



United States Department of Agriculture

Colorado Snow Surveys

Water Availability Task Force Meeting

November 15th, 2016

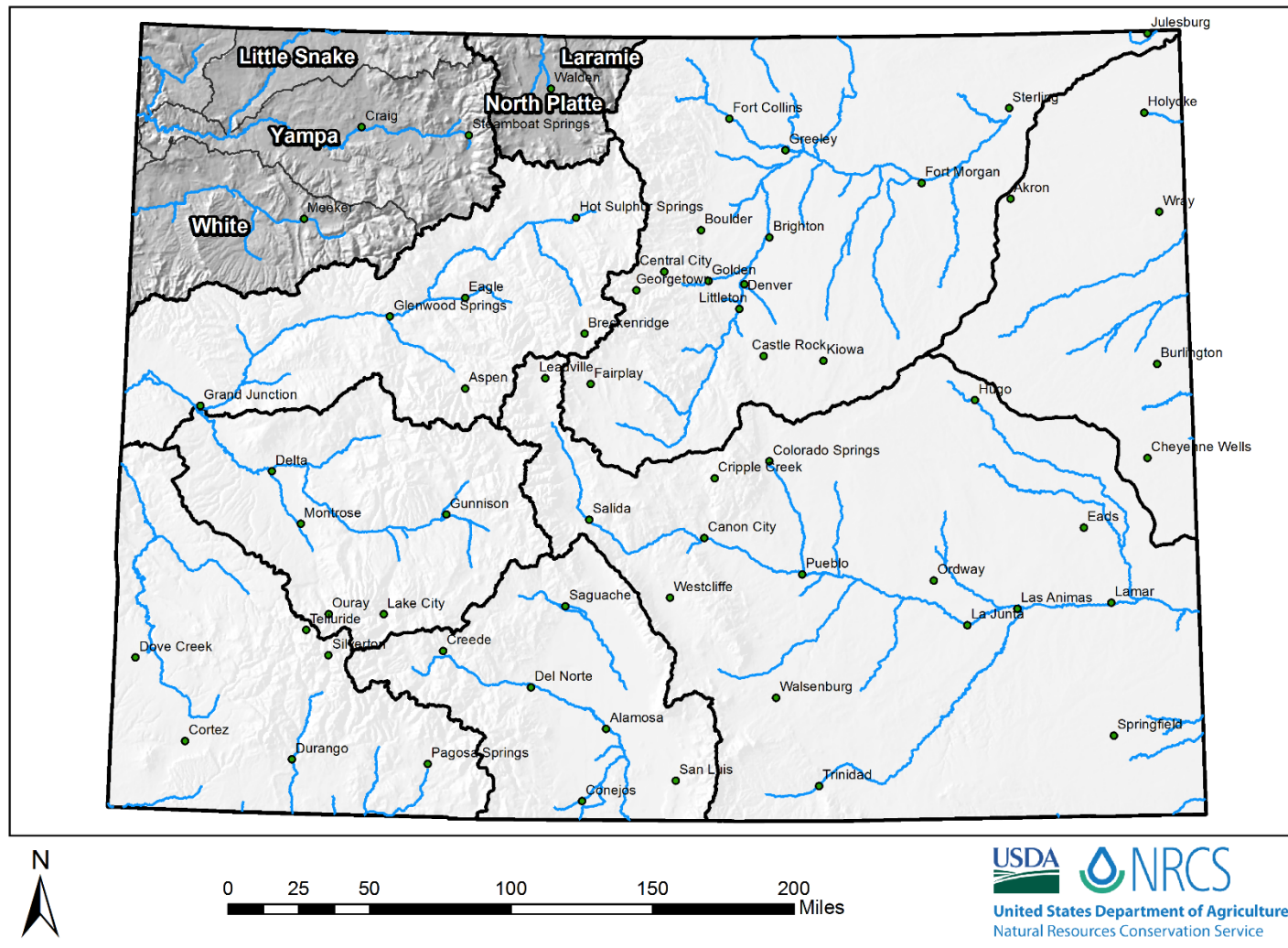
NRCS Snow Survey and Water Supply Forecasting Program

Brian Domonkos
Snow Survey Supervisor
720-544-2852

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/co/snow/>

Major Basin Summary

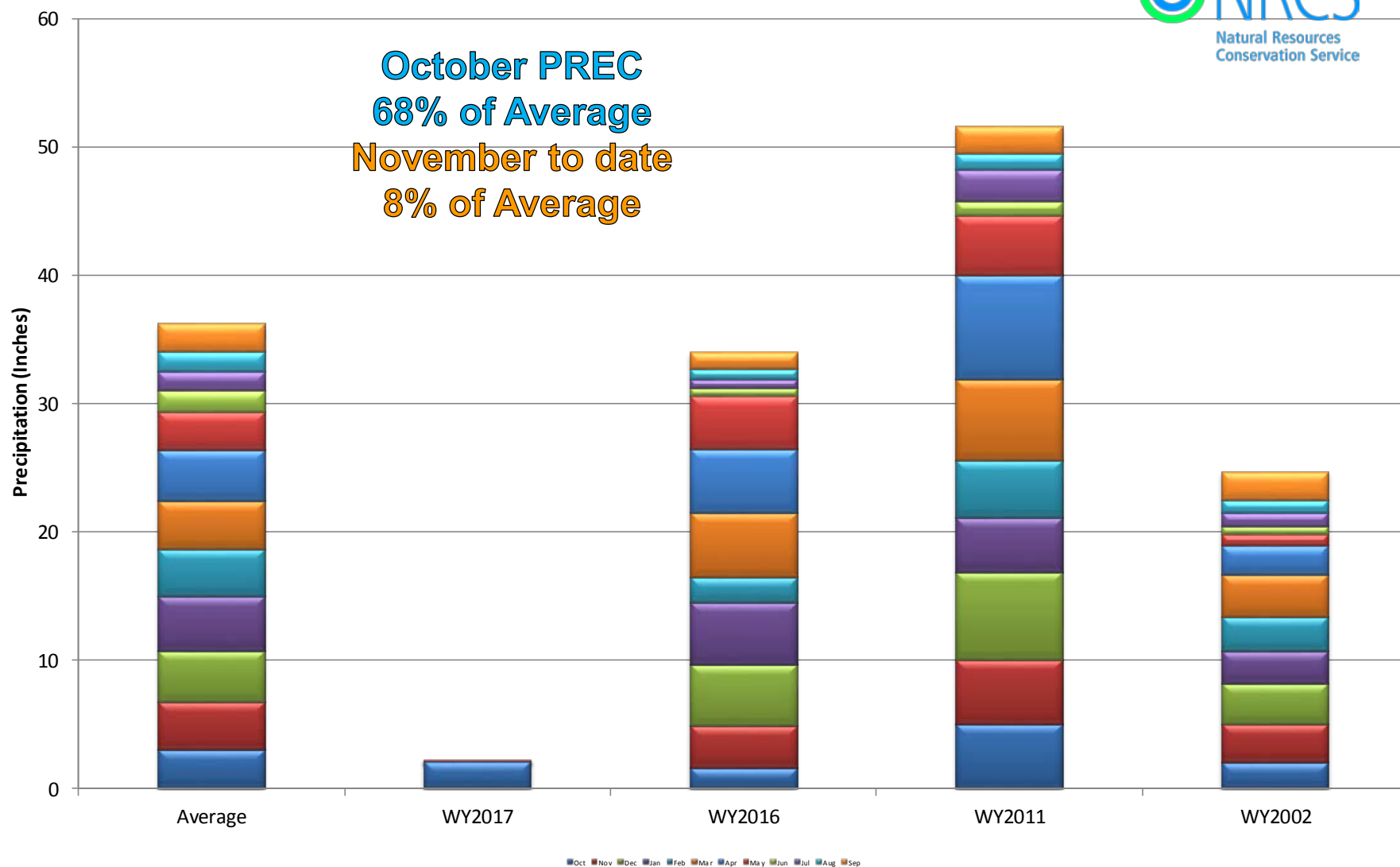
Yampa, White, and North Platte River Basins



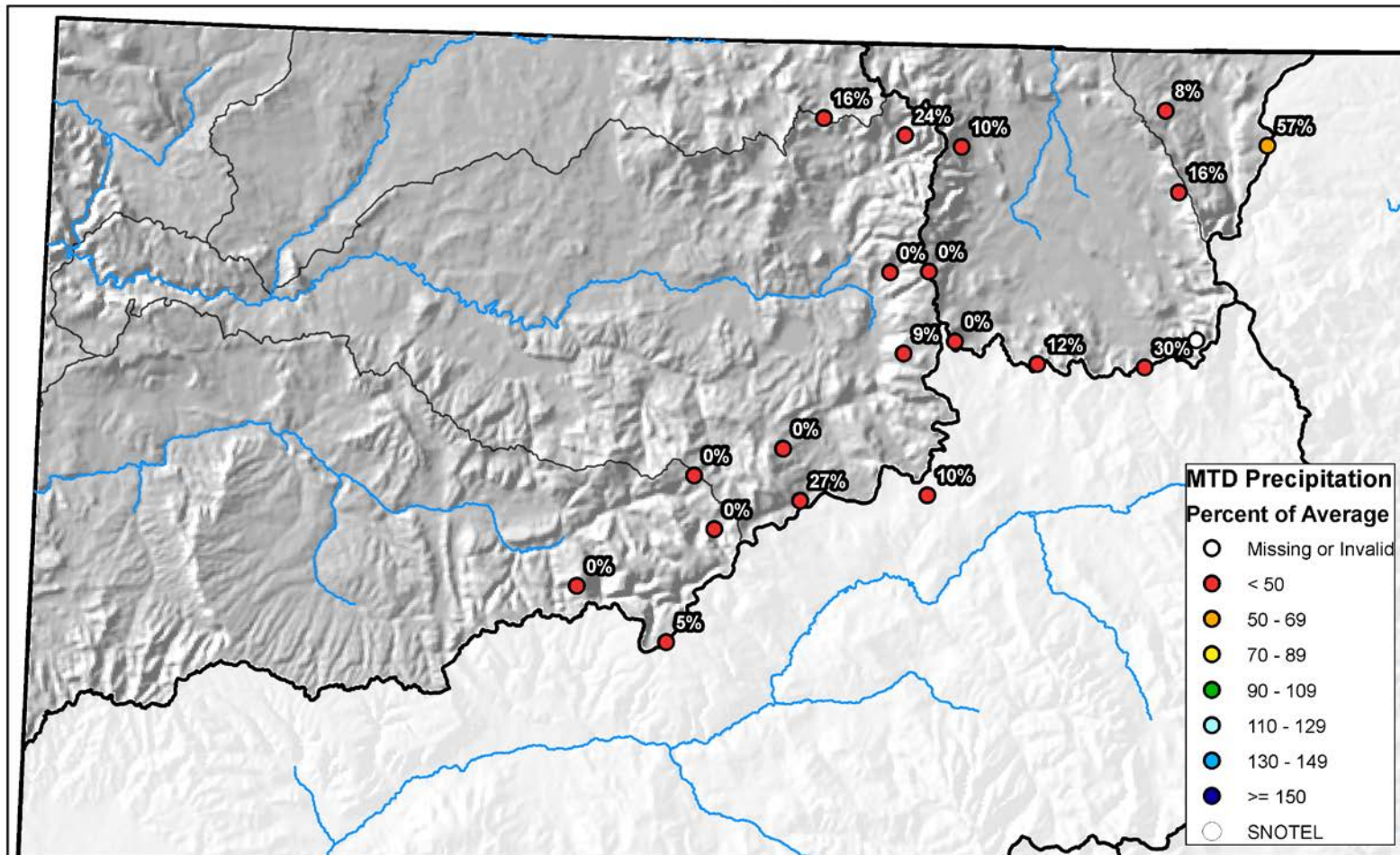


Yampa & White River Basins High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



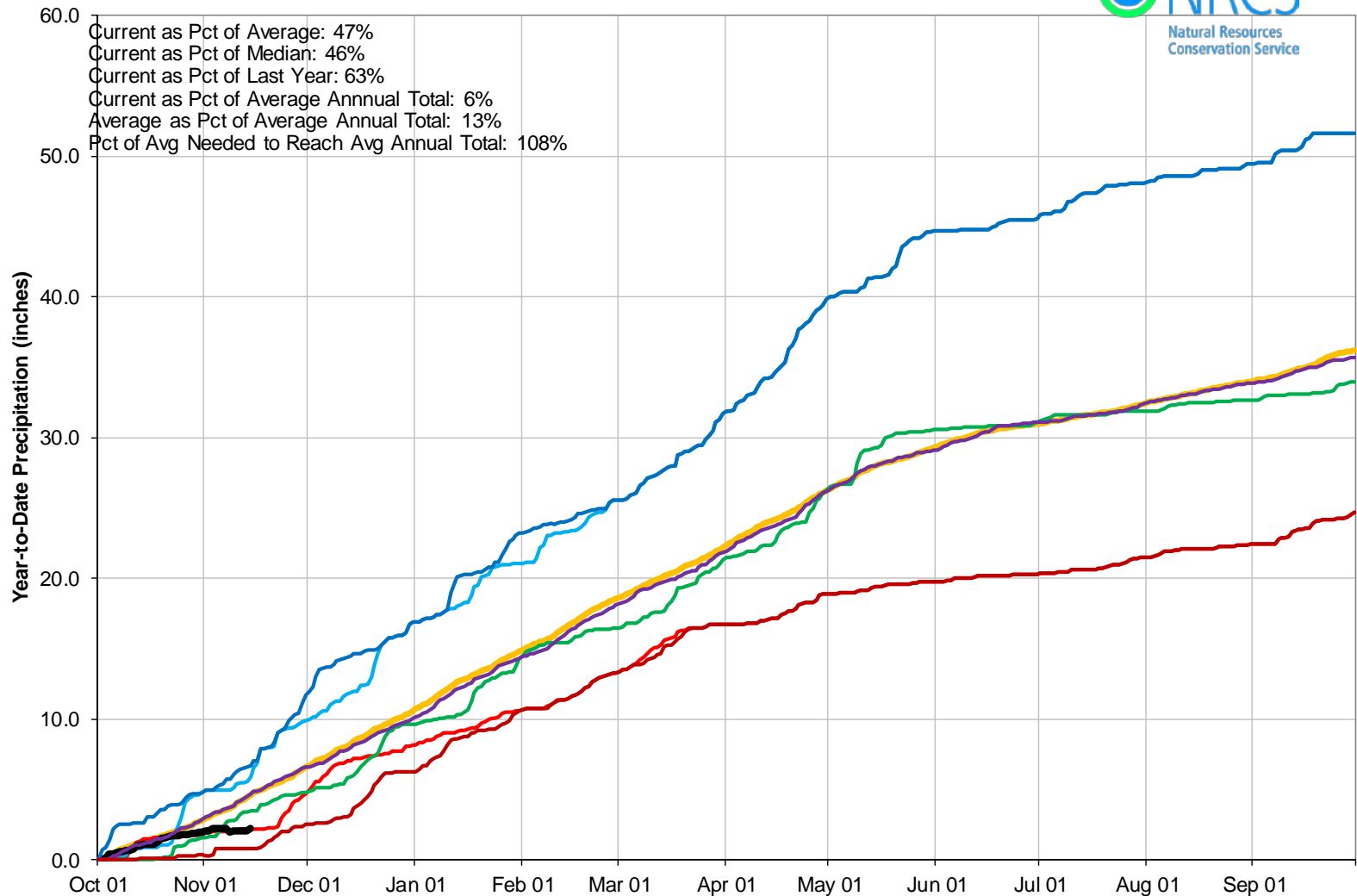
Yampa, White, and North Platte River Basins Month to Date Precipitation Summary Current as of Nov 14, 2016



