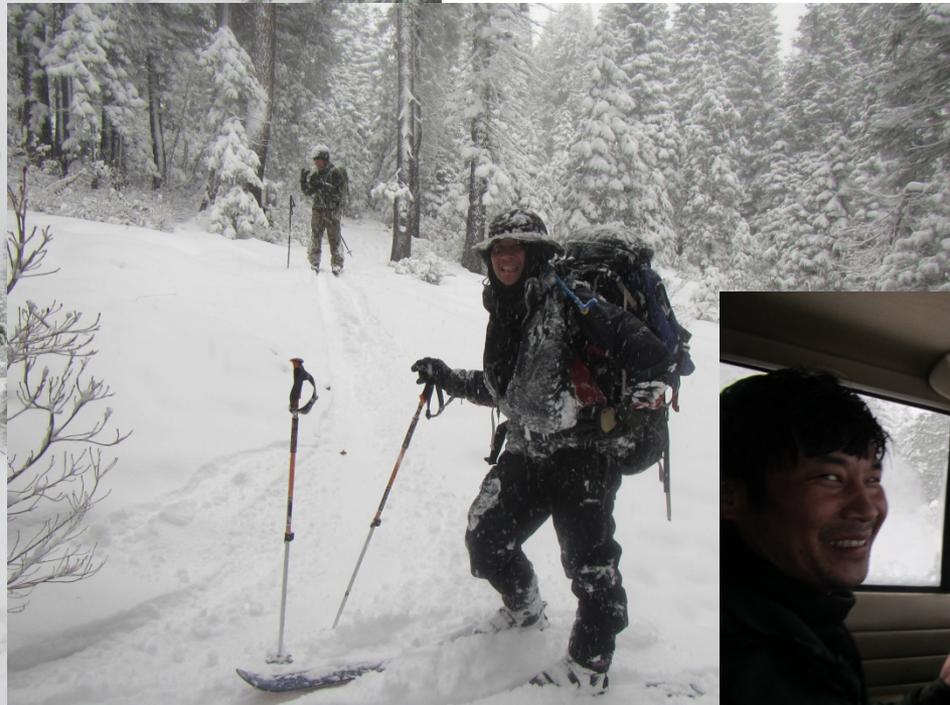
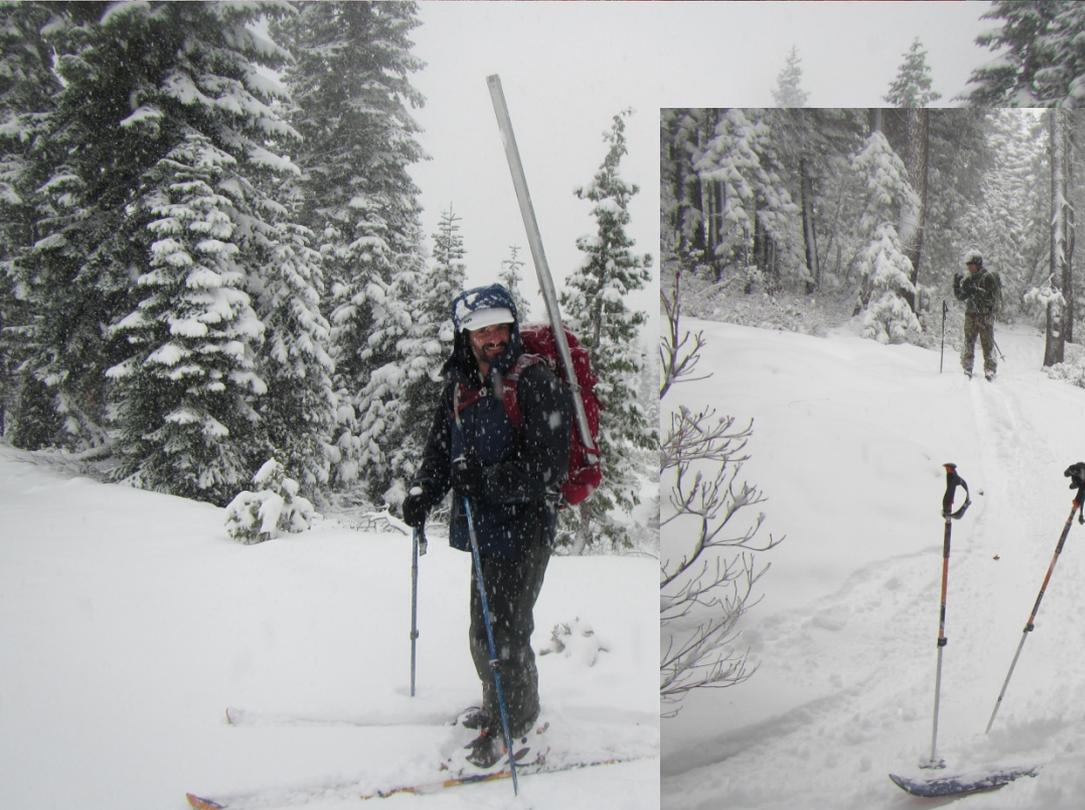




