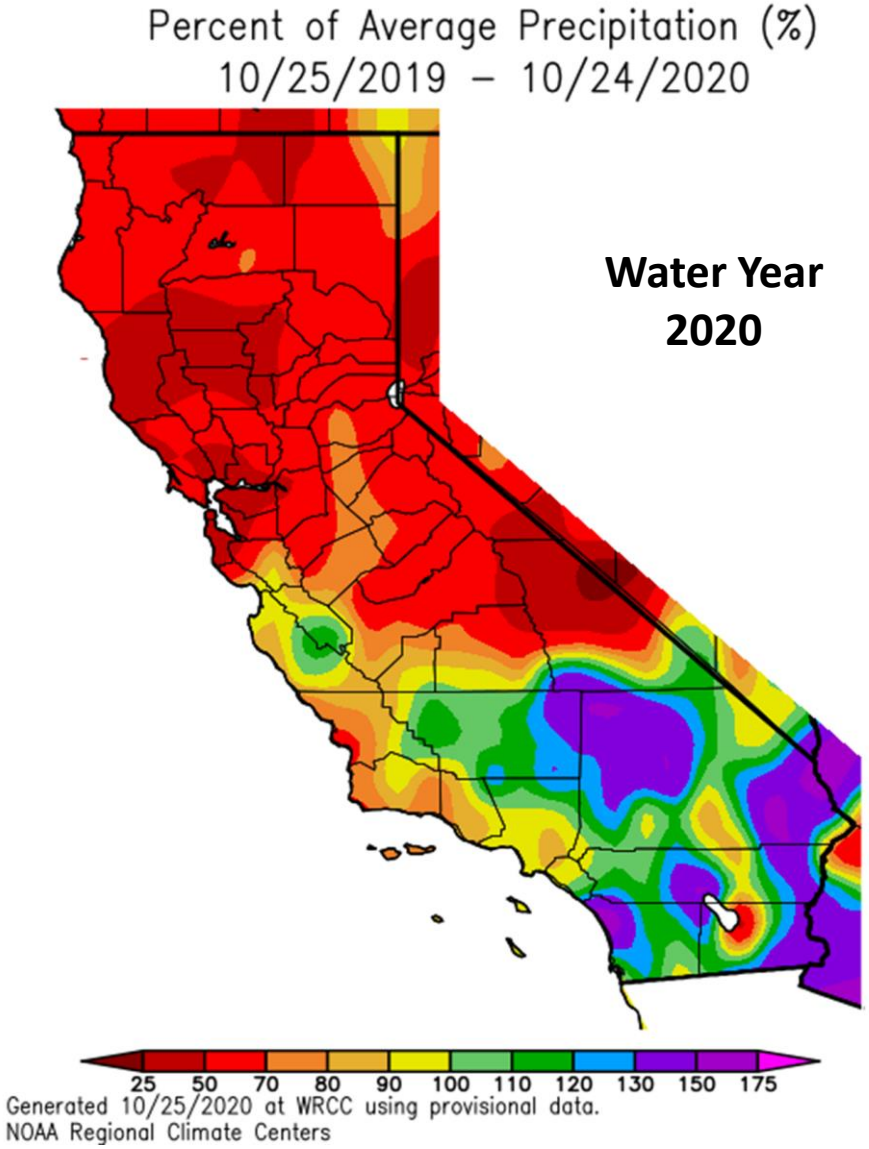
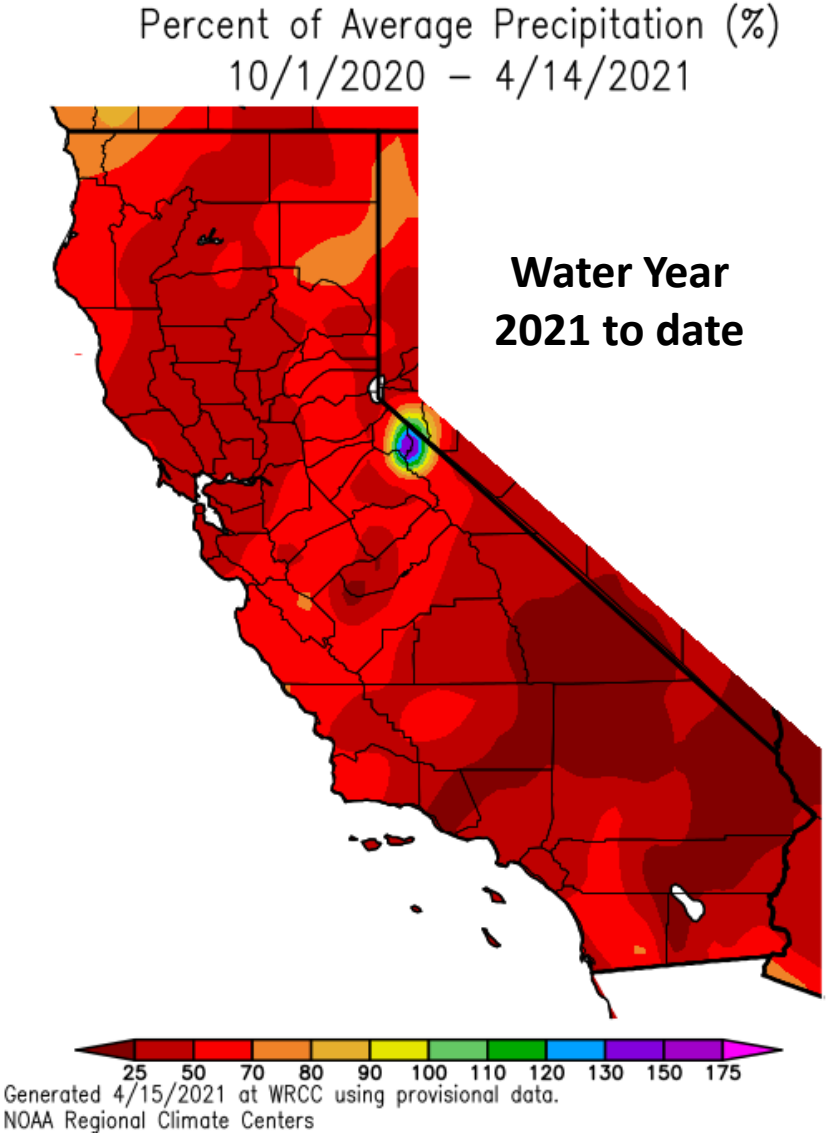
Hydrology and Project Operations Update

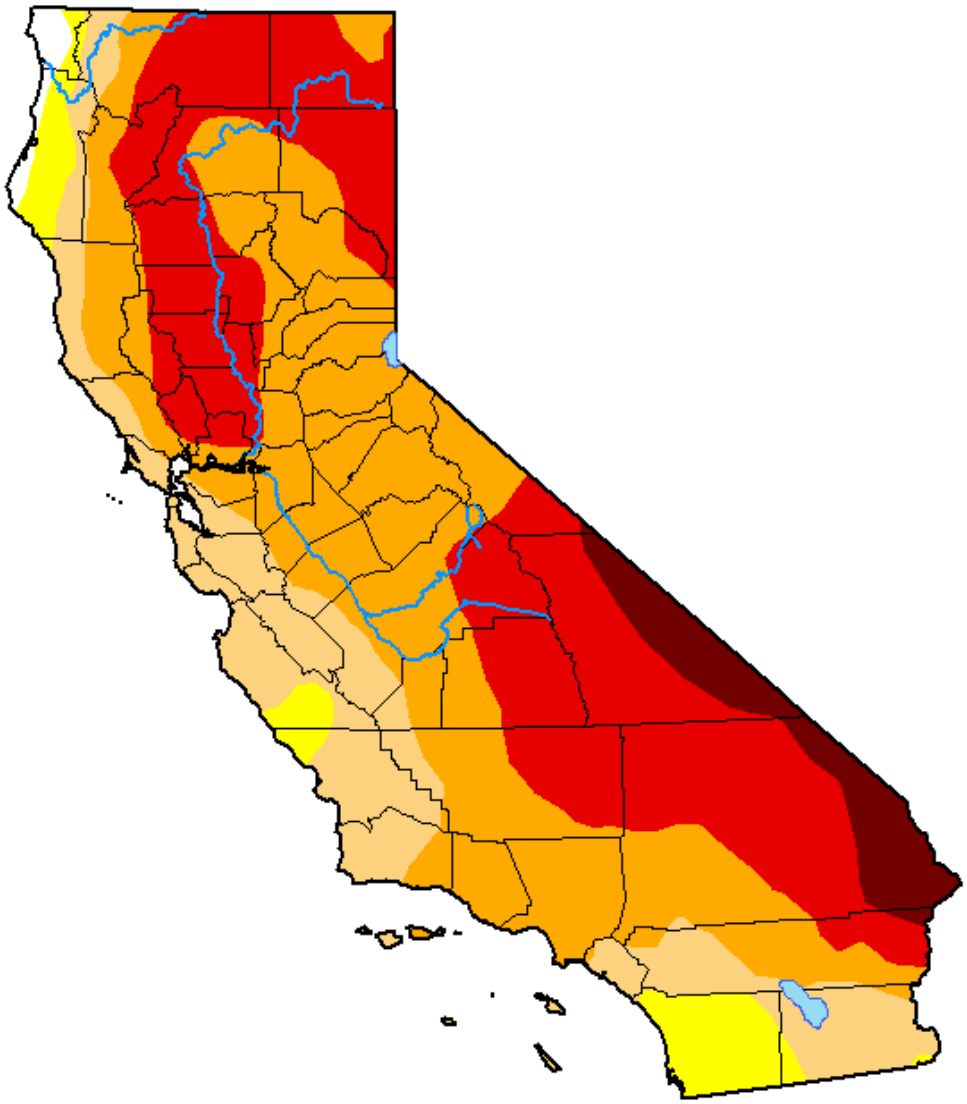
Molly White, DWR, SWP Operations
Kristin White, Reclamation, CVP Operations

