

State Water Project and Central Valley Project TUCP

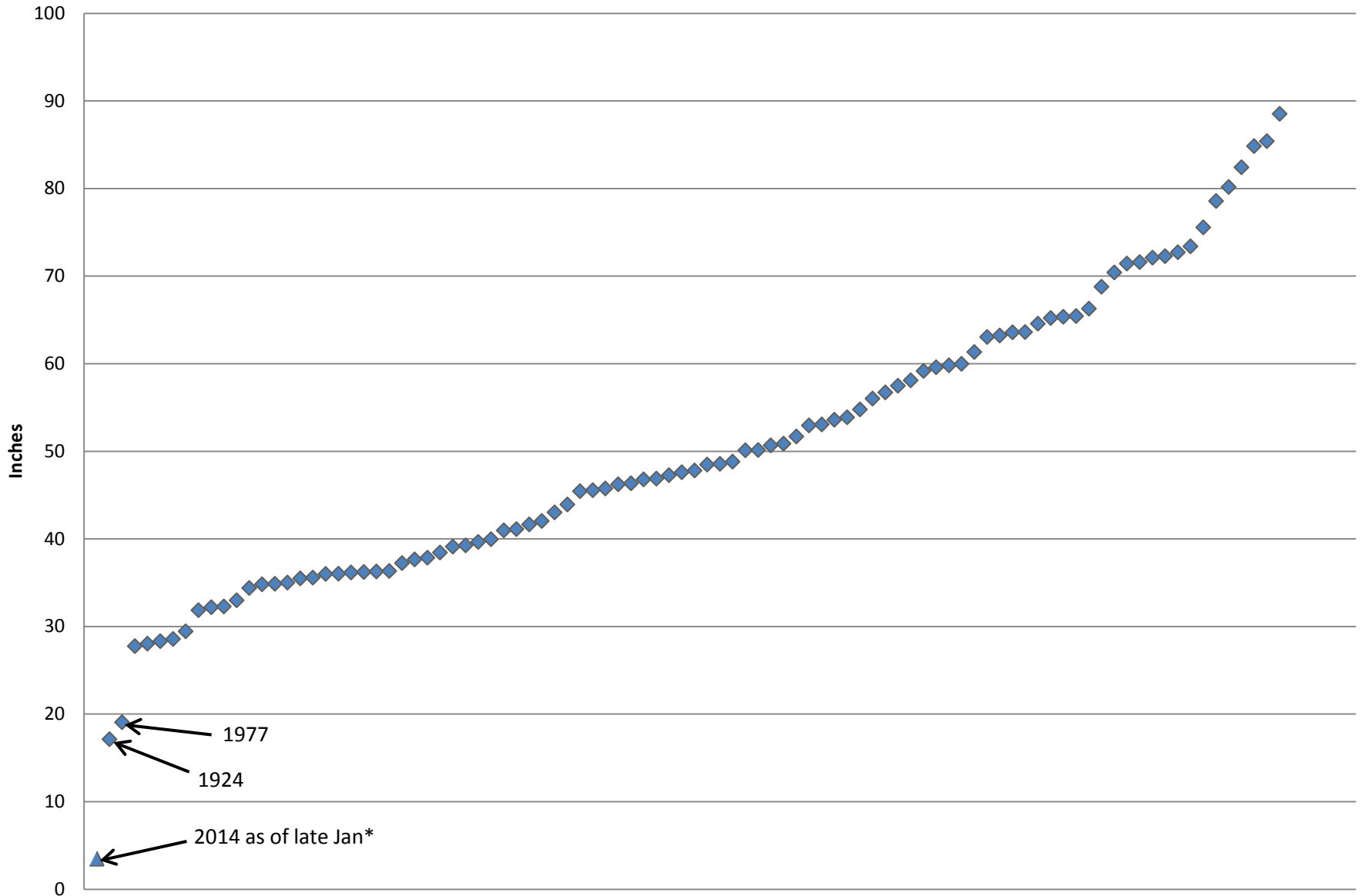
State Water Board Workshop

05/06/14

- Hydrologic Progression Since January
- Actual Operations based on TUCP Order
- Latest Petition Request
- Forecasted Operations

Early January Hydrologic Picture

Northern Sierra 8-Station WY Precipitation Totals



*WY 2014 Precipitation through 1/29/14 = 3.5" - half of WY total typically occurs by late January

Salinity Intrusion Projections based on January Hydrologic Forecasts

Figure 4-26 Maximum Salinity Intrusion, 1921-1943

90% Exceedence projected EC conditions as experienced during Pre-Project Period (1920-1943)