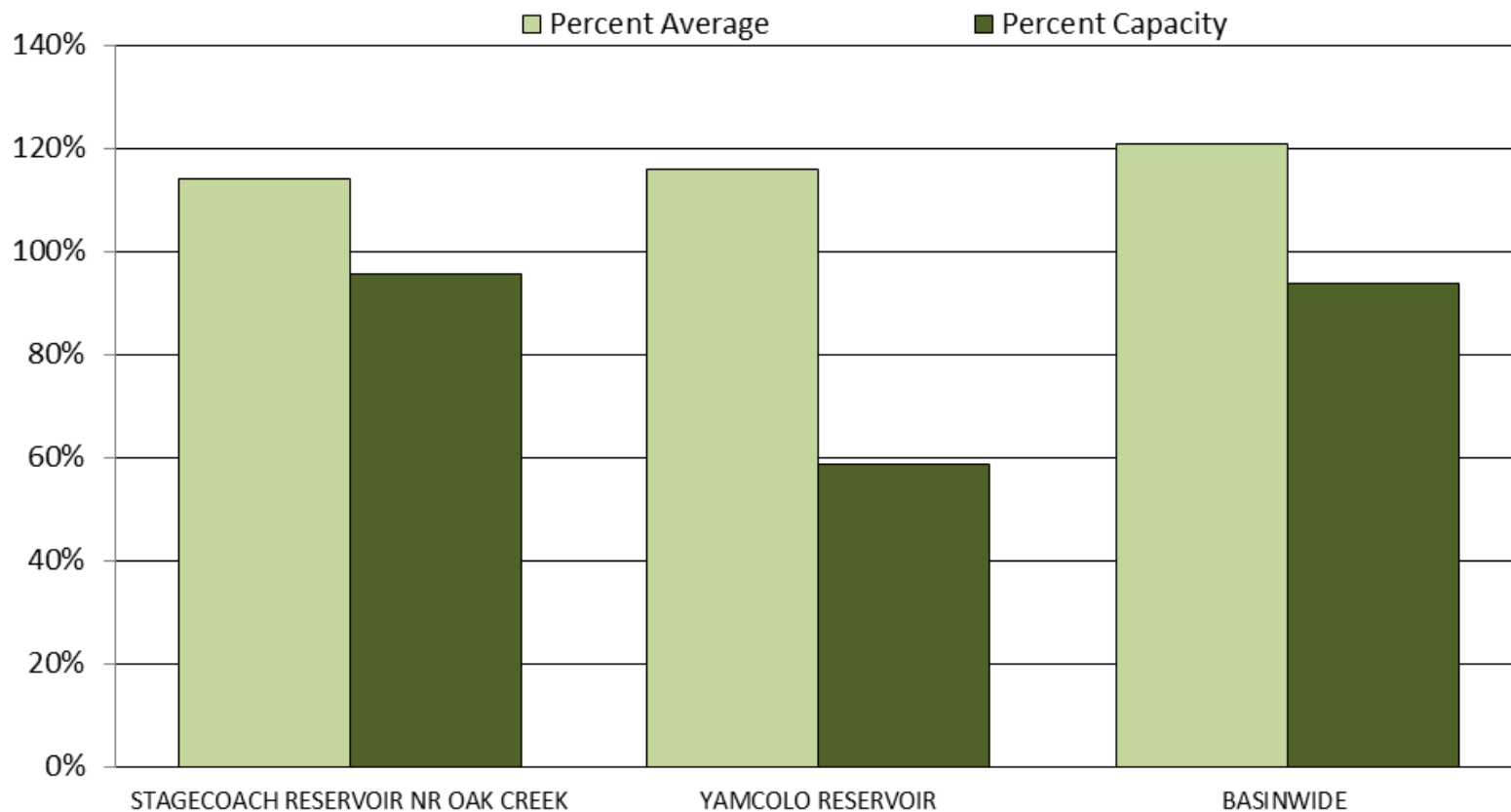


Yampa & White River Basins High/Low Year-to-Date Precipitation Summary

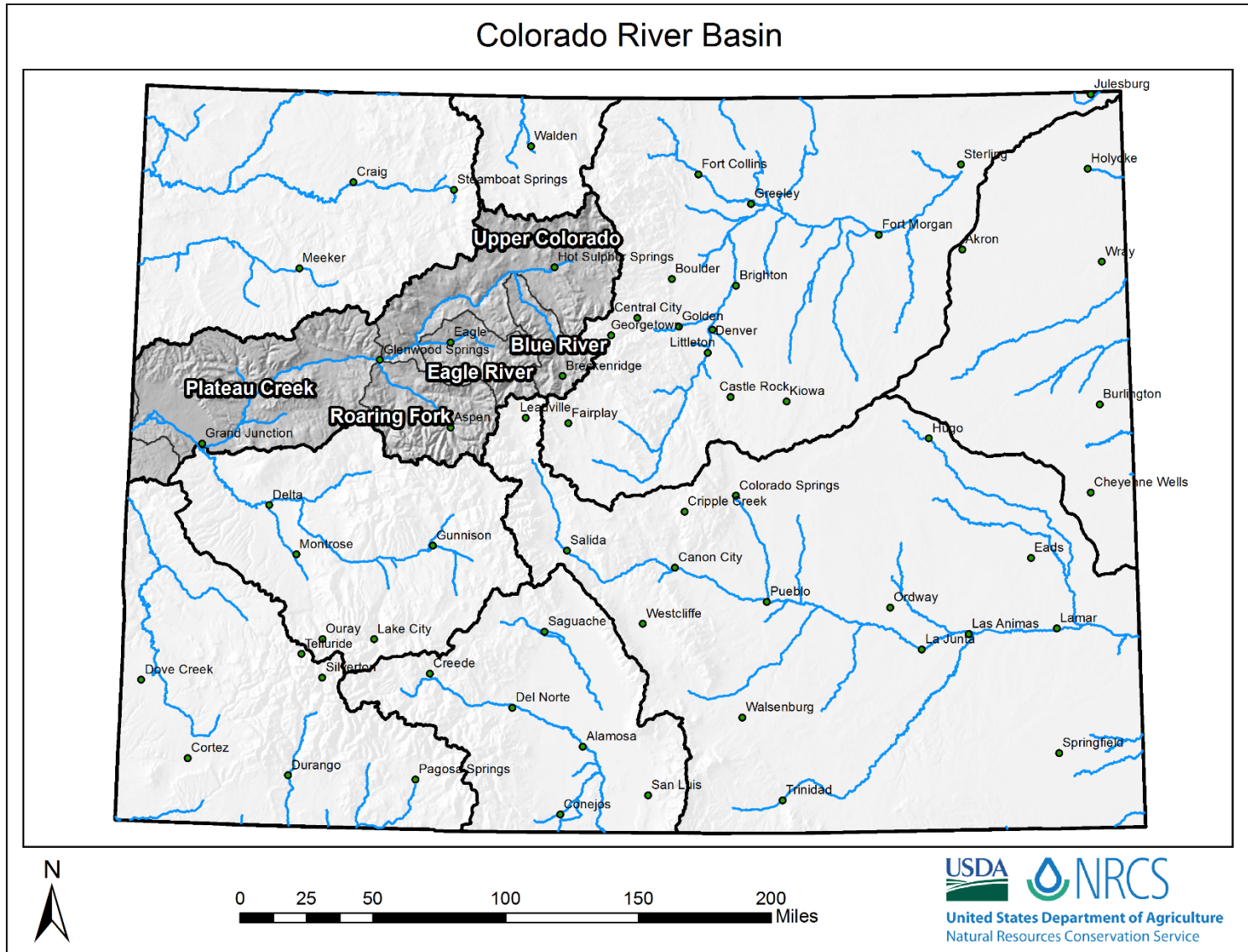
Based on Provisional SNOTEL data as of Nov 14, 2016



Reservoir Storage

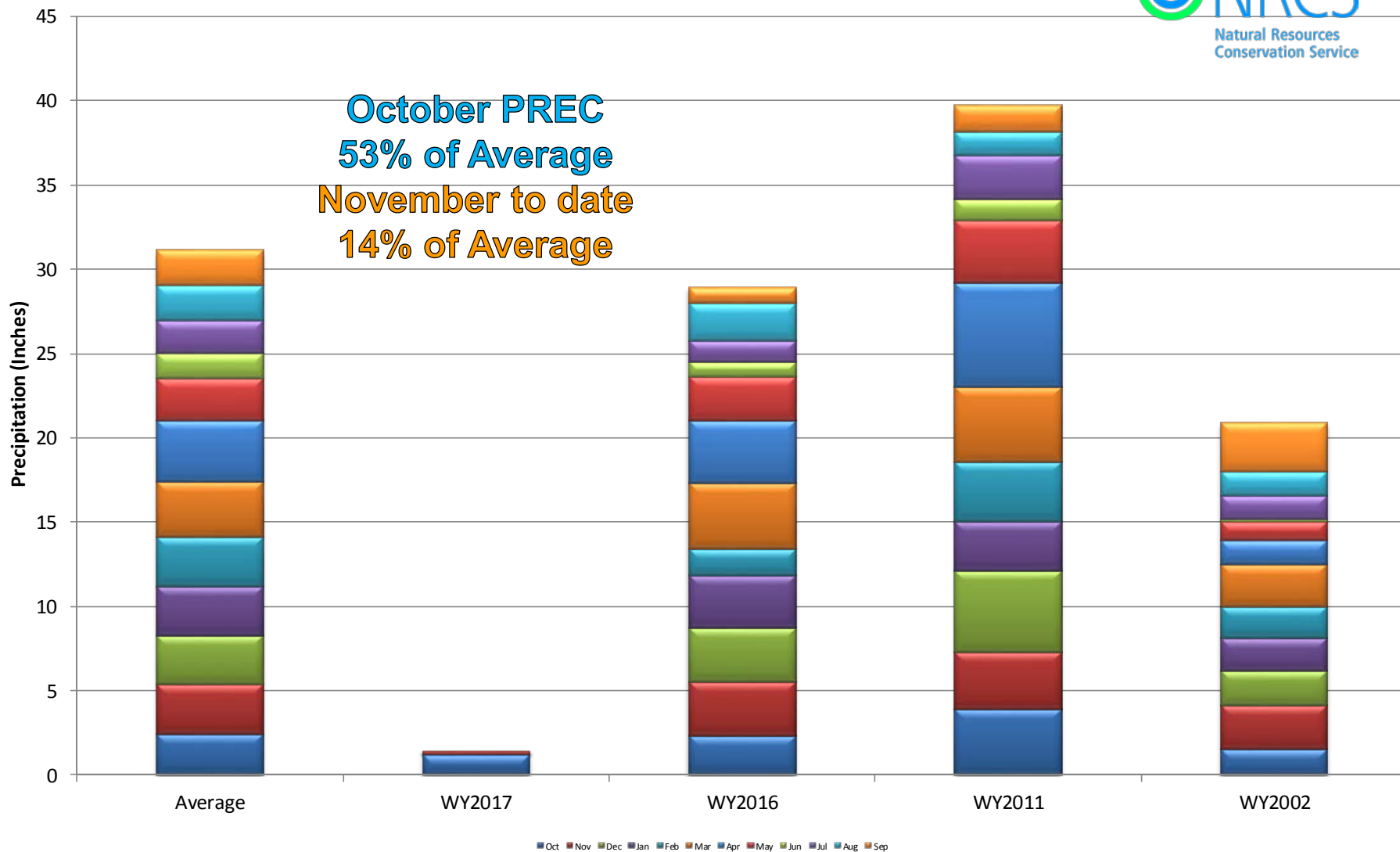


Major Basin Summary



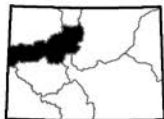
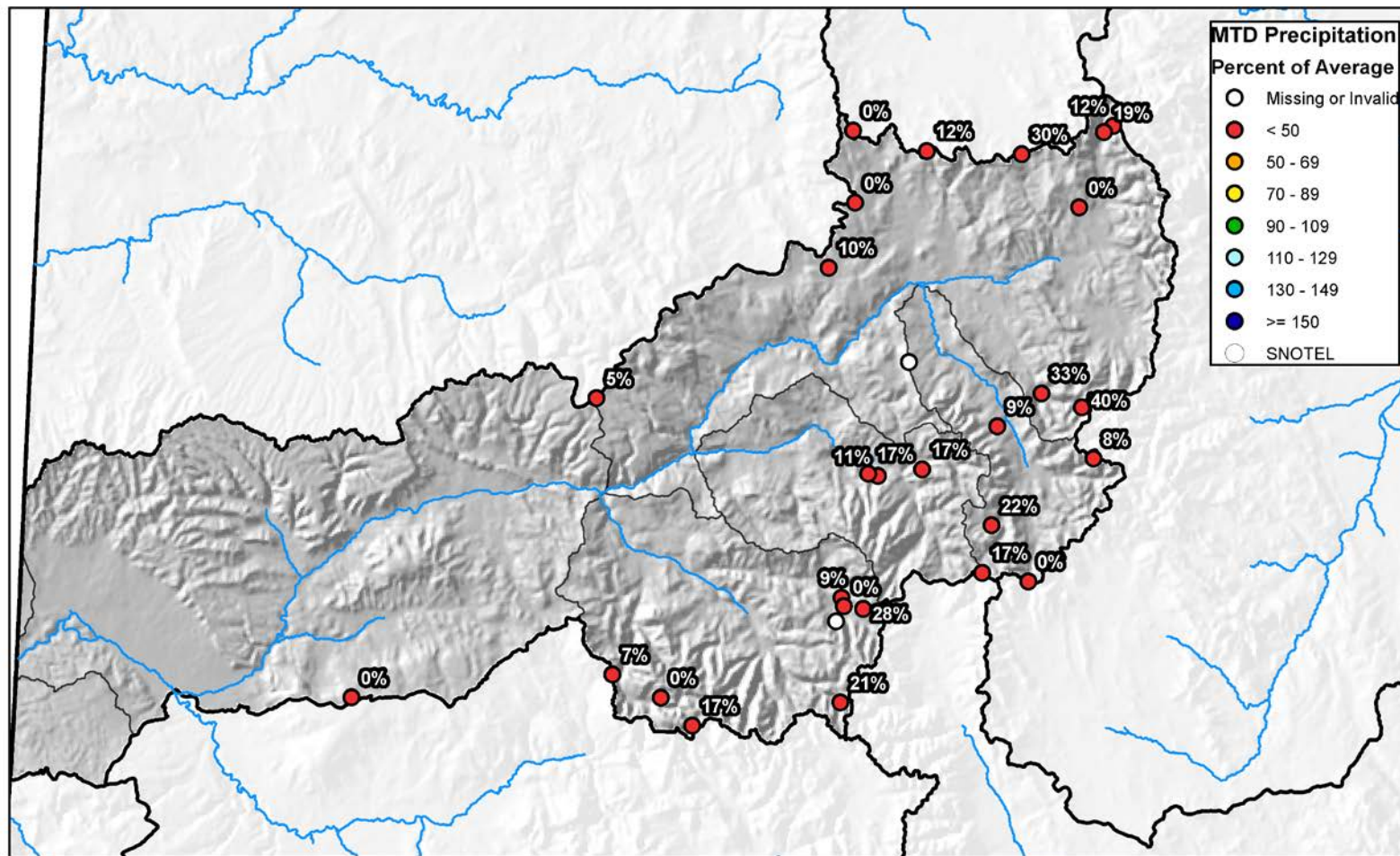
Upper Colorado River Basin High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