State Water Resources Control Board
April 21, 2021


Percent of Average Precipitation (%)
10/25/2019 – 10/24/2020
Water Year
2020
25 50 70 80 90 100 110 120 130 150 175
Generated 10/25/2020 at WRCC using provisional data.
NOAA Regional Climate Centers


Percent of Average Precipitation (%)
10/1/2020 – 4/14/2021
Water Year
2021 to date
25 50 70 80 90 100 110 120 130 150 175
Generated 4/15/2021 at WRCC using provisional data.
NOAA Regional Climate Centers

U.S. Drought Monitor
California



April 13, 2021
(Released Thursday, Apr. 15, 2021)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	0.78	5.09	17.16	38.29	33.32	5.36
Last Week *04-06-2021*	0.77	6.58	22.97	34.27	30.06	5.36
3 Months Ago *01-12-2021*	0.00	4.80	16.10	39.60	38.31	1.19
Start of Calendar Year *12-29-2020*	0.00	4.83	20.82	40.59	32.56	1.19
Start of Water Year *09-29-2020*	15.35	17.00	32.03	22.88	12.74	0.00
One Year Ago *04-14-2020*	41.80	22.50	22.87	12.83	0.00	0.00

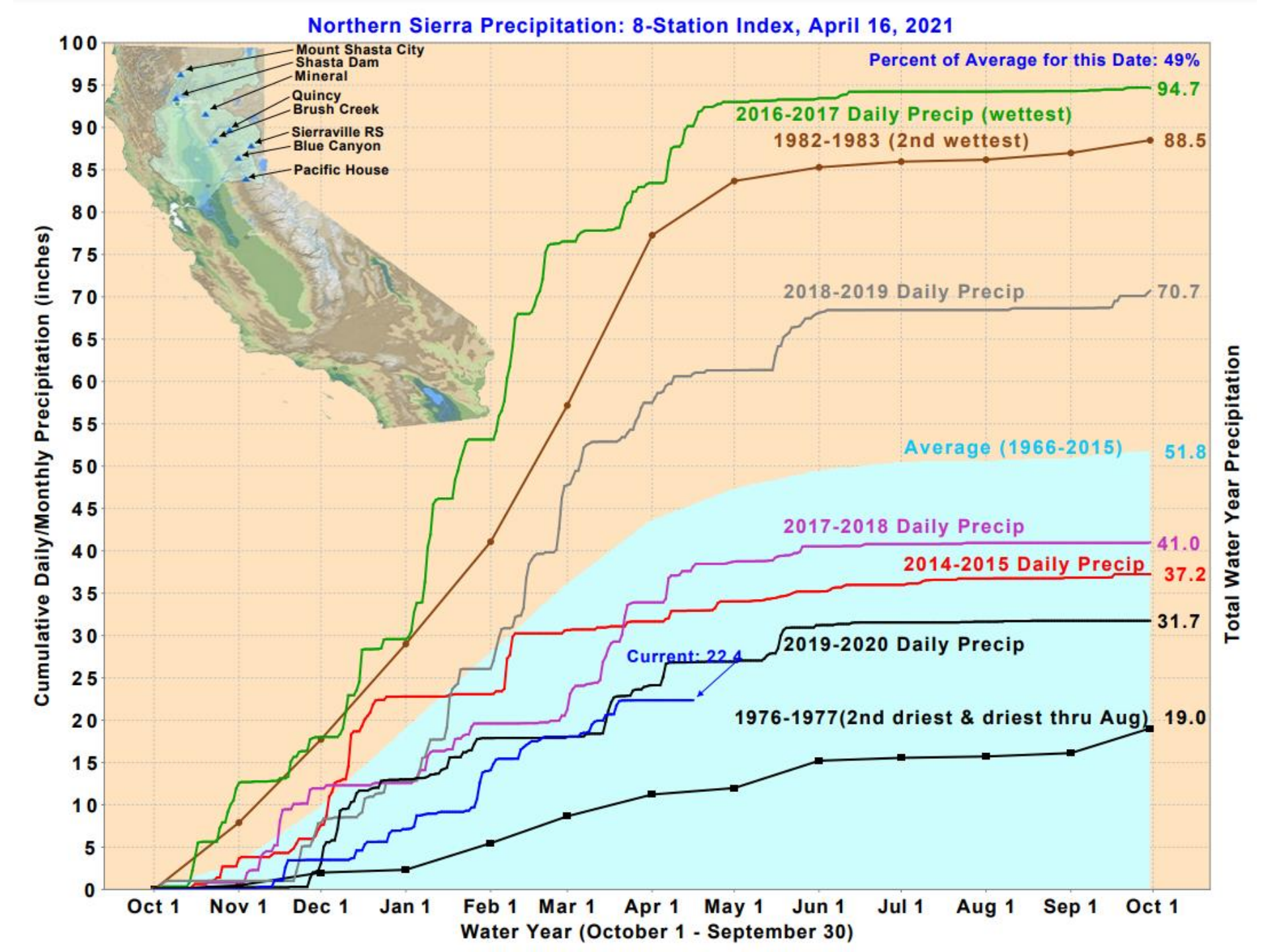
Intensity:

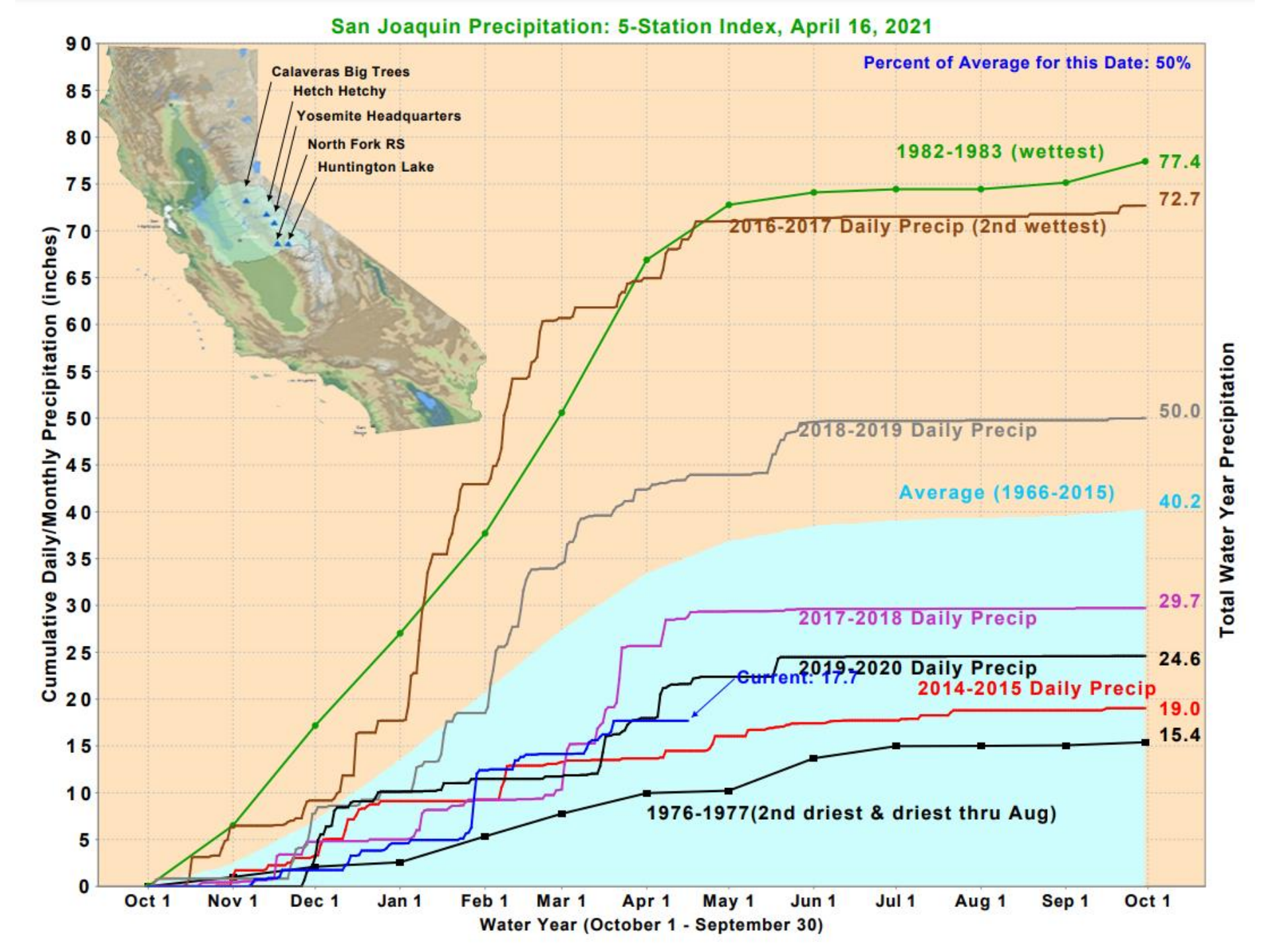
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