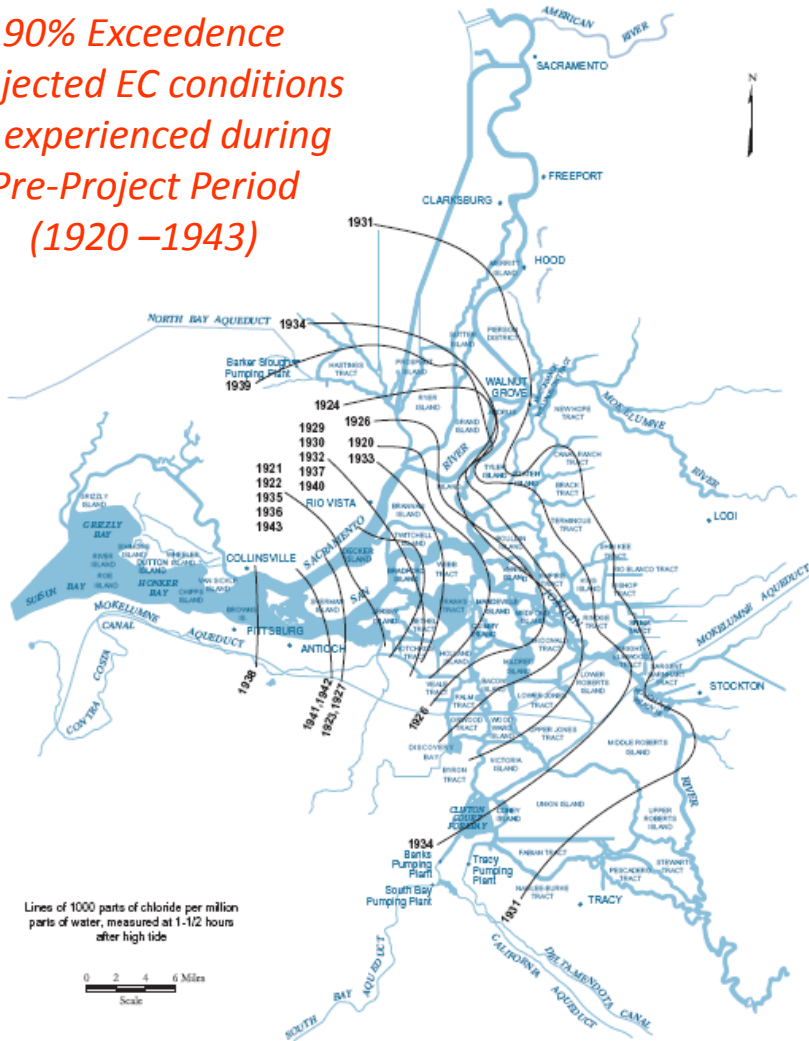
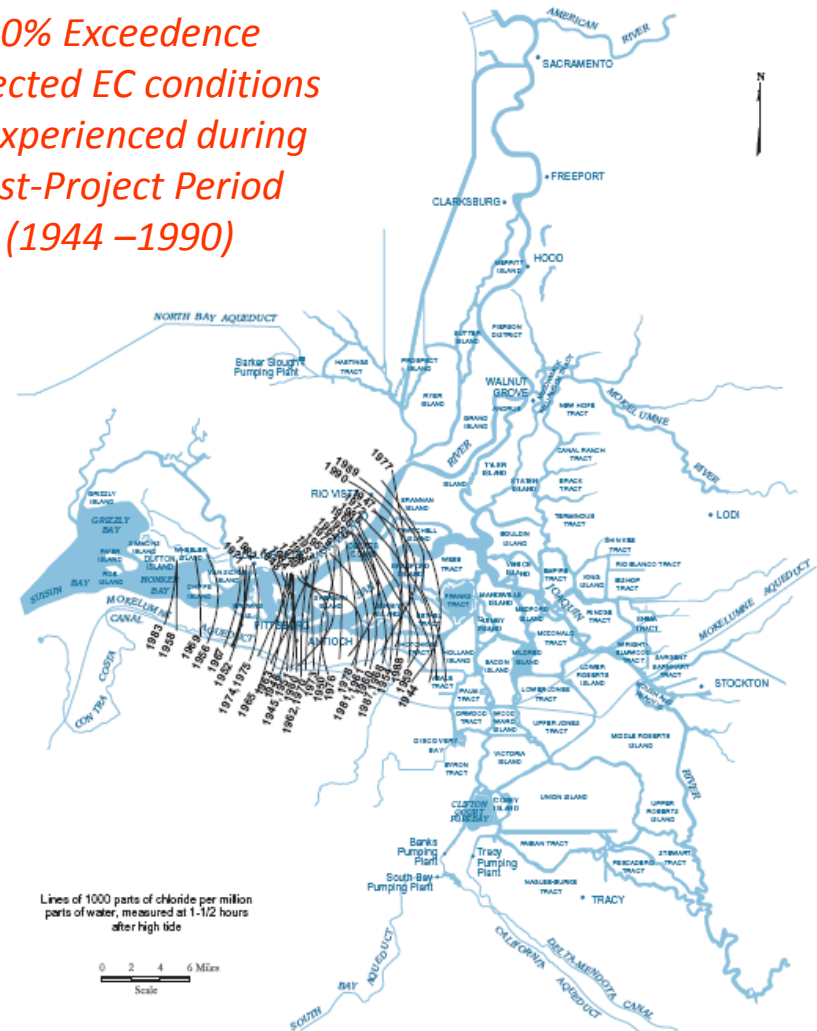


Figure 4-27 Maximum Salinity Intrusion, 1944-1990

50% Exceedence projected EC conditions as experienced during Post-Project Period (1944-1990)

