



Where Did Winter Go!?

*Weather and Water
Outlook for Spring-
Summer 2020*

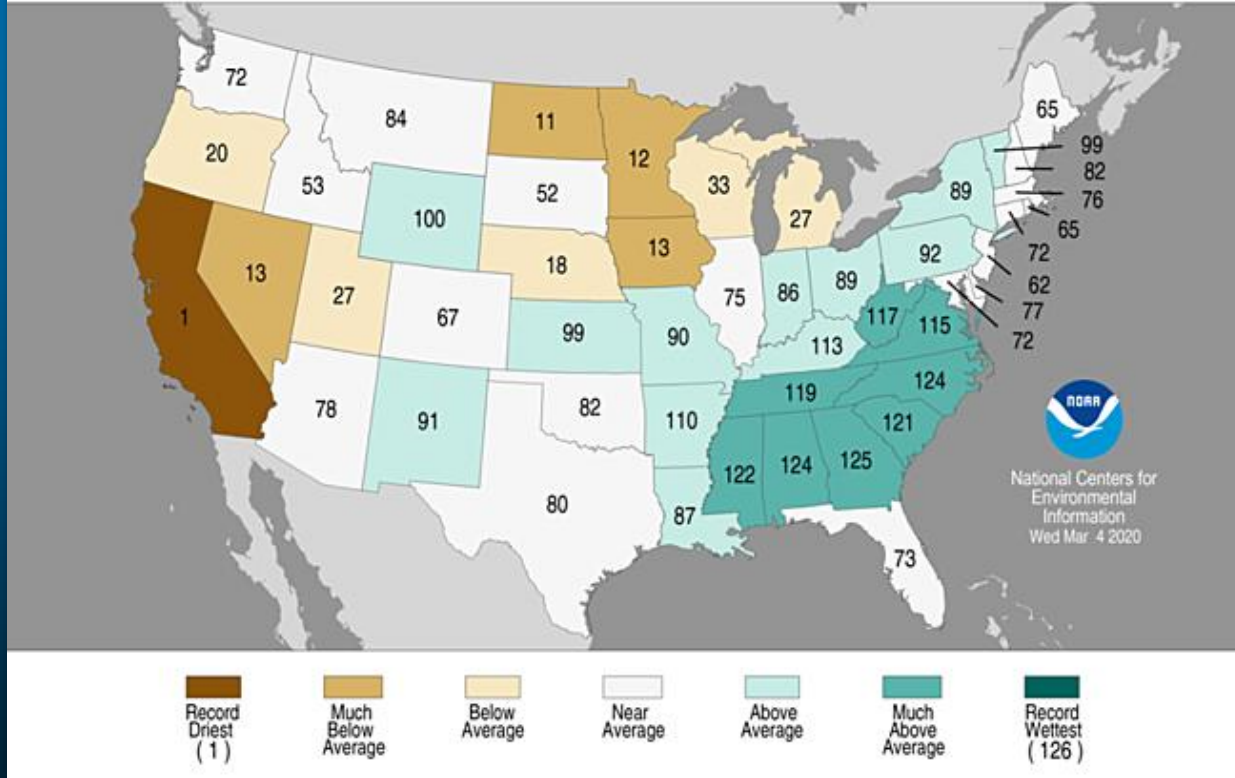
chris.smallcomb@noaa.gov



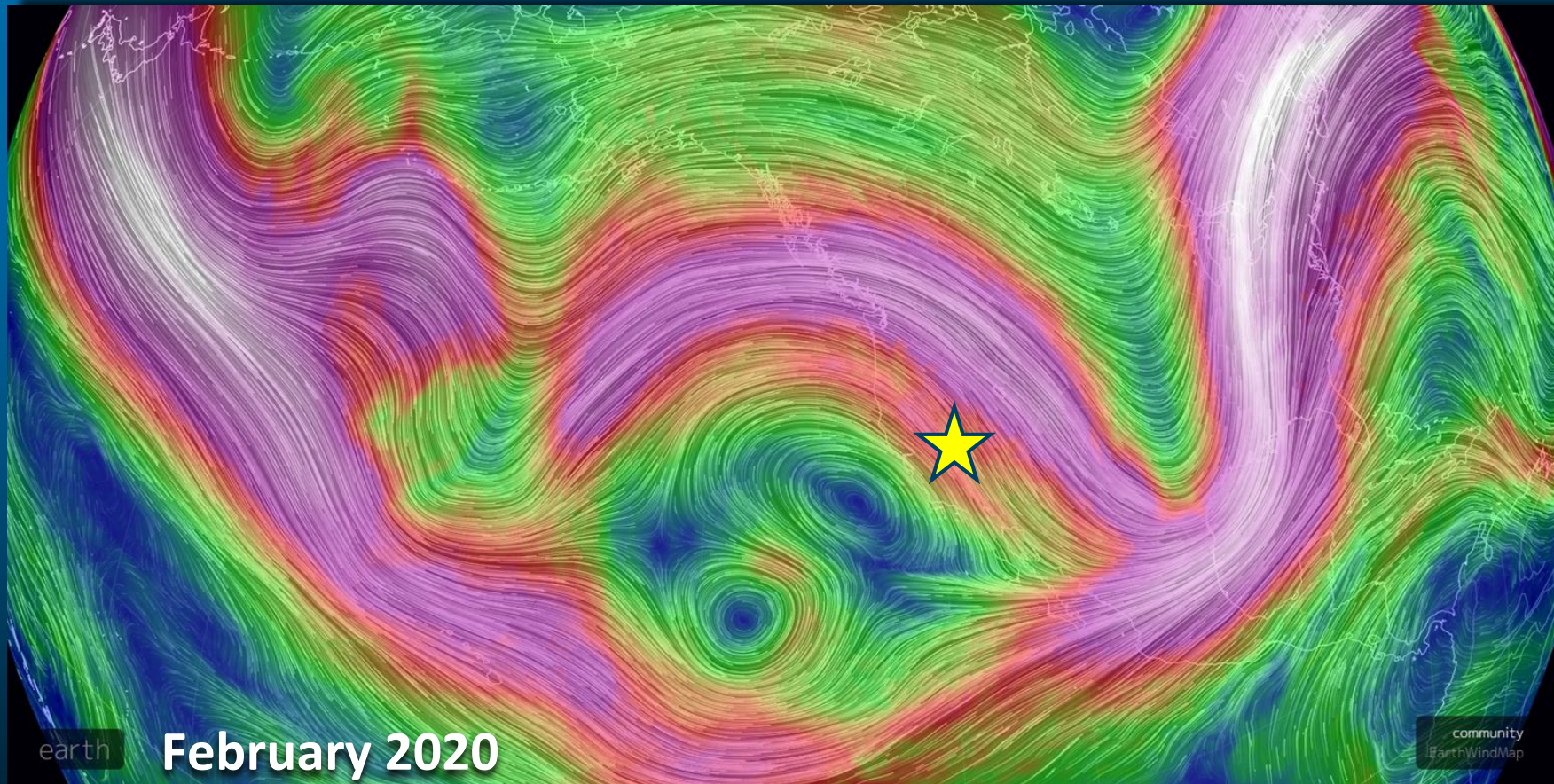
Statewide Precipitation Ranks

February 2020

Period: 1895–2020



Precipitation Rankings



3 **Why So Dry? It's the Jet Stream!**

Reno National Weather Service
Forecasting for the Sierra and western Nevada since 1905

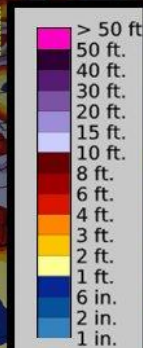