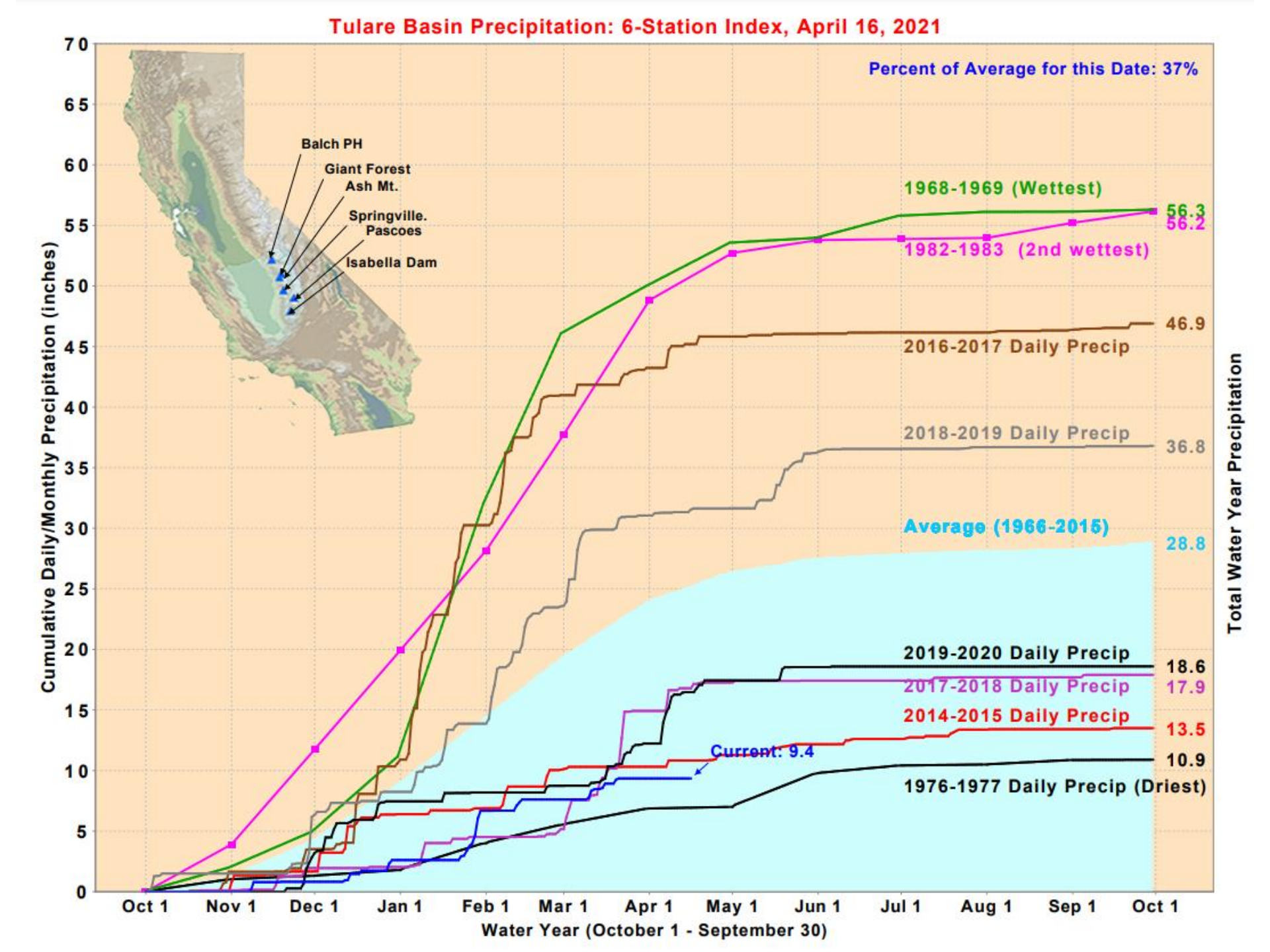
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:
Deborah Bathke
National Drought Mitigation Center