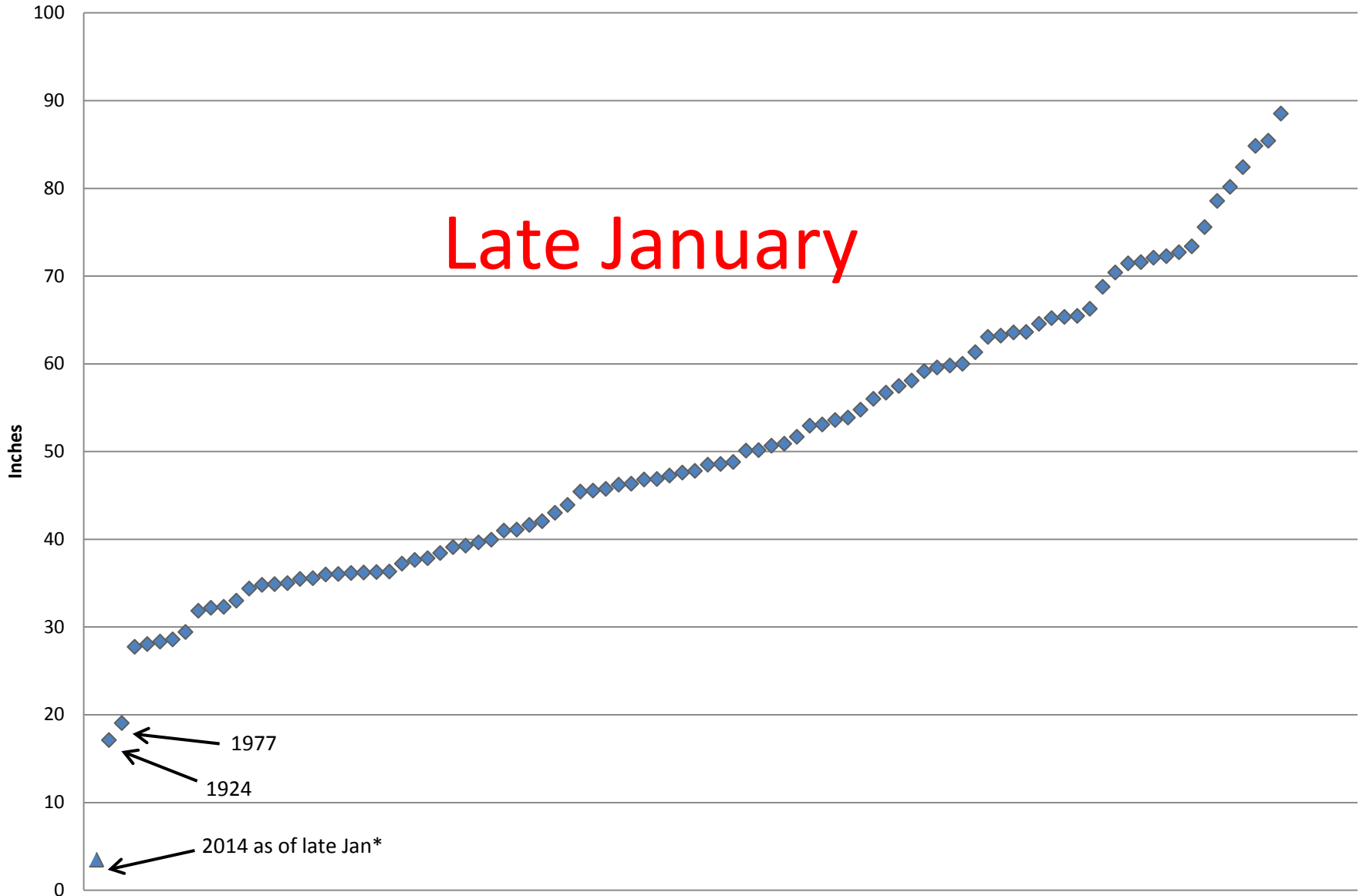


Preparing for the Worst

- Allocation Reductions
- Petition State Board to Modify Delta Standards
- Plan for Emergency Drought Barriers
- Begin Development of the Drought Operations Plan

