

NOAA's Colorado Basin River Forecast Center

2017 Water Supply Early Season Outlook

Colorado Basin River Forecast Center
December 16, 2016



Overview

2

- Fall Soil Moisture Conditions
- October through December Climate
 - Precipitation, Temperature
- Current Snow Conditions
- Updated Calibration Period
- Current Seasonal Forecast Highlights



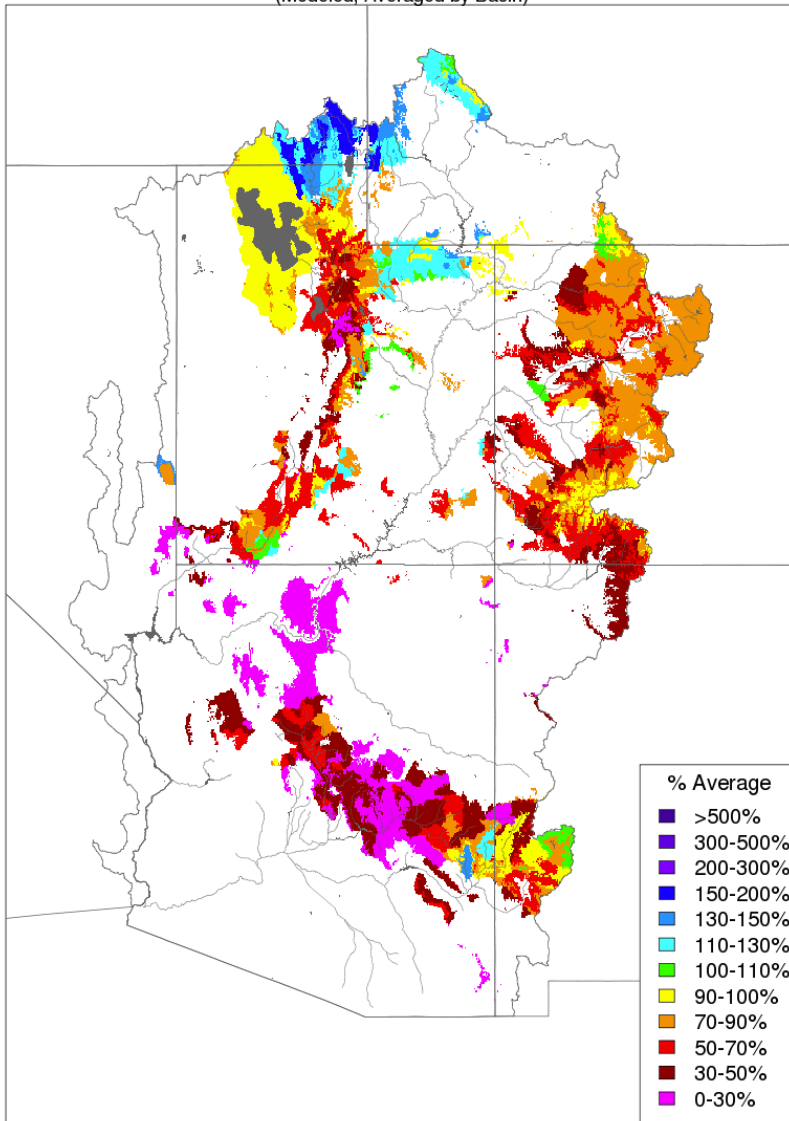
Take Away Points

3

- Predominantly dry fall soil moisture conditions over the CBRFC region
 - Exceptions: Wetter conditions over Upper Green, Duchesne, and Bear River Basins
 - Dry conditions could result in less efficient runoff
- Large uncertainty in the ensembles this time of year
 - Could result in larger changes month to month
 - Less skillful this time of year



Soil Moisture - Fall - 2016 (November 16)
(Modeled, Averaged by Basin)

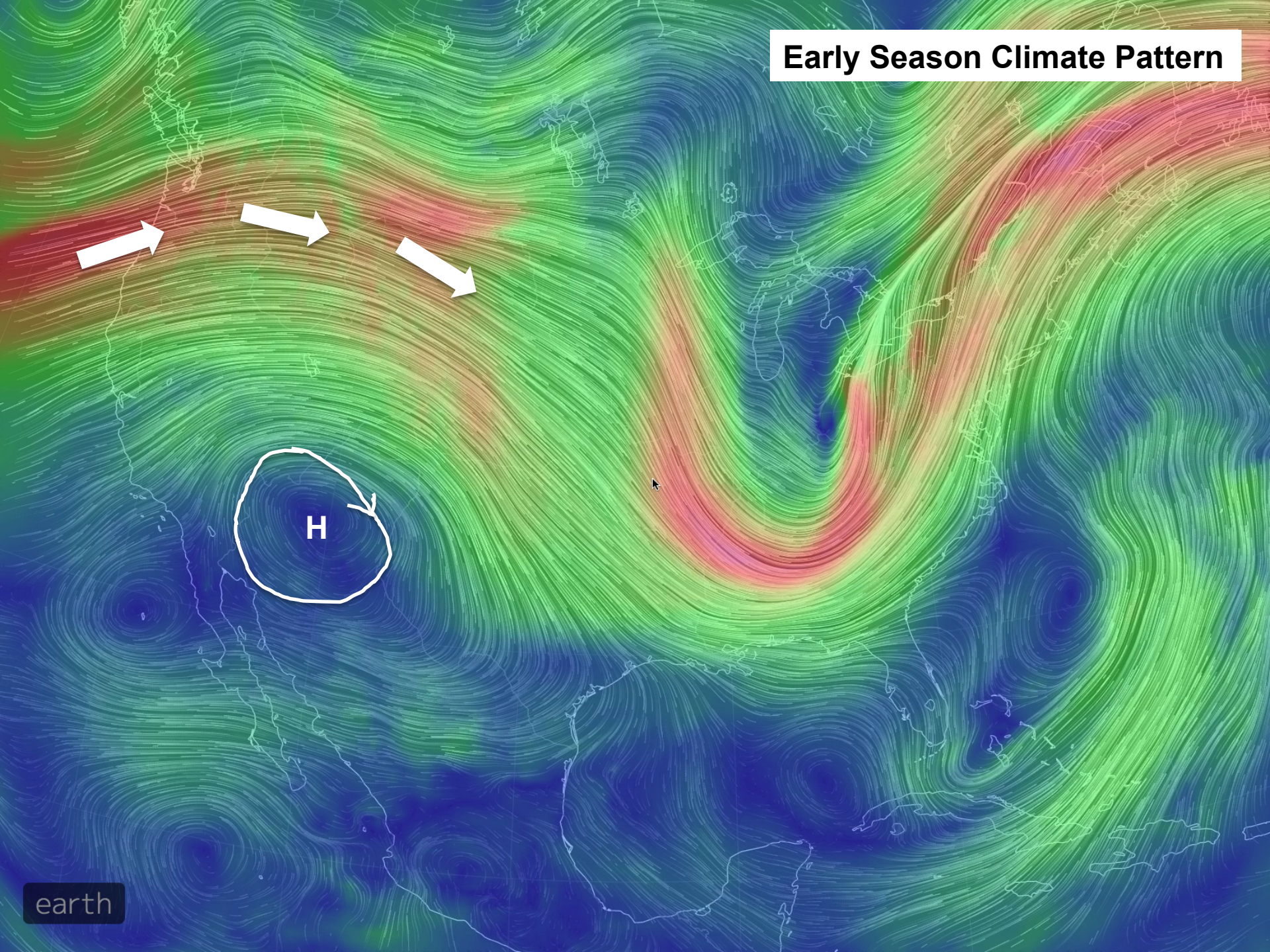


Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Fall Soil Moisture

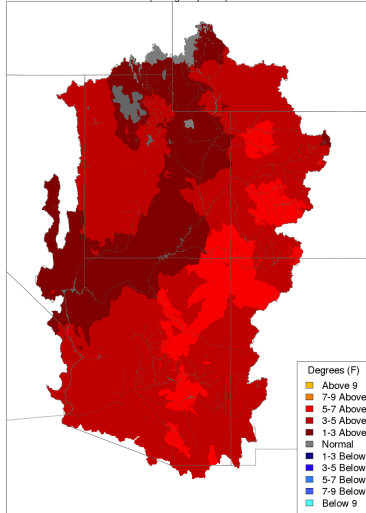
- Map illustrates Fall (Nov. 16th) lower zone, modeled, soil moisture conditions
- Representative of baseflow conditions heading into winter; our best estimate of model states
- Relative to modeled daily average between 1981 – 2010
- Dry conditions are prevalent, but some wetter conditions are visible in the northern Green River Basin and Bear River Basin areas

Early Season Climate Pattern



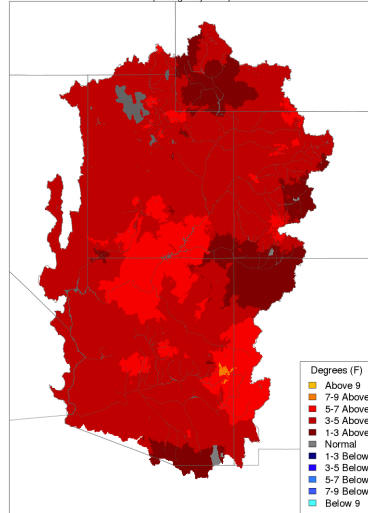
Temperature

Max Temp - Monthly Deviation - October 2016
(Averaged by Basin)



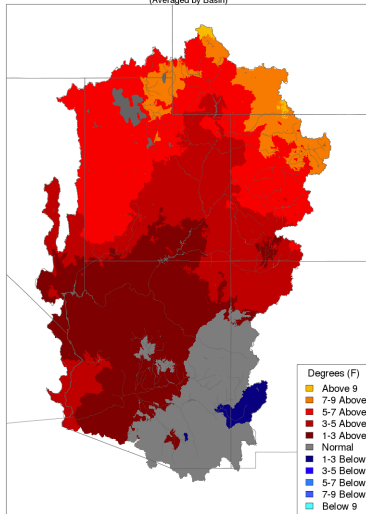
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Min Temp - Monthly Deviation - October 2016
(Averaged by Basin)



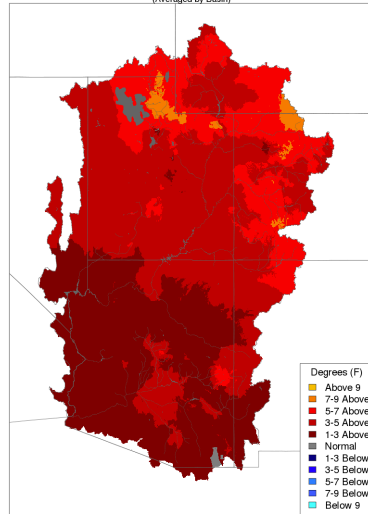
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Max Temp - Monthly Deviation - November 2016
(Averaged by Basin)



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Min Temp - Monthly Deviation - November 2016
(Averaged by Basin)



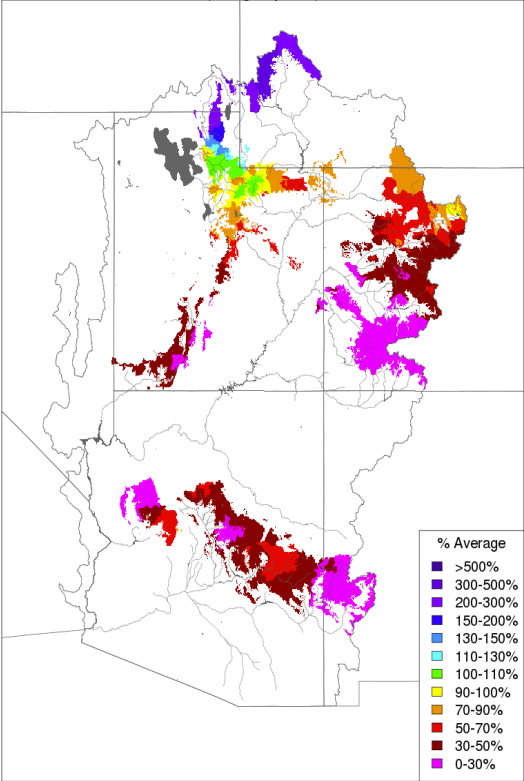
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

- Above average temperatures over the entire CBRFC region over October and November



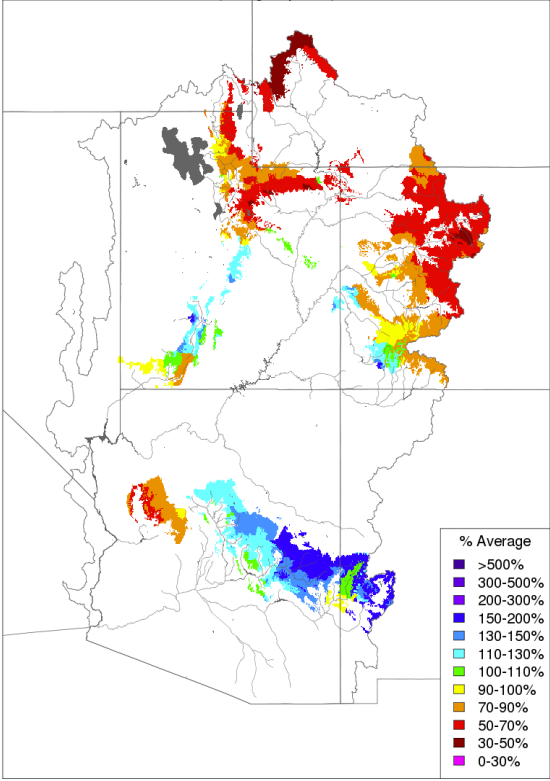
Precipitation

Monthly Precipitation - October 2016
(Averaged by Basin)