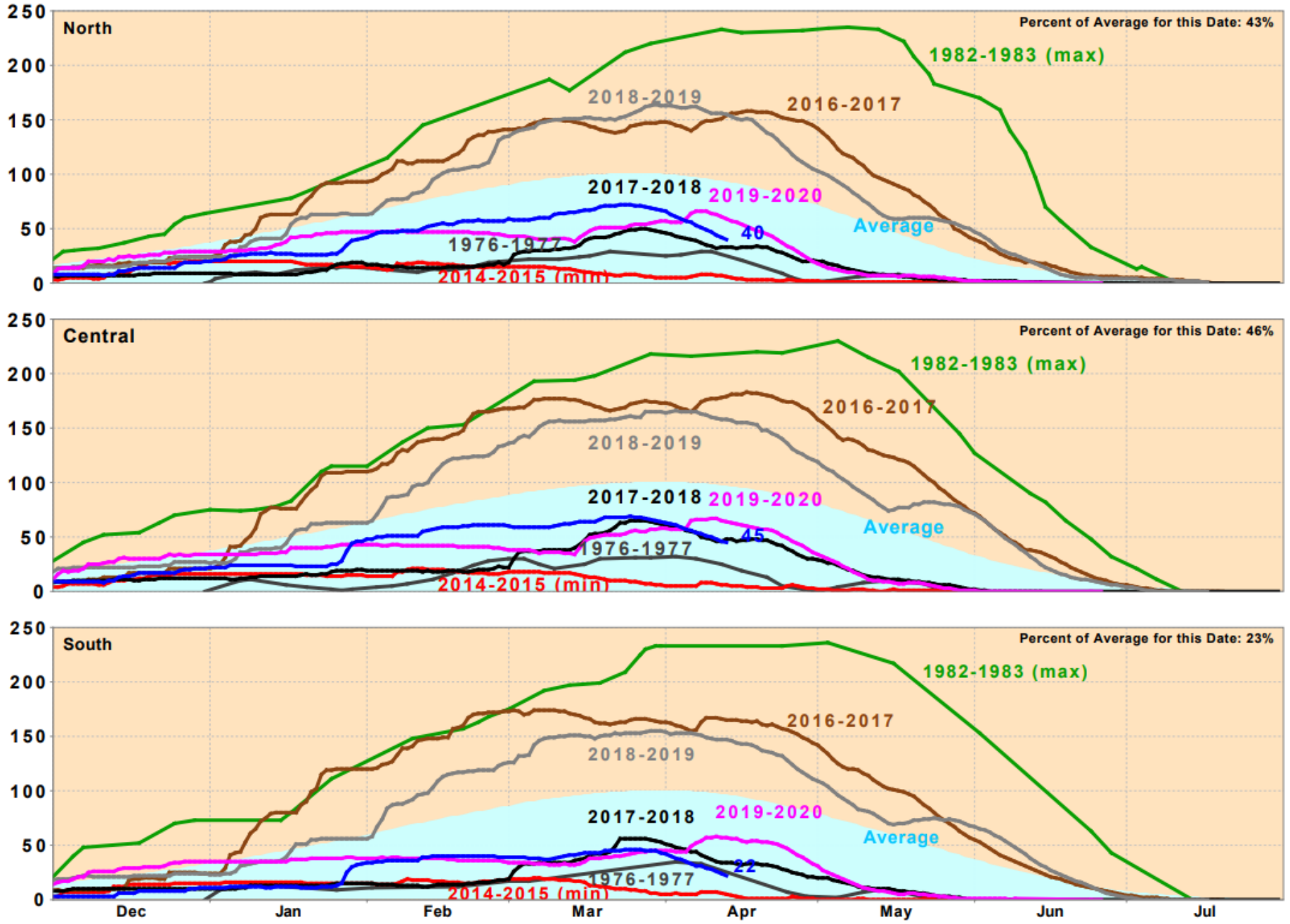
droughtmonitor.unl.edu


Northern Sierra Precipitation: 8-Station Index, April 16, 2021
Mount Shasta City
Shasta Dam
Mineral
Quincy
Brush Creek
Sierraville RS
Blue Canyon
Pacific House
Percent of Average for this Date: 49%
2016-2017 Daily Precip (wettest)
94.7
1982-1983 (2nd wettest)
88.5
2018-2019 Daily Precip
70.7
Average (1966-2015)
51.8
2017-2018 Daily Precip
41.0
2014-2015 Daily Precip
37.2
31.7
2019-2020 Daily Precip
Current: 22.4
1976-1977(2nd driest & driest thru Aug)
19.0
Cumulative Daily/Monthly Precipitation (inches)
Total Water Year Precipitation
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
Water Year (October 1 - September 30)


San Joaquin Precipitation: 5-Station Index, April 16, 2021
Percent of Average for this Date: 50%
Calaveras Big Trees
Hetch Hetchy
Yosemite Headquarters
North Fork RS
Huntington Lake
1982-1983 (wettest)
77.4
72.7
2016-2017 Daily Precip (2nd wettest)
50.0
2018-2019 Daily Precip
Average (1966-2015)
40.2
29.7
2017-2018 Daily Precip
24.6
2019-2020 Daily Precip
Current: 17.7
2014-2015 Daily Precip
19.0
15.4
1976-1977(2nd driest & driest thru Aug)
Cumulative Daily/Monthly Precipitation (inches)
Total Water Year Precipitation
Water Year (October 1 - September 30)
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90

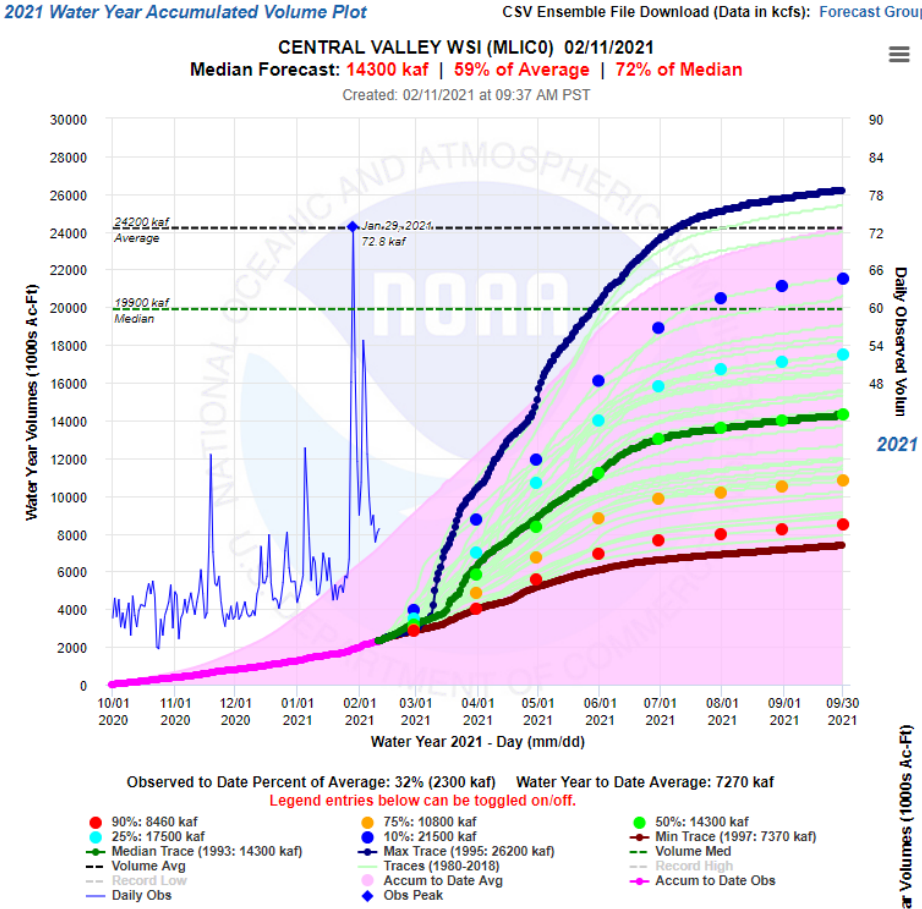

Tulare Basin Precipitation: 6-Station Index, April 16, 2021
Percent of Average for this Date: 37%
Balch PH
Giant Forest
Ash Mt.
Springville.
Pascoes
Isabella Dam
1968-1969 (Wettest)
56.3
1982-1983 (2nd wettest)
56.2
46.9
2016-2017 Daily Precip
2018-2019 Daily Precip
36.8
Average (1966-2015)
28.8
2019-2020 Daily Precip
18.6
2017-2018 Daily Precip
17.9
2014-2015 Daily Precip
13.5
Current: 9.4
10.9
1976-1977 Daily Precip (Driest)
Cumulative Daily/Monthly Precipitation (inches)
Total Water Year Precipitation
Water Year (October 1 - September 30)
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Oct 1
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70