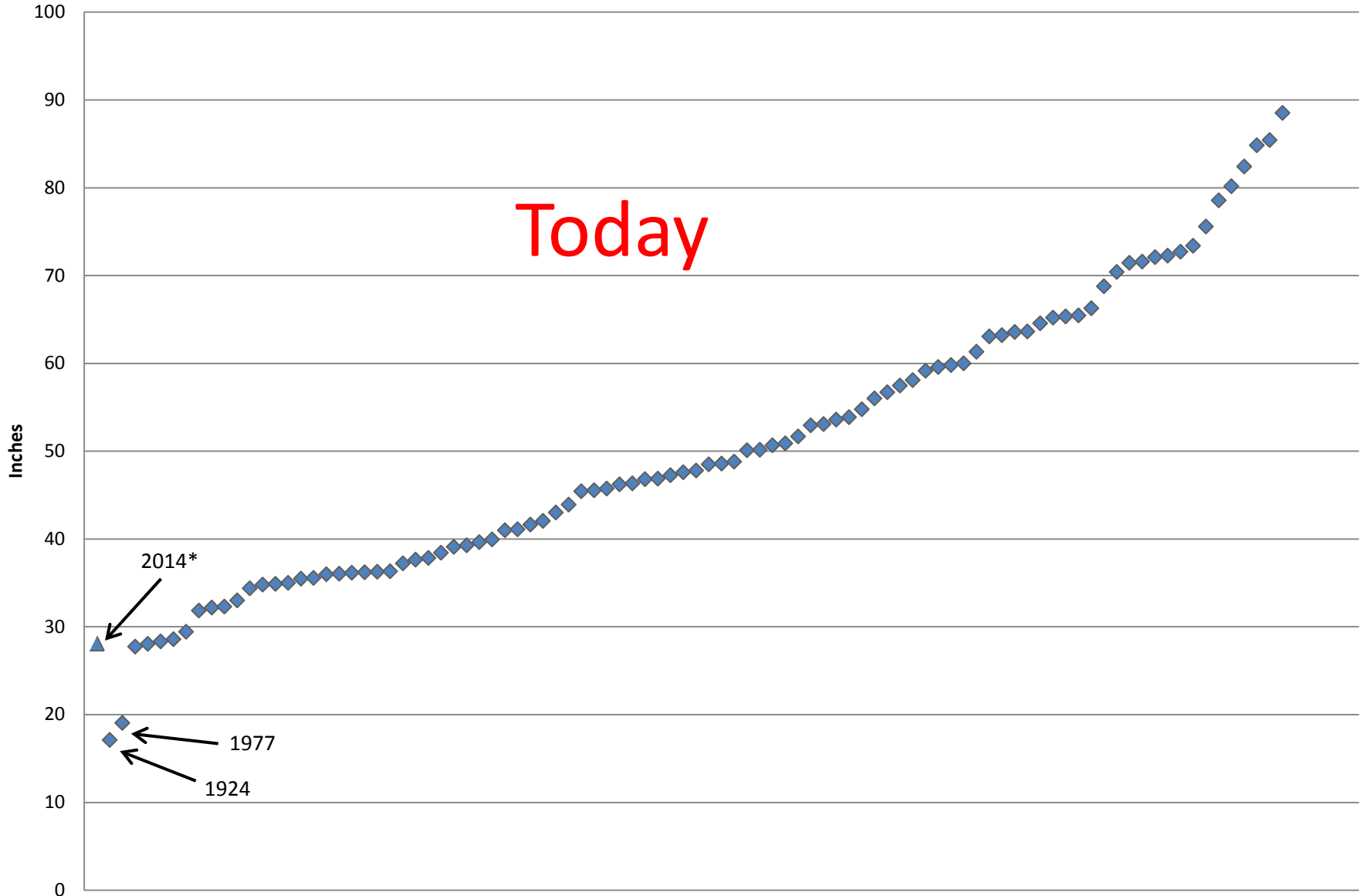
February/March Improvements

Northern Sierra 8-Station WY Precipitation Totals



*WY 2014 Precipitation through 1/29/14 = 3.5" - half of WY total typically occurs by late January

Northern Sierra 8-Station WY Precipitation Totals



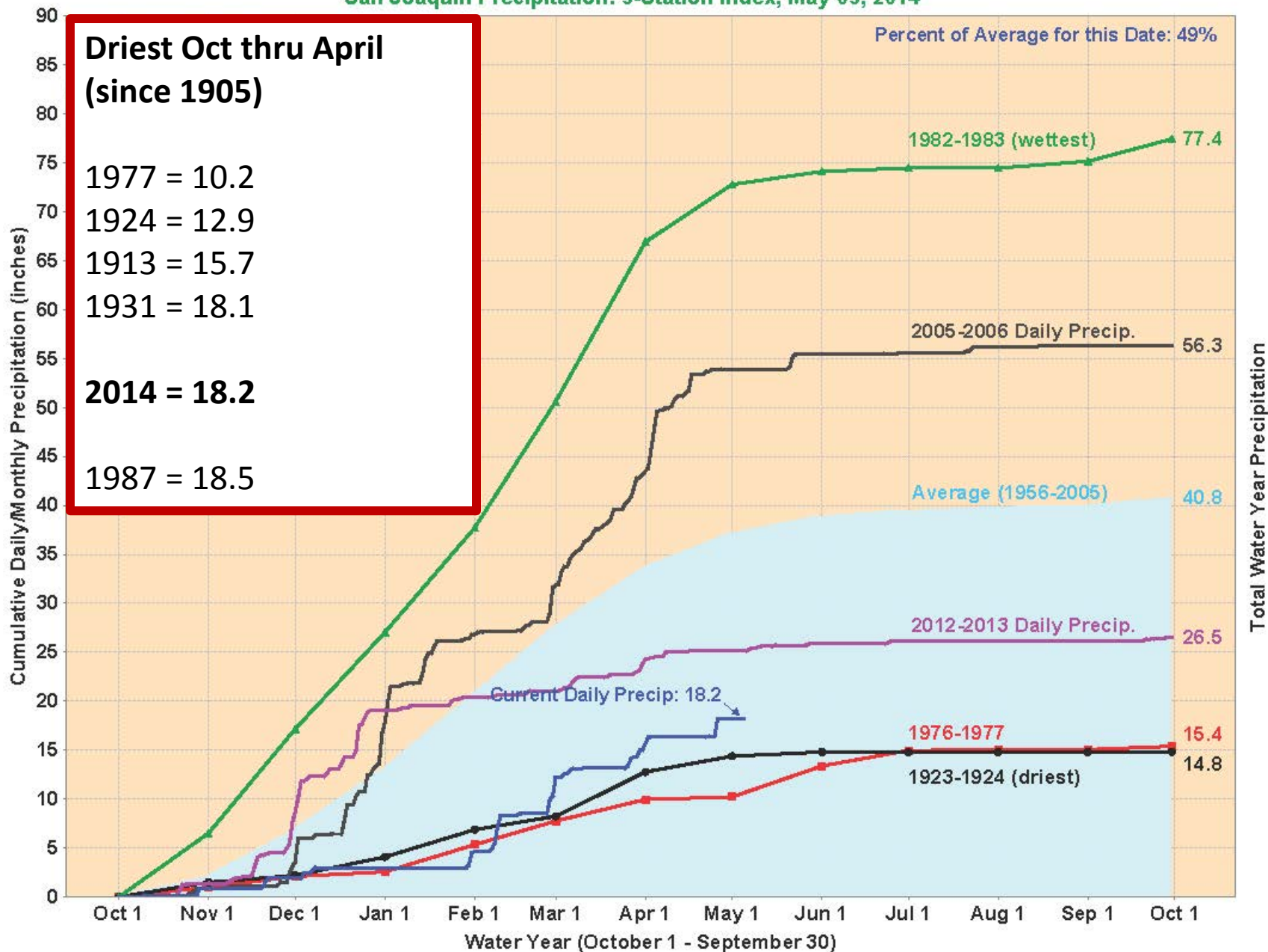
*WY 2014 with forecasted precipitation through 5/1/14 = 28.1"

