# **Tracking Change**

California Water and Environment Modeling Forum April 23, 2013

## **Talk Overview**

## • Variables, Regions and Tools of the Trade

Some Examples

Coming Soon



Slide from Jamie Anderson DWR- Bay Delta

# What to Track?

- Temperature
- Precipitation
- Annual, Seasonal, and Monthly Runoff
- Snowpack
- Peak River Flows
- Mean Sea Level

# **Regional Perspectives**

**DWR Hydrologic Regions** 

### CA Climate Tracker





# Tools of the Trade

- Long-term, complete data sets that have been quality controlled and have solid metadata
- Reference periods from which change can be identified
- Sufficient data coverage to illuminate spatial variability





WRCC's California Climate Tracker



WRCC's California Climate Tracker

## Year to Year Precipitation Variability

### a) COEFFICENTS OF VARIATION OF TOTAL PRECIPITATION, WY 1951-2008



## California precipitation is uniquely variable

Dettinger et al, 2011

## Mariposa County West Map Data



Annual Average Minimum Temperature

Annual Average Precipitation

## Mariposa County West Map Data



Annual Average Maximum Temperature

# Annual Average Precipitation

# Northern Sierra 8 Station Index





Annual Average: 50 inches Maximum Year (1983): 88.5 inches Minimum Year (1924): 17.1 inches Period of Record 1921- Present Average of:Mt. Shasta CityQuincyShasta DamSierraville RSMineralPacific HouseBrush Creek RSBlue Canyon

# Northern Sierra 8 Station Index Monthly Distribution



### Monthly Average Runoff of Sacramento River System



Month

### Sacramento River (SBB+FTO+YRS+AMF Combined) April - July Runoff in percent of Water Year Runoff 1906-2012



Water Year (October 1 - September 30)

### April 1 Snowpack Water Content Statewide Percent of Average





# **Coming Soon**

Lauribre phillips



# FERIX – Flood Emergency Response Information Exchange



# National Climate Assessment Indicators Development Effort



#### Slide material from Dr. M. Kenney

# Questions?

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