California Snow Water Content, April 13, 2021, Percent of April 1 Average

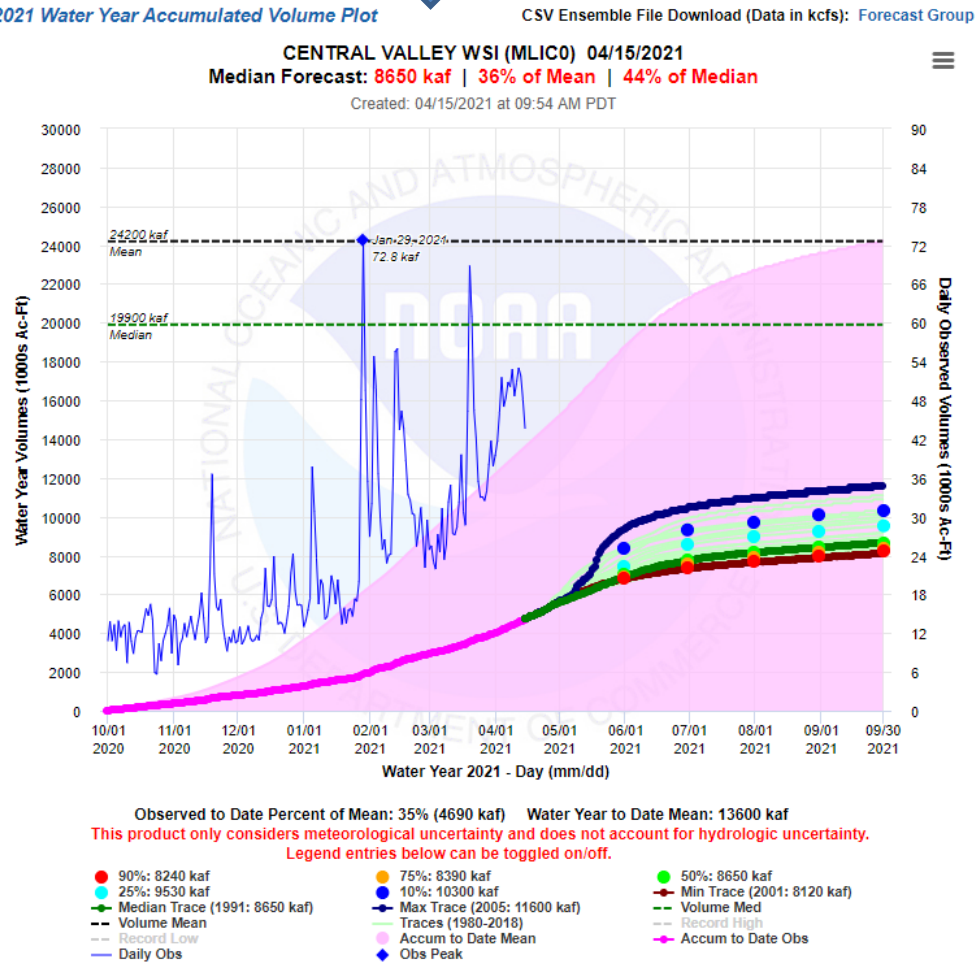


Statewide Percent of April 1: 38%

Statewide Percent of Average for Date: 40%



Current Runoff Forecast

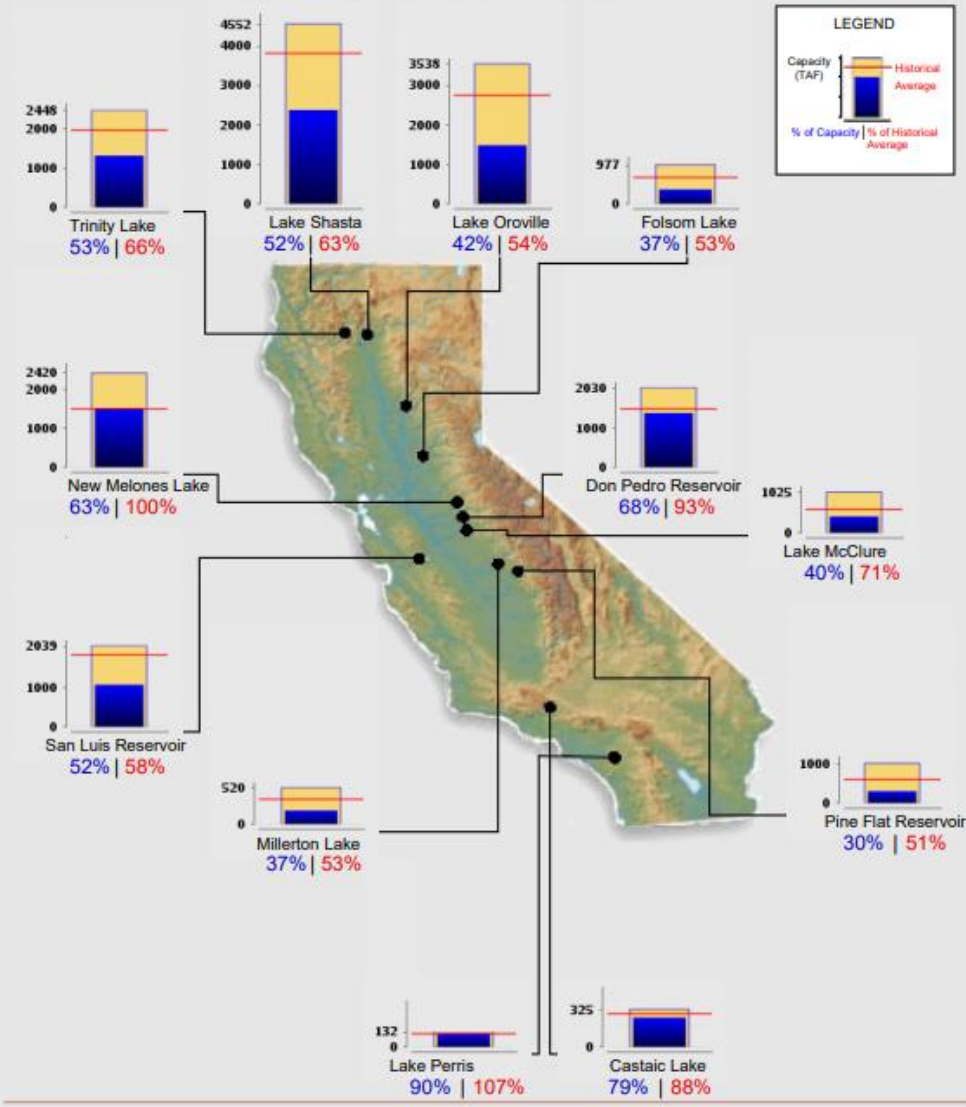


2/16/2021 SWRCB Hydrology Briefing

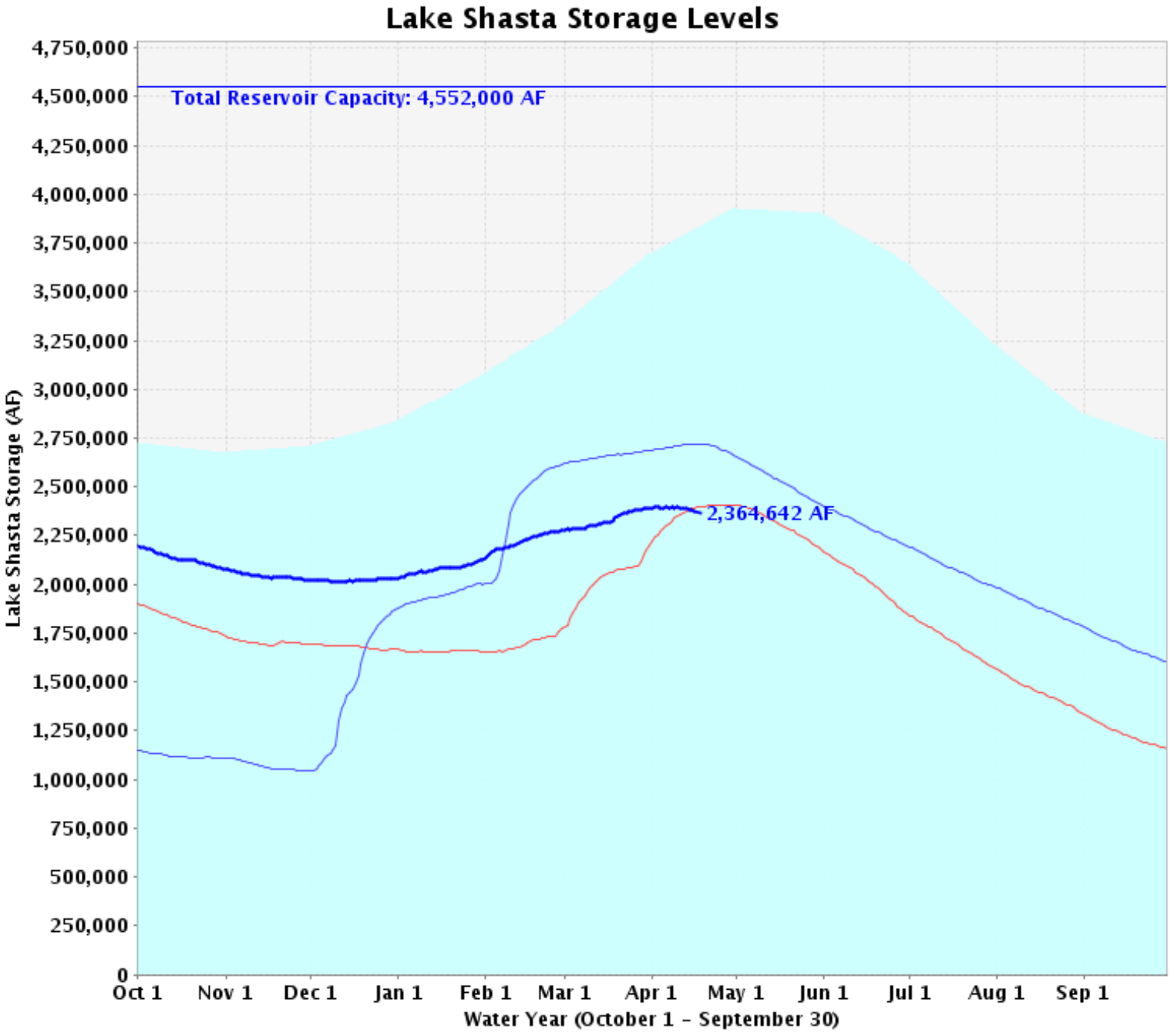
Reservoir Conditions

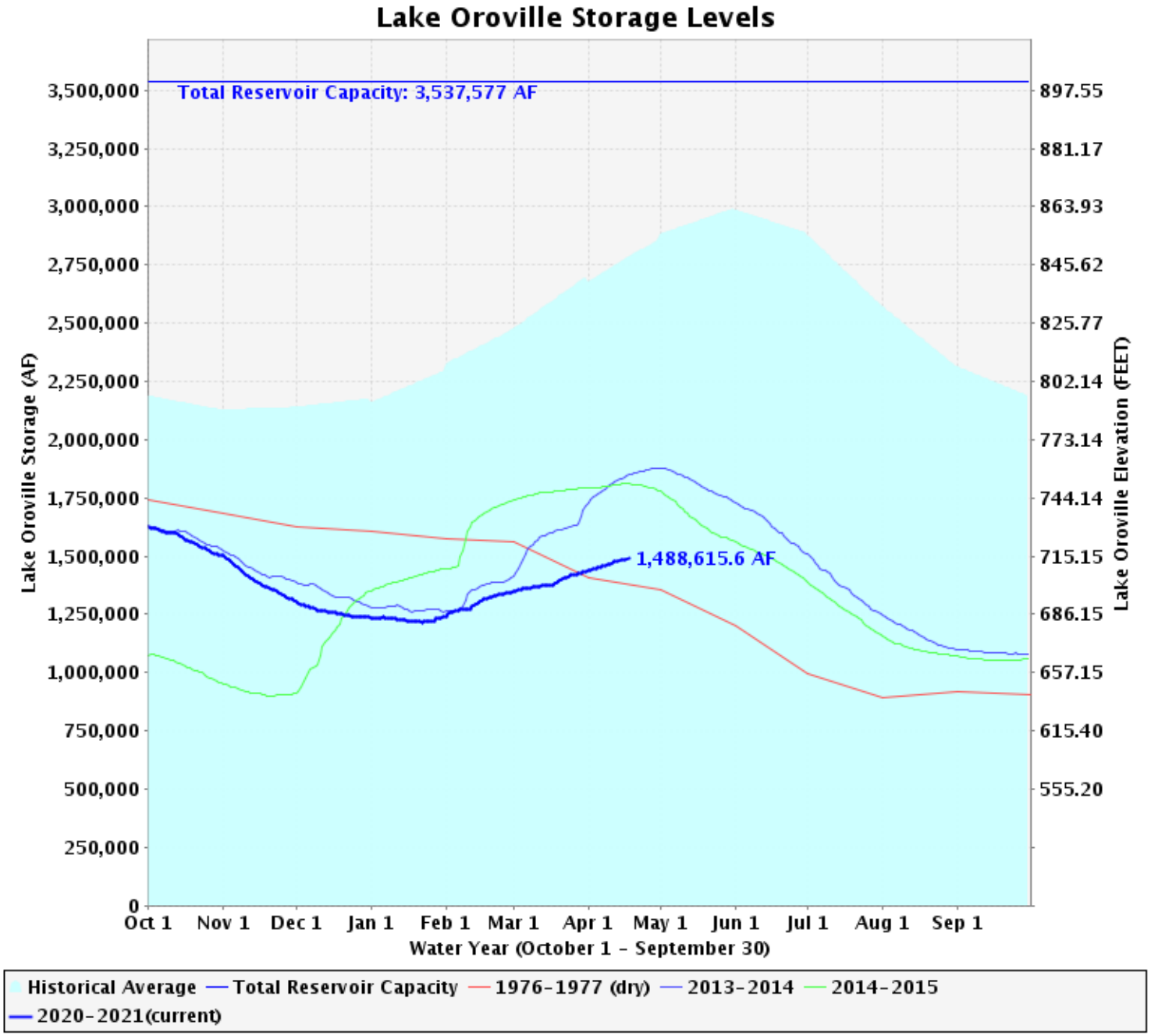
Ending At Midnight - April 15, 2021

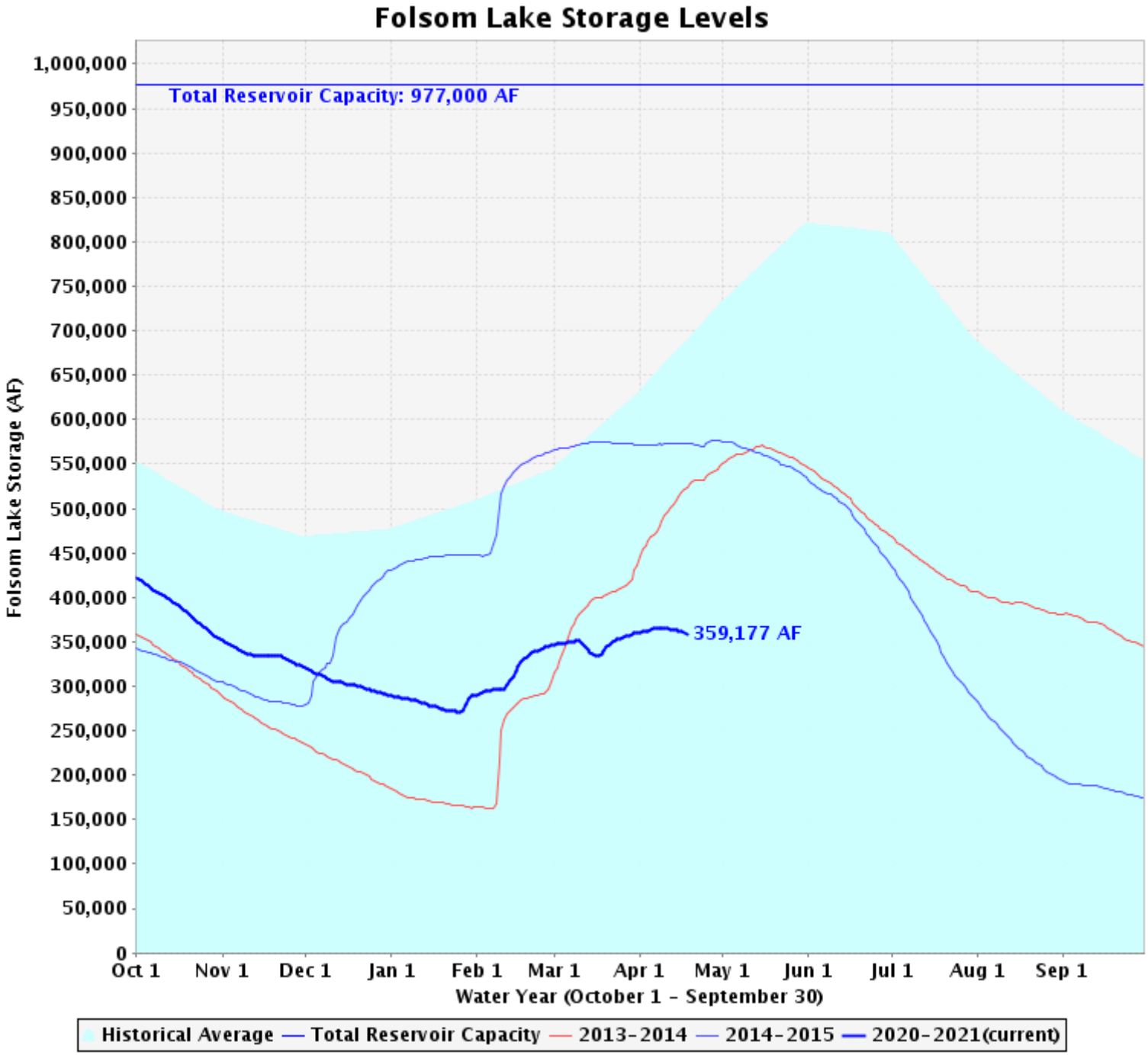
CURRENT RESERVOIR CONDITIONS

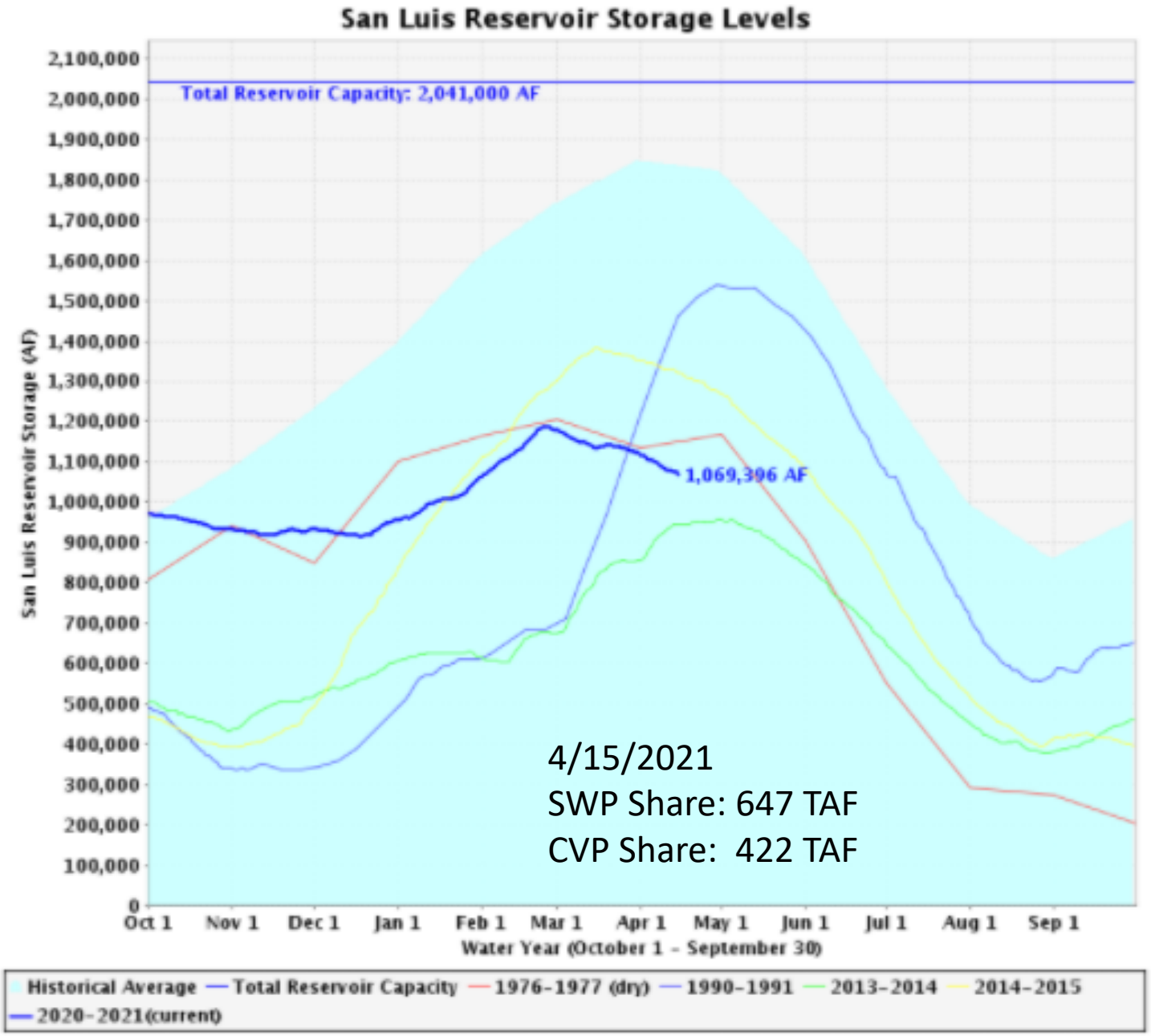


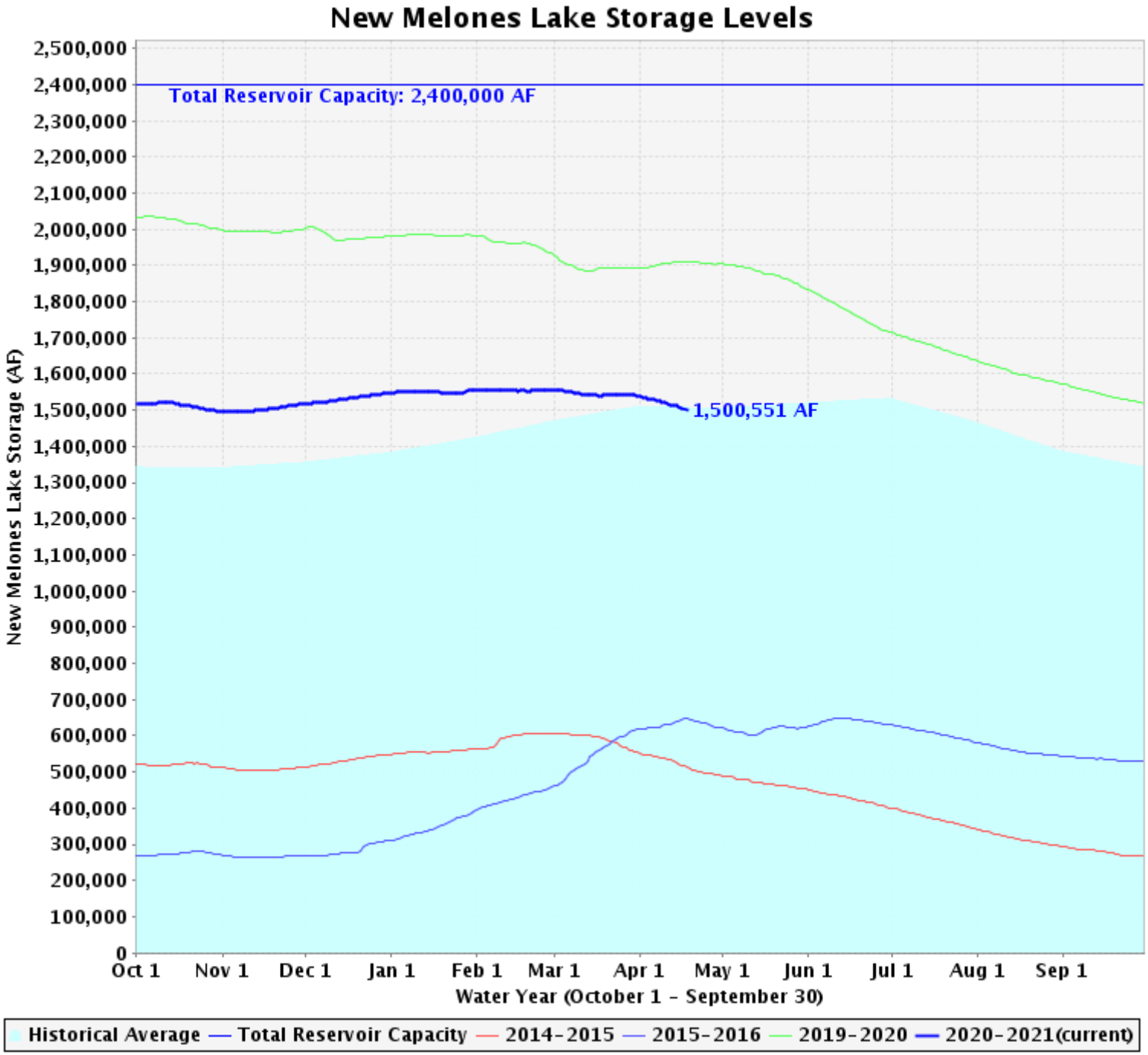
Graph Updated 04/16/2021 08:48 AM

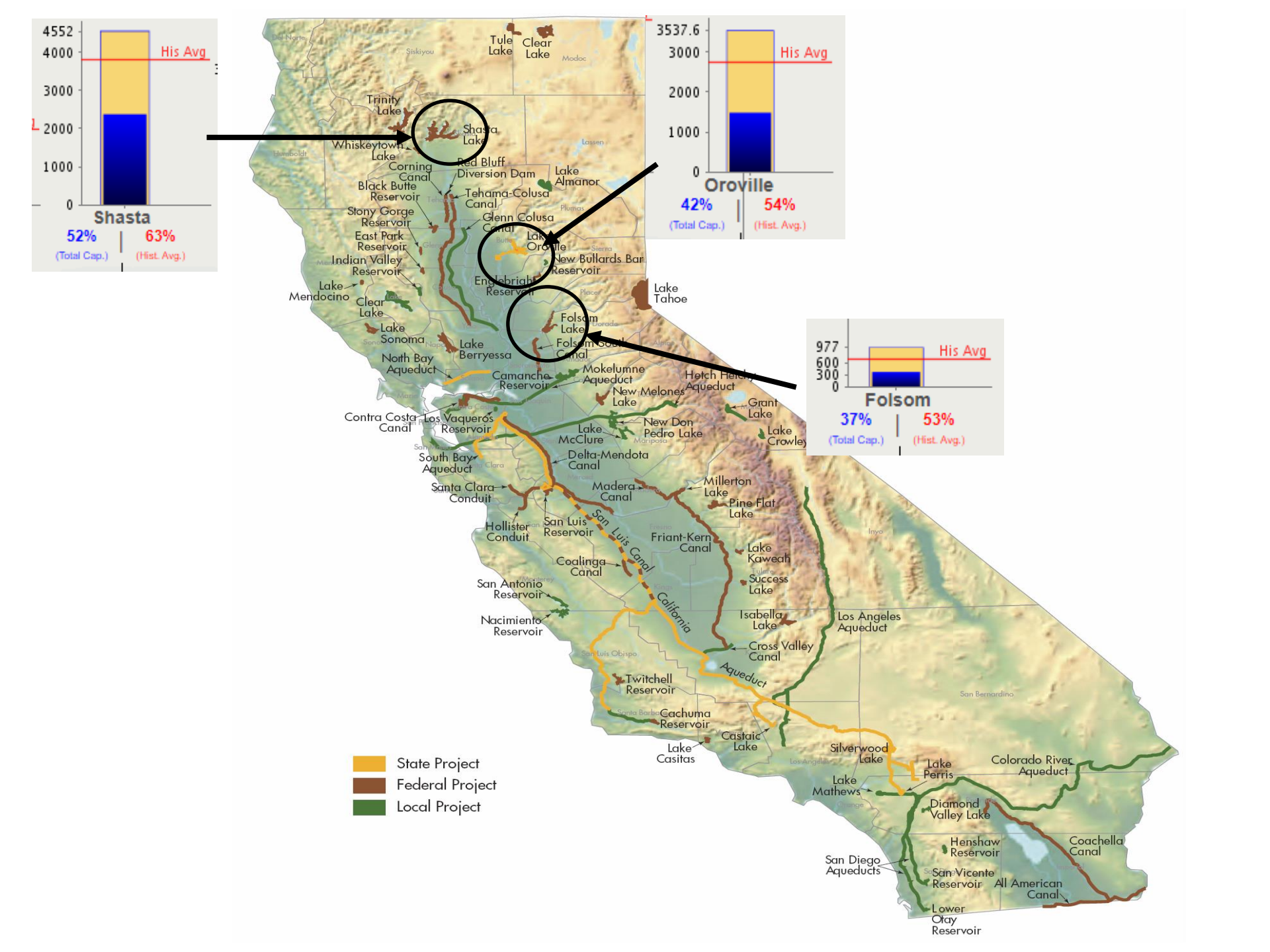

Lake Shasta Storage Levels
Total Reservoir Capacity: 4,552,000 AF
2,364,642 AF
Lake Shasta Storage (AF)
4,750,000
4,500,000
4,250,000
4,000,000
3,750,000
3,500,000
3,250,000
3,000,000
2,750,000
2,500,000
2,250,000
2,000,000
1,750,000
1,500,000
1,250,000
1,000,000
750,000
500,000
250,000
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Water Year (October 1 - September 30)
Historical Average
Total Reservoir Capacity
2013-2014
2014-2015
2020-2021(current)


Lake Oroville Storage Levels
Total Reservoir Capacity: 3,537,577 AF
1,488,615.6 AF
Lake Oroville Storage (AF)
Lake Oroville Elevation (FEET)
3,500,000
3,250,000
3,000,000
2,750,000
2,500,000
2,250,000
2,000,000
1,750,000
1,500,000
1,250,000
1,000,000
750,000
500,000
250,000
0
897.55
881.17
863.93
845.62
825.77
802.14
773.14
744.14
715.15
686.15
657.15
615.40
555.20
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Water Year (October 1 - September 30)
Historical Average
Total Reservoir Capacity
1976-1977 (dry)
2013-2014
2014-2015
2020-2021(current)


Folsom Lake Storage Levels
Total Reservoir Capacity: 977,000 AF
359,177 AF
Folsom Lake Storage (AF)
1,000,000
950,000
900,000
850,000
800,000
750,000
700,000
650,000
600,000
550,000