Accumulated Season Snowfall

October 1, 2018 to February 24, 2019

Prototype



Last Year

Created by: NWS San Francisco Bay Area
Gridded Data: National Snowfall Analysis/National Operational Hydrologic
Remote Sensing Center/National Weather Service

This product is a prototype, for more information:

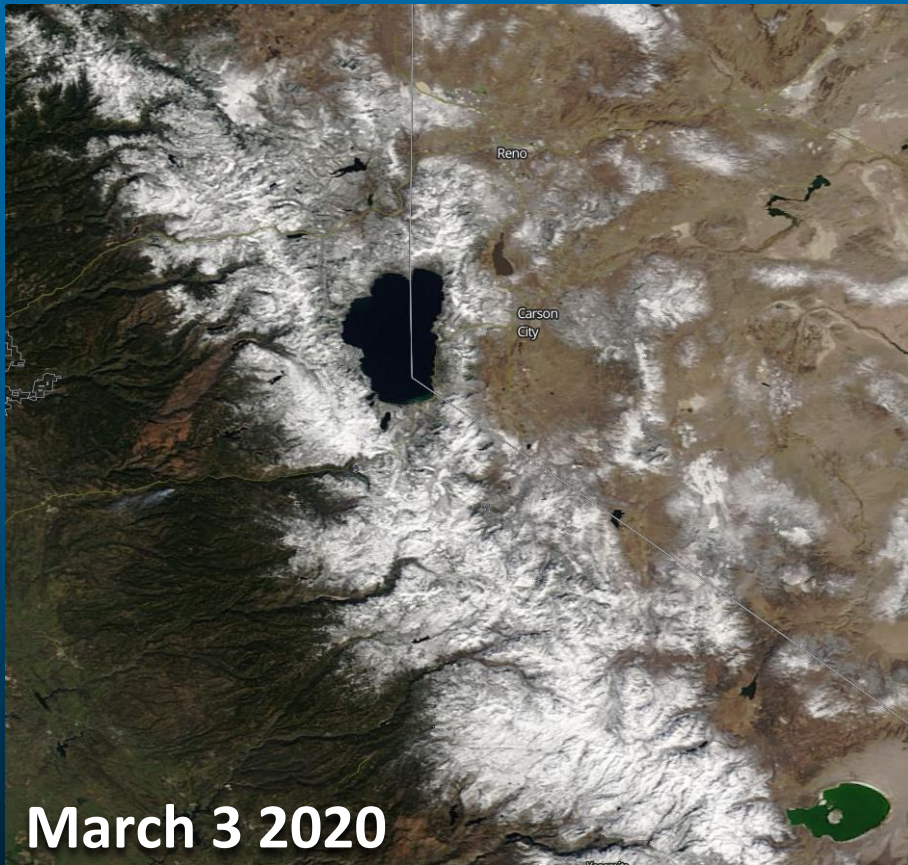
https://www.nws.noaa.gov/os/notification/tin15-05bigrsc_snowfall_aaa.htm