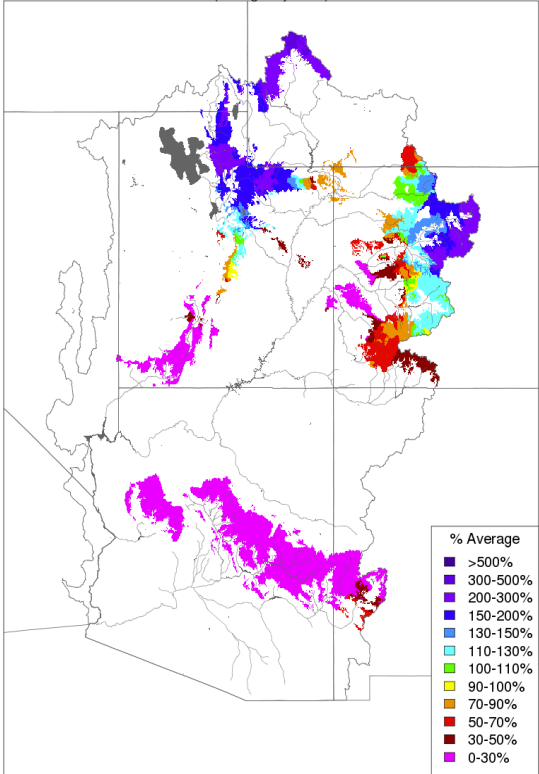
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Monthly Precipitation - November 2016
(Averaged by Basin)



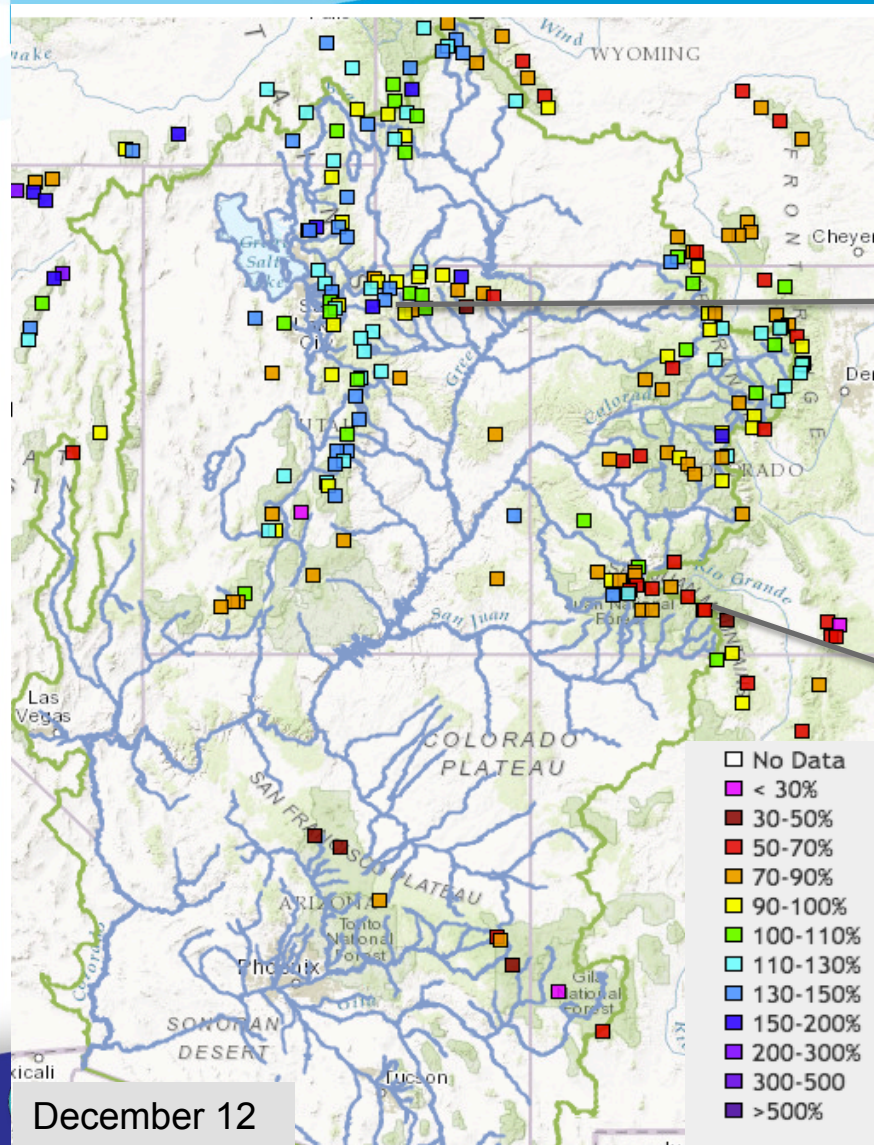
Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Month to Date Precipitation - December 12 2016
(Averaged by Basin)

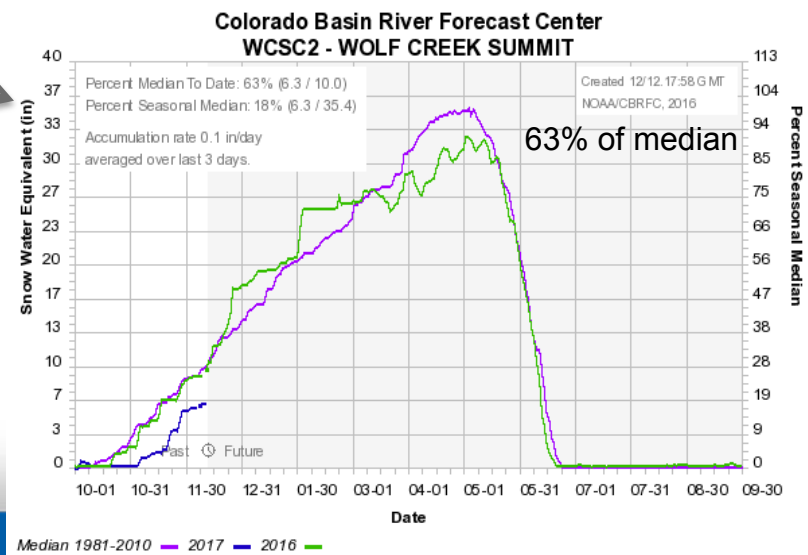
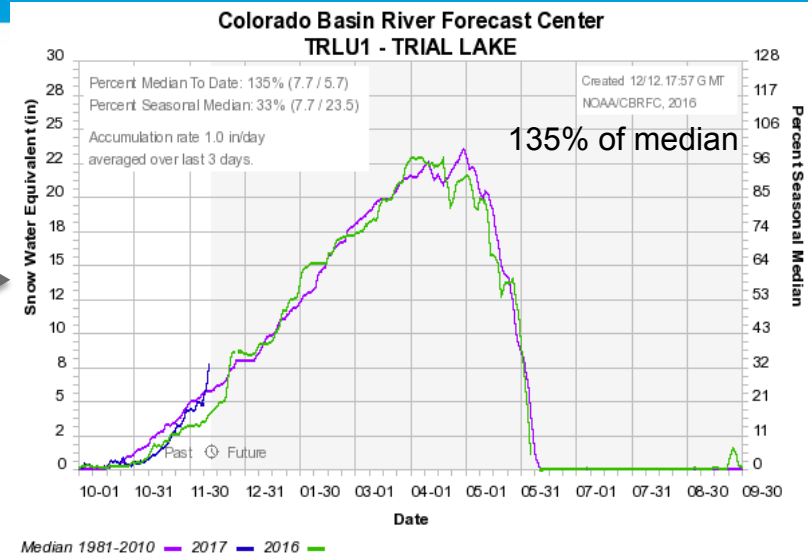


Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov

Current Snow-SNOTEL



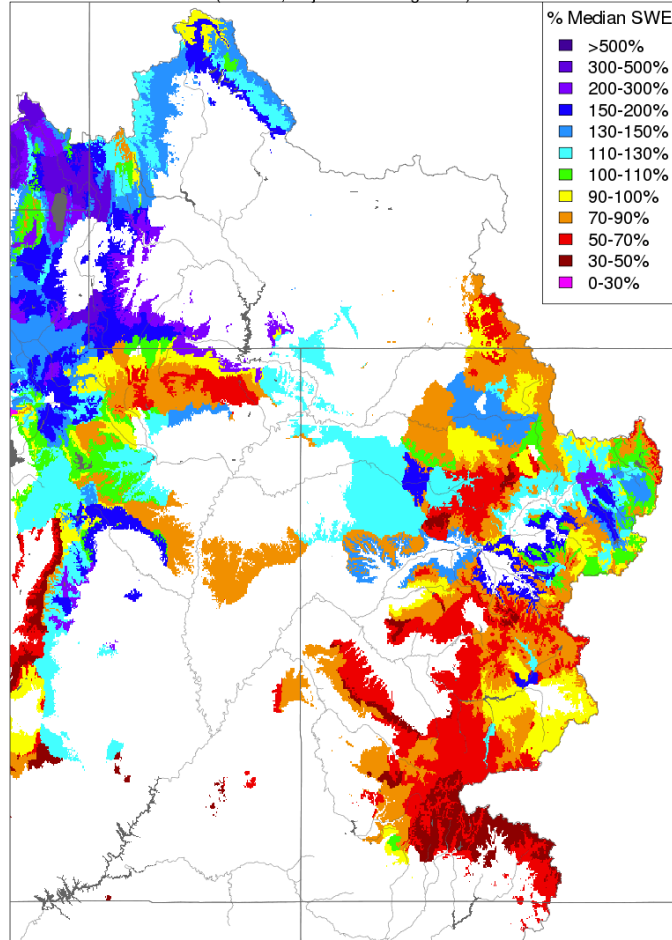
December 12



Current Snow – Modeled

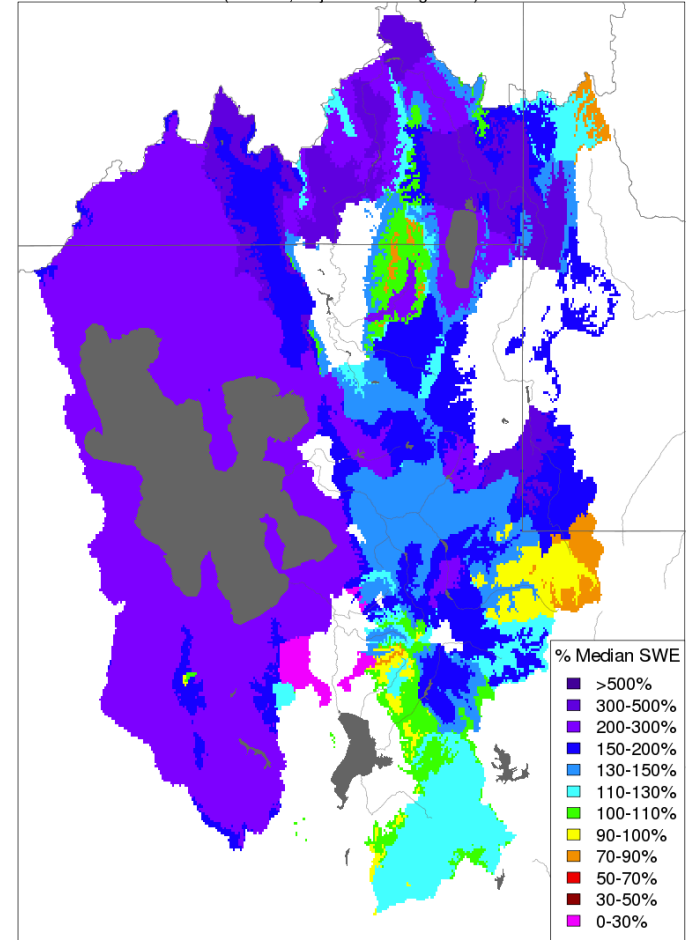
10

Snow Conditions - December 12 2016
(Modeled, Major Contributing Areas)



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbRFC.noaa.gov

Snow Conditions - December 12 2016
(Modeled, Major Contributing Areas)



Prepared by NOAA, Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbRFC.noaa.gov



Early Seasonal Runoff Outlooks

11

- Range of values in ESP is large this time of year
- Skill in forecasts this time of year is less than other times of year after snowpack accumulation has really started
- Official forecasts will begin in January



WY 2017 Calibration Update

12

- Add 5 years to calibration record (2011 – 2015)
 - ESP will use 35 traces (1981-2015) instead of 30
 - NOT updating official averages (still 1981-2010)
 - Upper Colorado River Basin above Lake Powell is done
 - 35 traces will be used for official forecasts this year
 - Great Basin and Lower Colorado River Basin still to be done
 - 30 traces will be used for official forecasts this year
- Impacts to water supply forecasts due to calibration update:
 - Little change in most areas in the northern Colorado River Basin
 - Can expect slightly drier forecasts in the San Juan River Basin
 - As the season progresses, forecasts will be more impacted by current snow conditions





COLORADO BASIN RIVER FORECAST CENTER

NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

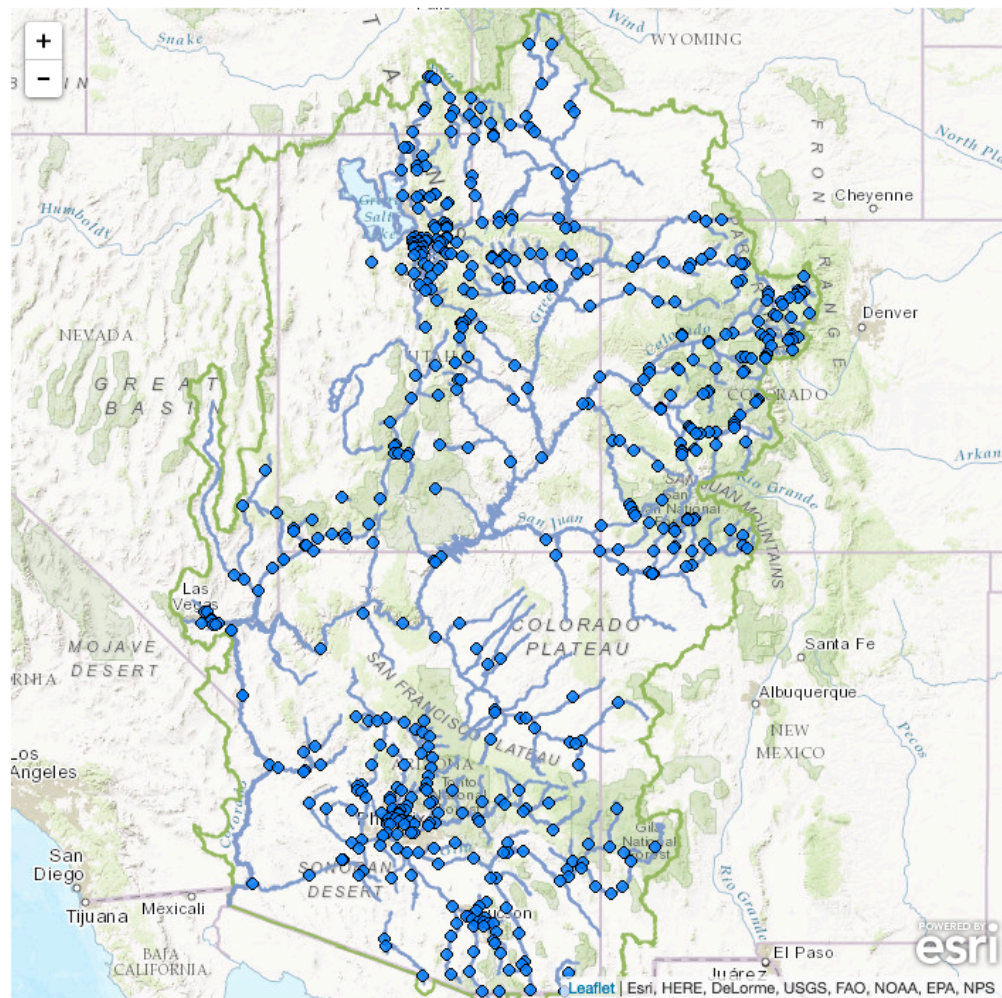
- HOME
- RIVERS
- SNOW
- WATER SUPPLY**
- RESERVOIRS
- WEATHER
- CLIMATE
- HELP
- ABOUT
- NEWS
- SEARCH