Upper Colorado River Basin Month to Date Precipitation Summary

Current as of Nov 14, 2016



0 10 20 40 60 80 Miles



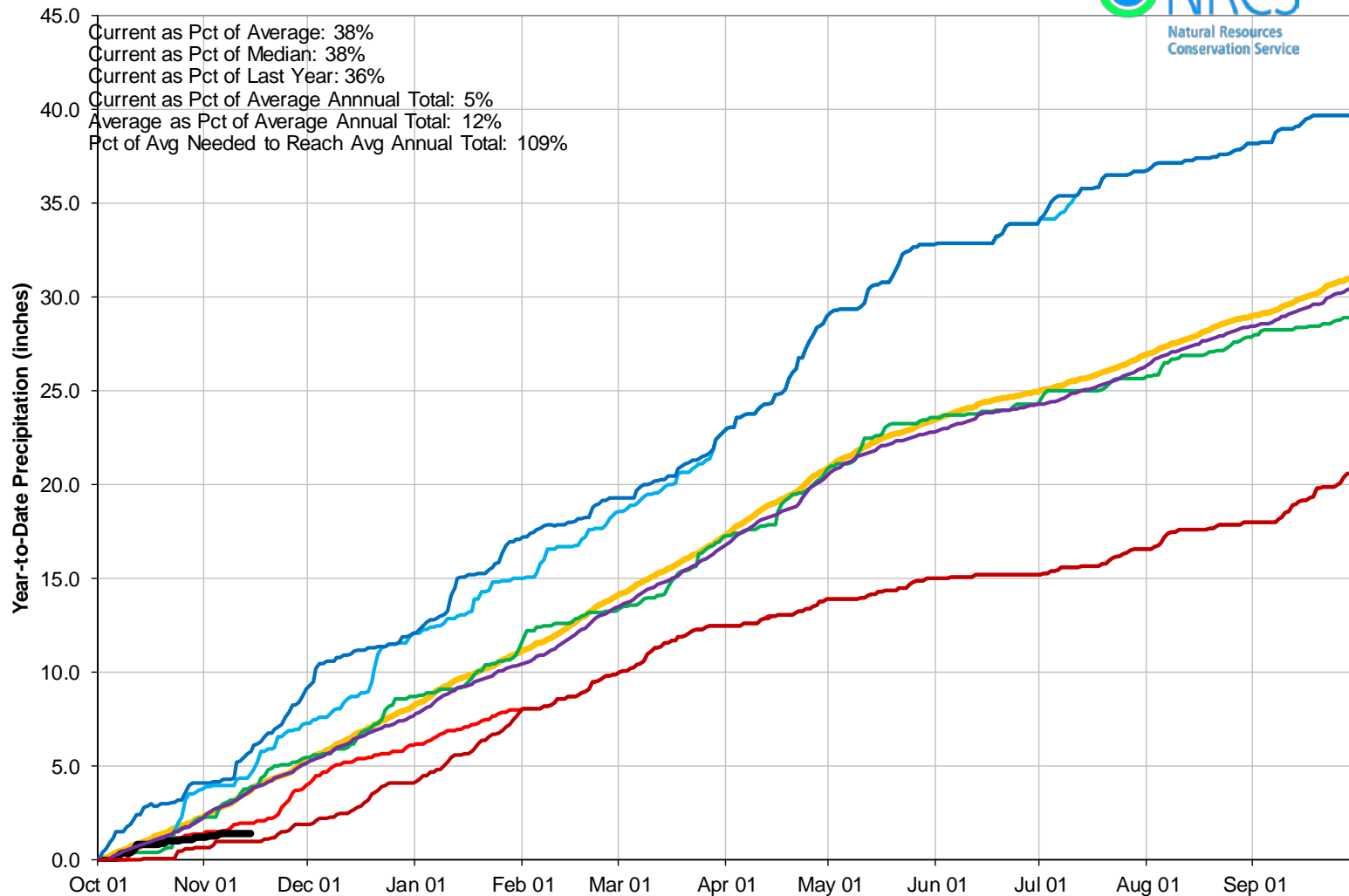
United States Department of Agriculture

Natural Resources Conservation Service

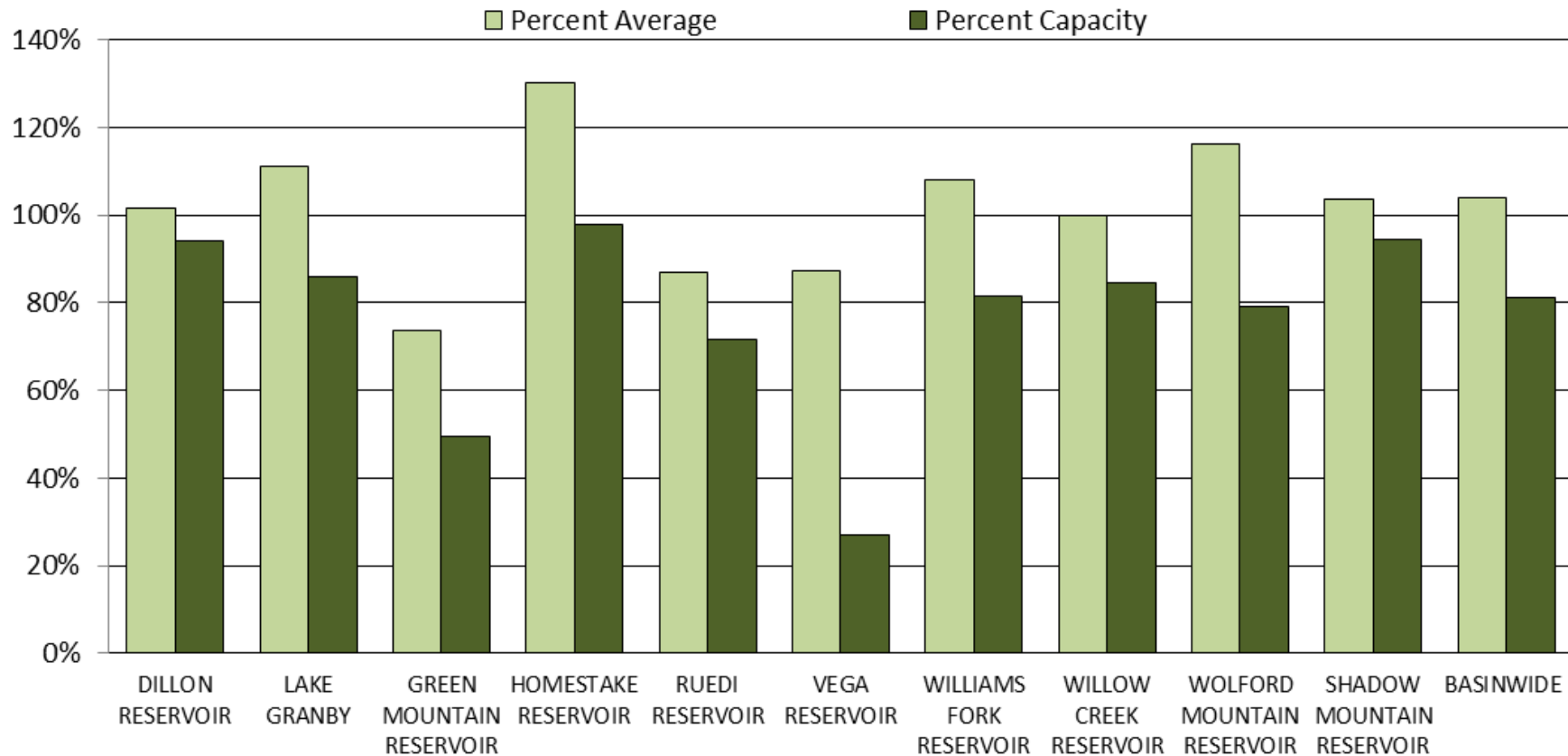


Upper Colorado River Basin High/Low Year-to-Date Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016

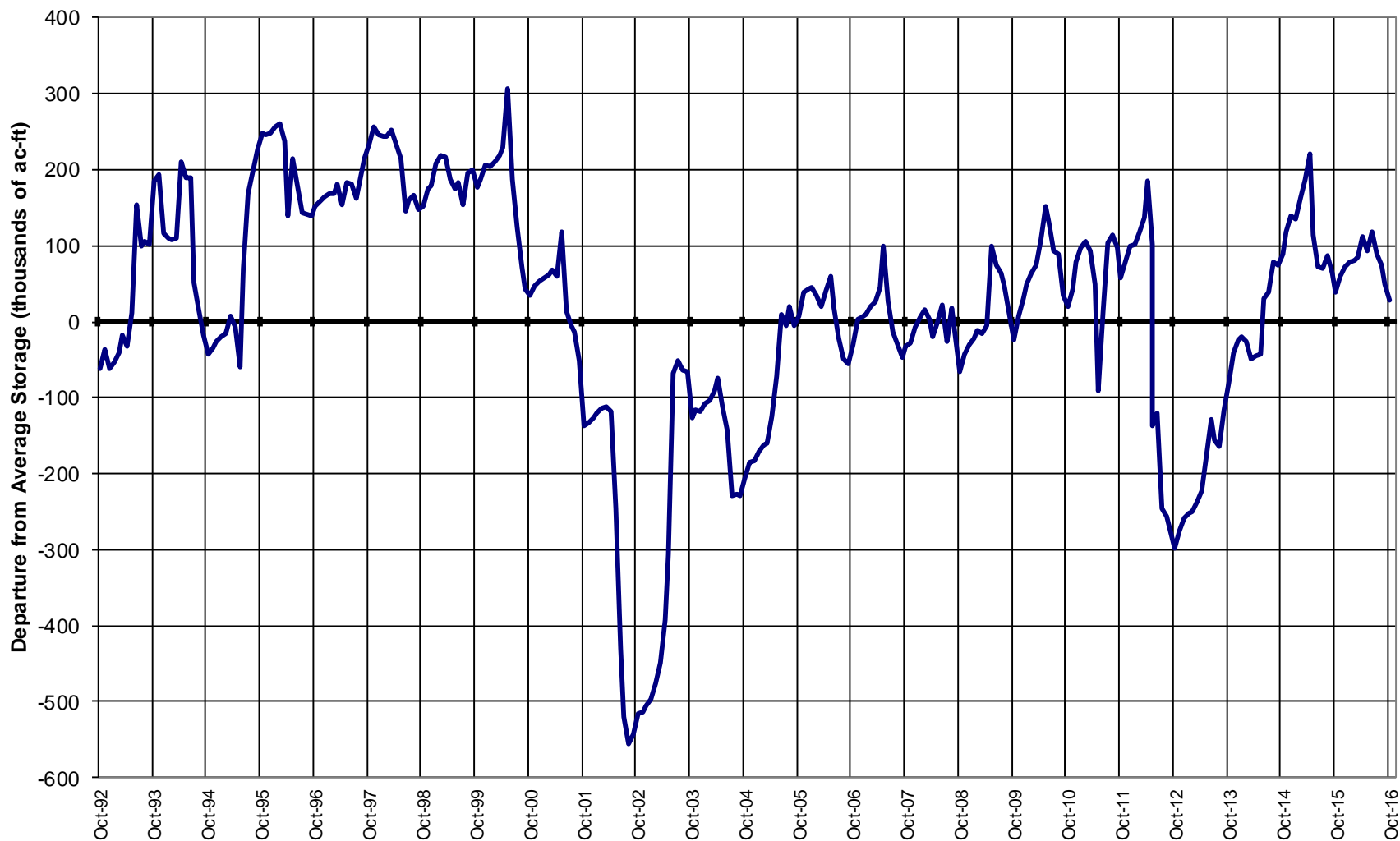


Reservoir Storage



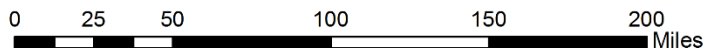
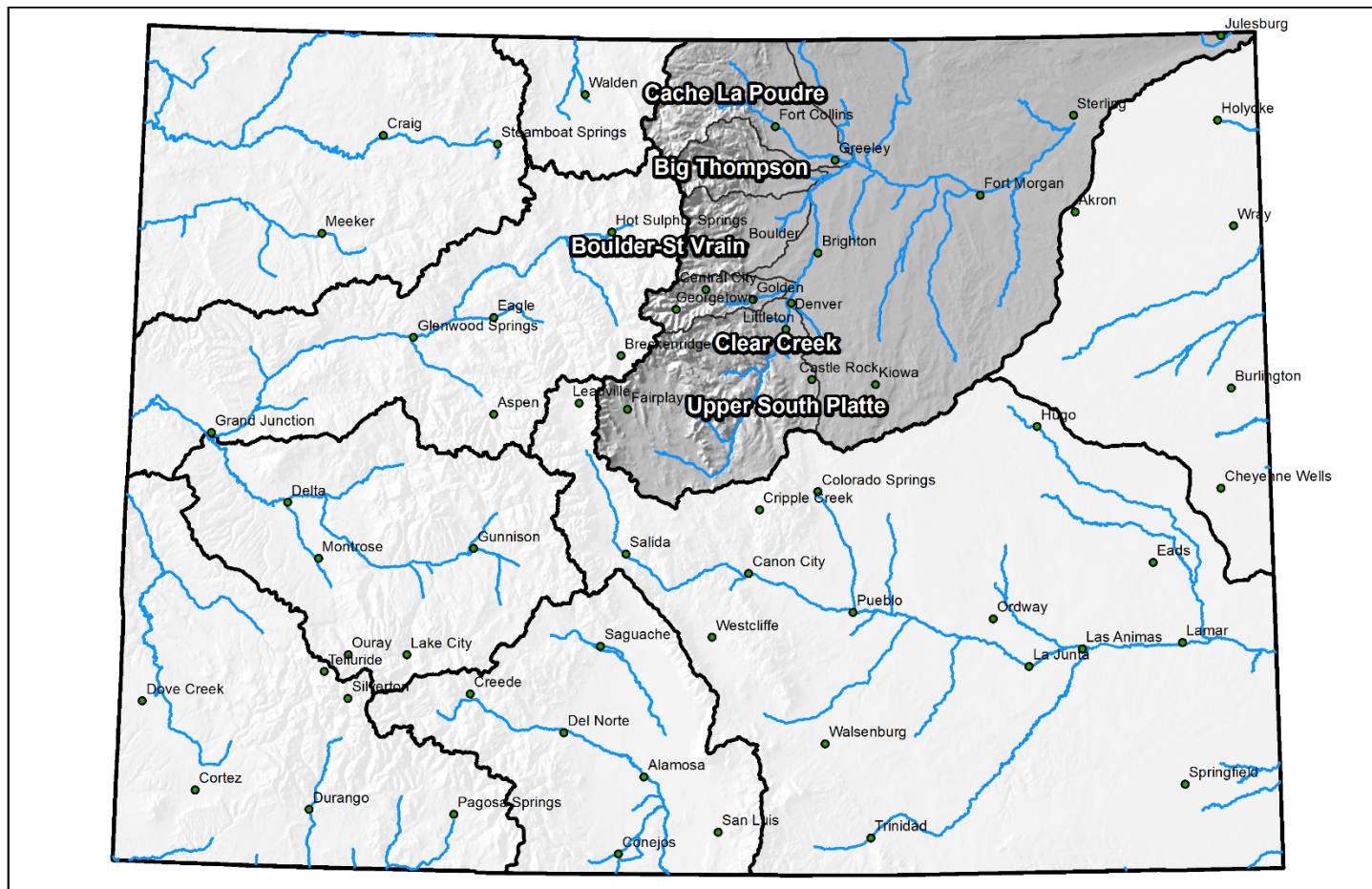