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Water Year (October 1 - September 30)
Historical Average
Total Reservoir Capacity
2013-2014
2014-2015
2020-2021(current)


San Luis Reservoir Storage Levels
Total Reservoir Capacity: 2,041,000 AF
1,069,396 AF
4/15/2021
SWP Share: 647 TAF
CVP Share: 422 TAF
San Luis Reservoir Storage (AF)
2,100,000
2,000,000
1,900,000
1,800,000
1,700,000
1,600,000
1,500,000
1,400,000
1,300,000
1,200,000
1,100,000
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Water Year (October 1 - September 30)
Historical Average
Total Reservoir Capacity
1976-1977 (dry)
1990-1991
2013-2014
2014-2015
2020-2021(current)


New Melones Lake Storage Levels
Total Reservoir Capacity: 2,400,000 AF
1,500,551 AF
New Melones Lake Storage (AF)
2,500,000
2,400,000
2,300,000
2,200,000
2,100,000
2,000,000
1,900,000
1,800,000
1,700,000
1,600,000
1,500,000
1,400,000
1,300,000
1,200,000
1,100,000
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Oct 1
Nov 1
Dec 1
Jan 1
Feb 1
Mar 1
Apr 1
May 1
Jun 1
Jul 1
Aug 1
Sep 1
Water Year (October 1 - September 30)
Historical Average
Total Reservoir Capacity
2014-2015
2015-2016
2019-2020
2020-2021(current)


4552
4000
3000
2000
1000
0
His Avg
Shasta
52%
(Total Cap.)
63%
(Hist. Avg.)
3537.6
3000
2000
1000
0
His Avg
Oroville
42%
(Total Cap.)
54%
(Hist. Avg.)
977
600
300
0
His Avg
Folsom
37%
(Total Cap.)
53%
(Hist. Avg.)
Tule Lake
Clear Lake
Trinity Lake
Shasta Lake
Whiskeytown Lake
Corning Canal
Red Bluff Diversion Dam
Lake Almanor
Black Butte Reservoir
Tehama-Colusa Canal
Stony Gorge Reservoir
Glenn Colusa Canal
East Park Reservoir
Lake Oroville
New Bullards Bar Reservoir
Indian Valley Reservoir
Englebright Reservoir
Lake Mendocino
Clear Lake
Lake Tahoe
Folsom Lake
Folsom South Canal
Lake Sonoma
Lake Berryessa
North Bay Aqueduct
Mokelumne Aqueduct
Camanche Reservoir
Hetch Hetchy Aqueduct
New Melones Lake
Grant Lake
Contra Costa Canal
Los Vaqueros Reservoir