News

Colorado River Basin Water Supply Early Season Outlook Briefing - December 13th, 1pm MDT - Register here: [Read More...](#)
 Upcoming Webinars: [Read More...](#)

Conditions Map

[Help](#)



Lat: 37.6 Lng: -110.5, Zoom: 6

River Conditions

Data Updated: 12/07/22Z

[Help](#)

Show [Hide Other Types](#)

- Data
- Forecast
- Reservoir Inflow
- Reservoir Outflow
- Official Flood
- Active

- ◊ Not Available
- Normal
- Significant Rise
- Near Bankfull
- Above Bankfull
- Above Flood Stage
- Outlook (> 3 days)

Popup Alerts

Snow Conditions

Water Supply Forecasts

Peak Flood Probability

Reservoir Conditions

Daily Precipitation

Monthly Precipitation

Soil Moisture

Map Options

Search Points



COLORADO BASIN RIVER FORECAST CENTER

NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

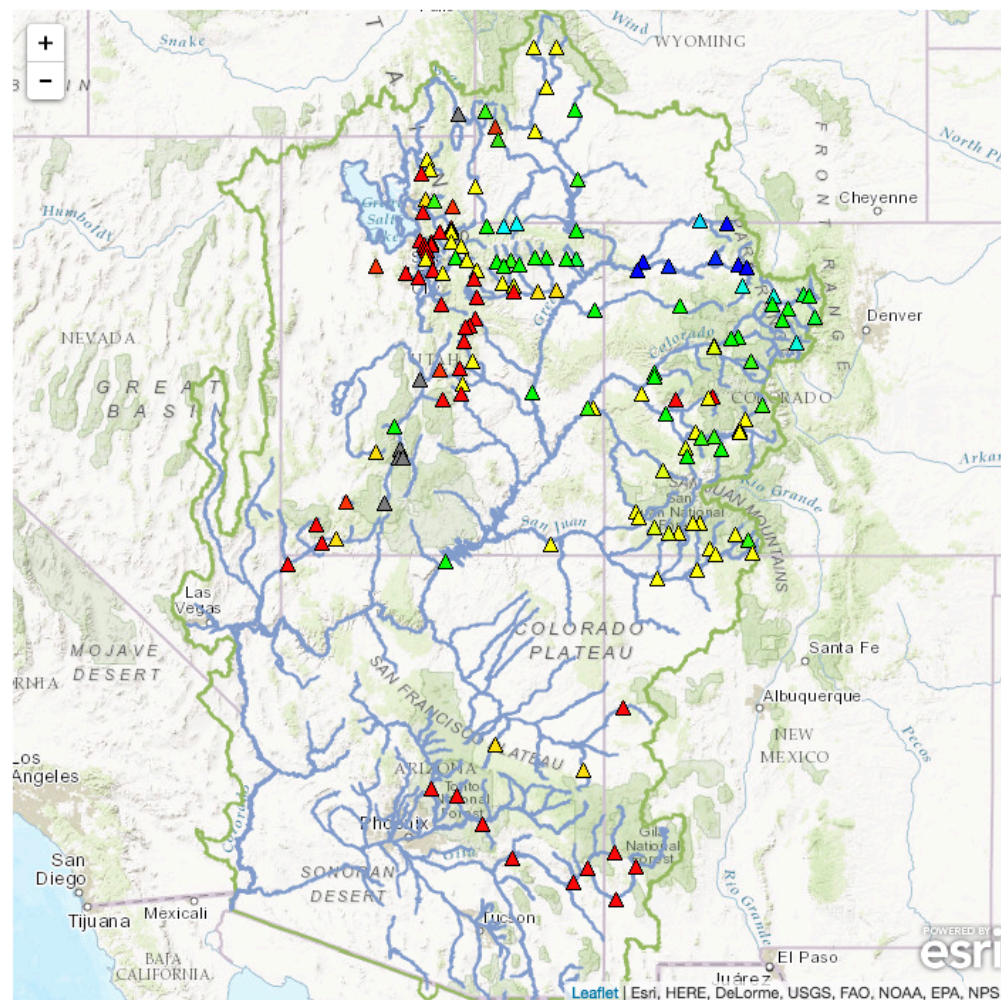
- HOME
- RIVERS
- SNOW
- WATER SUPPLY
- RESERVOIRS
- WEATHER
- CLIMATE
- HELP
- ABOUT
- NEWS
- SEARCH

News

Colorado River Basin Water Supply Early Season Outlook Briefing - December 13th, 1pm MDT - Register here: [Read More...](#)
 Upcoming Webinars: [Read More...](#)

Conditions Map

[Help](#)



Lat: 37.6 Lng: -110.5, Zoom: 6

[River Conditions](#)

[Snow Conditions](#)

Water Supply Forecasts

Official Forecast Date: 2016-6-1 [Help](#)
 ESP Model Run Date: 2016-07-31

Show [Hide Other Types](#)

- Official Percent Average
- Official Percent Median
- ESP Model Percent Average
- ESP Model Percent Median

- ▲ < 70%
- ▲ 70-90%
- ▲ 90-110%
- ▲ 110-130%
- ▲ >130%
- ▲ Regulated
- △ No Forecast

Offices

- CBRFC
- WGRFC
- ABRFC

[Peak Flood Probability](#)

[Reservoir Conditions](#)

[Daily Precipitation](#)

[Monthly Precipitation](#)

[Soil Moisture](#)

[Map Options](#)

[Search Points](#)

[Follow us on Twitter](#)

[Follow us on Facebook](#)

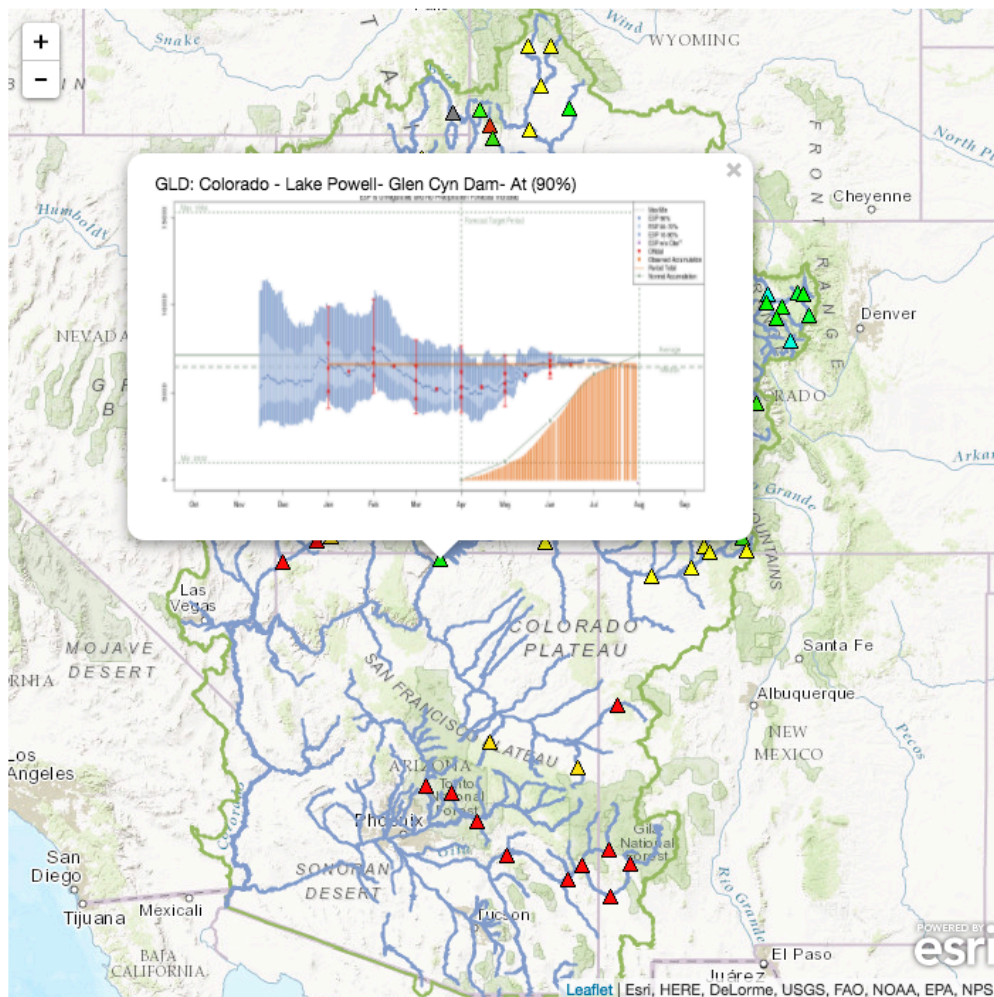


News

Colorado River Basin Water Supply Early Season Outlook Briefing - December 13th, 1pm MDT - Register here: [Read More...](#)
Upcoming Webinars: [Read More...](#)

Conditions Map

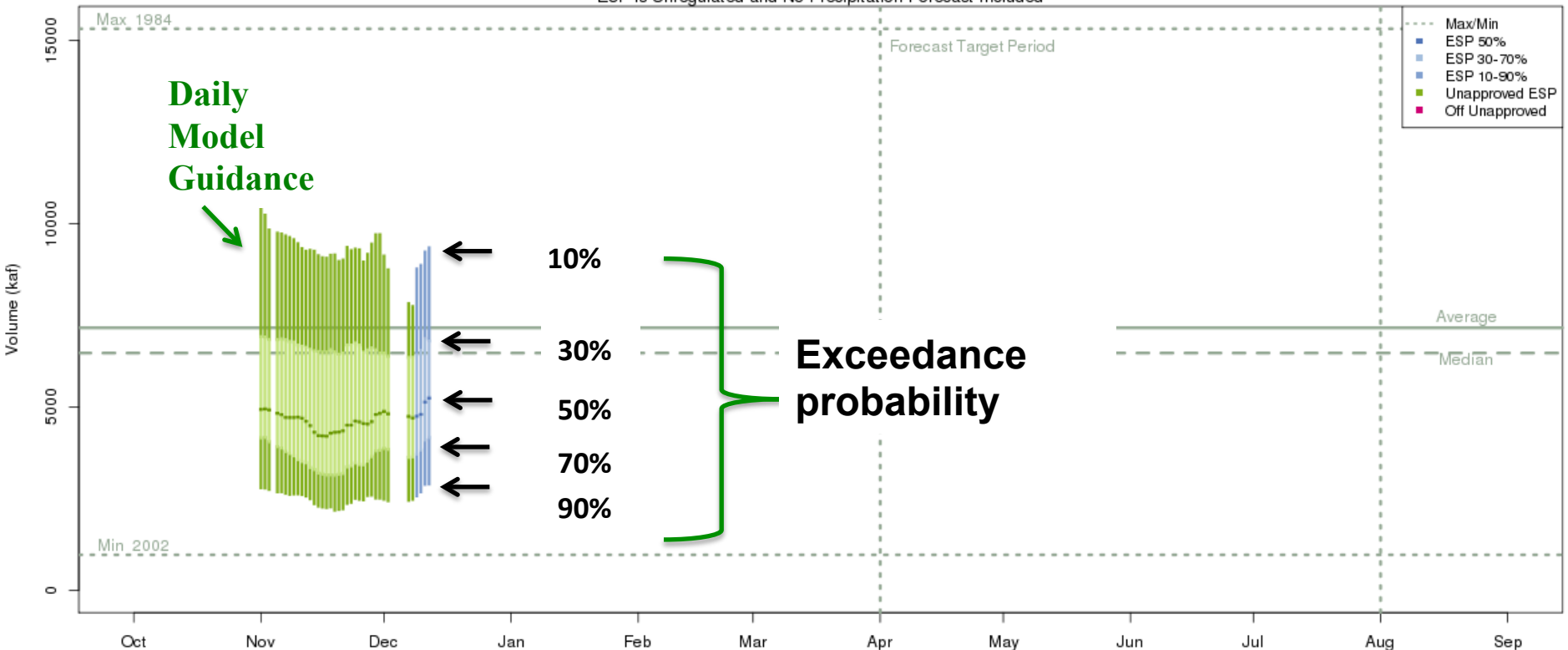
[Help](#)



Current Guidance

Colorado - Lake Powell- Glen Cyn Dam- At (GLDA3)