COLORADO RIVER BASIN Reservoir Storage Departure from Average



Major Basin Summary

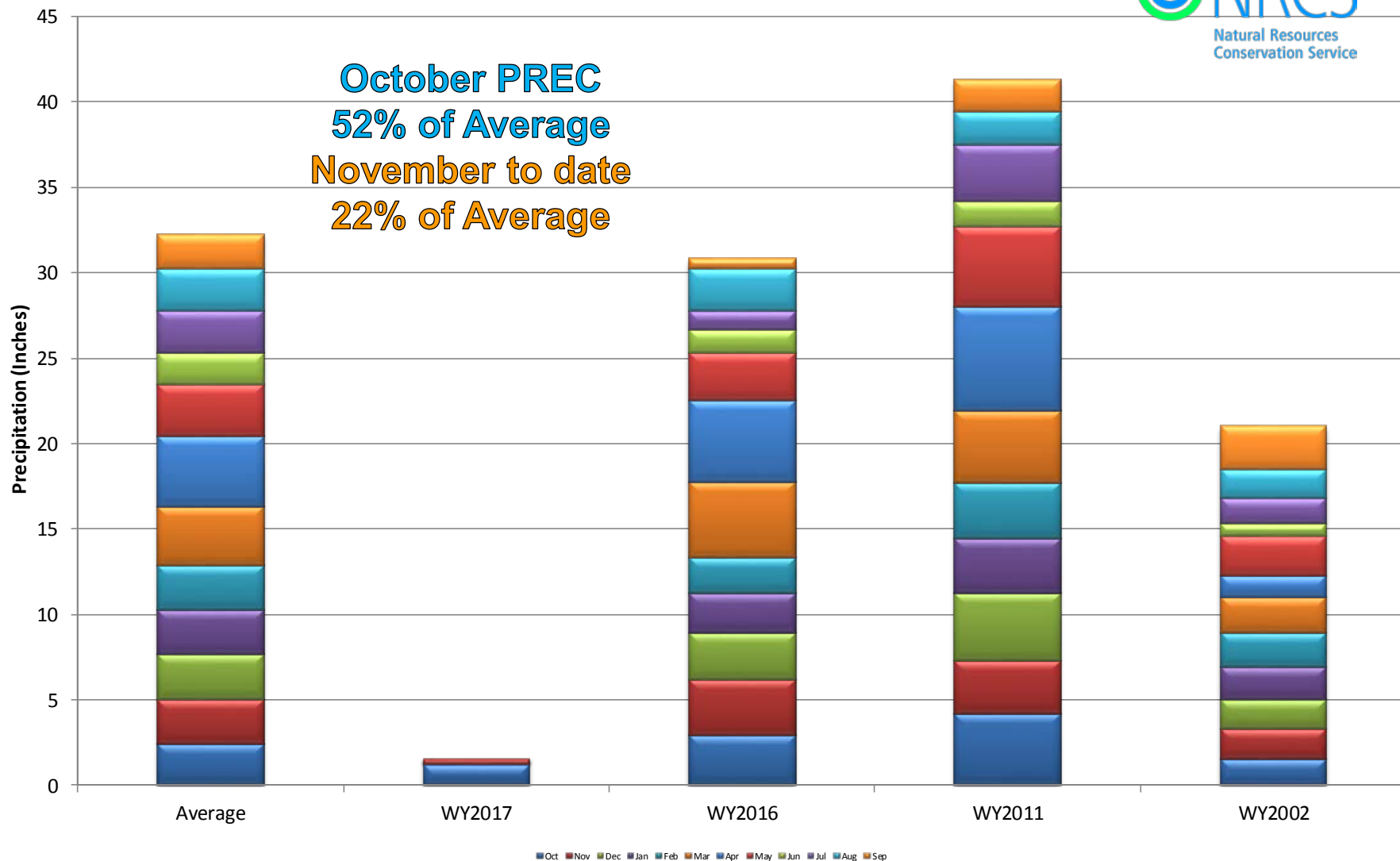
South Platte River Basin





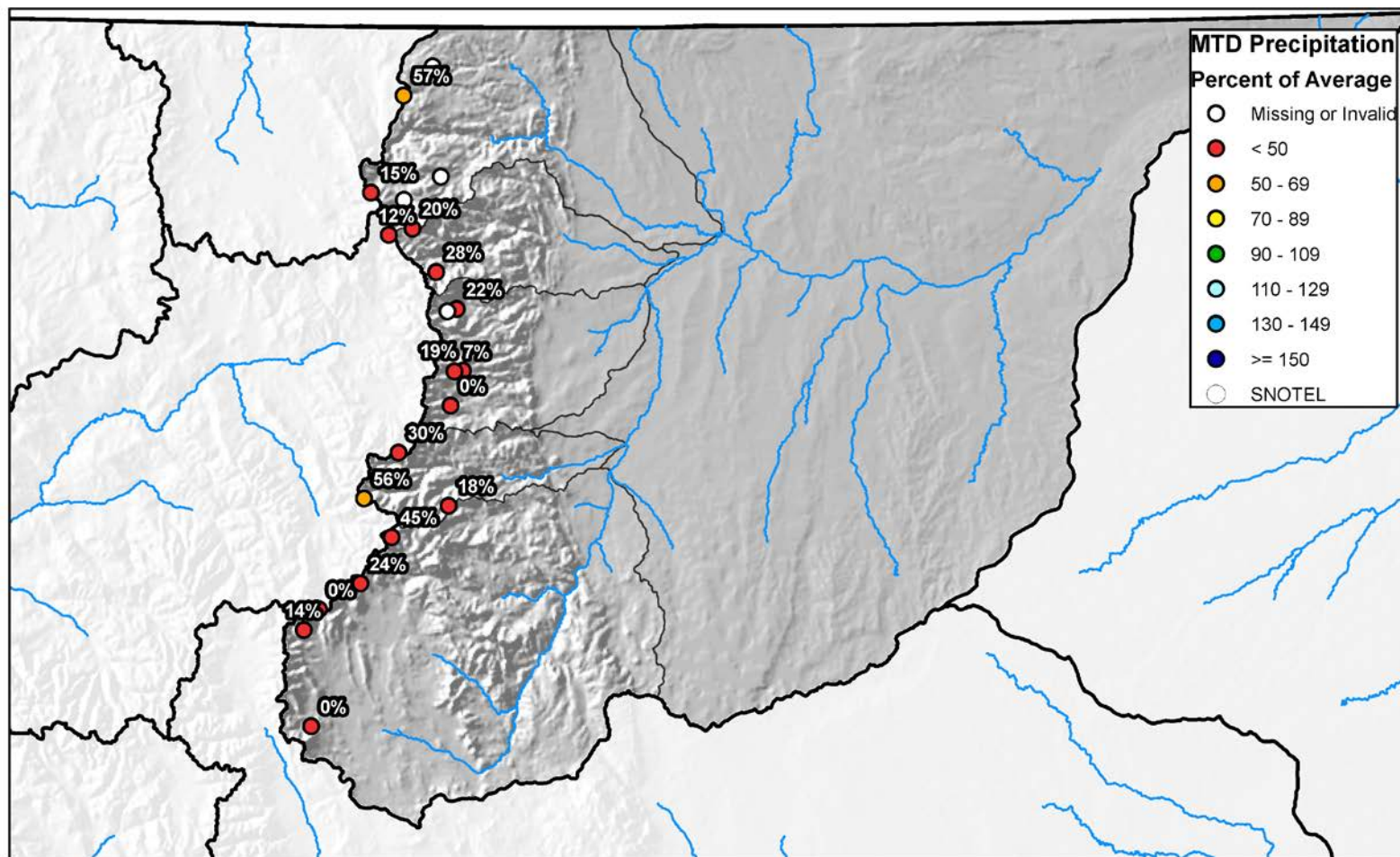
South Platte River Basin High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



South Platte River Basin Month to Date Precipitation Summary

Current as of Nov 14, 2016

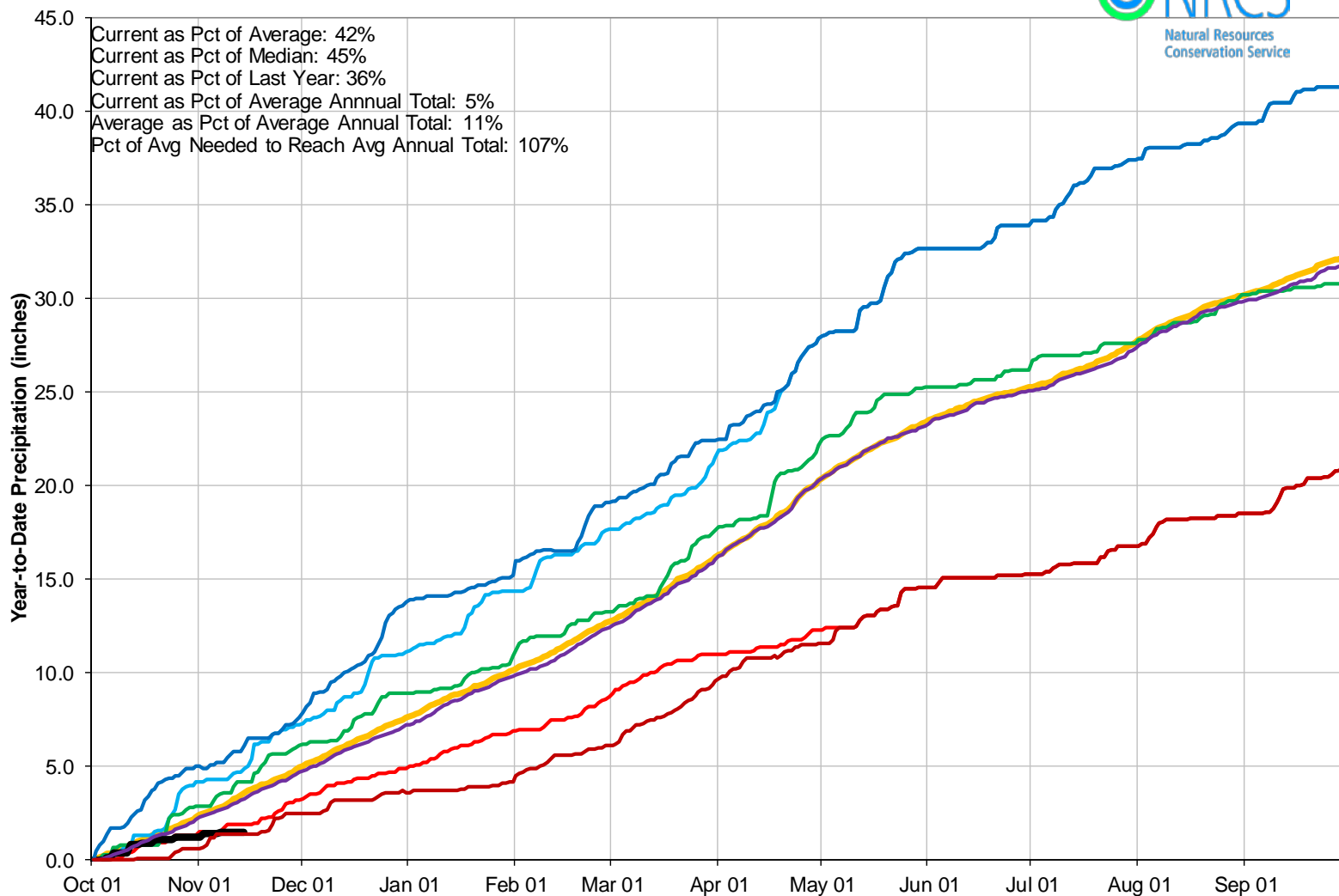


0 10 20 40 60 80 Miles



South Platte River Basin High/Low Year-to-Date Precipitation Summary

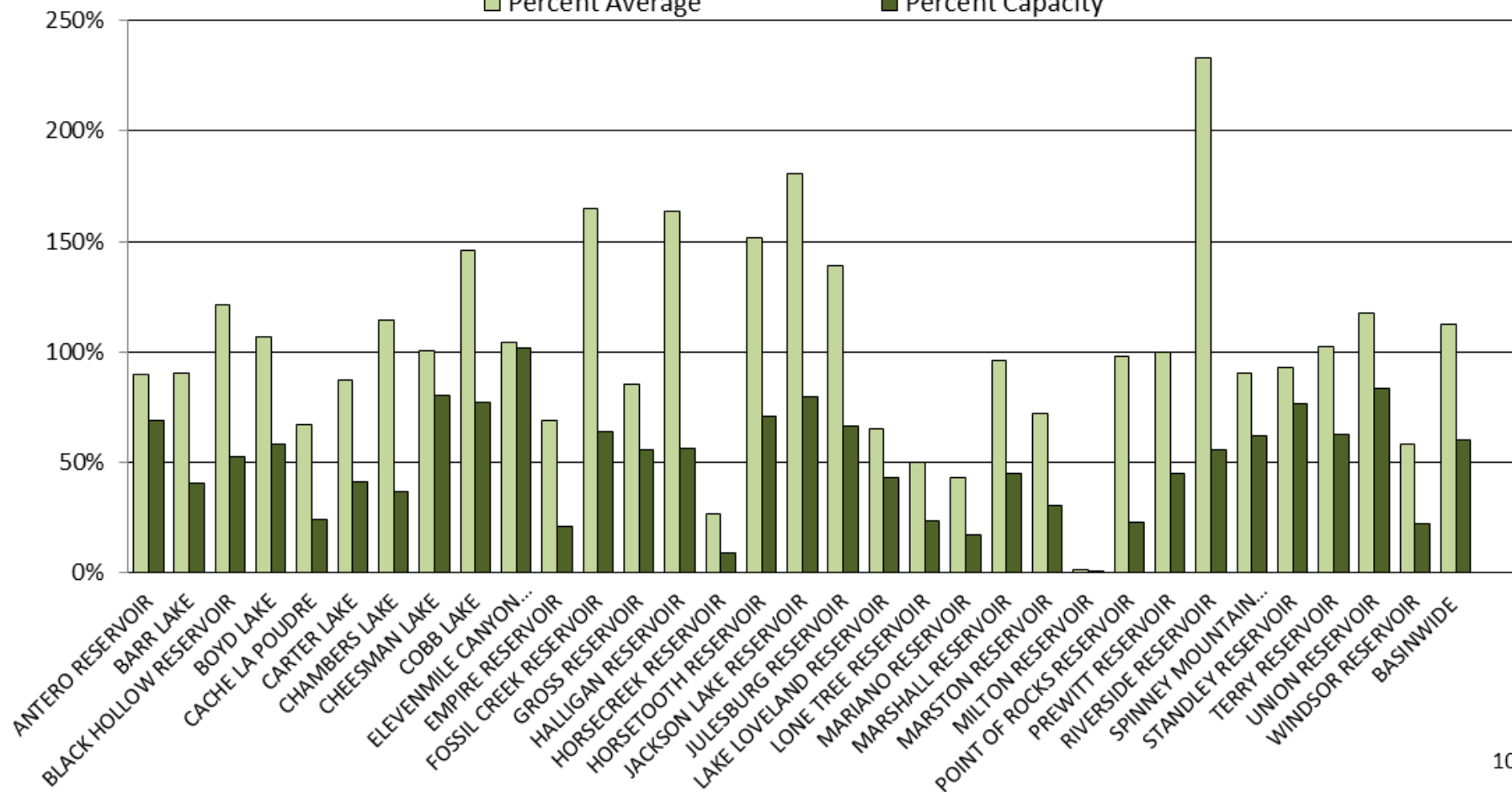
Based on Provisional SNOTEL data as of Nov 14, 2016