https://www.noahrc.noaa.gov/snowfall_v2/

Reno National Weather Service

Forecasting for the Sierra and western Nevada since 1905

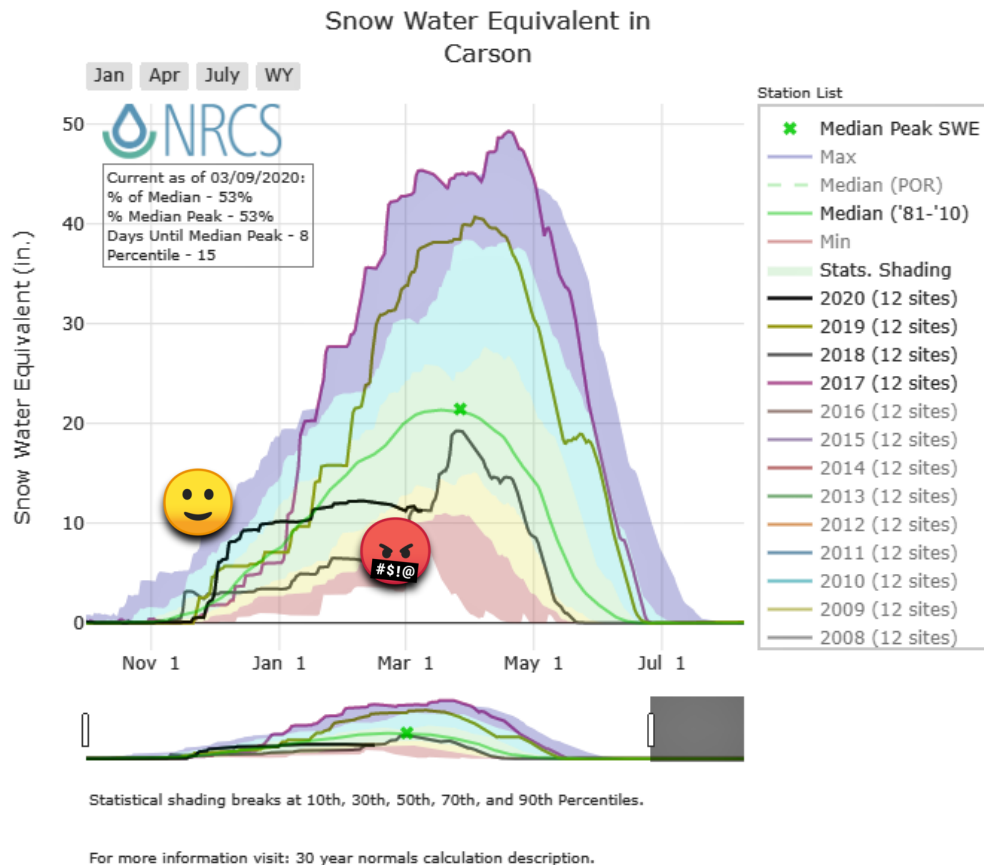




March 3 2020



2017



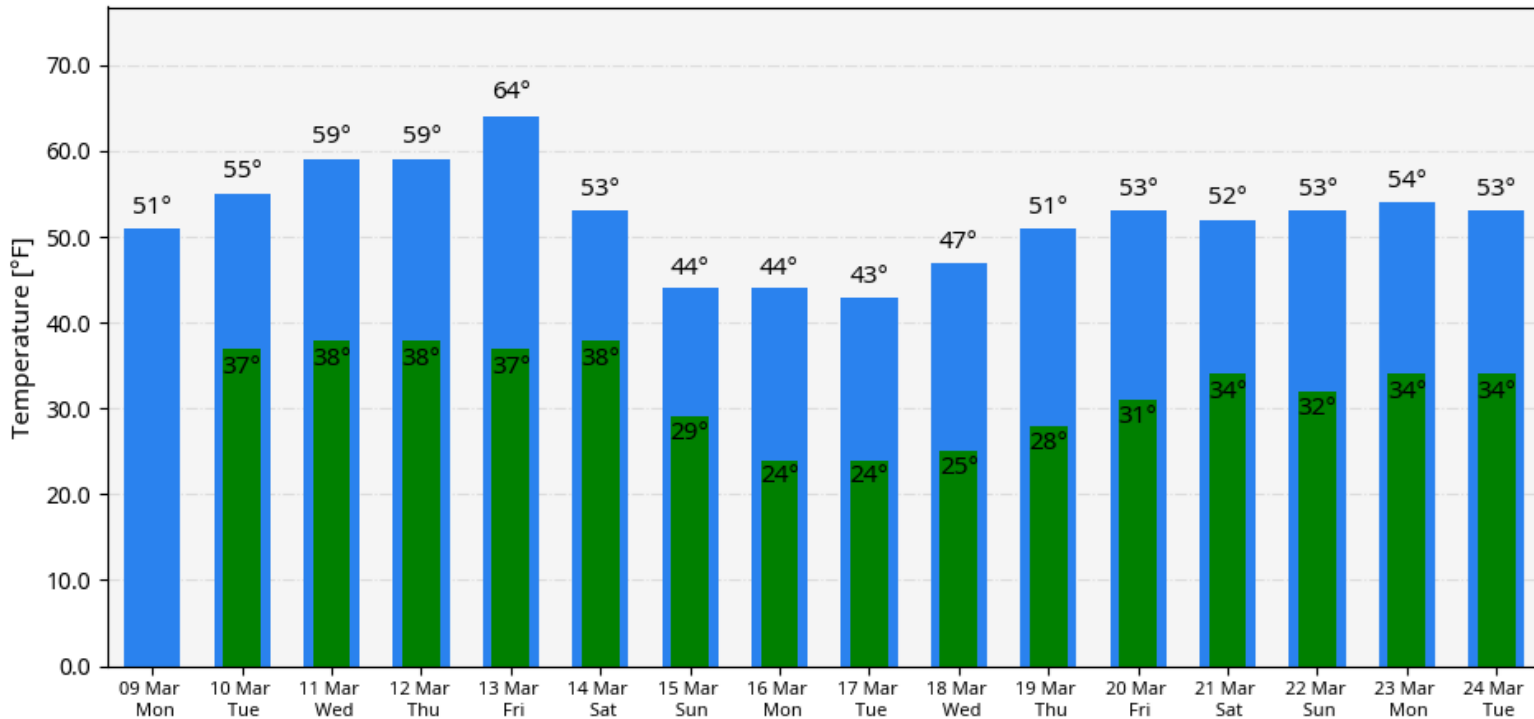
53%