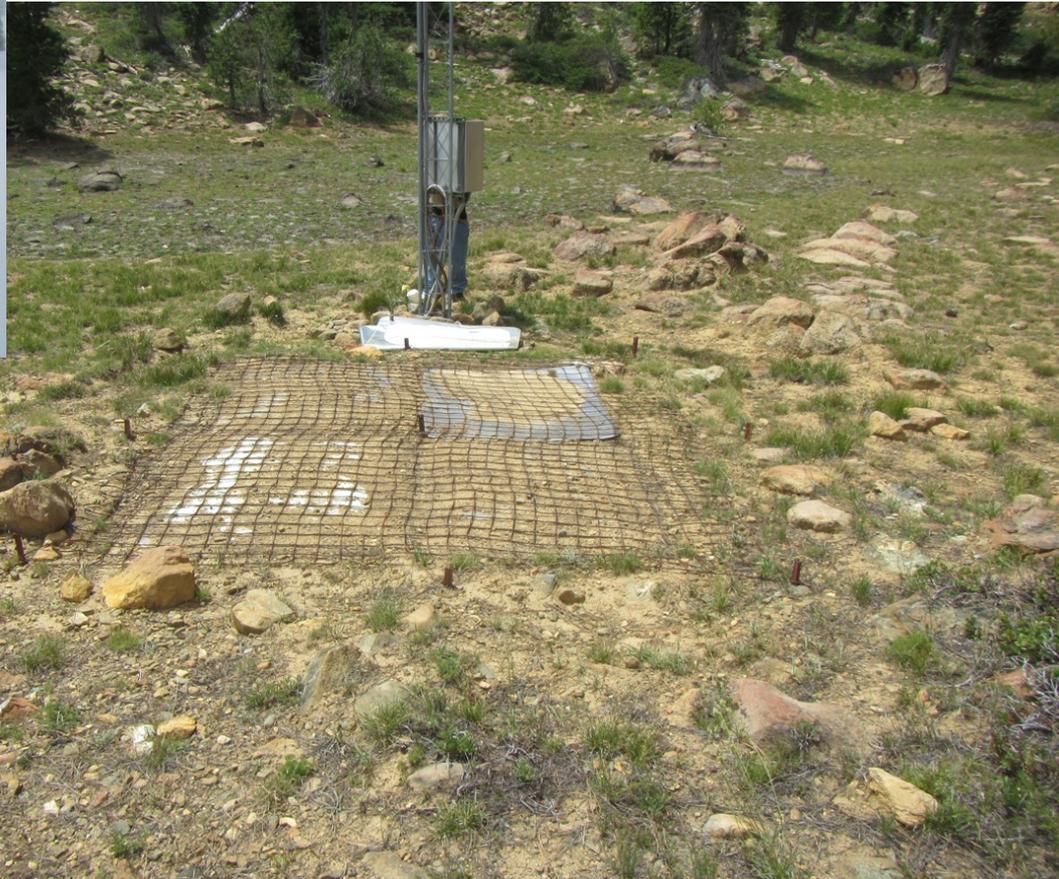


# Judd acoustic depth sensor replaced 2015 July 21





# Trinity Alps, Shimmy Lake, SHM







# Scott Mtn, SCT