New Don Pedro Lake
Lake McClure
Lake Crowley
South Bay Aqueduct
Delta-Mendota Canal
Madera Canal
Millerton Lake
Pine Flat Lake
Santa Clara Conduit
Hollister Conduit
San Luis Reservoir
San Luis Canal
Friant-Kern Canal
Lake Kaweah
Coalinga Canal
Success Lake
San Antonio Reservoir
California Aqueduct
Isabella Lake
Los Angeles Aqueduct
Nacimiento Reservoir
Cross Valley Canal
Twitchell Reservoir
Cachuma Reservoir
Castaic Lake
Lake Casitas
Silverwood Lake
Lake Perris
Colorado River Aqueduct
Lake Mathews
Diamond Valley Lake
Henshaw Reservoir
Coachella Canal
San Diego Aqueducts
San Vicente Reservoir
All American Canal
Lower Otay Reservoir
State Project
Federal Project
Local Project

April 1 - Water Supply Forecast

- Sacramento and San Joaquin Valley - Critical
- Runoff, rainfall and snowpack well below average
- Observed Oct through March Runoff:
  - Sacramento Valley – 3rd driest in historical record (back to 1906)
  - San Joaquin Valley – 6th driest in historical record (back to 1901)
  - Tulare Lake Basin – 8th driest in historical record (back to 1901)

2021 SWP Operations Update

- Reduced 2021 SWP water supply allocation from 10% to 5%. Lowest allocation for M&I contractors, and matches 2014

- Lake Oroville/Feather River
  - Storage-1.48 MAF, 54% average
  - Storage conservation: minimum releases until increases needed for delta outflow/water quality
  - Confirmed 50% reduction to Feather River Settlement Contractors
  - Storage objective:
    - At least 900 TAF through August
      - Conservation of cold-water pool for late summer/fall Feather River Temperature management
      - Sustain peak downstream requirements and demands

- Spring/Summer Delta Operations
  - Minimum exports through summer to meet demands of contractors who are not connected to San Luis Reservoir, with increased exports to facilitate third party water transfers

2021 CVP Operations Update