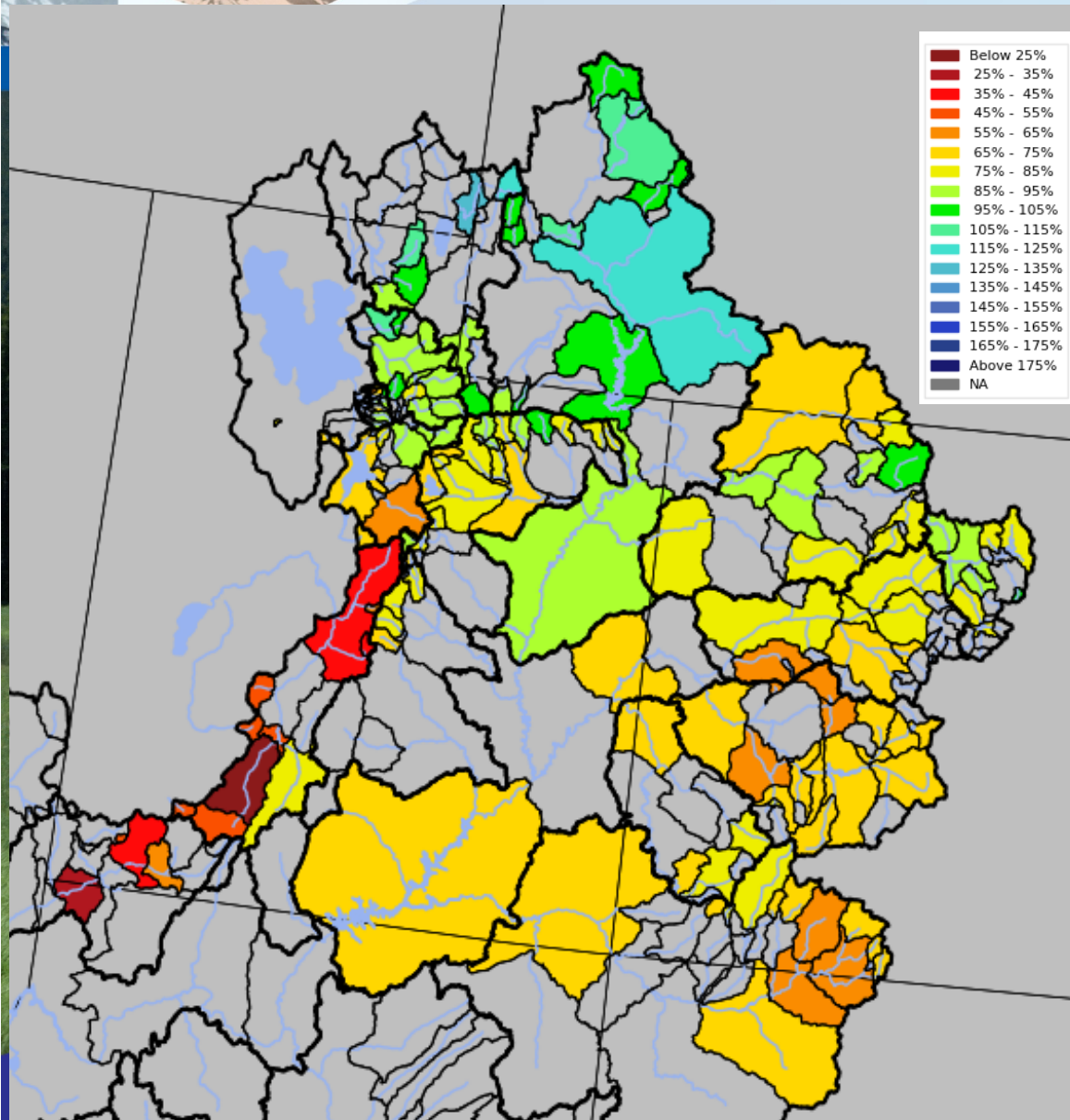
ESP is Unregulated and No Precipitation Forecast Included



The latest (2016-12-12) 50% ESP forecast is 5241 kaf.
 Plot Created 2016-12-13 06:38:25, NOAA / NWS / CBRFC
 Forecasts in the forecast target period include observed values.



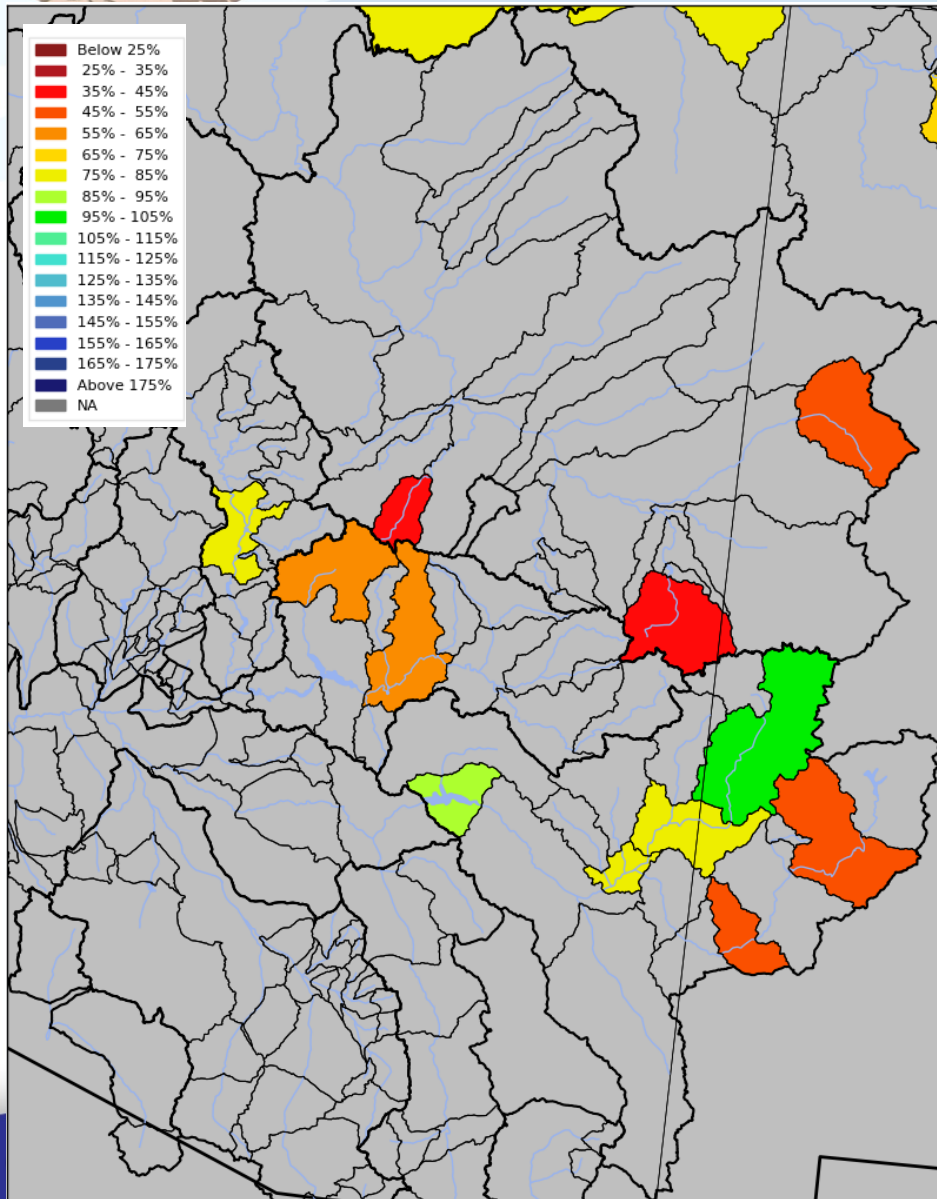
Latest Guidance



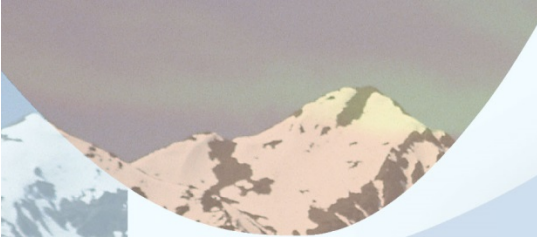
Raw ESP 12/12/2016
April - July forecast runoff
volume
% average

Latest Guidance

18



Raw ESP 12/12/2016
January - May forecast runoff
volume
% median



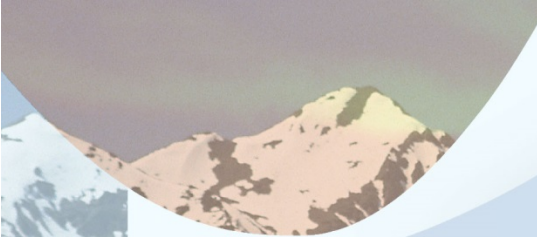
Green - Flaming Gorge Res- Flaming Gorge Dam- At (GRNU1)

ESP is Unregulated and No Precipitation Forecast Included



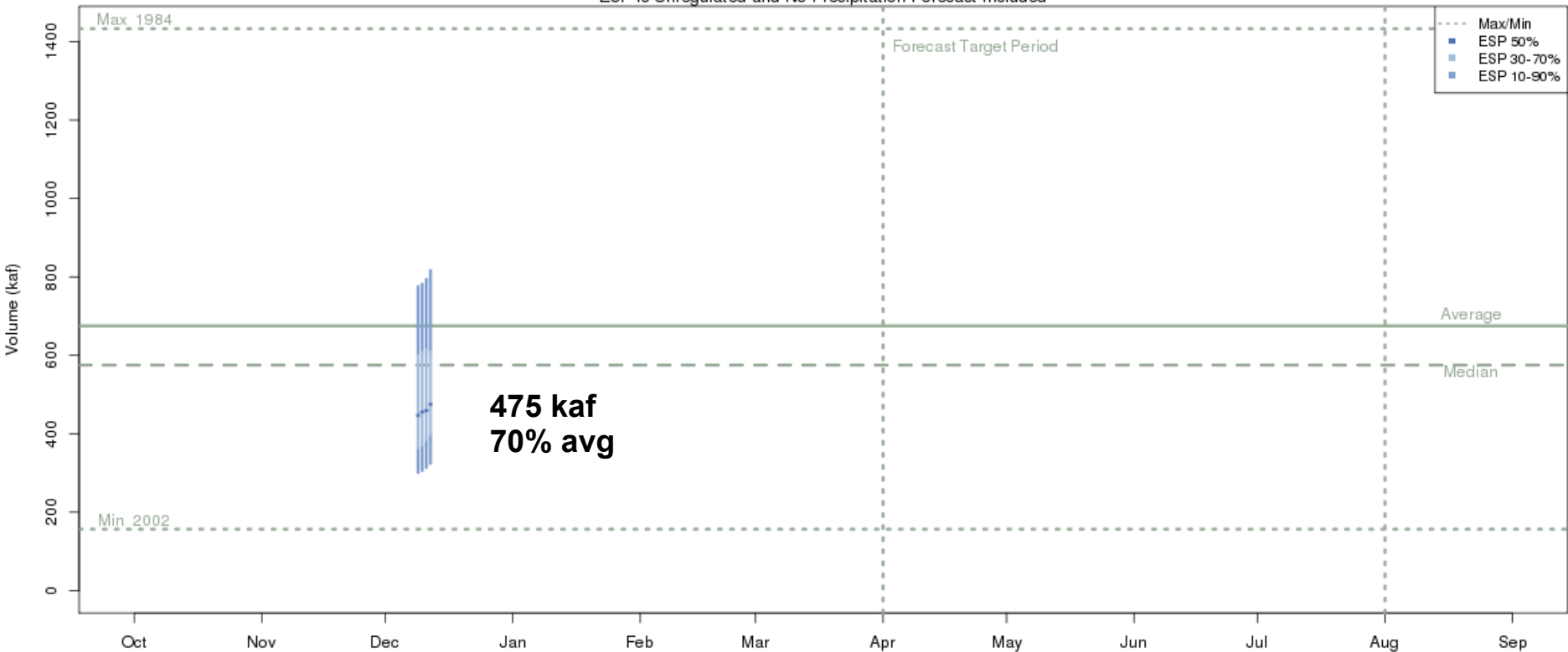
The latest (2016-12-12) 50% ESP forecast is 1009 kaf.
Plot Created 2016-12-13 06:39:17, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





Gunnison - Blue Mesa Res (BMD2)

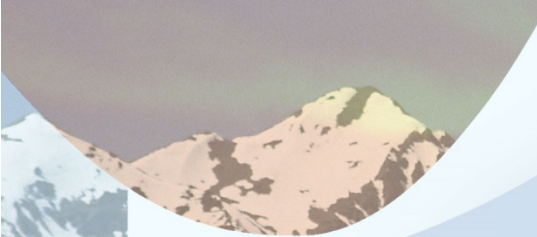
ESP is Unregulated and No Precipitation Forecast Included



475 kaf
70% avg

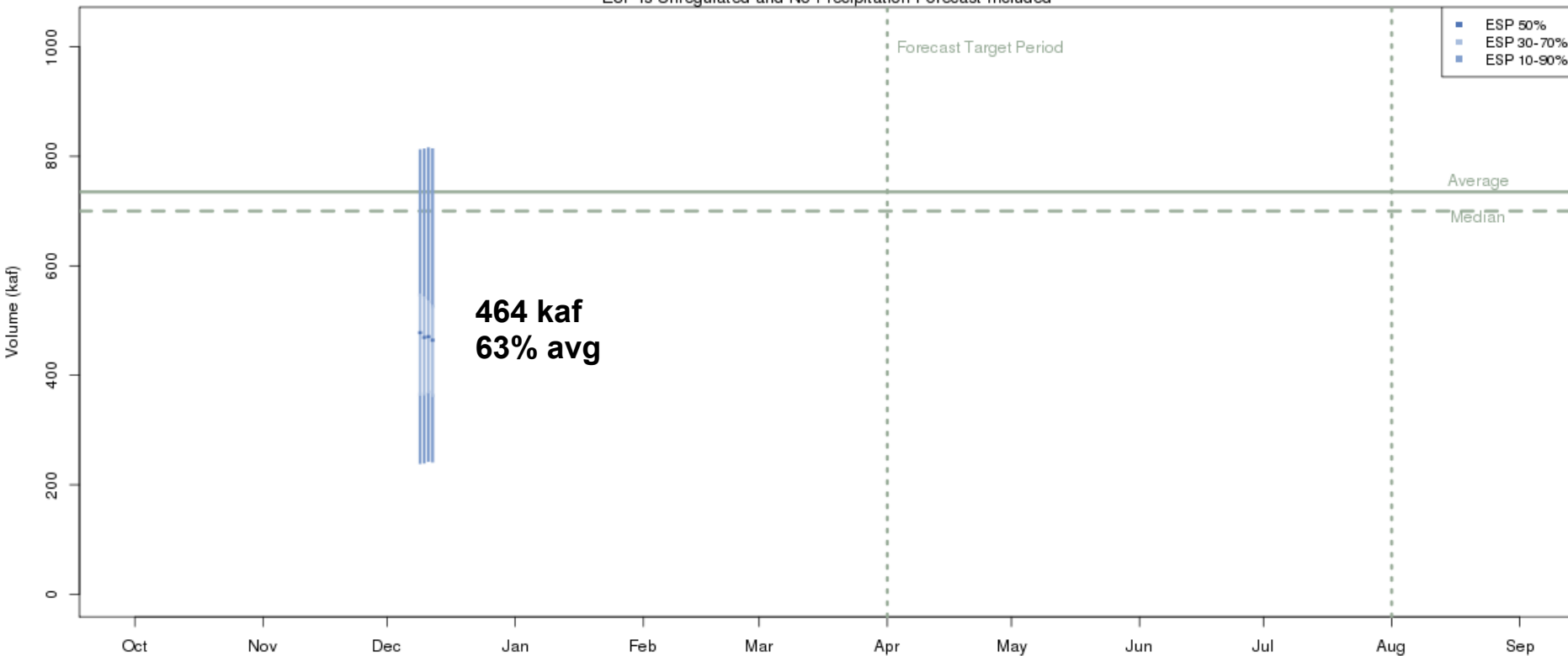
The latest (2016-12-12) 50% ESP forecast is 475 kaf.
Plot Created 2016-12-13 06:28:06, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