San Joaquin Precipitation: 5-Station Index, May 05, 2014

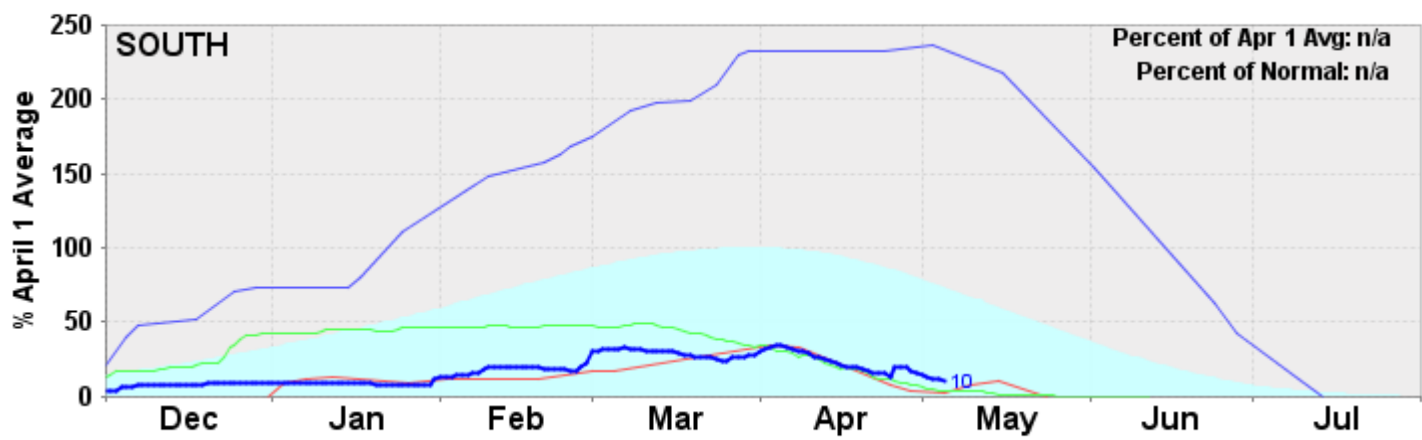
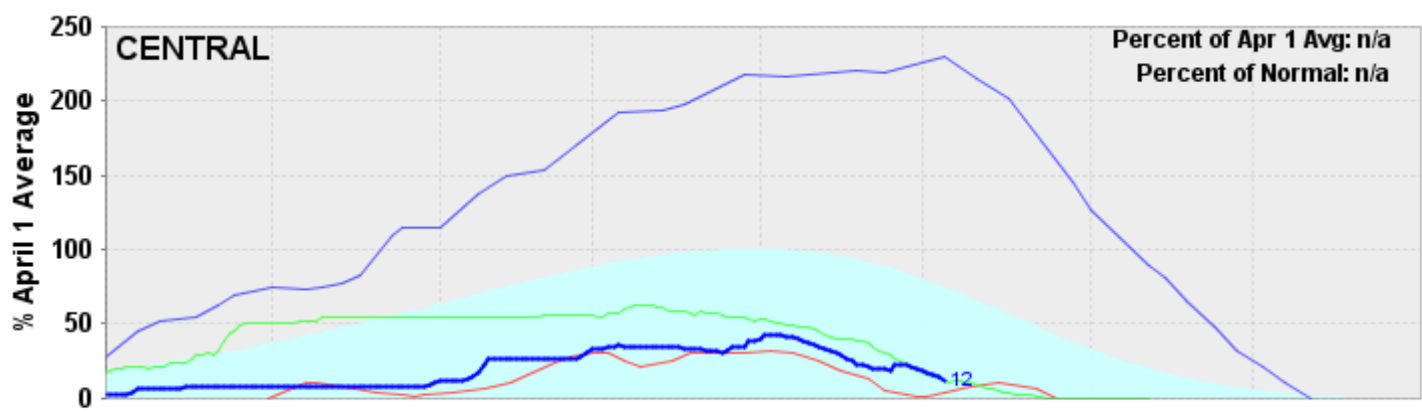
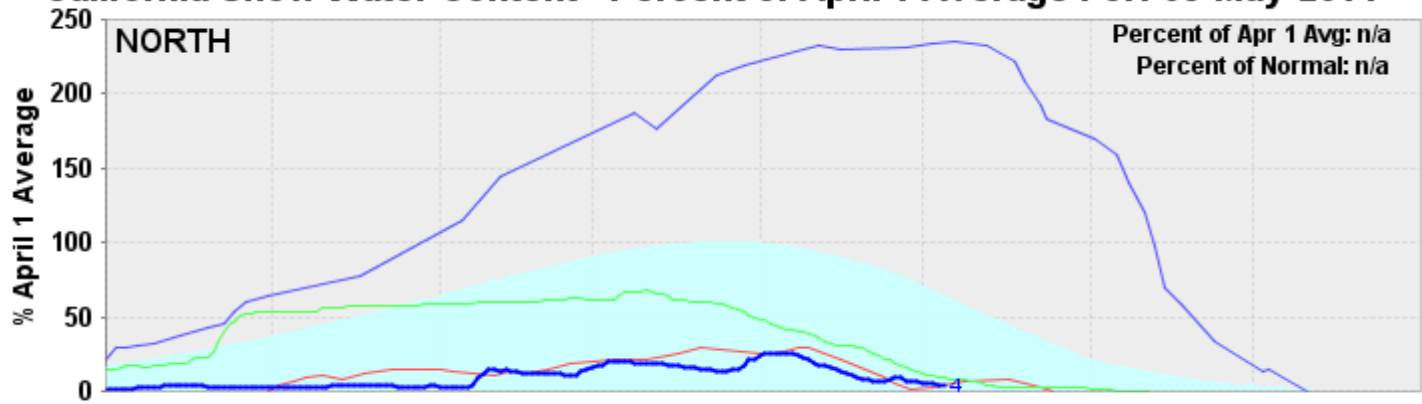
Percent of Average for this Date: 49%