- 2021 Allocations:
  - 5% North of Delta Ag; 55% (historical use) North of Delta Municipal and Industrial
  - South of Delta Ag allocation of 5% is no longer available; 55% (historical use) South of Delta Municipal and Industrial

- Lake Shasta/Sacramento River
  - Storage-2.36 MAF, 62% average
  - Storage conservation: releases from late April throughout the summer will primarily be controlled by releases for meeting senior water right demands and delta objectives
  - 75% allocation to Sacramento River Settlement Contractors
  - Key objectives:
    - Temperature Management
    - Carryover storage
    - Meeting senior water right requirements
    - Meeting health and safety needs throughout the basin

2021 CVP Operations Update

- Folsom Lake/American River
  - Storage:359 TAF, 52% average
  - Storage conservation: Releases above minimums expected to primarily support delta objectives
  - Key objectives:
    - Carryover storage
    - Temperature Management
    - Meeting health and safety needs throughout the basin
- Trinity Lake/Trinity River/Sacramento River
  - Storage: 1.3 MAF, 66% average
  - Storage conservation: Releases to the Trinity River will follow the 2001 Record of Decision; Releases to the Sacramento River are shaped to balance between storage management at Trinity and Shasta
  - Key objectives:
    - Carryover storage
    - Temperature Management (both Sacramento and Trinity Rivers)

2021 CVP Operations Update

- New Melones Lake/Stanislaus River
  - Storage:1.5 MAF, 100% average
  - Storage conservation: Releases primarily controlled by the Stepped Release Plan from the 2019 Record of Decision and Vernalis flows and salinity objectives
  - Key objectives:
    - Carryover storage
- Spring/Summer Delta Operations
  - Low exports through summer to meet senior water right and refuge requirements with increased exports to facilitate third party water transfers