Reservoir Storage

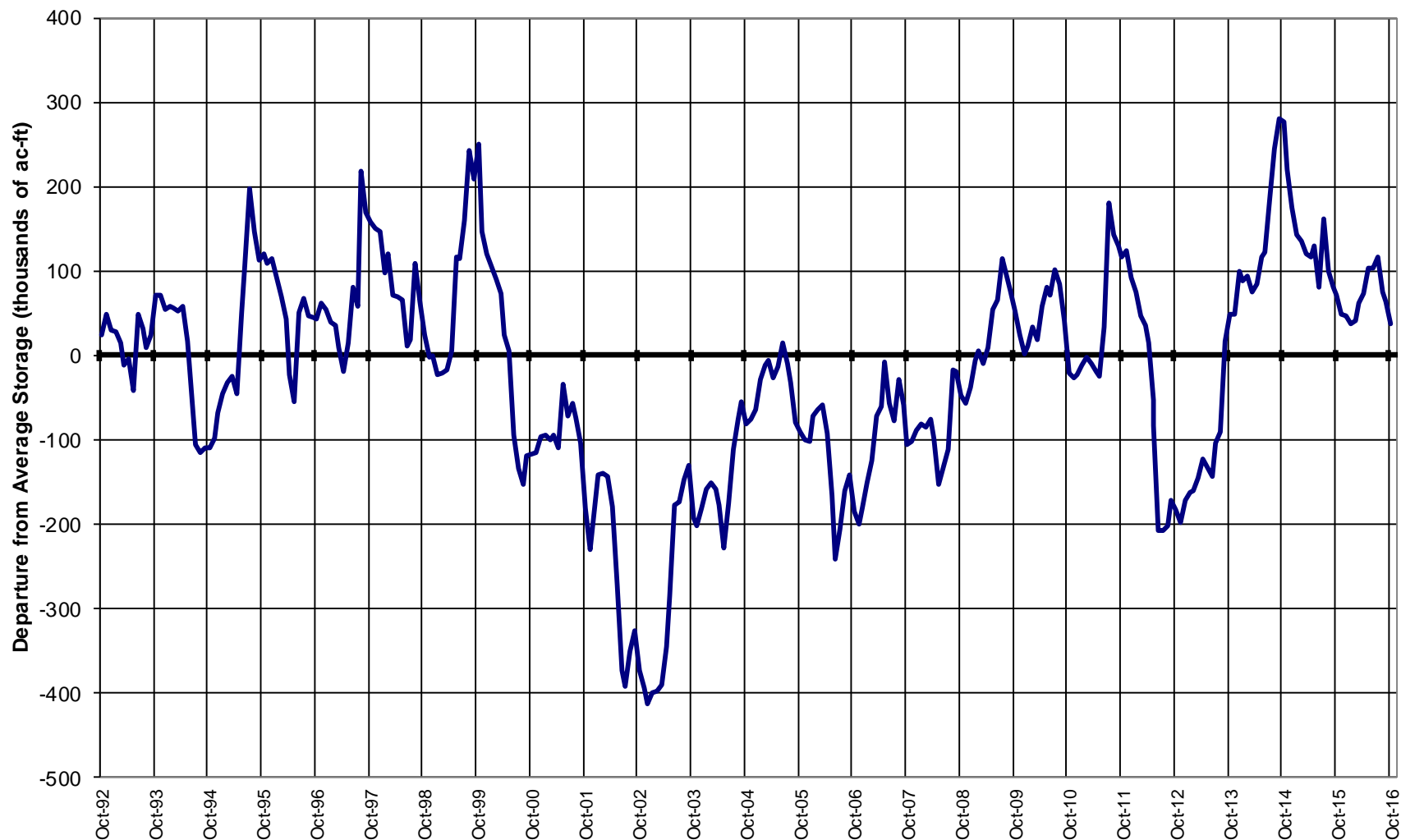
■ Percent Average

■ Percent Capacity



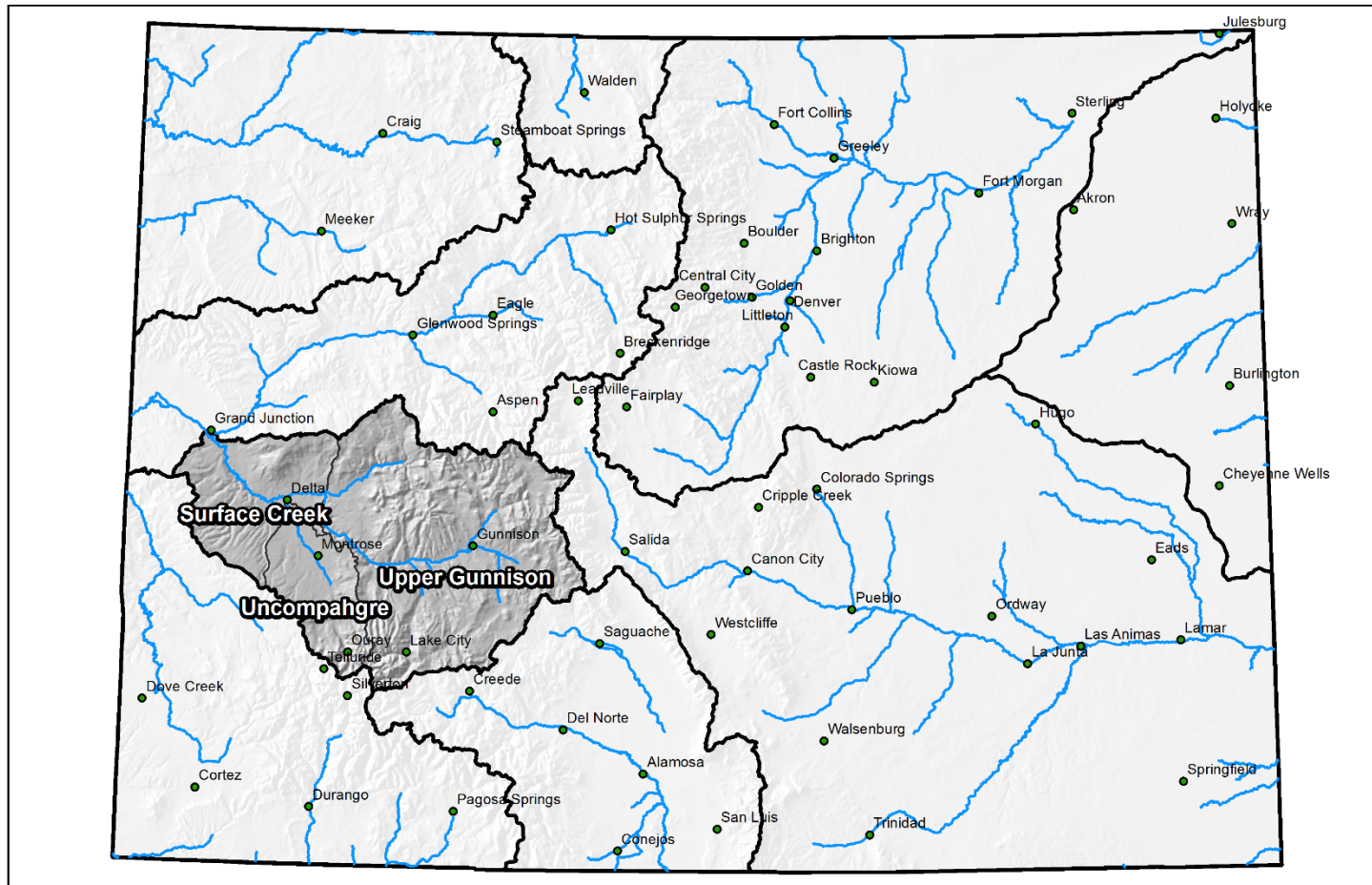


SOUTH PLATTE RIVER BASIN Reservoir Storage Departure from Average



Major Basin Summary

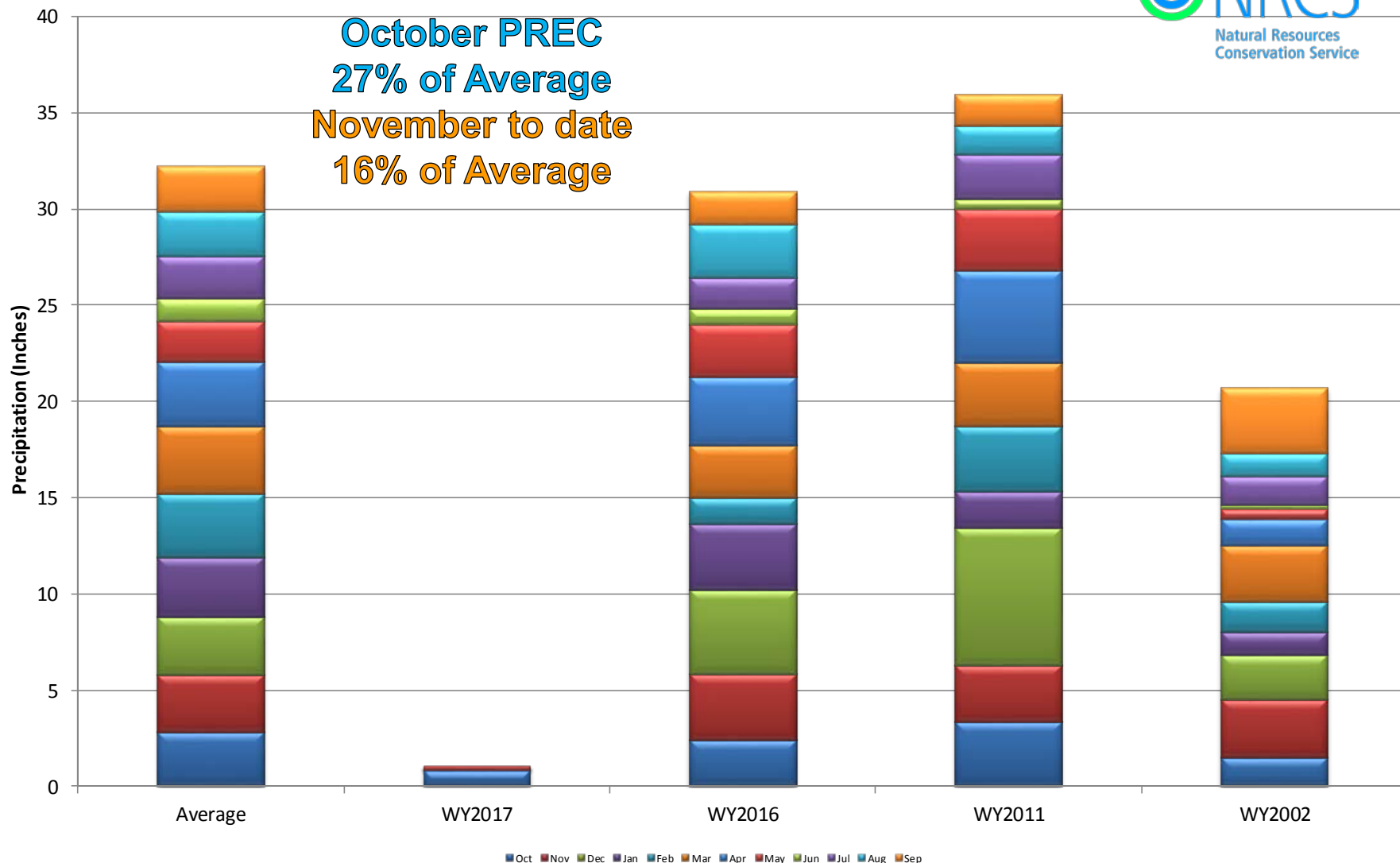
Gunnison River Basin



0 25 50 100 150 200 Miles

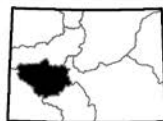
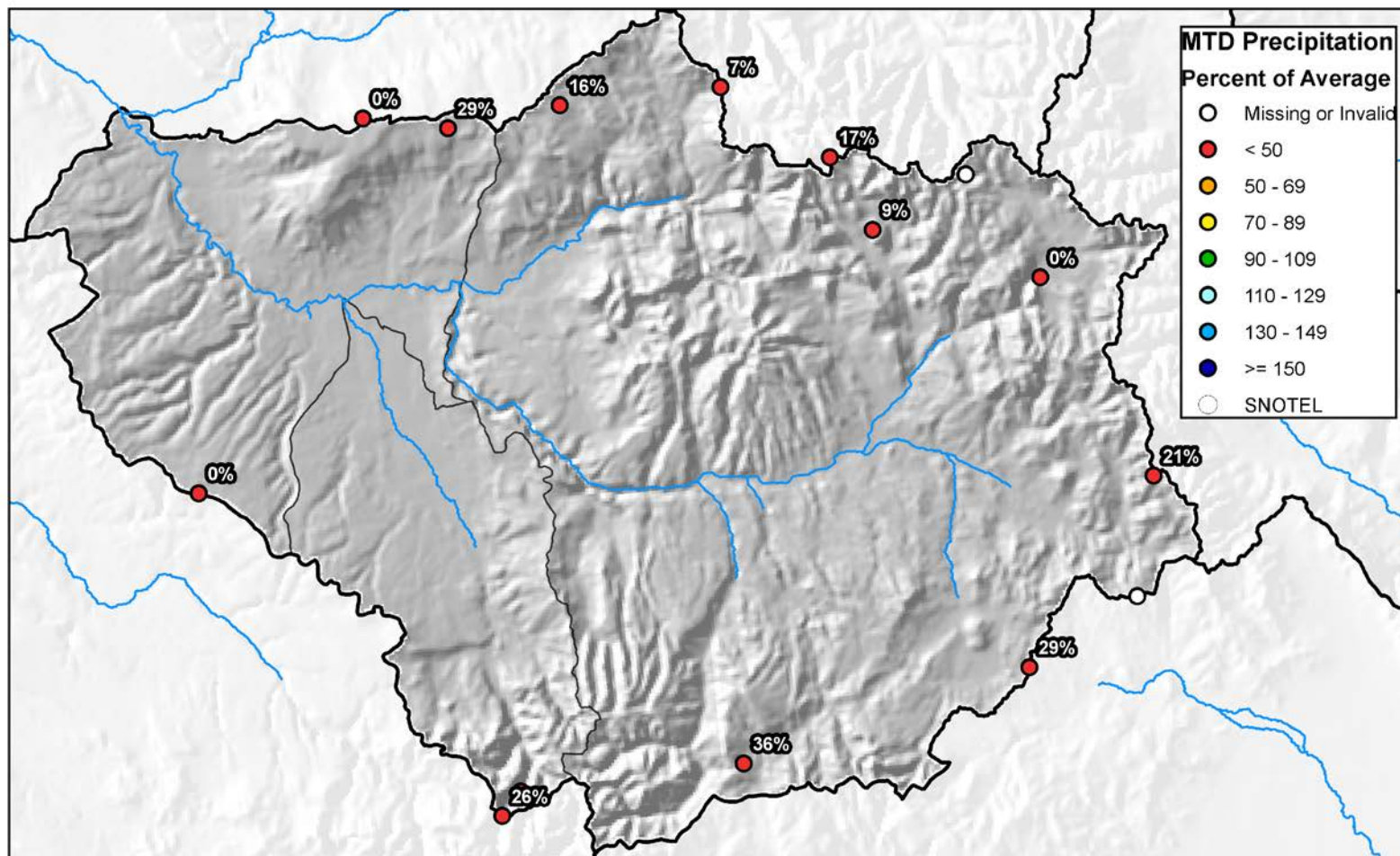
Gunnison River Basin High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