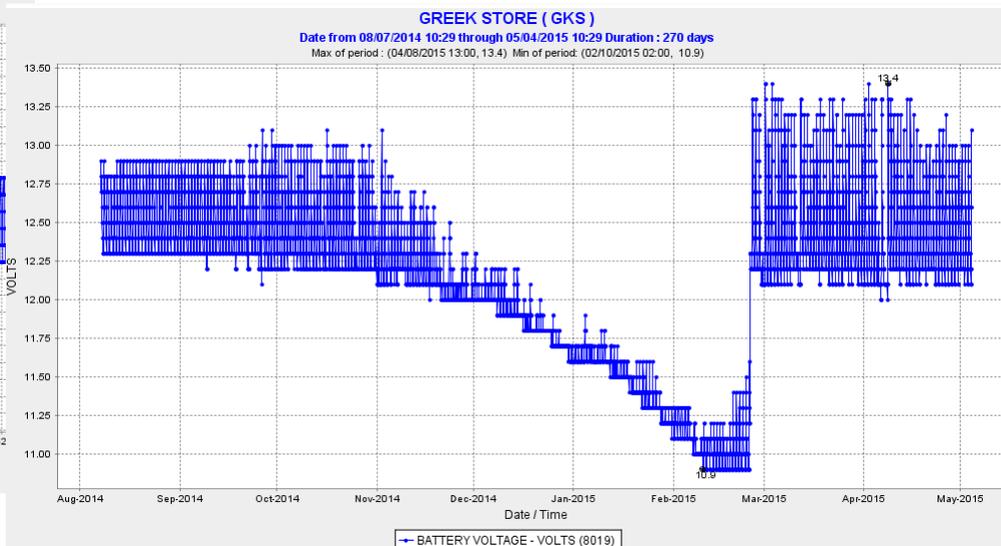
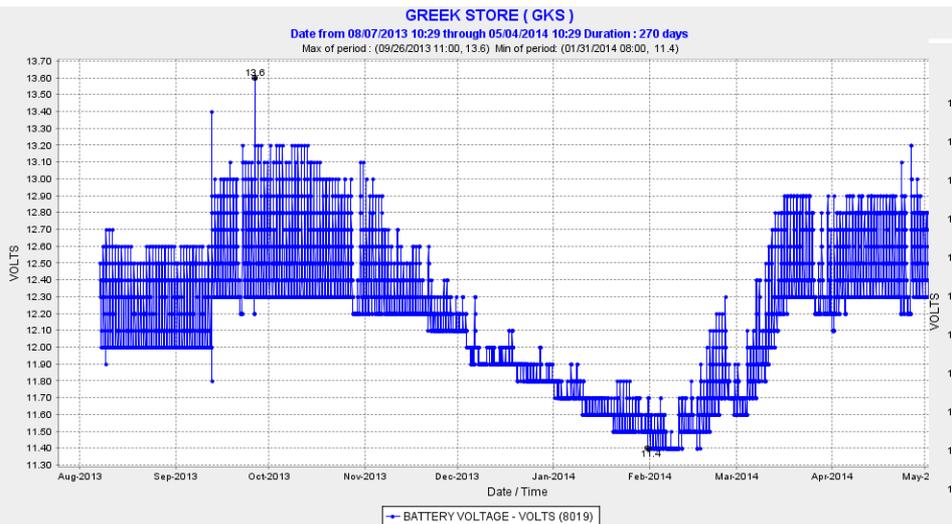
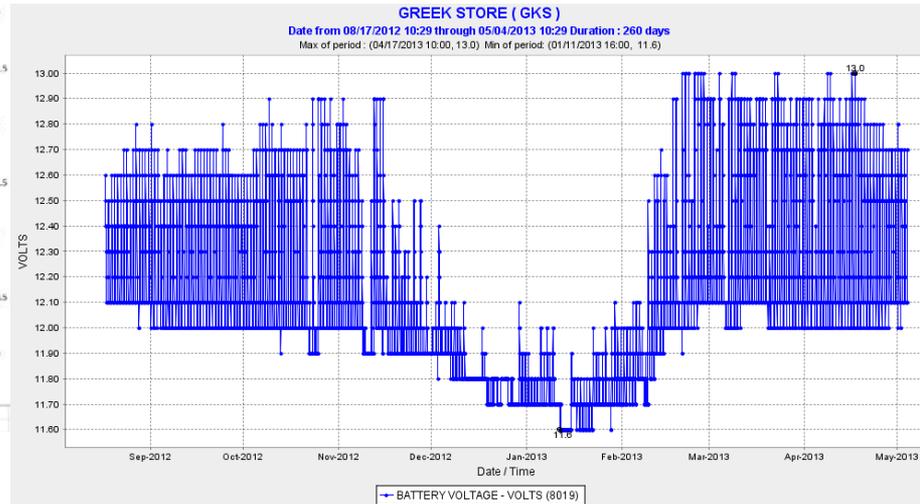
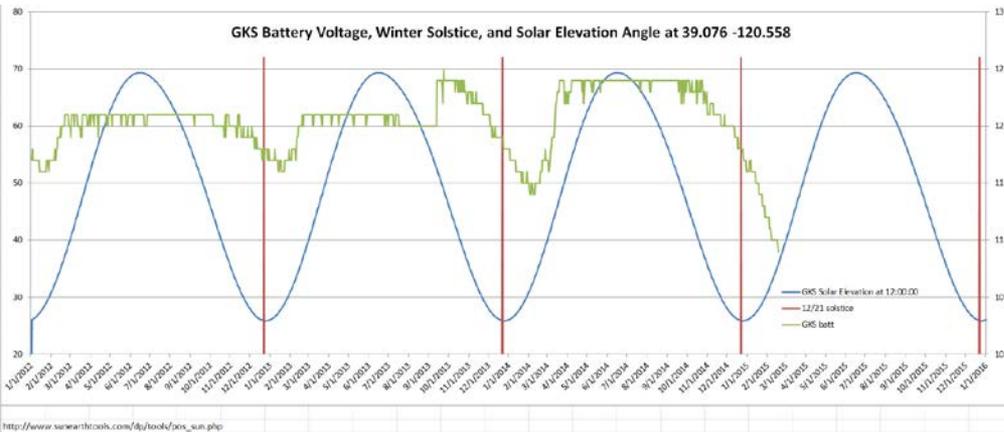
# Scott Mtn, SCT