**Driest Oct thru April
(since 1905)**

- 1977 = 10.2
- 1924 = 12.9
- 1913 = 15.7
- 1931 = 18.1
- 2014 = 18.2**
- 1987 = 18.5

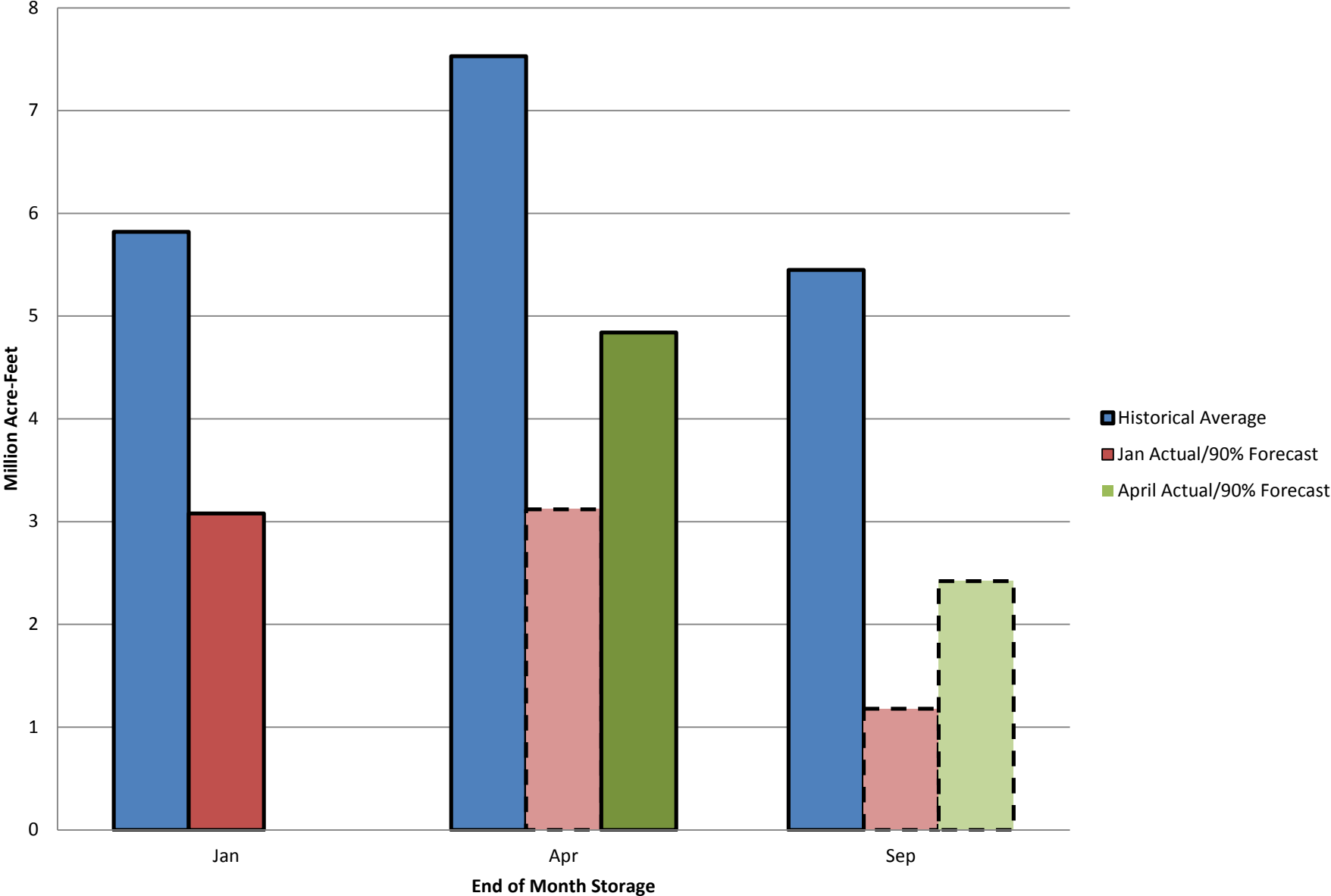


California Snow Water Content - Percent of April 1 Average For: 05-May-2014



Average 1976-1977 (min) 1982-1983 (max) 2012-2013 2013-2014 (current)

Combined Shasta/Oroville/Folsom Storages



Improved Conditions

- Some Increased Supply
- Scaled Back Requests for Modified Delta Standards
- Emergency Drought Barrier Installation on Hold

Actual Operations

February and March

- Unmodified D-1641 Standards Largely Met
- Exceptions
 - DCC Opening for Water Quality: February 1 – 10
 - X2 Objectives: < 5 TAF less outflow
- Additional unquantifiable upstream benefits