Gunnison River Basin Month to Date Precipitation Summary

Current as of Nov 14, 2016

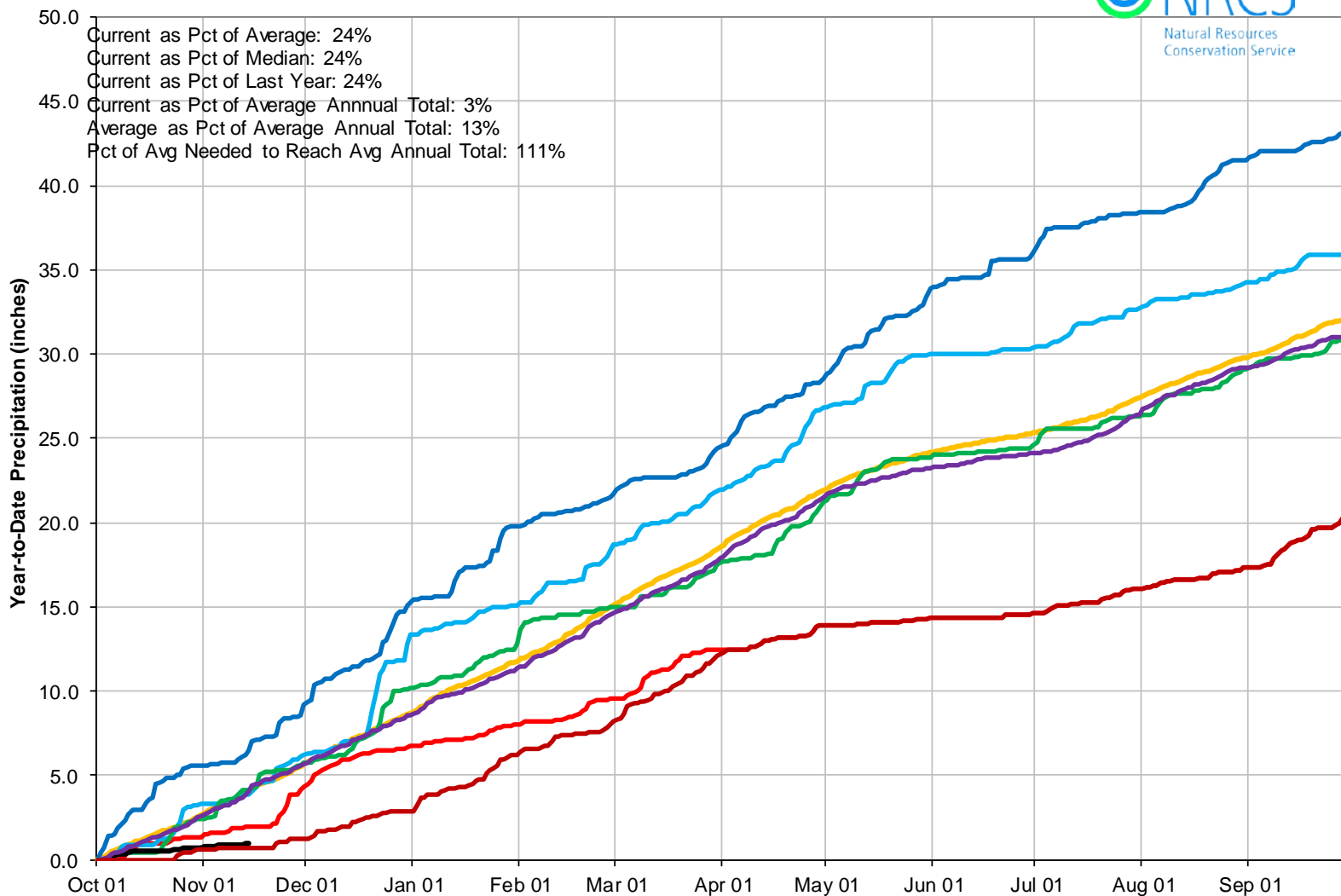


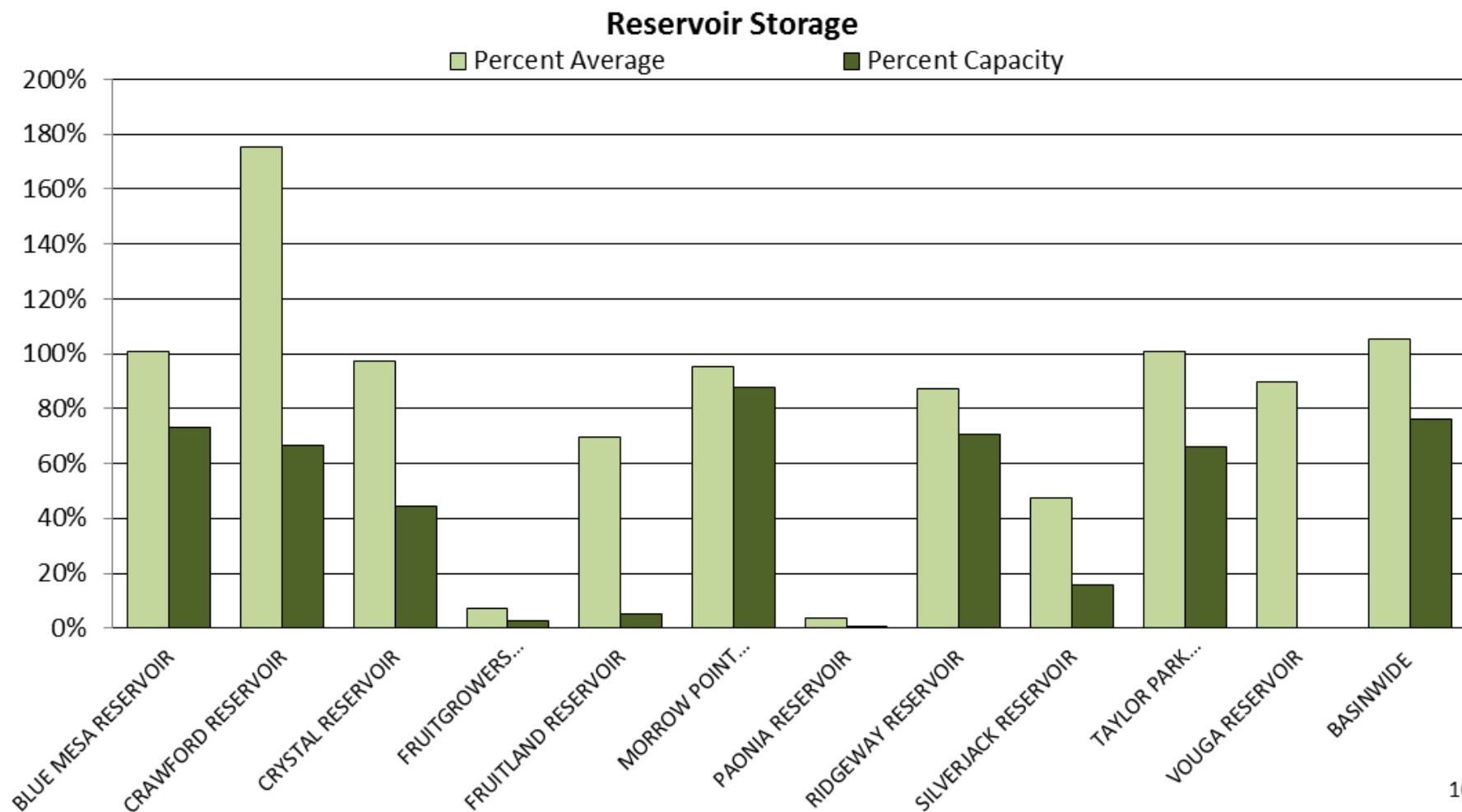
0 5 10 20 30 40 Miles



Gunnison River Basin High/Low Year-to-Date Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