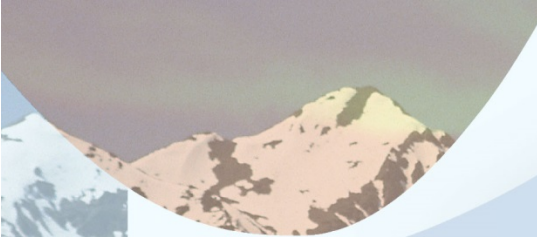
San Juan - Navajo Res- Archuleta- Nr (NVRN5)

ESP is Unregulated and No Precipitation Forecast Included



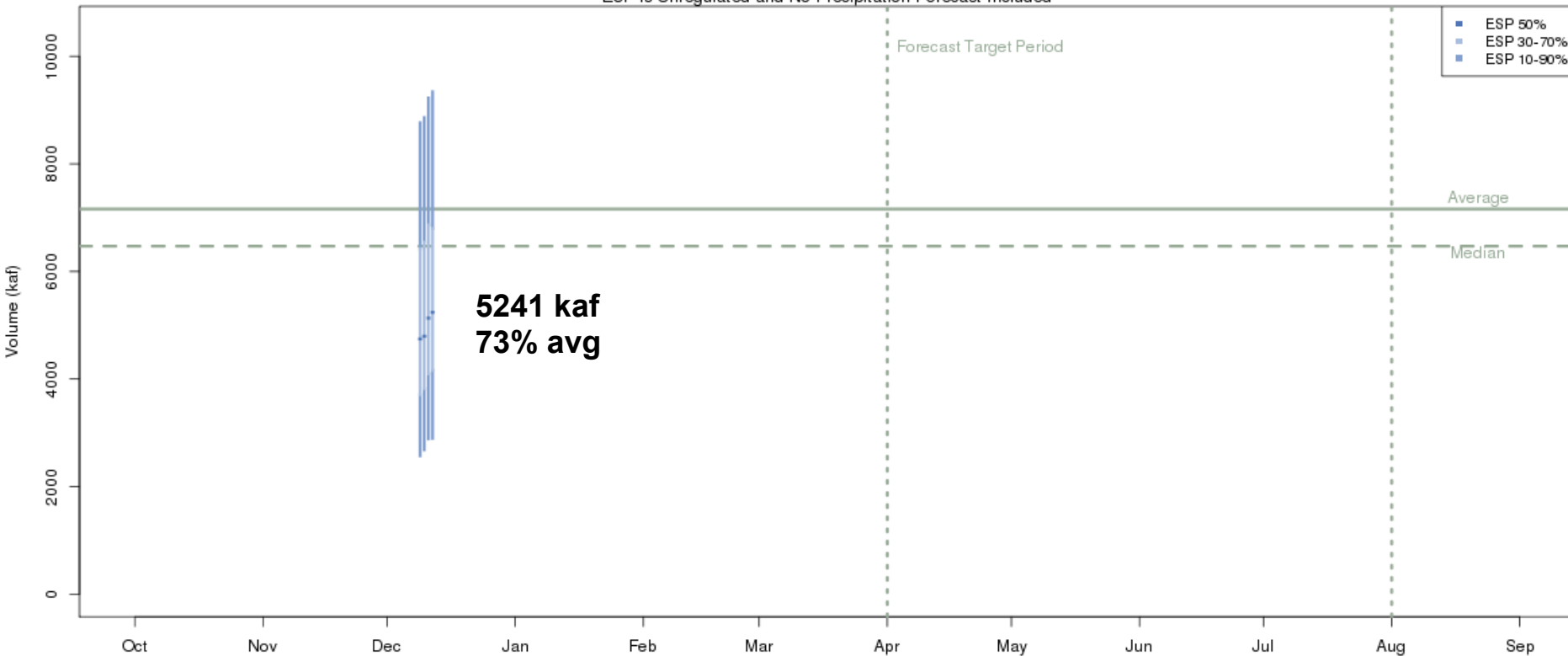
The latest (2016-12-12) 50% ESP forecast is 464 kaf.
Plot Created 2016-12-13 06:46:52, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





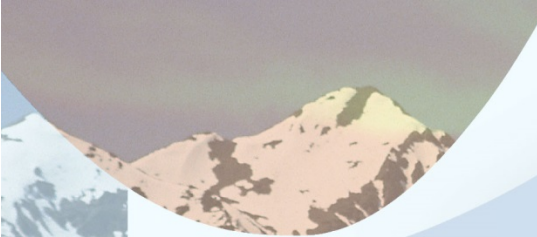
Colorado - Lake Powell- Glen Cyn Dam- At (GLDA3)

ESP is Unregulated and No Precipitation Forecast Included



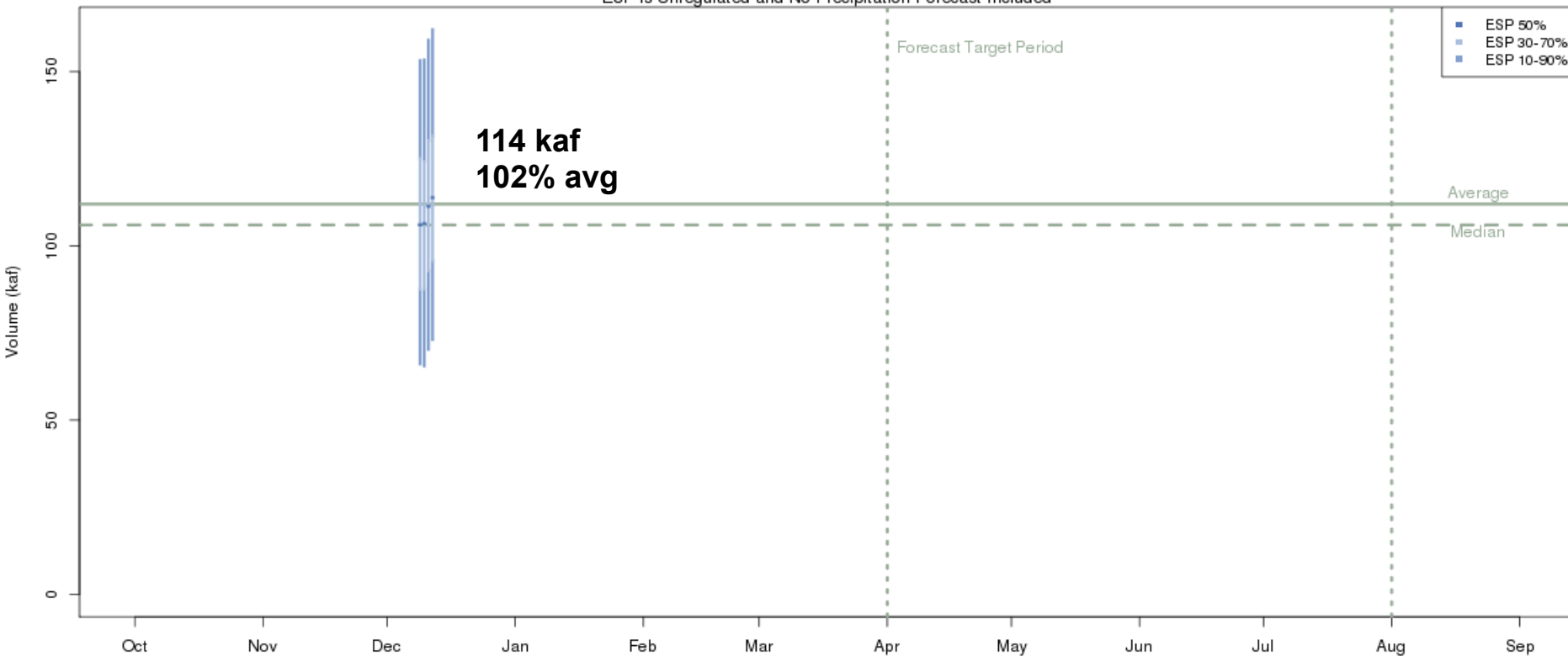
The latest (2016-12-12) 50% ESP forecast is 5241 kaf.
Plot Created 2016-12-13 06:38:25, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





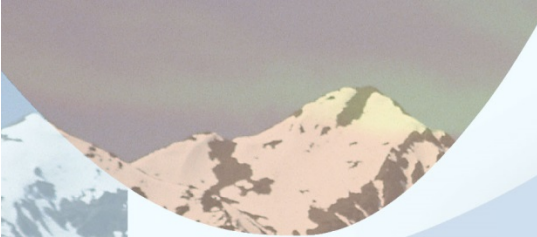
Bear - Utah-wyoming State Line- Nr (BERU1)

ESP is Unregulated and No Precipitation Forecast Included



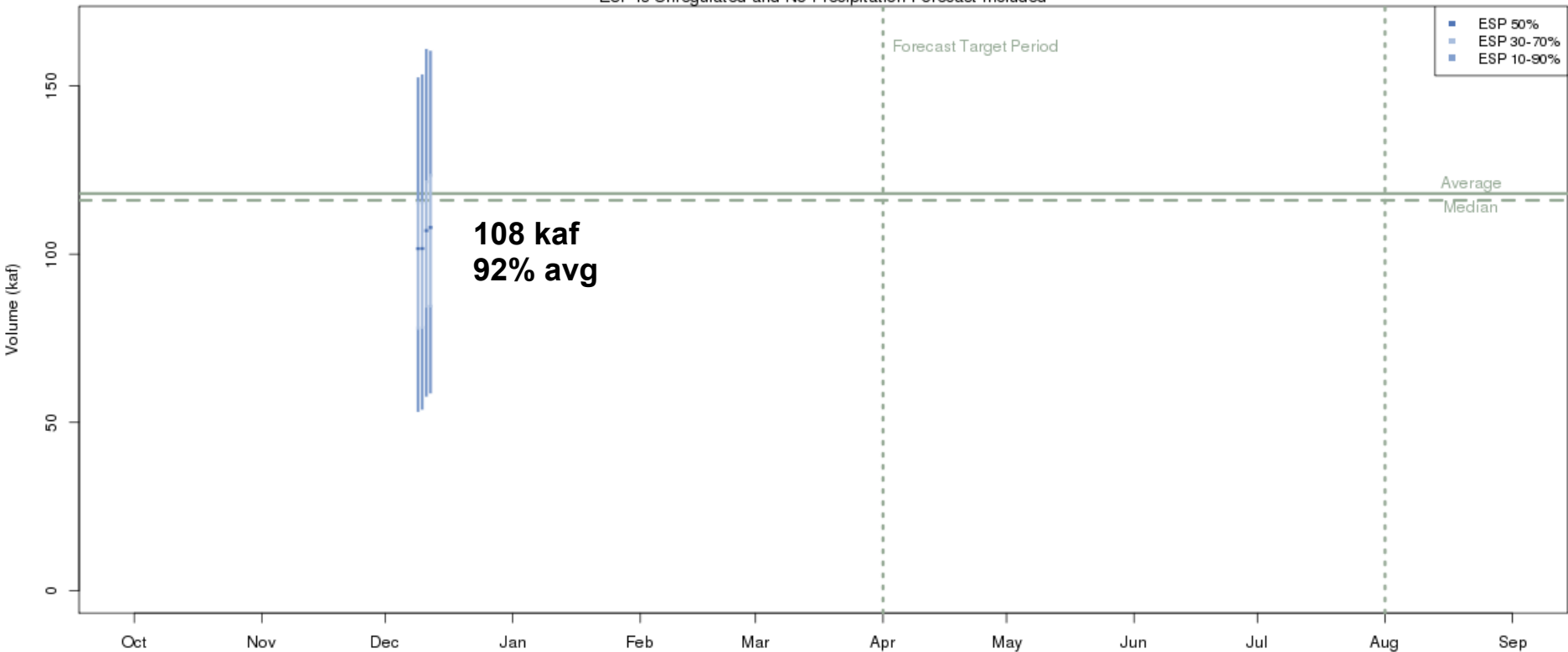
The latest (2016-12-12) 50% ESP forecast is 114 kaf.
Plot Created 2016-12-13 06:27:27, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





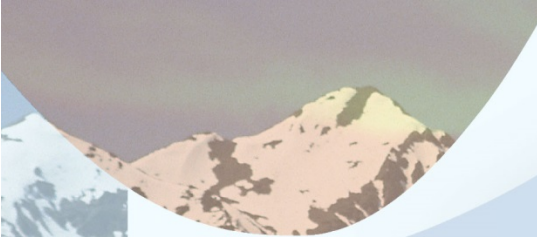
Weber - Oakley- Nr (OAWU1)