Snowpack, vs median 3/9

53%

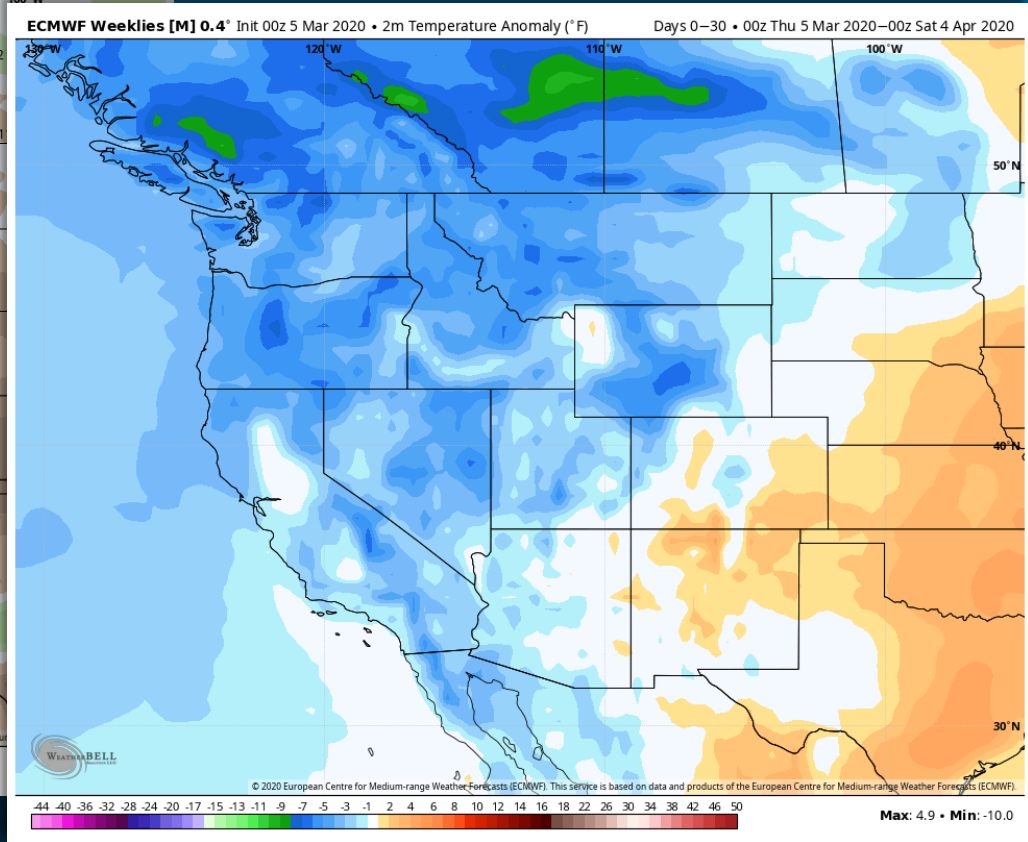
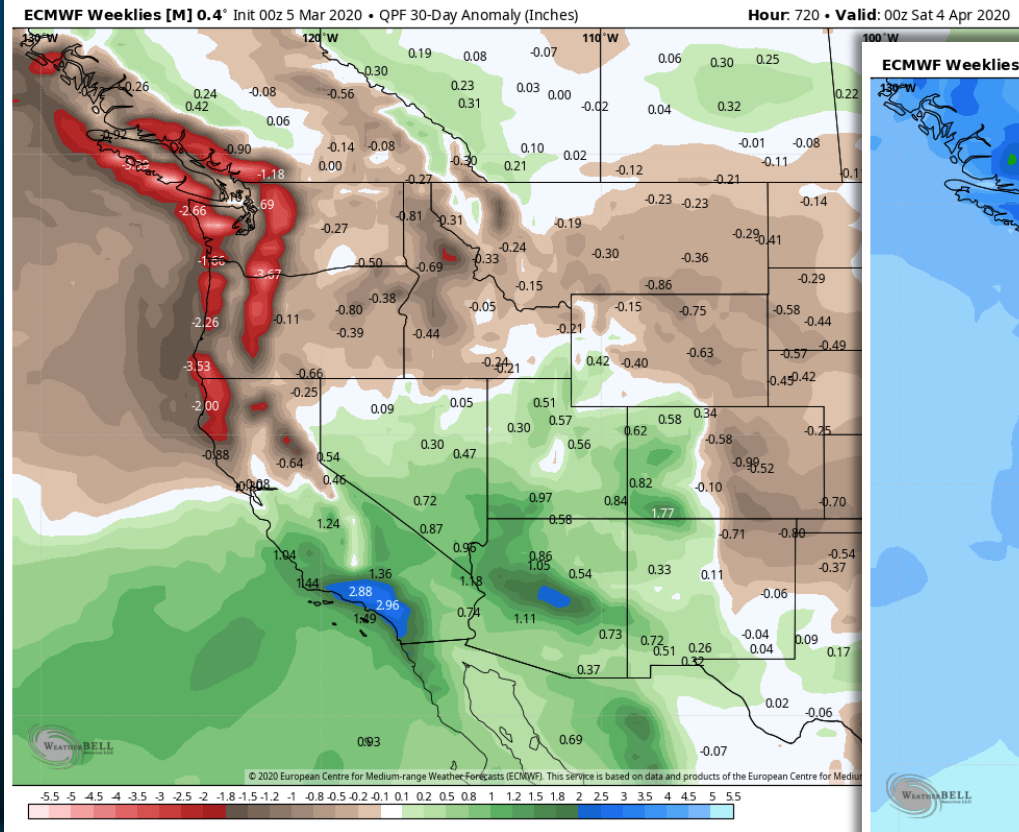
Total precip, vs average
10/1-3/9

Daily High/Low Temperature • GEFS Downscaled MOS 2.5km Init 12z 9 Mar 2020
Carson Airport • KCXP [39.1922°N, 119.734°W]