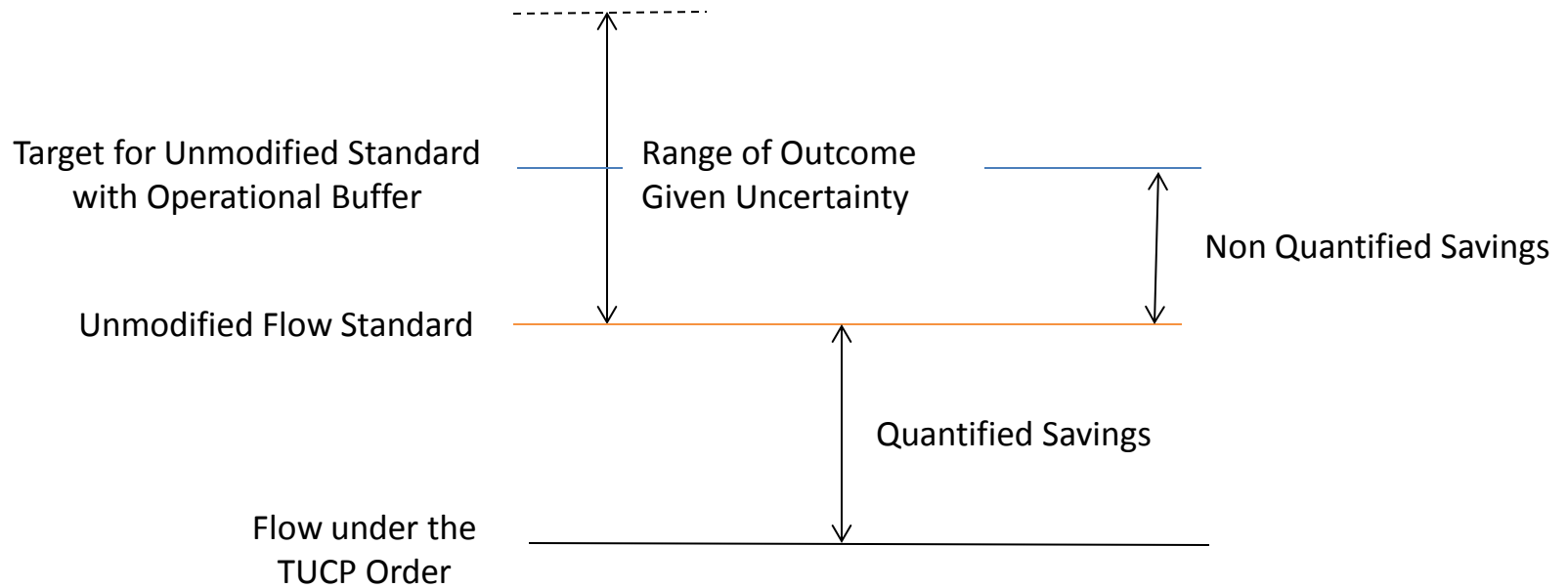
April

- X2 Objectives: ~210 TAF less outflow
 - 70% upstream savings
 - 30% export of Table 4 water
- Additional unquantifiable upstream benefits

Additional Upstream Benefits

- There is significant uncertainty inherent to this system
- Operational buffers are necessary to ensure regular compliance with Delta standards (>99% of the time historically)
- This level of performance comes with a cost