ESP is Unregulated and No Precipitation Forecast Included



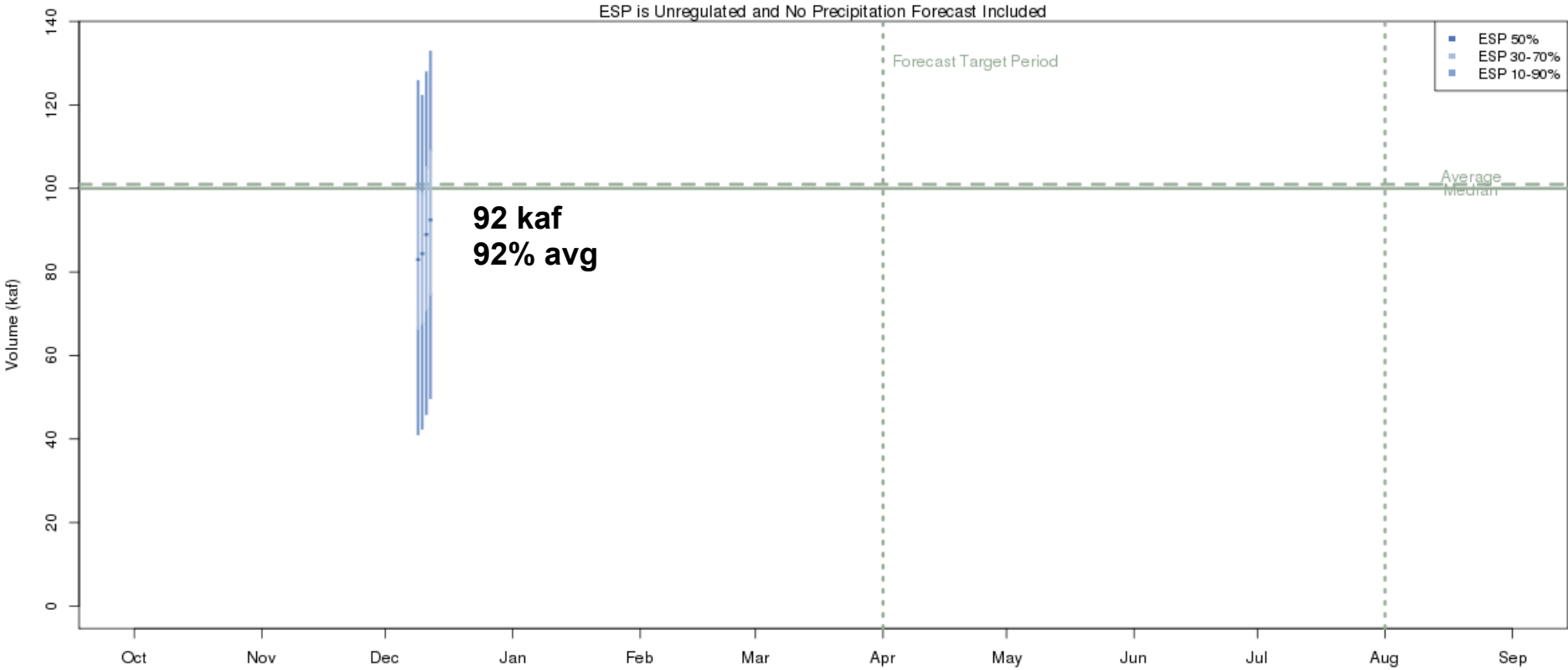
The latest (2016-12-12) 50% ESP forecast is 108 kaf.
Plot Created 2016-12-13 06:47:05, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





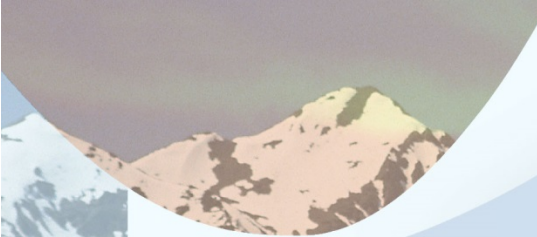
Provo - Woodland- Nr (WOOU1)

ESP is Unregulated and No Precipitation Forecast Included



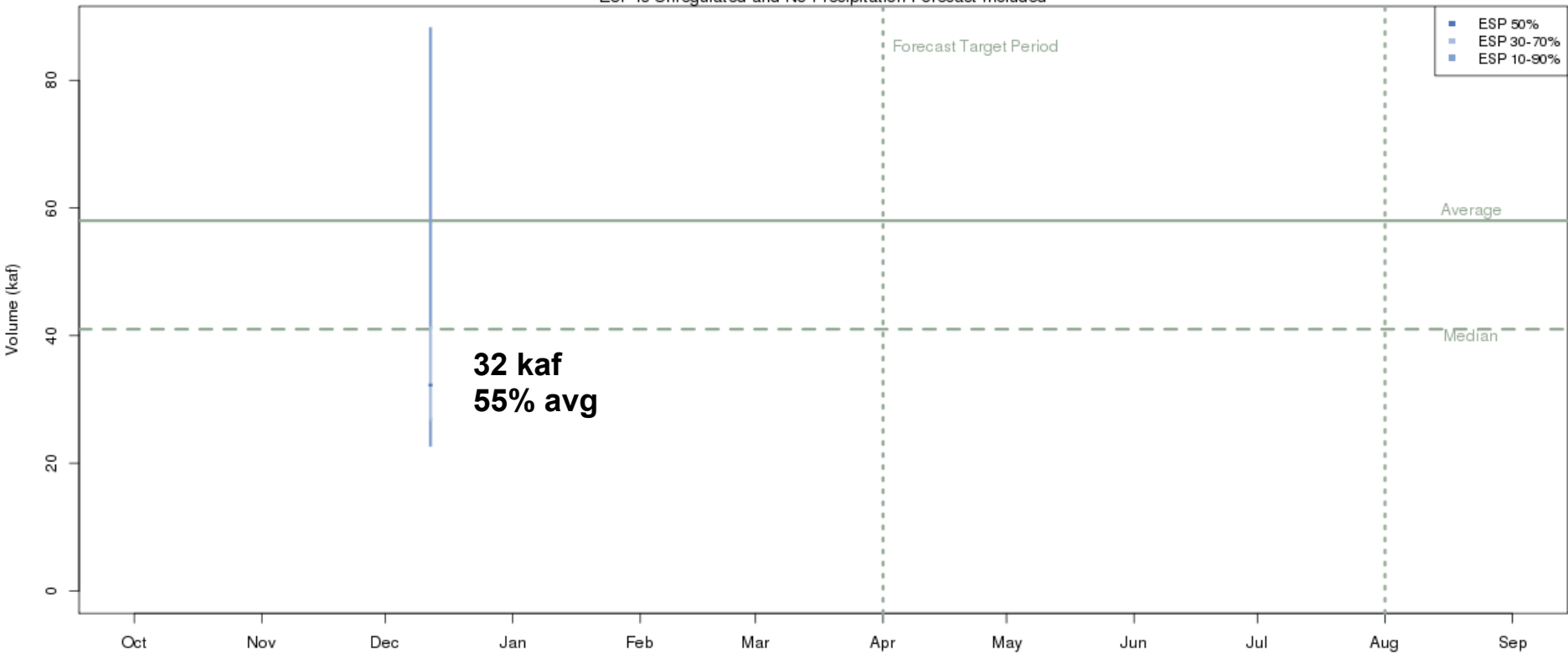
The latest (2016-12-12) 50% ESP forecast is 92 kaf.
Plot Created 2016-12-13 06:58:56, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





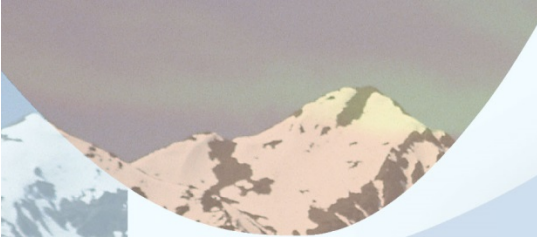
Virgin - Virgin (VIRU1)

ESP is Unregulated and No Precipitation Forecast Included



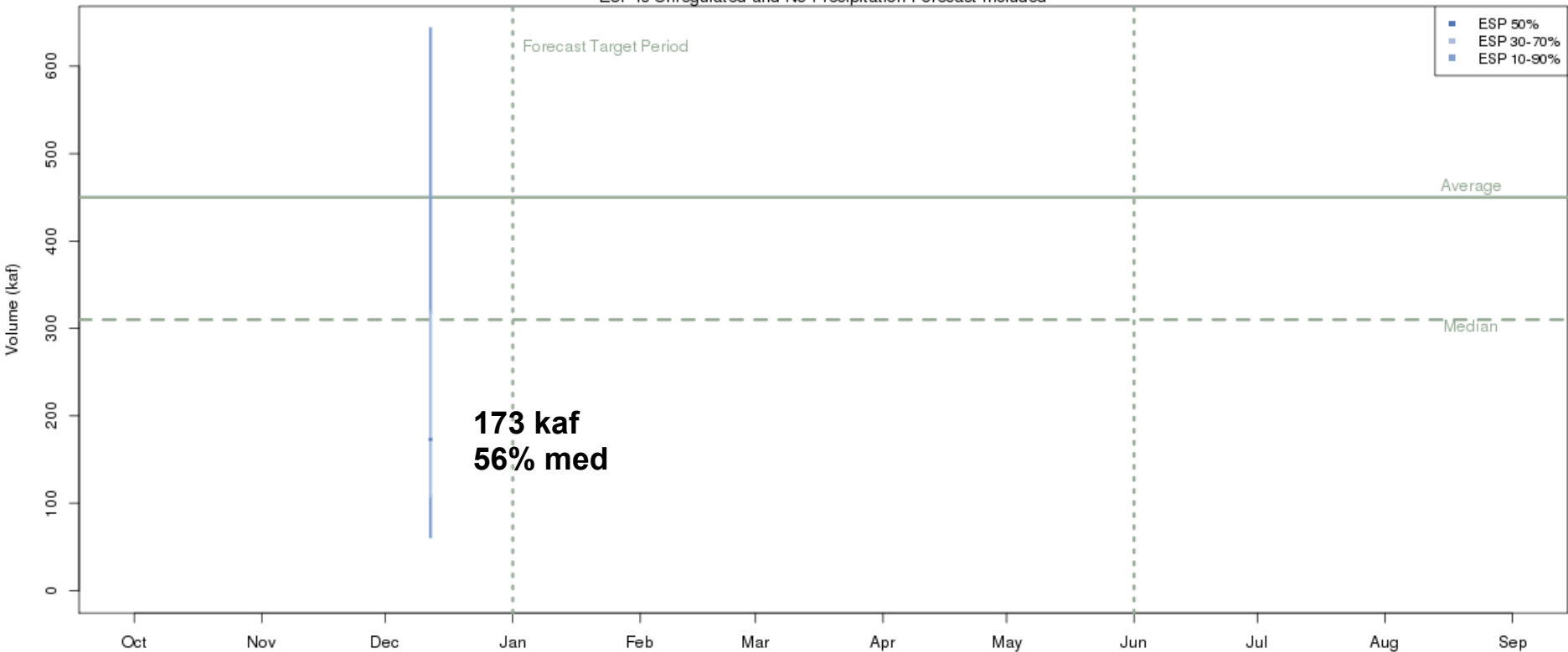
The latest (2016-12-12) 50% ESP forecast is 32 kaf.
Plot Created 2016-12-13 07:50:42, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





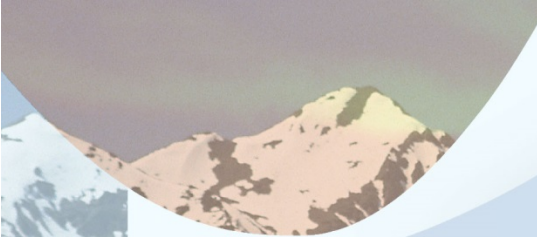
Salt - Roosevelt- Nr (SLRA3)

ESP is Unregulated and No Precipitation Forecast Included



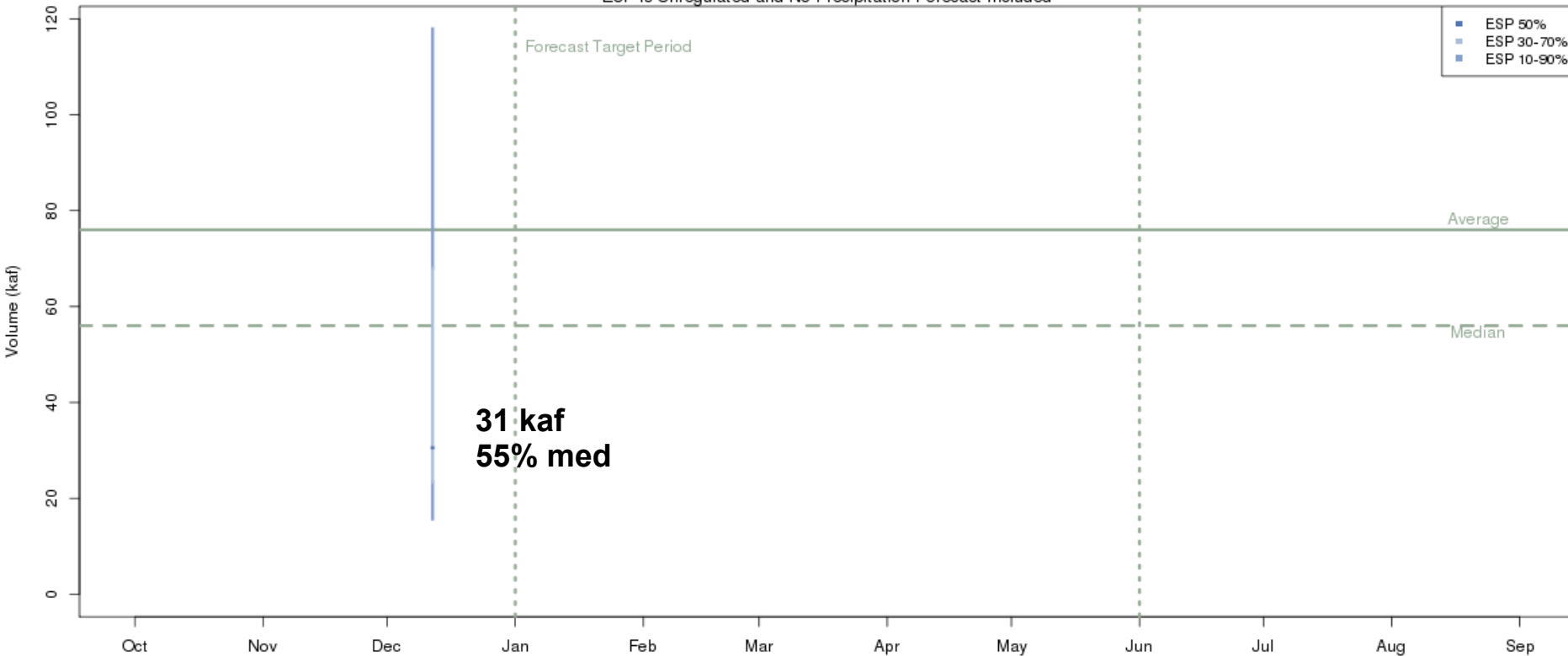
The latest (2016-12-12) 50% ESP forecast is 173 kaf.
Plot Created 2016-12-13 12:09:37, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.