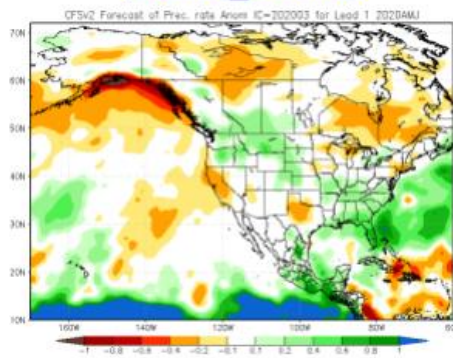
Week 1-2 Outlook



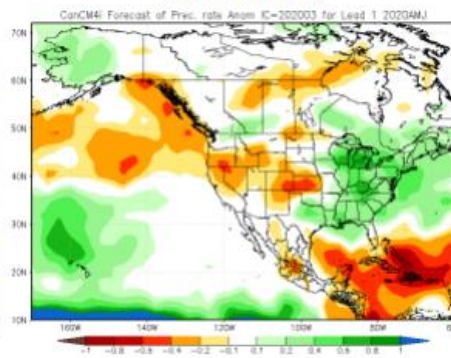


Outlook into Early April

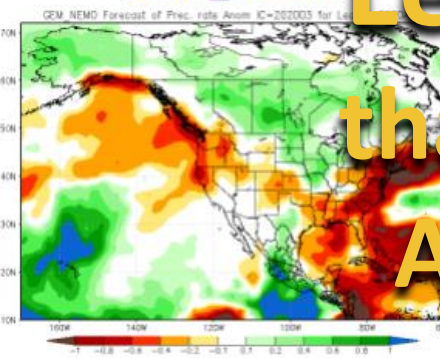
NCEP CFSv2



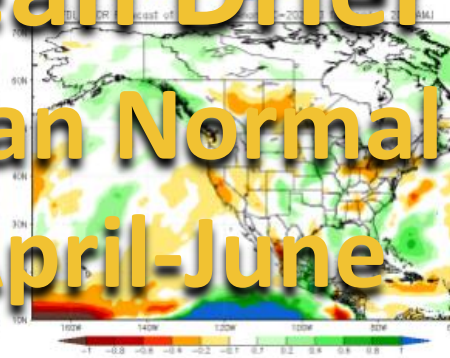
CanCM4i



GEM NEMO

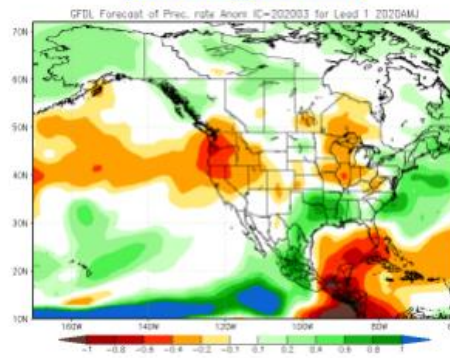


GEOSv2

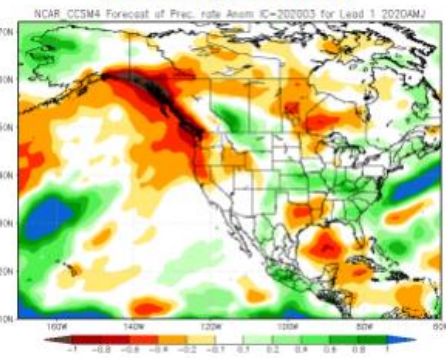


**Lean Drier
than Normal
April-June**

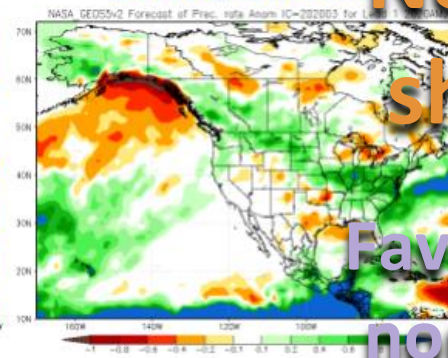
GFDL CM2.1



NCAR CCSM4

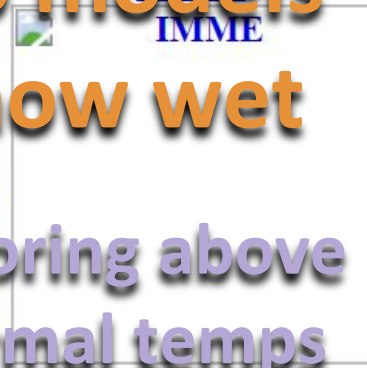