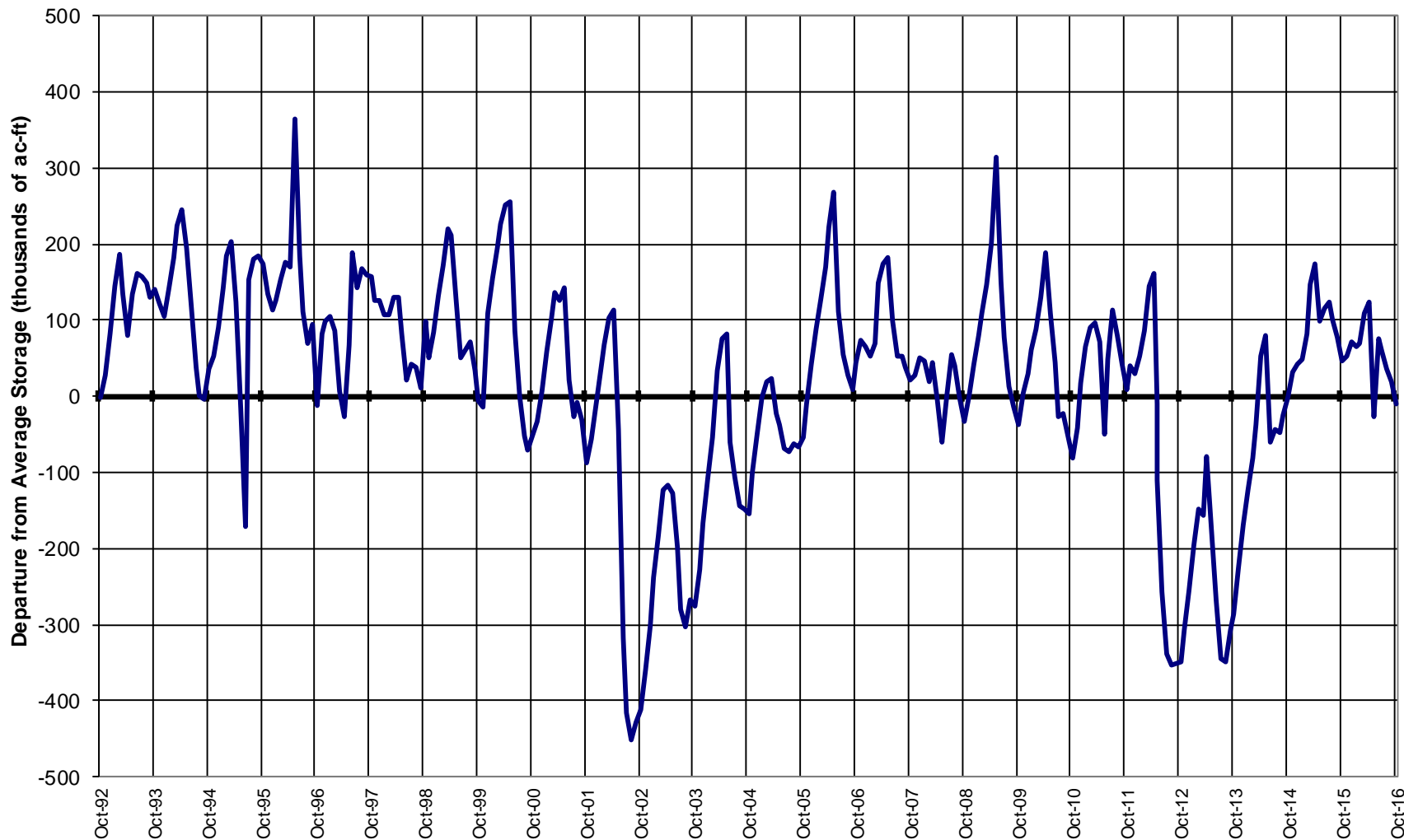




GUNNISON RIVER BASIN

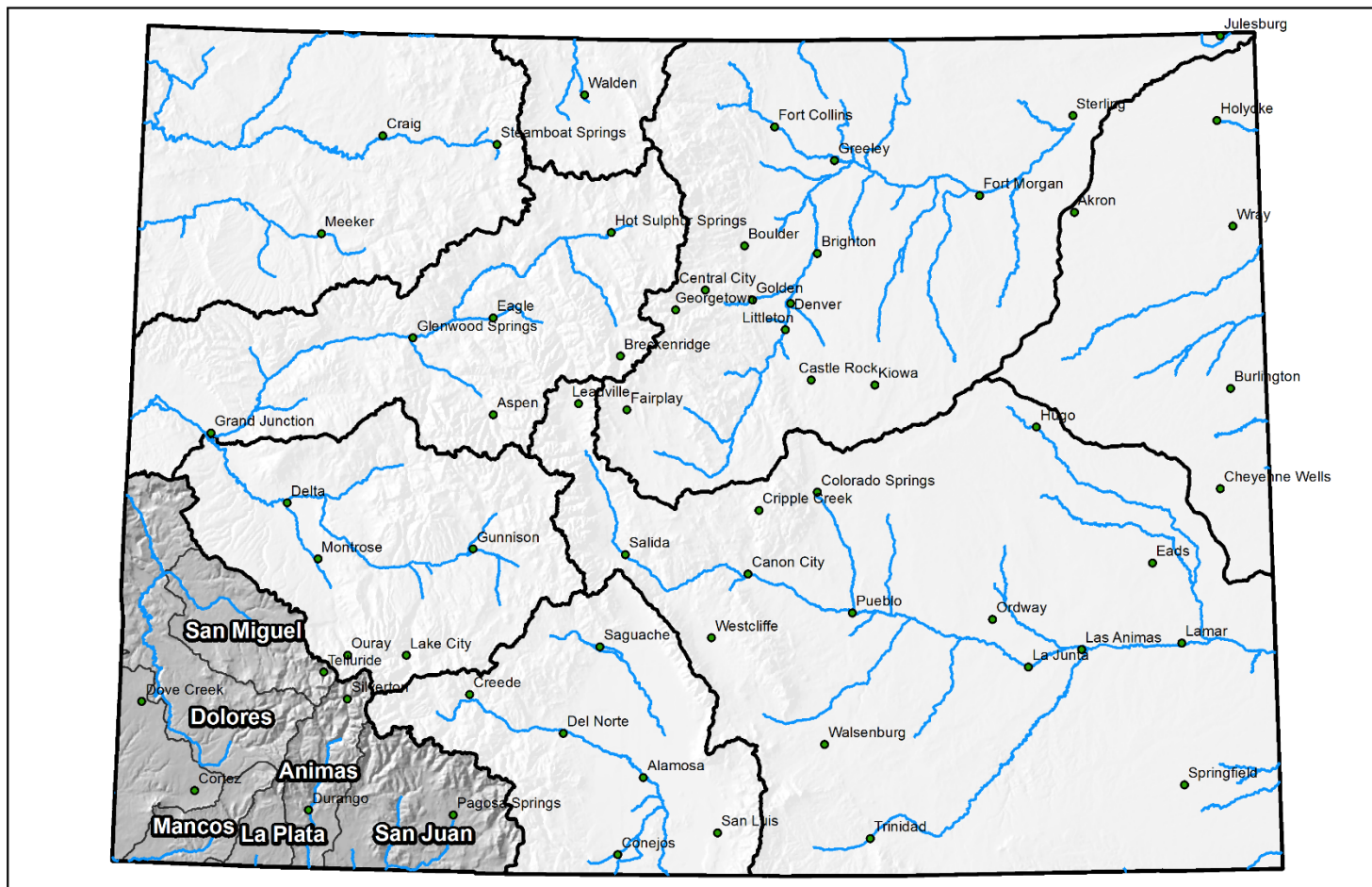
Reservoir Storage

Departure from Average



Major Basin Summary

San Miguel, Dolores, Animas, and San Juan River Basins

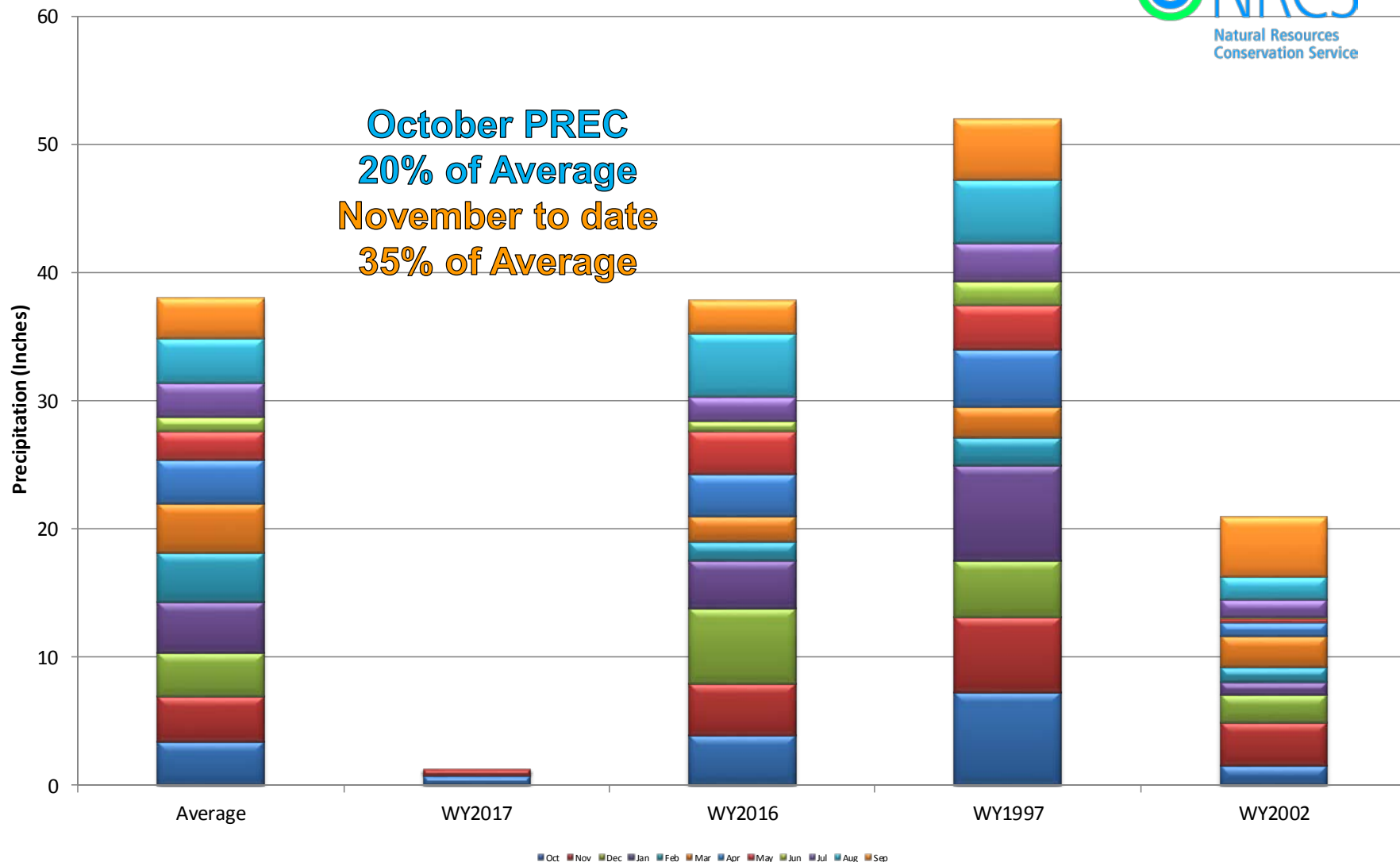


0 25 50 100 150 200 Miles

San Miguel, Dolores, Animas & San Juan River Basins High/Low Monthly Precipitation Summary



October PREC
20% of Average
November to date
35% of Average

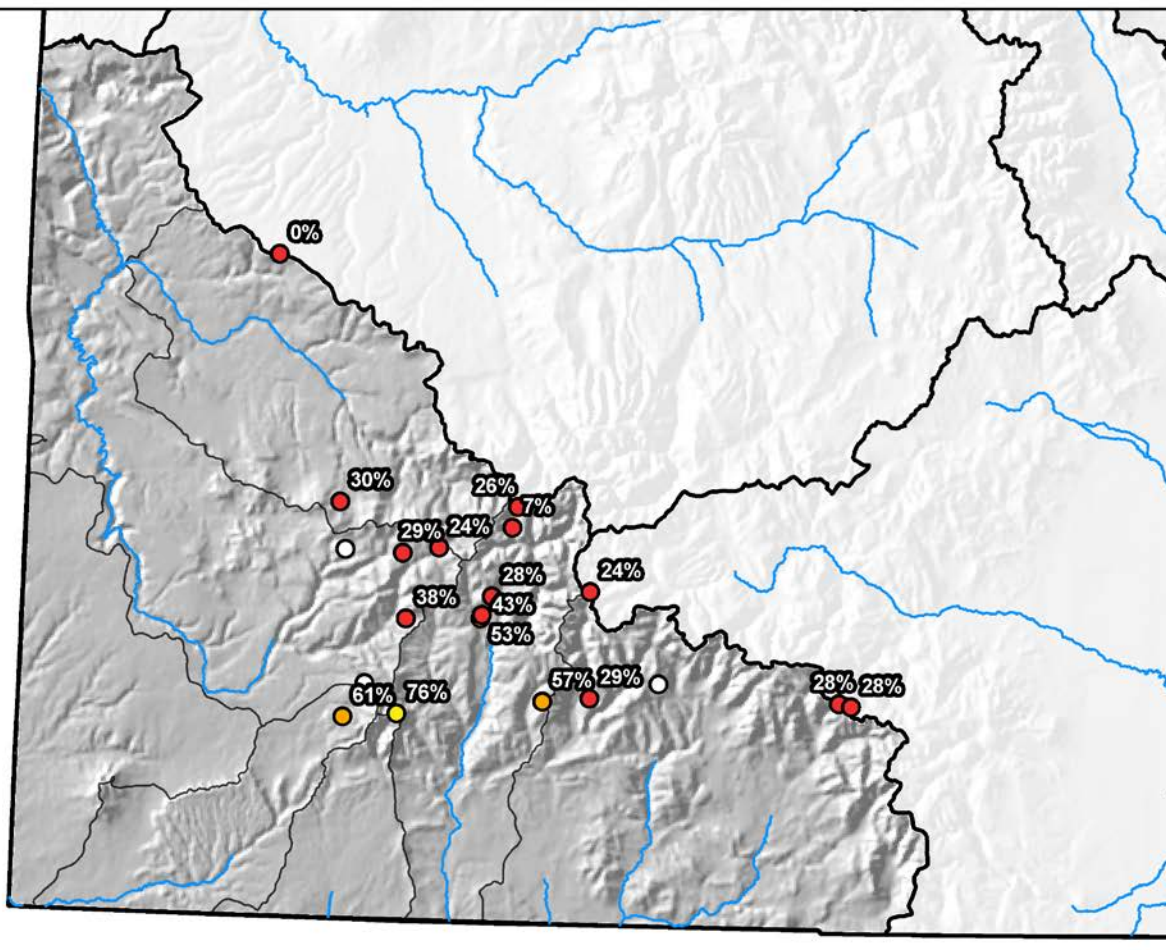


San Miguel, Dolores, Animas, and San Juan River Basins Month to Date Precipitation Summary

Current as of Nov 14, 2016

MTD Precipitation Percent of Average

- Missing or Invalid
- < 50
- 50 - 69
- 70 - 89
- 90 - 109
- 110 - 129
- 130 - 149
- ≥ 150
- SNOTEL

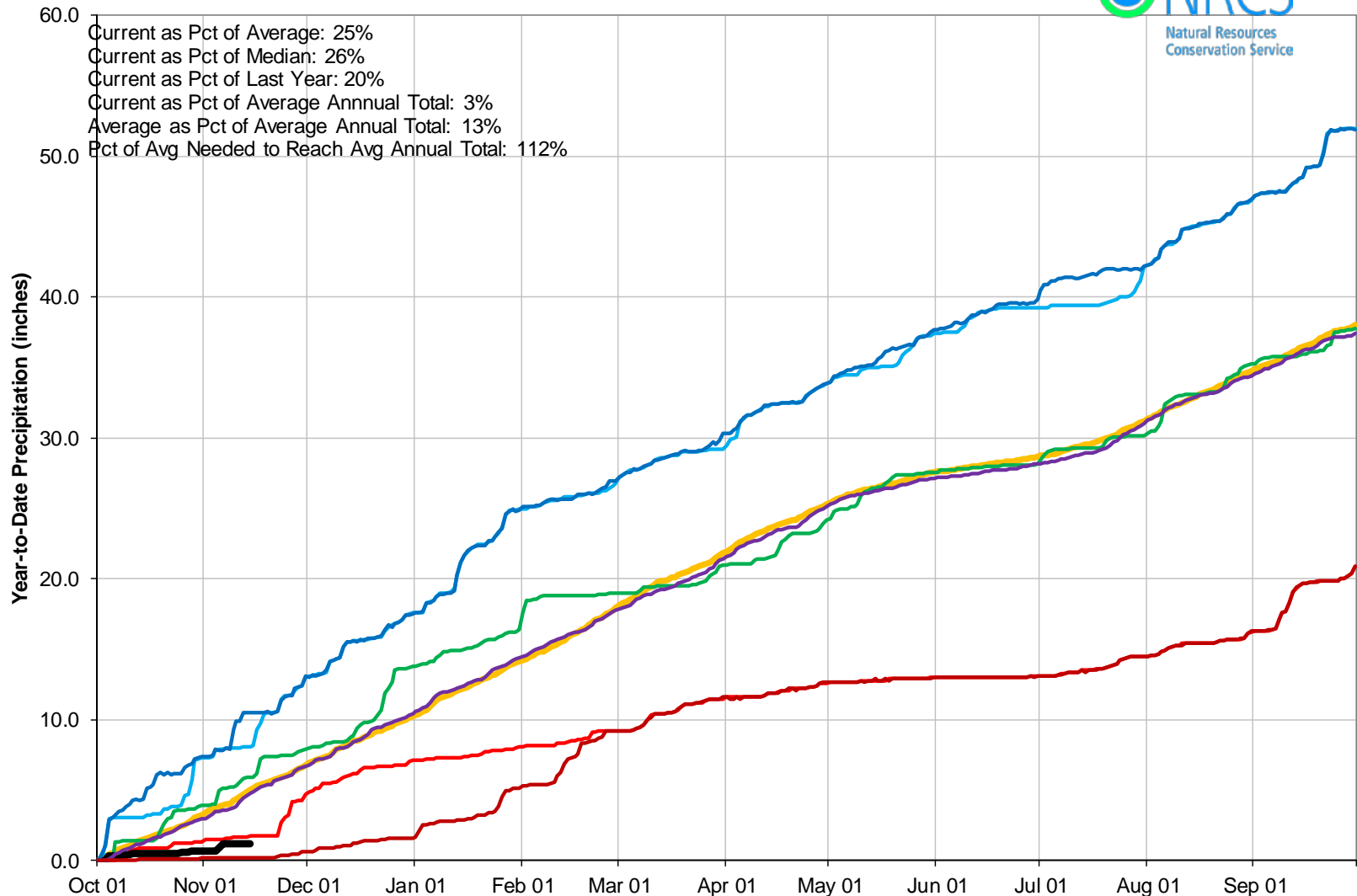


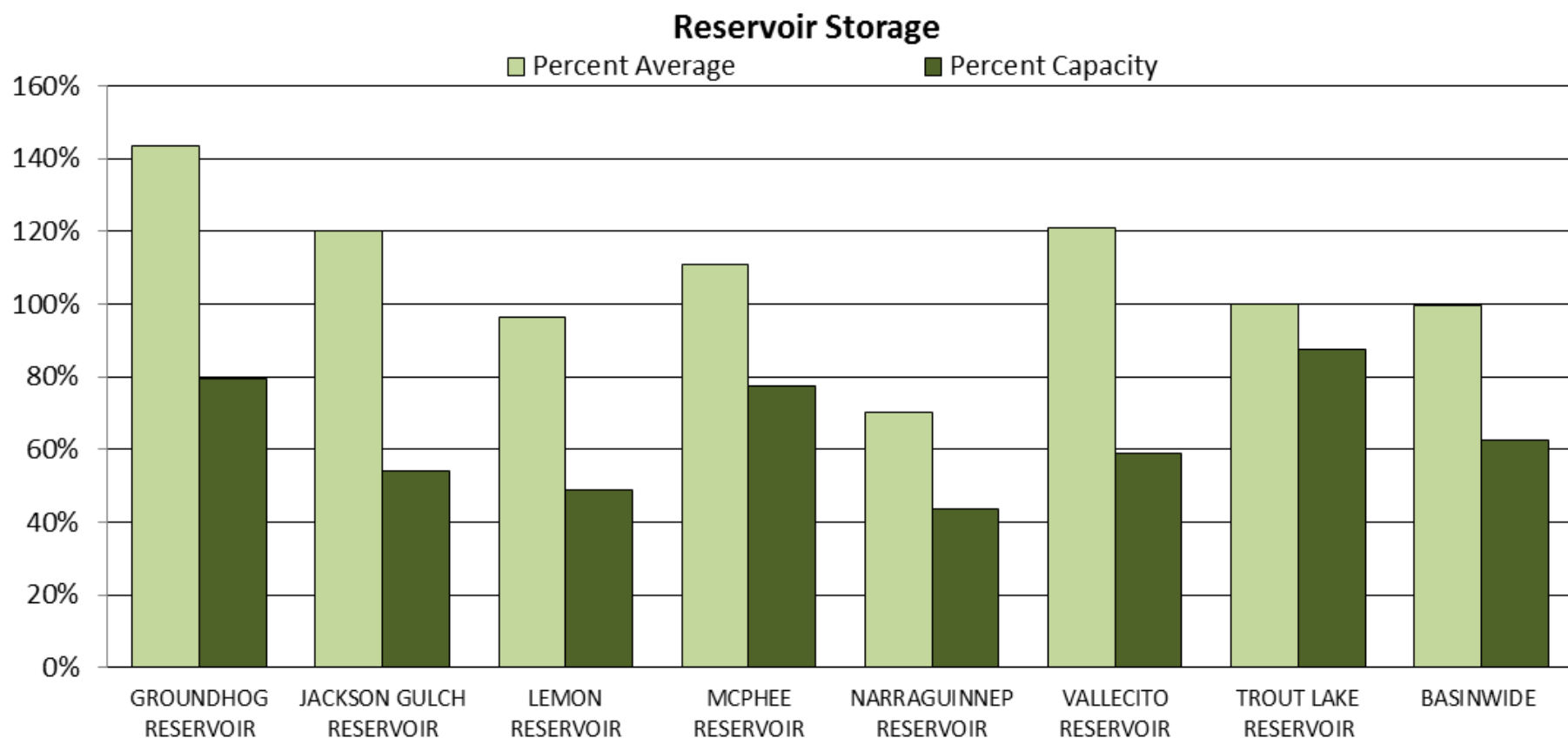
0 10 20 40 60 80 Miles



San Miguel, Dolores, Animas & San Juan River Basins High/Low Year-to-Date Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016