Additional Upstream Benefits



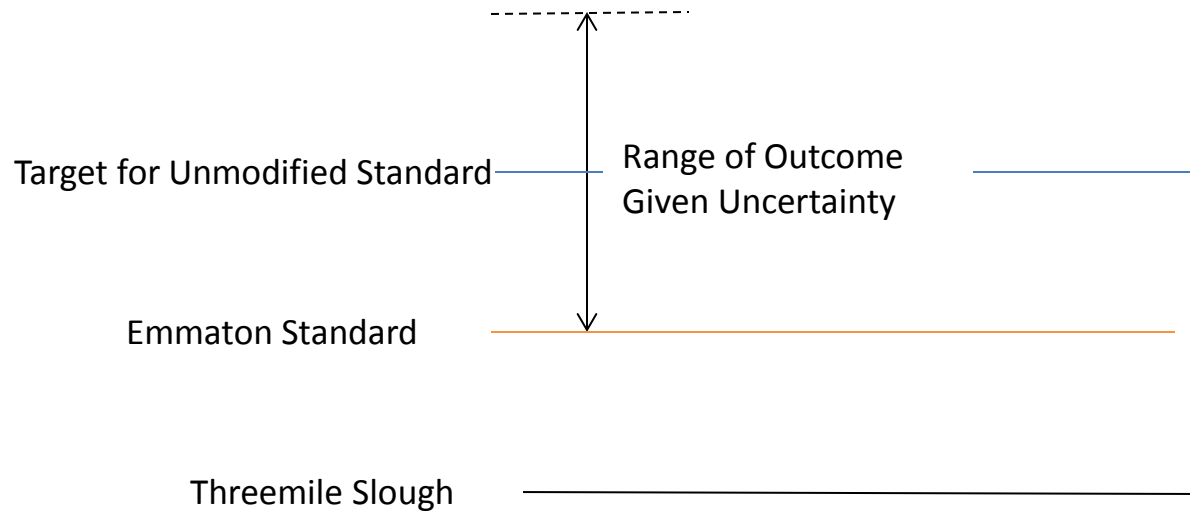
Latest Petition Requests

Additional Petition Requests for Upstream Savings

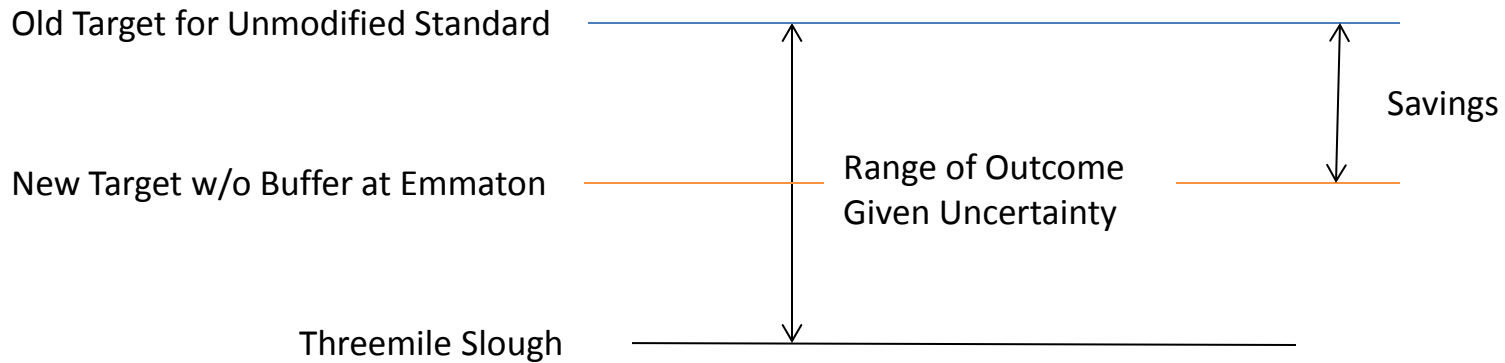
- Emmaton EC Compliance moved to Threemile Slough
- Delta Outflow Modifications in May and July
- Rio Vista Flow Modification in the Fall

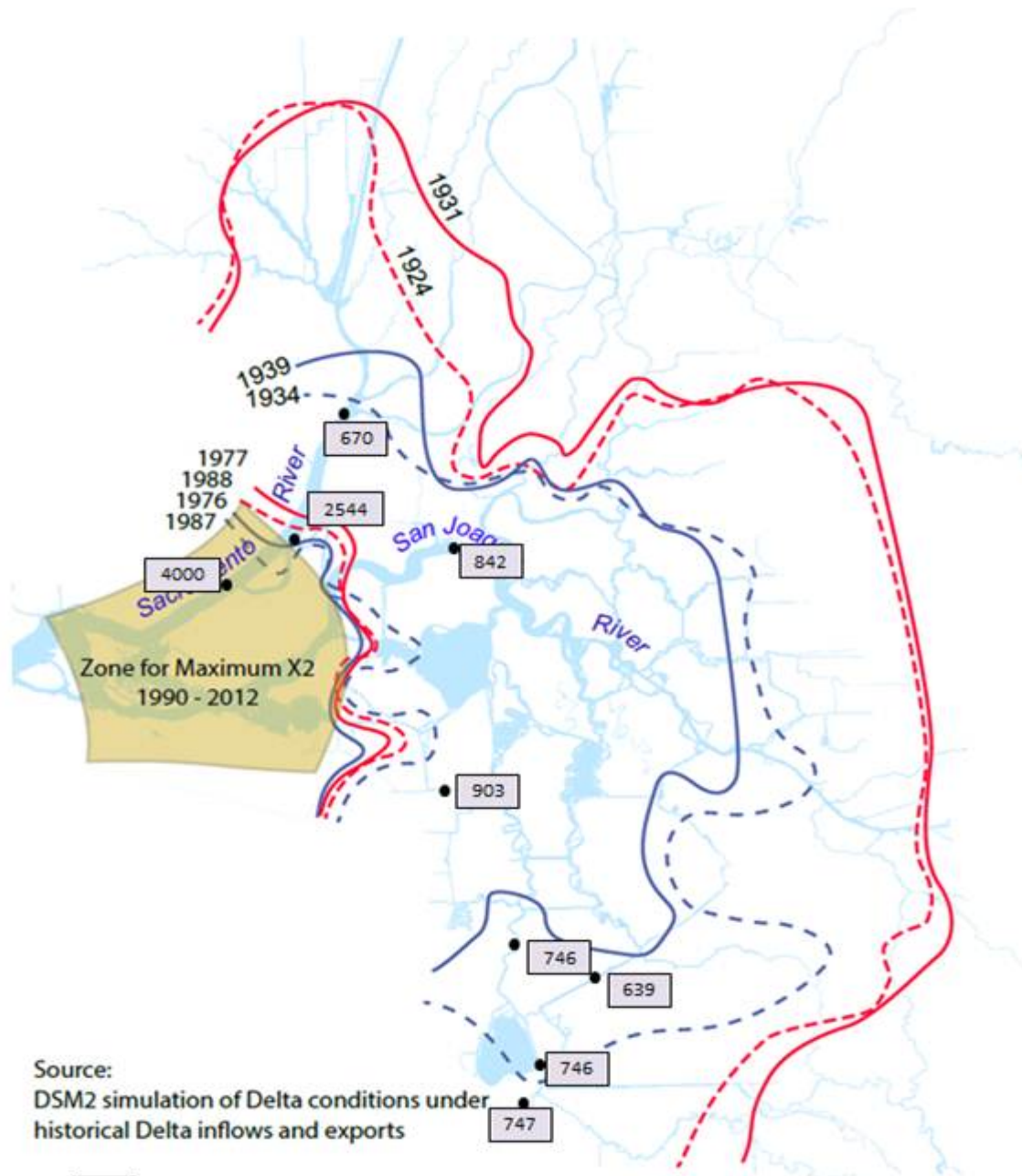
Forecasted Operations

Unmodified Operation



Modified Operation





Source:
 DSM2 simulation of Delta conditions under
 historical Delta inflows and exports

EC in umhos/cm for Three-Mile Slough
 Objective – April 2014 Forecast

2015 Reservoir Reserves

- Forecasted end of September Storages:
 - Oroville > 1.0 MAF
 - Shasta > 1.1 MAF
 - Folsom > 300 TAF
- Adequate for Health and Safety Supplies
 - Drinking, Hygiene, Sanitation, and Fire Suppression