NASA GEOSv2

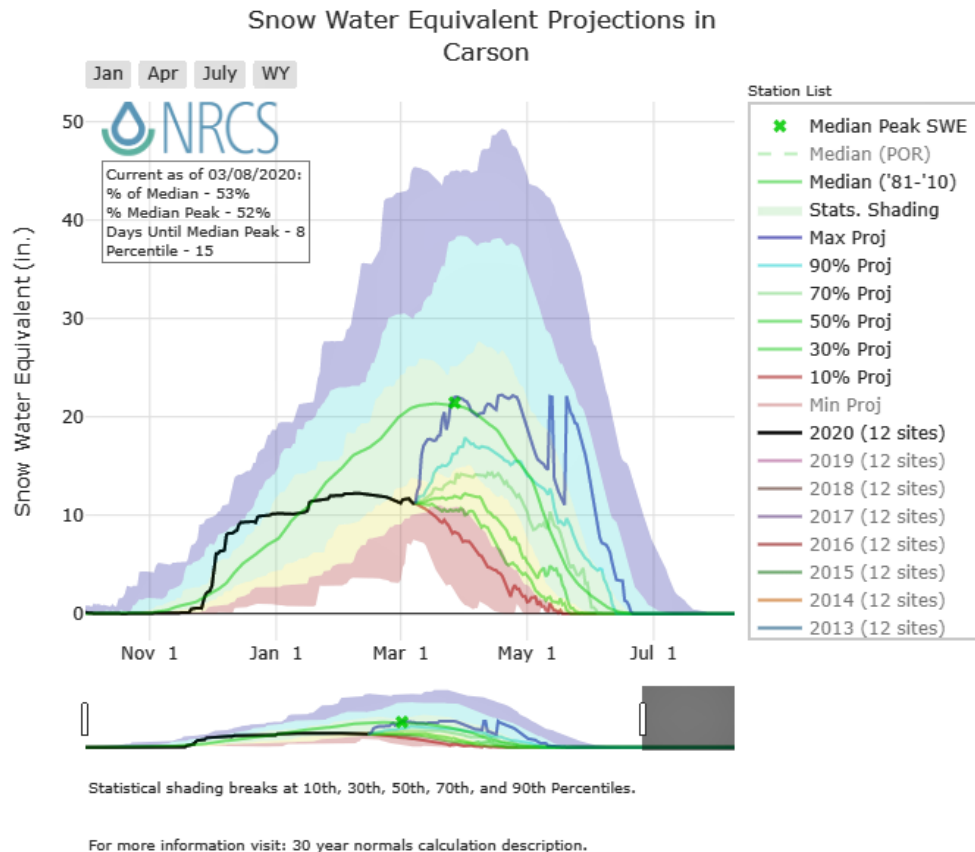


**No models
show wet**

**Favoring above
normal temps**



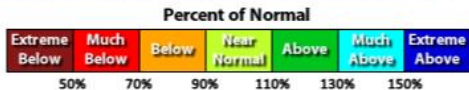
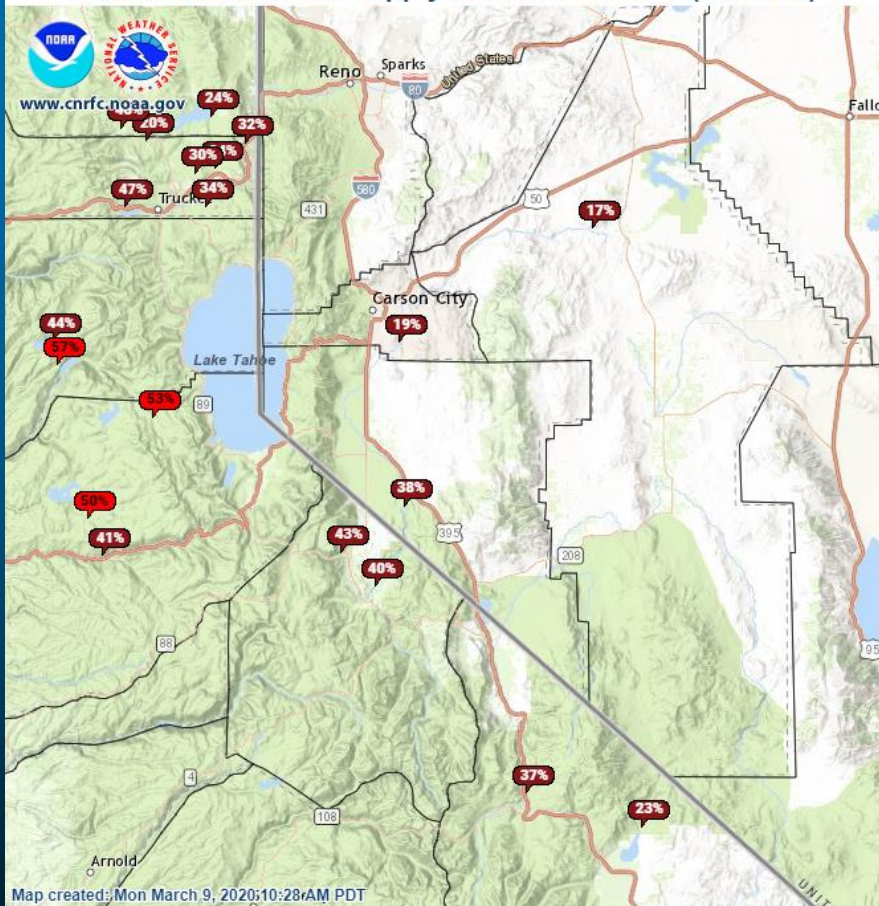
Crystal Ball April through June



1 in 50

Tim & Chris Odds of SWE
 “Recovery” in Carson
 River Basin by early April.

Odds of a “Recovery”



April-July Water Supply Outlook

41%

Headwaters, % of avg.

18%

Carson-Lahontan, % of avg.

2020 Forecast is

18%

Lahontan Inflow, % of
avg.