Gila - Gila- Nr (GILN5)

ESP is Unregulated and No Precipitation Forecast Included

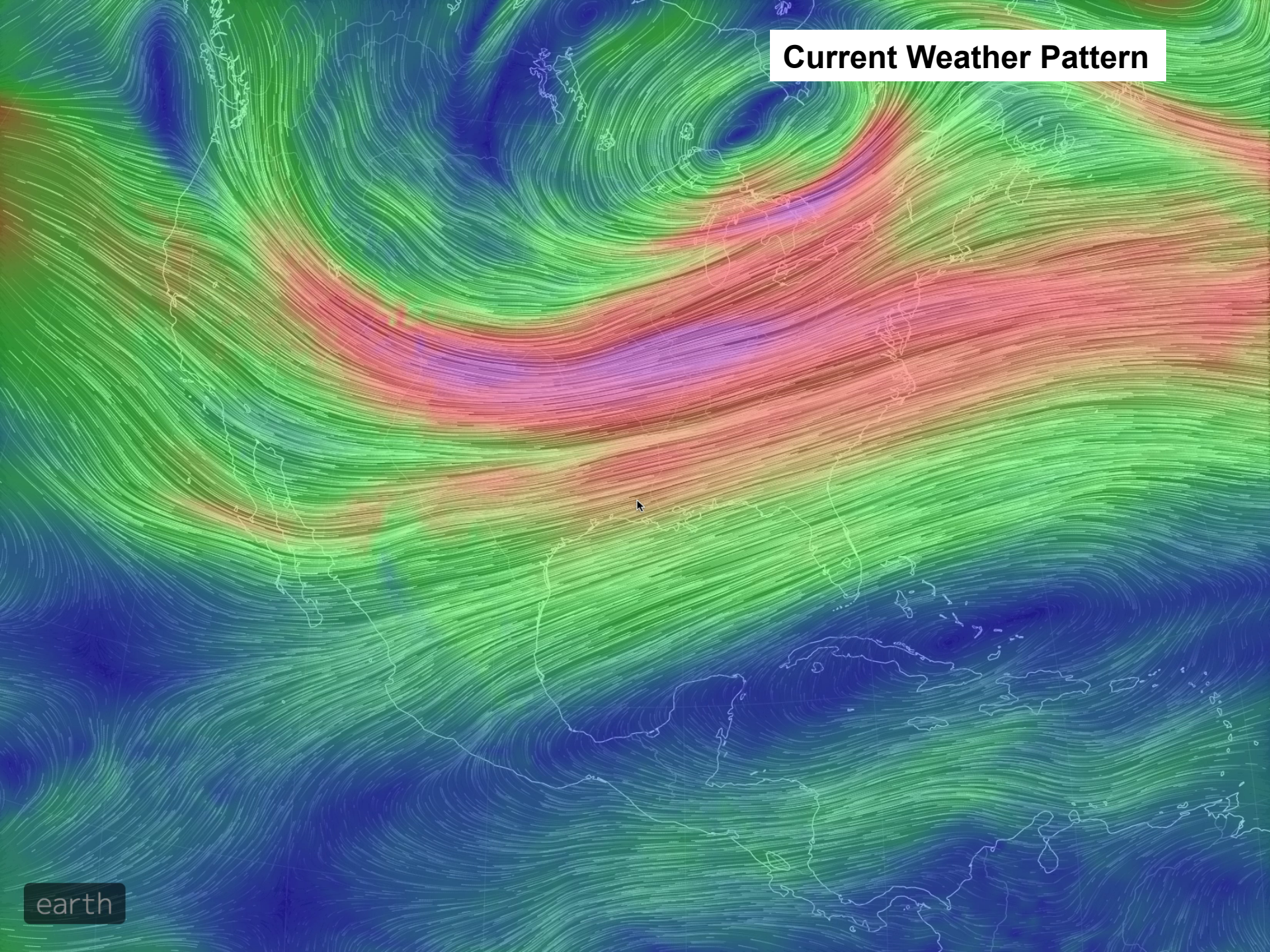


31 kaf
55% med

The latest (2016-12-12) 50% ESP forecast is 31 kaf.
Plot Created 2016-12-13 11:54:44, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.

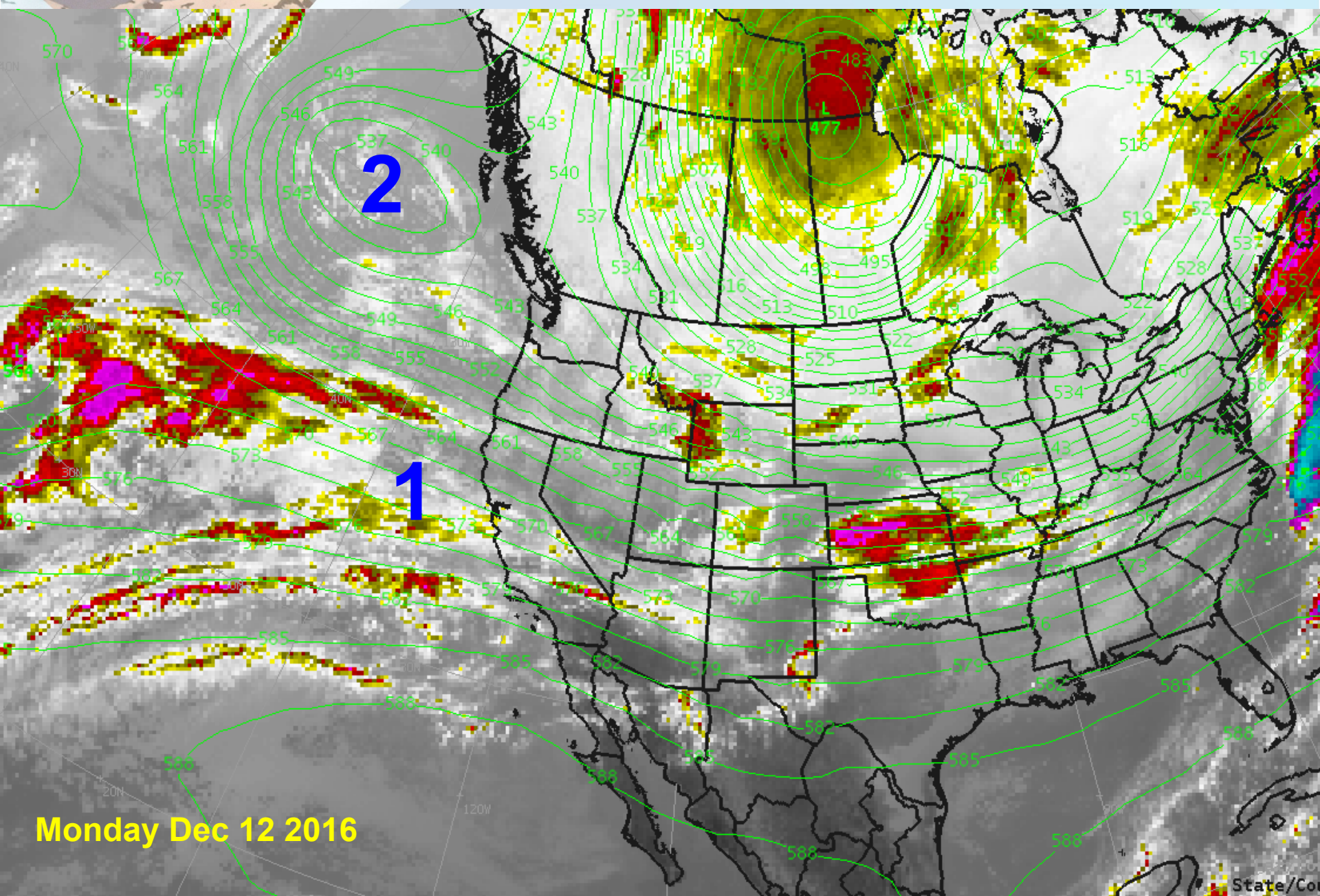


Current Weather Pattern



1: Light showers Wed / Thu as moisture increases over the area

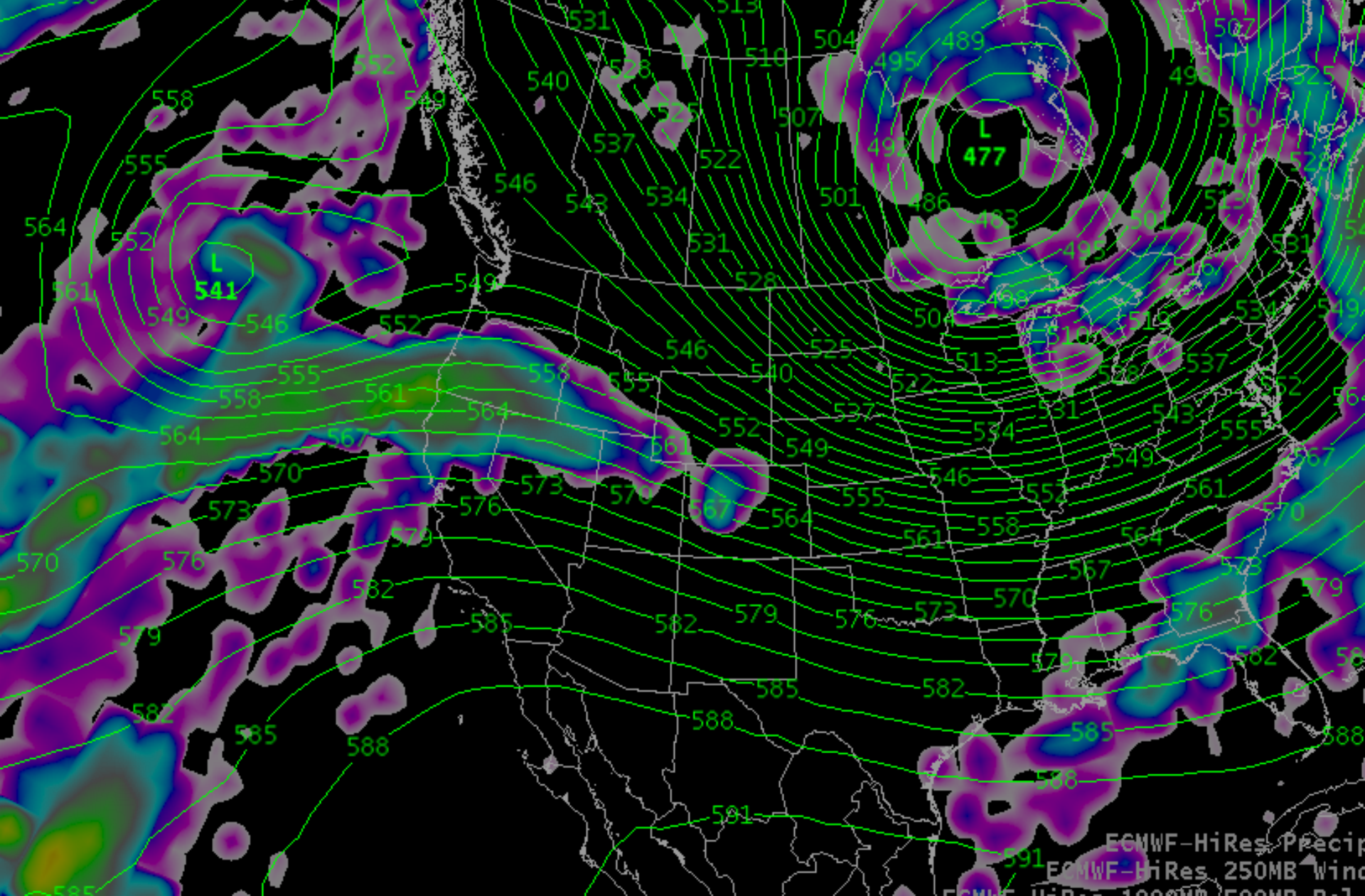
2: Colder storm system to impact the area over the weekend, widespread precipitation