# Mammoth Pass, MHP



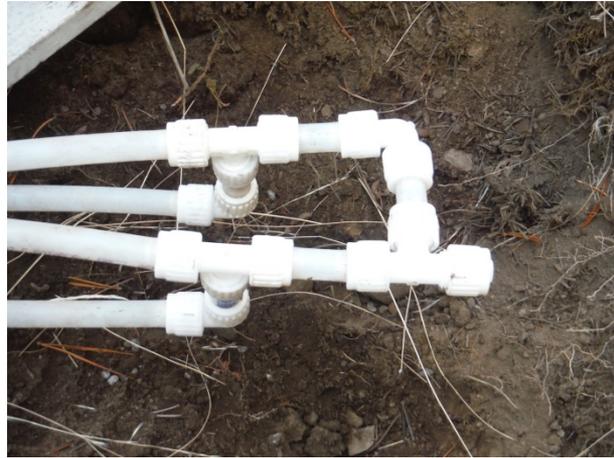
# Greek Store, GKS



# Pillow Plumbing



# Huysink, HYS, pillow replacement



# Recent Snow Surveys: Lyons Creek-LYN, Alpha-APH



2014 Mar survey:  
12" swe 32"dep  
2015 Mar survey:  
1" swe 6"dep





2011 Apr survey:  
57" swe 151"dep