186

2019

97

2018

323

2017

75

2016

2-9

2014 & 2015

24

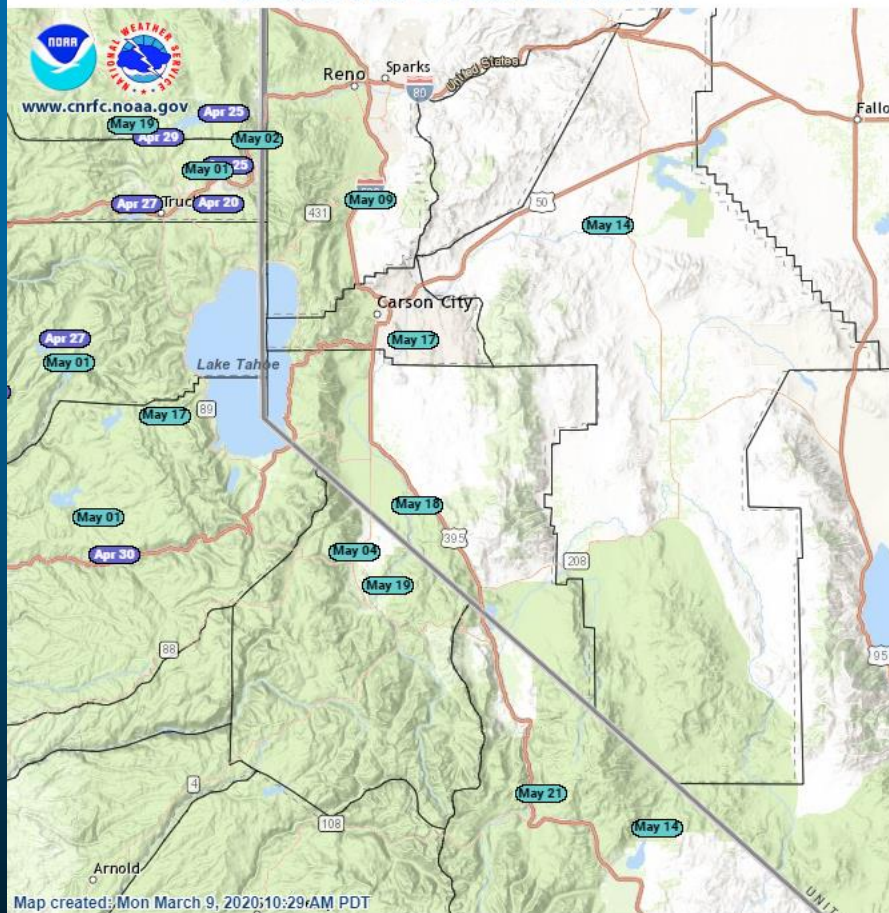
2013

Compare to Previous Years

Reno National Weather Service
Forecasting for the Sierra and western Nevada since 1905



Forecast Date of Peak Flow/Inflow



Peak Flow Timing

May 4

W Carson Headwaters

May 14-19

E Carson & Main Stem

Peak Dates



Carson @ Carson City

April						
S	M	T	W	T	F	S
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2
3	4	5	6	7	8	9

May						
S	M	T	W	T	F	S
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

June						
S	M	T	W	T	F	S
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6	7	8	9	10	11

Snowpack volume AND spring weather play key roles in timing.

Peak Flow vs Last 9 Years

Reno National Weather Service
Forecasting for the Sierra and western Nevada since 1905



CARSON RIVER - CARSON CITY (STWN2)

Latitude: 39.11° N

Longitude: 119.71° W

Location: Carson City County in Nevada

Elevation: 4620 Feet

River Group: Eastern Sierra

Issuance Time:

May 09 2016 at 8:05 AM PDT

Water Resources Verification

About These Plots and Help ?

Seasonal (Apr-Jul)

Water Year

Correlation Plot

Scatter Plots

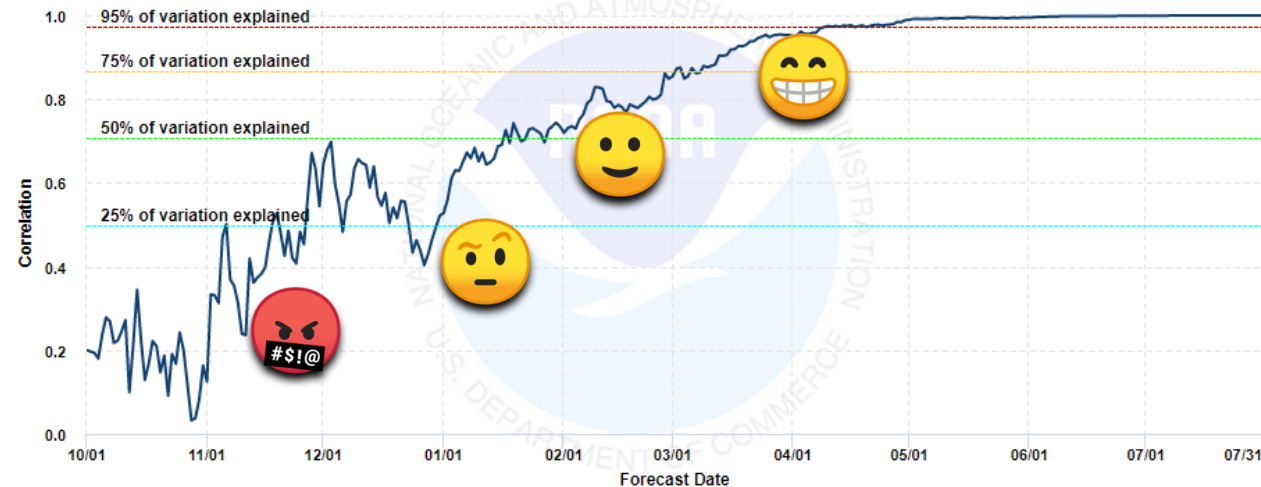
Percent Error Plots

Box Plots

Reliability Histograms

About this plot ?

Median Forecast Correlation with Observation for STWN2 (A-J)



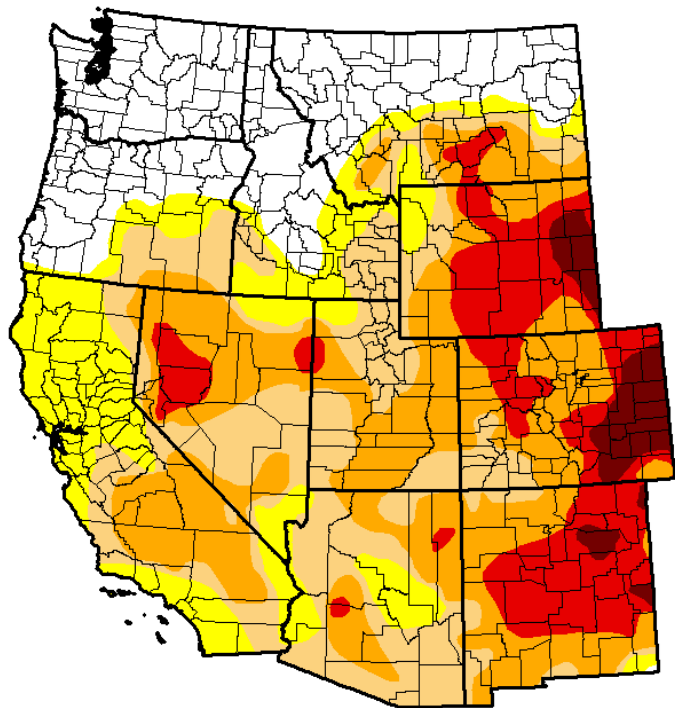
Water Supply Forecast Verification

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U.S. Drought Monitor West

March 5, 2013
(Released Thursday, Mar. 7, 2013)
Valid 7 a.m. EST



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Matthew Rosencrans
CPC/NCEP/NWS/NOAA