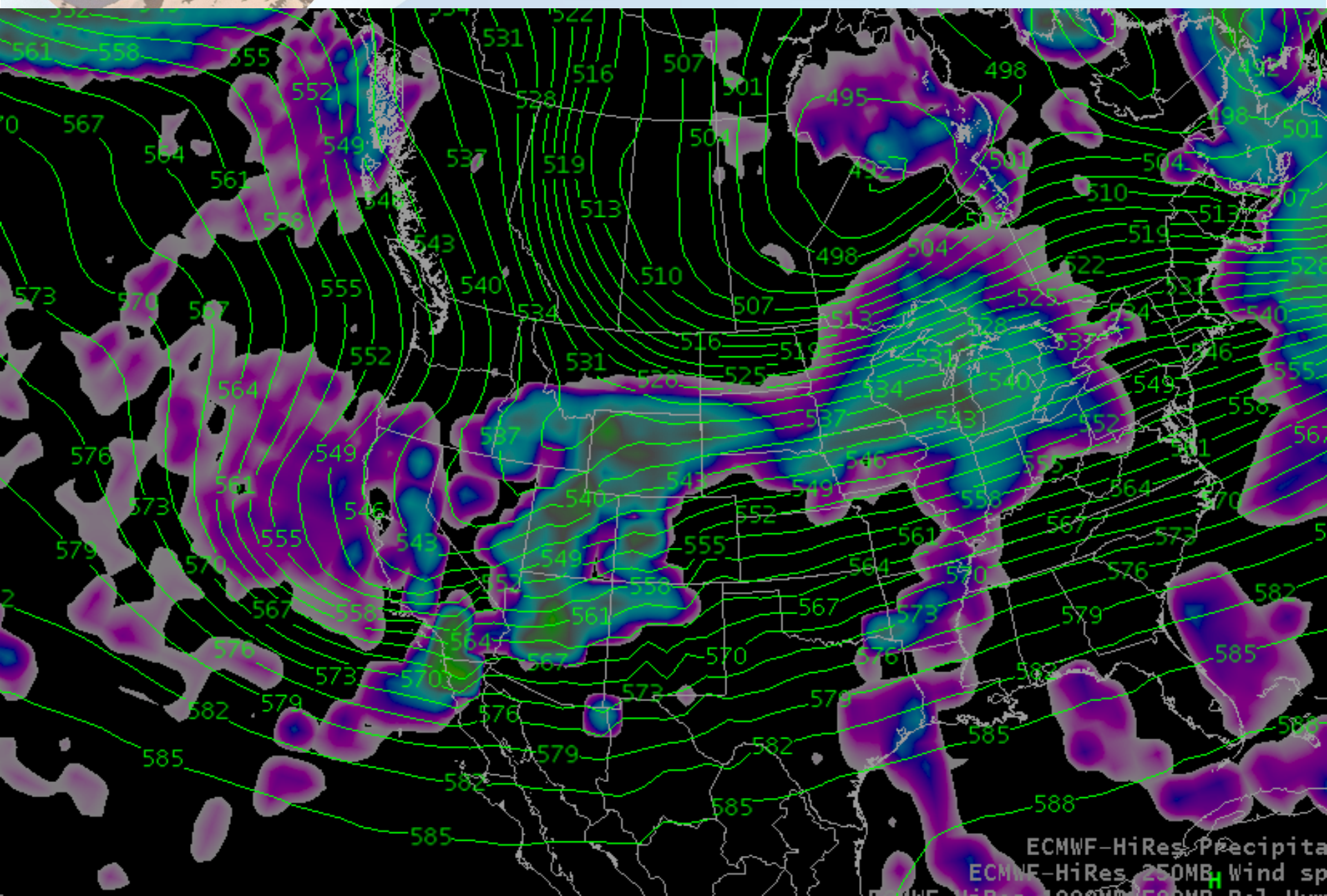
Monday Dec 12 2016

State/Co

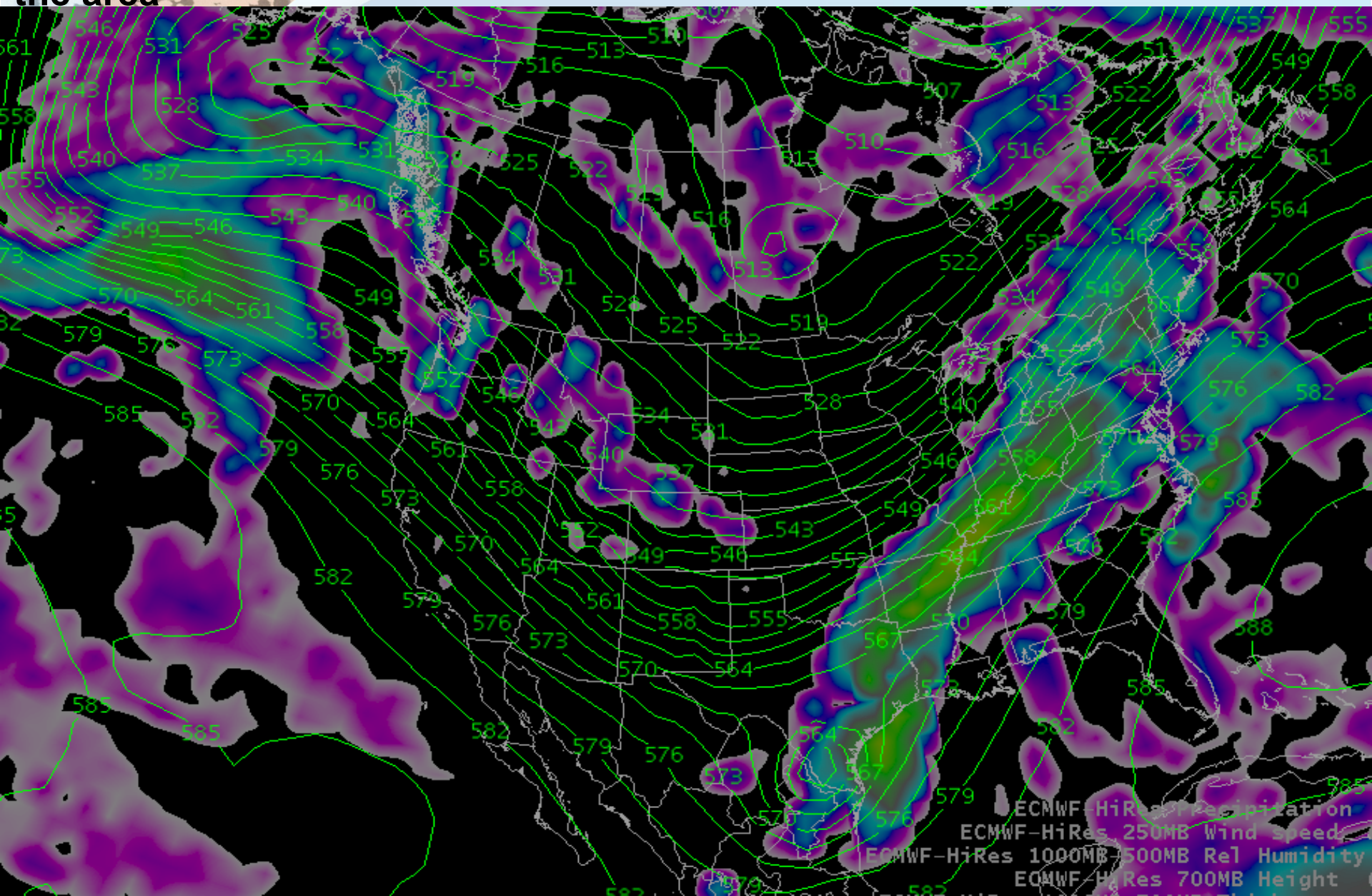
Future Weather: Moisture moving into the region Wed December 14th



Future Weather: Storm System over the forecast area Friday December 16th



Future Weather: Northwest flow (Dec 22nd) as another storm system prepares to move into the area

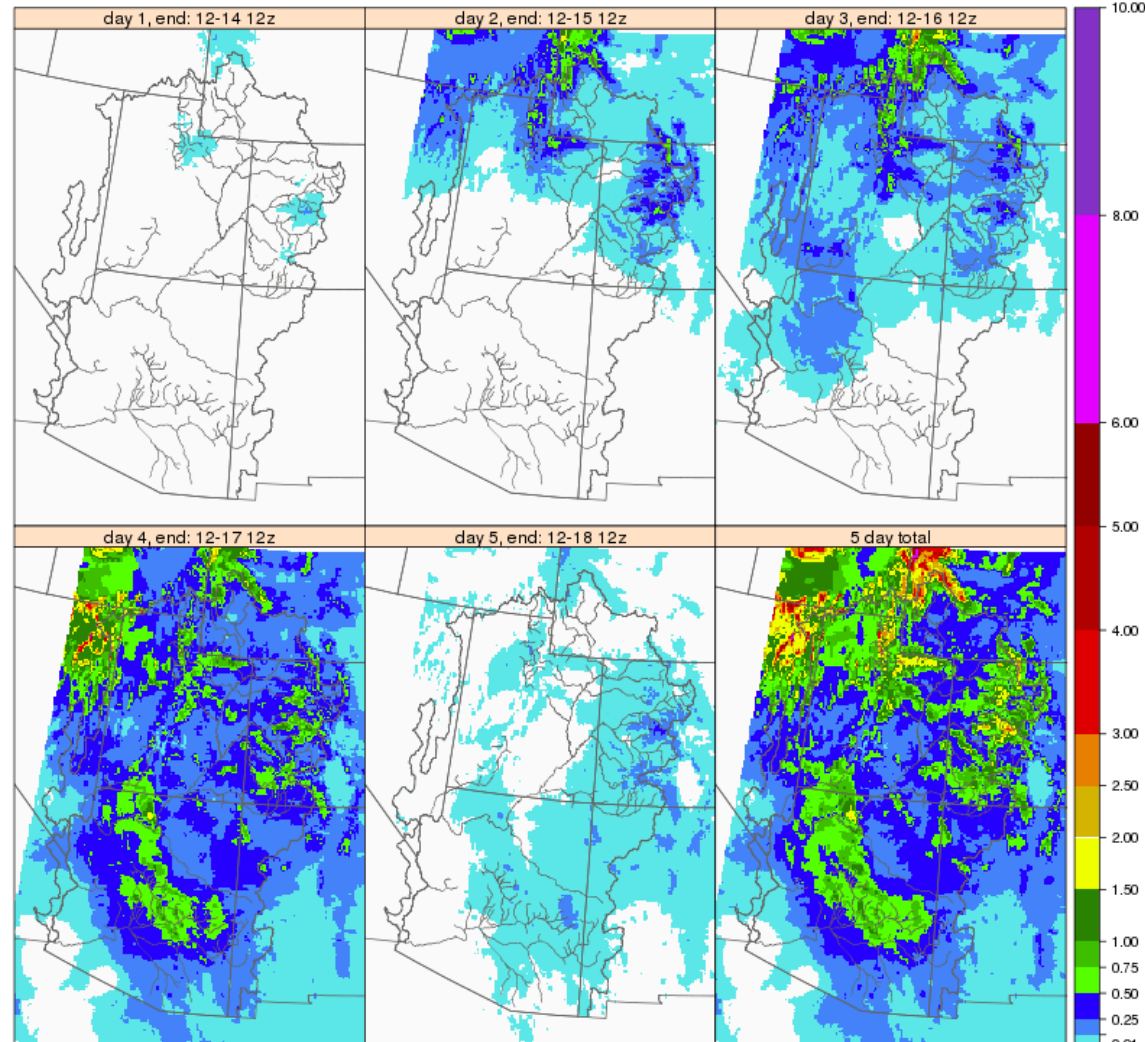


Current Weather Forecast

34

Chance for increased precipitation over much of the Upper Colorado and Great Basin Regions

QPF Daily Totals (inches), issued: 12-13-2016 12z



CBRFC/NWS/NOAA

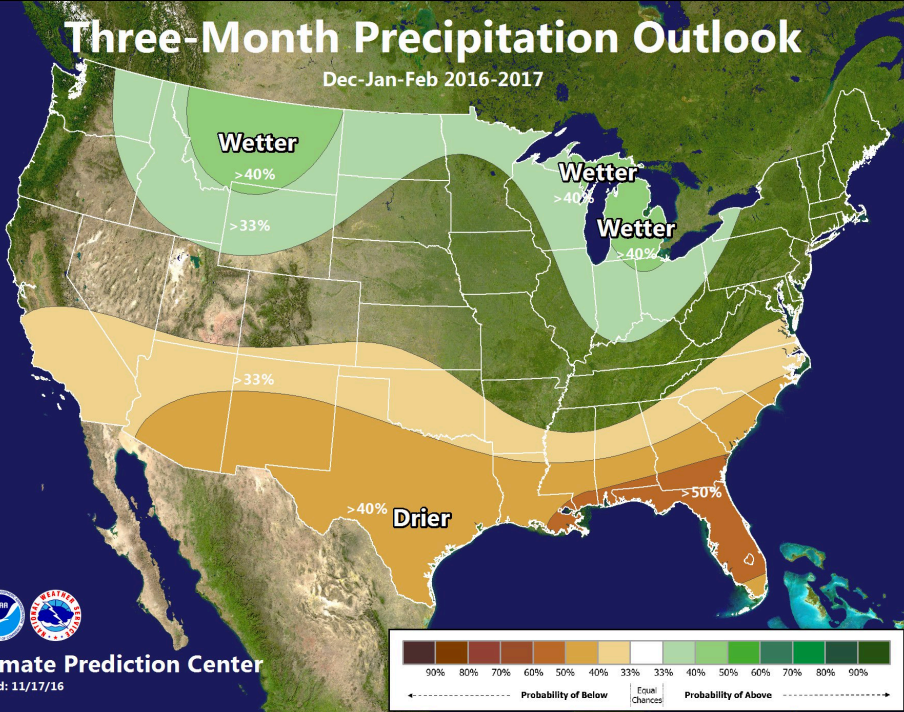


Future Climate

35

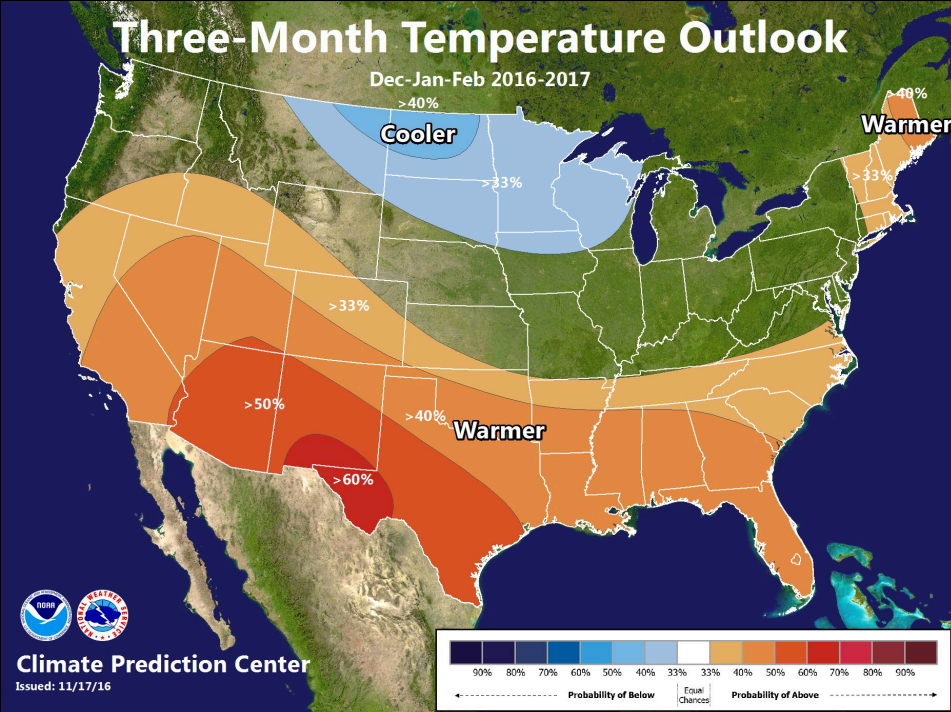
Three-Month Precipitation Outlook

Dec-Jan-Feb 2016-2017



Three-Month Temperature Outlook

Dec-Jan-Feb 2016-2017



Water Supply Webinar Schedule

36

- Monday, 1/9
- Tuesday, 2/7
- Tuesday, 3/7
- Thursday, 4/6
- Friday, 5/5
- Colorado River Basin at 11 a.m. MST
- Great Basin at 1:30 p.m. MST



Contact Us!

37

- Brenda Alcorn
- Greg Smith
- Ashley Nielson
- Brent Bernard
- Tracy Cox
- Craig Peterson
- Colorado Mainstem
- San Juan/Gunnison/Dolores
- Green/White – Yampa/Duchesne
- Great Basin
- Lower Colorado River
- Hydrologic Model

Firstname.Lastname@noaa.gov

801-524-5130