<http://droughtmonitor.unl.edu/>

**Drought has crept
back into the region
since October 1st.**

**Nowhere near as
bad and extensive vs
2013 “analog” year.**

U.S. Drought Monitor Trends

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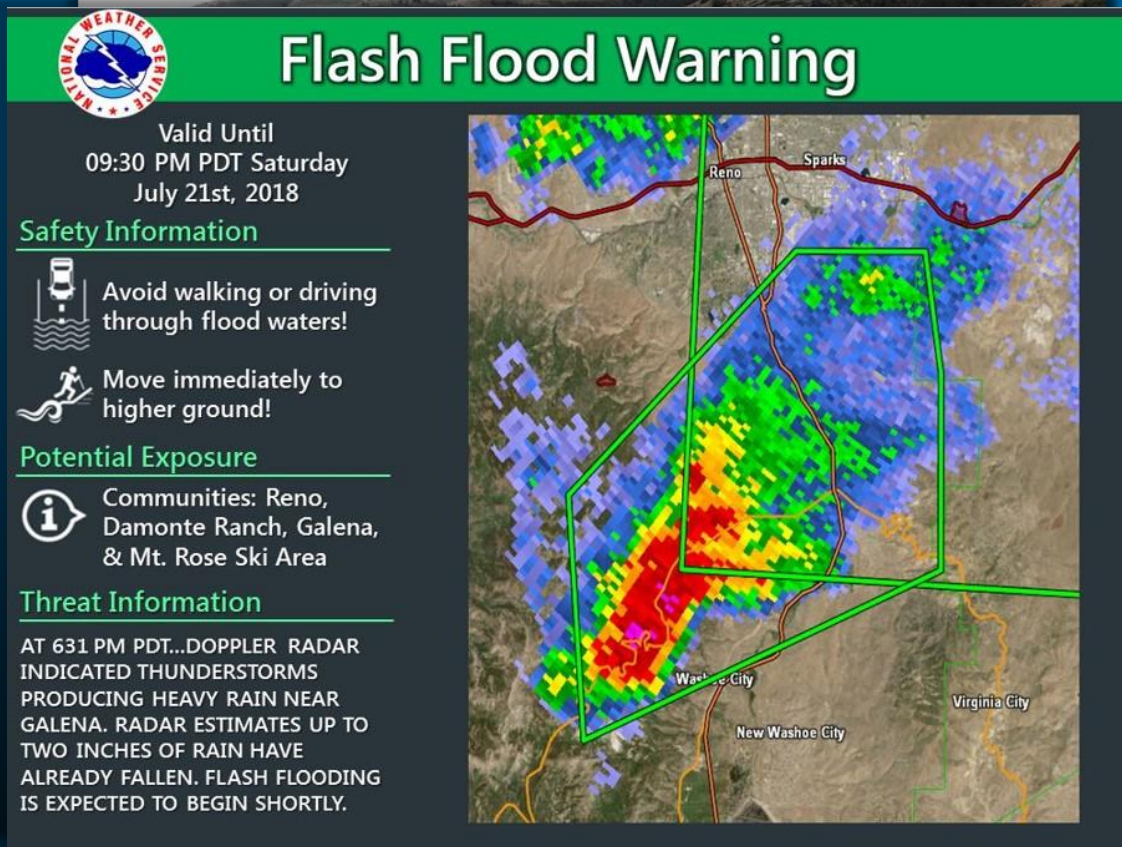
Three Category Rating System for Impacts

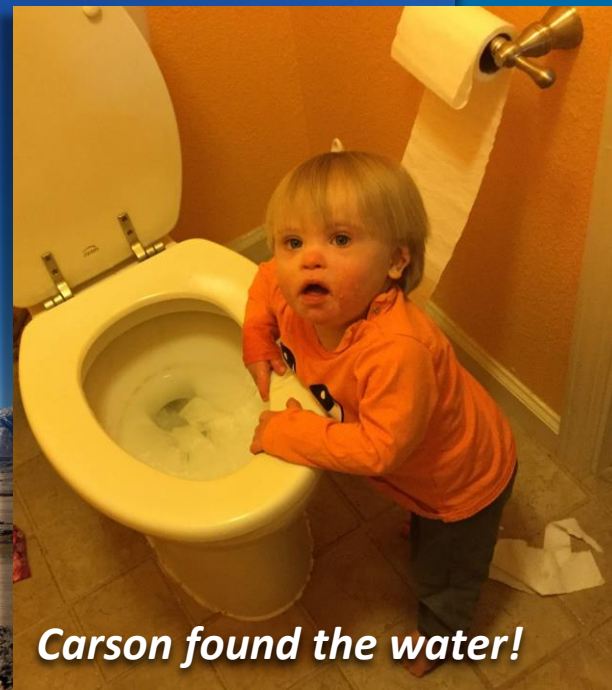
Base - a.k.a. CYA
(EAS/no WEA)

Considerable - impact
populated areas, roads,
debris flows (EAS/WEA)

Catastrophic - devastation,
emergency, major dam
failure (EAS/WEA)

Upgraded Flash Flood Warnings





Carson Valley, viewed from Prison Hill, Feb 9th