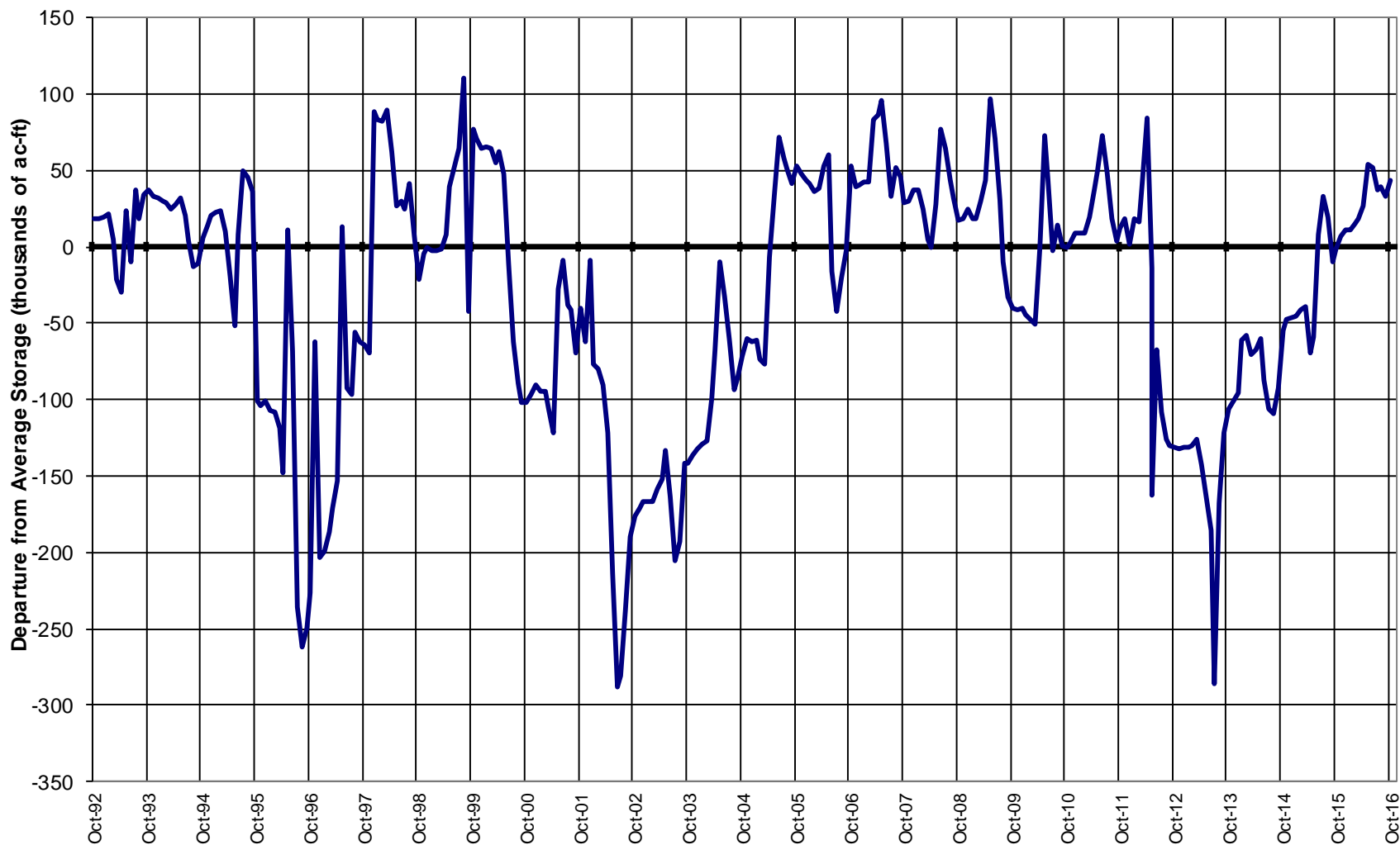






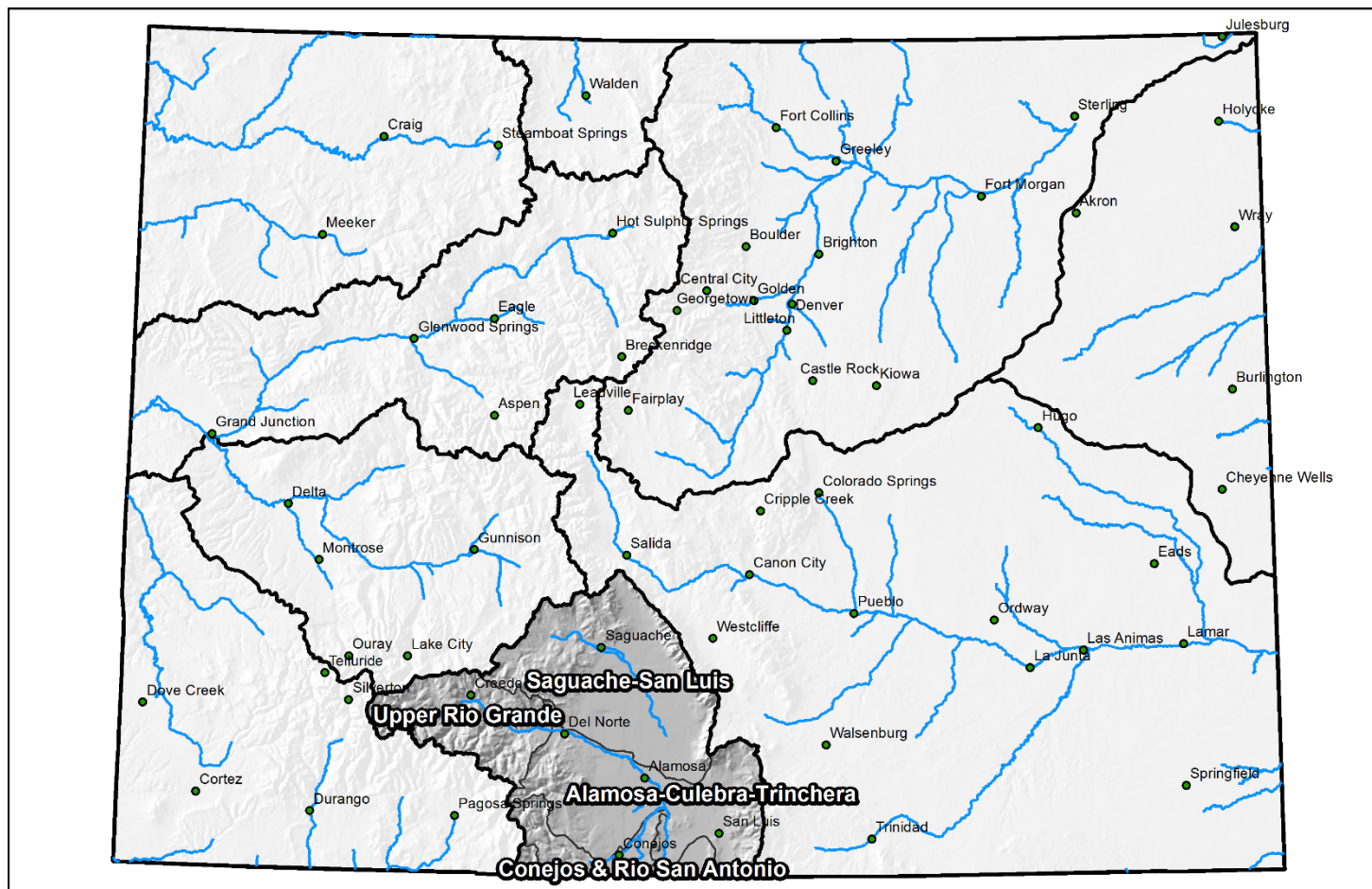
SAN MIGUEL, DOLORES, ANIMAS AND SAN JUAN RIVER BASINS

Reservoir Storage
Departure from Average



Major Basin Summary

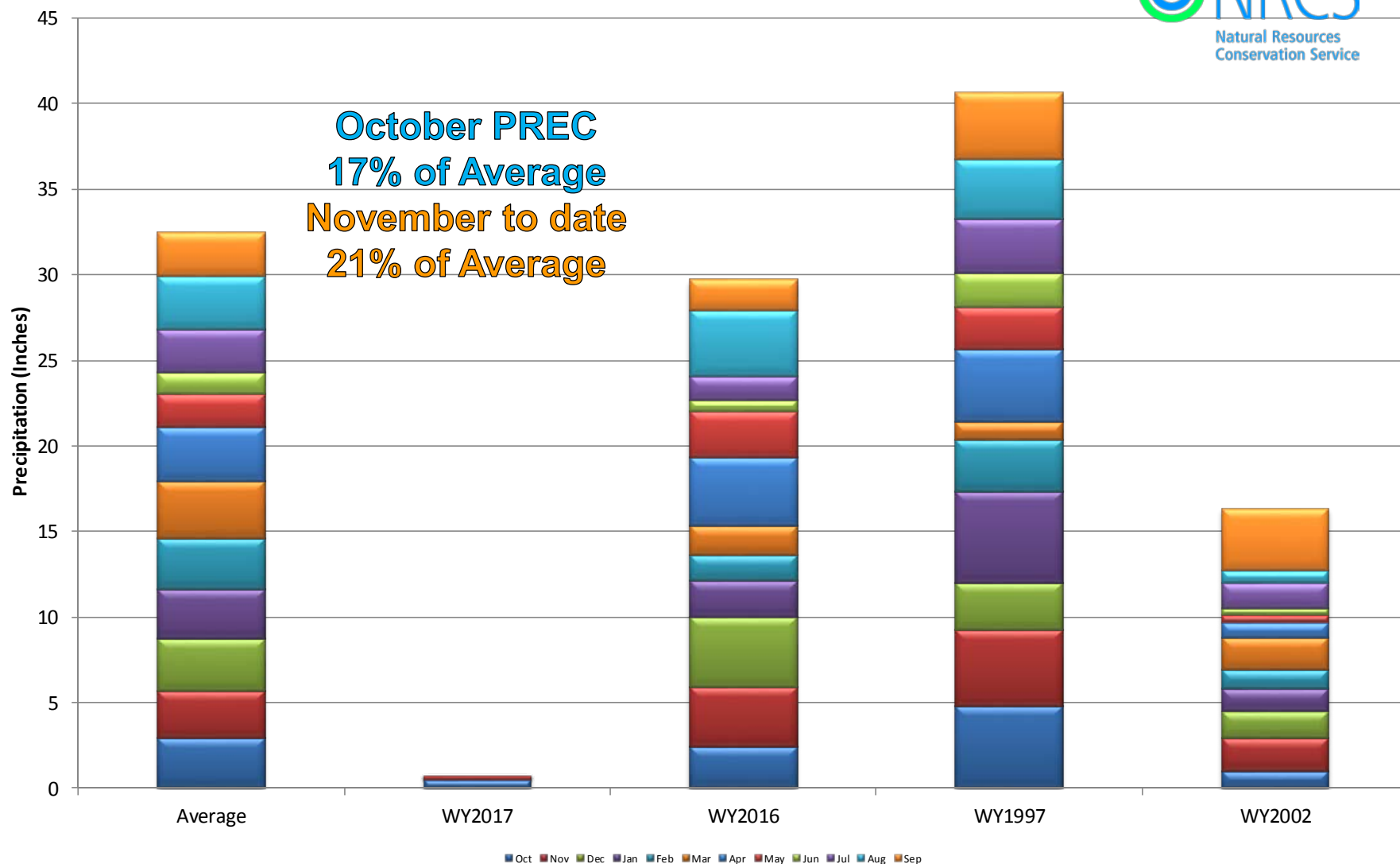
Upper Rio Grande River Basin



0 25 50 100 150 200 Miles

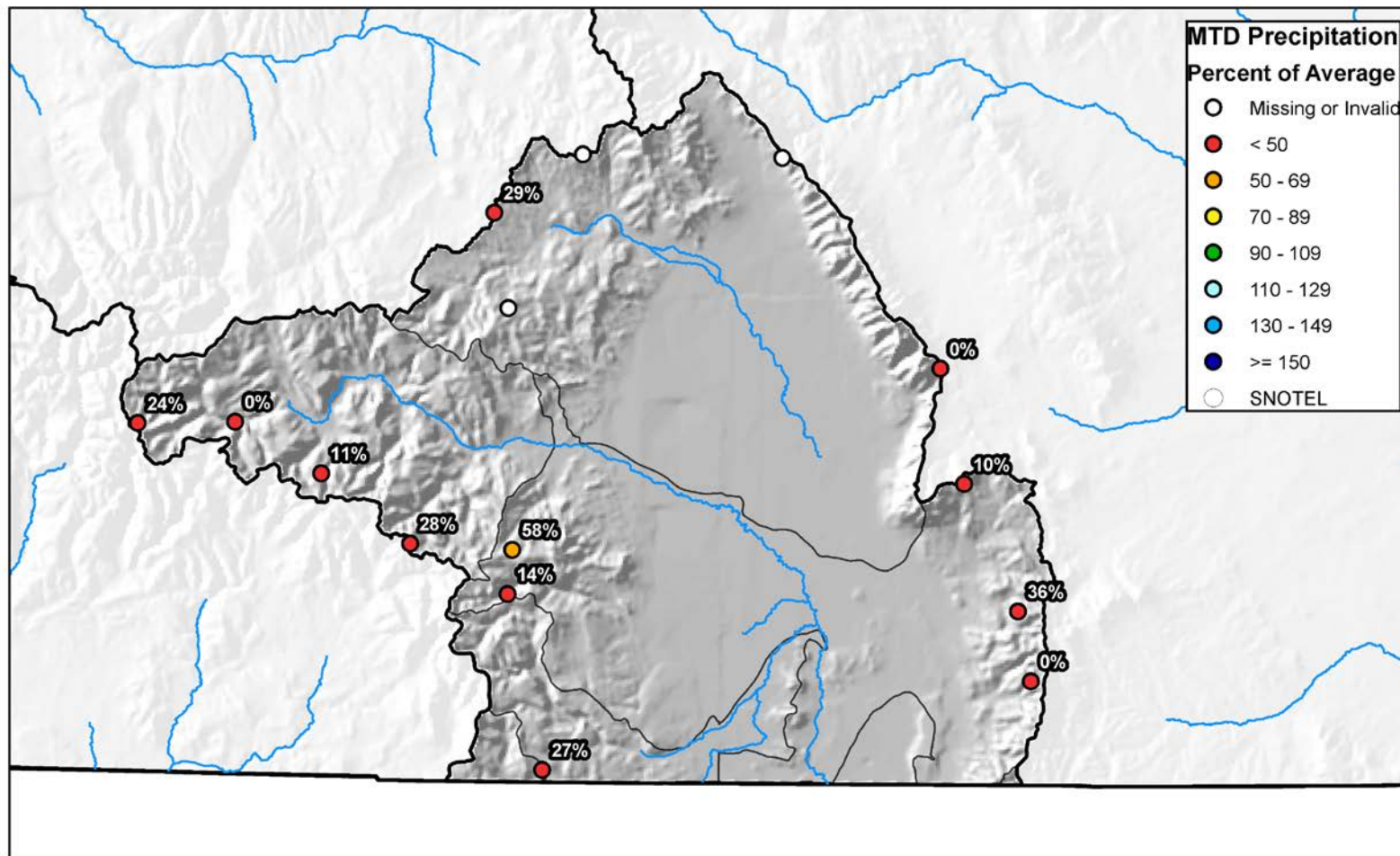
Upper Rio Grande Basin High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



Upper Rio Grande River Basin Month to Date Precipitation Summary

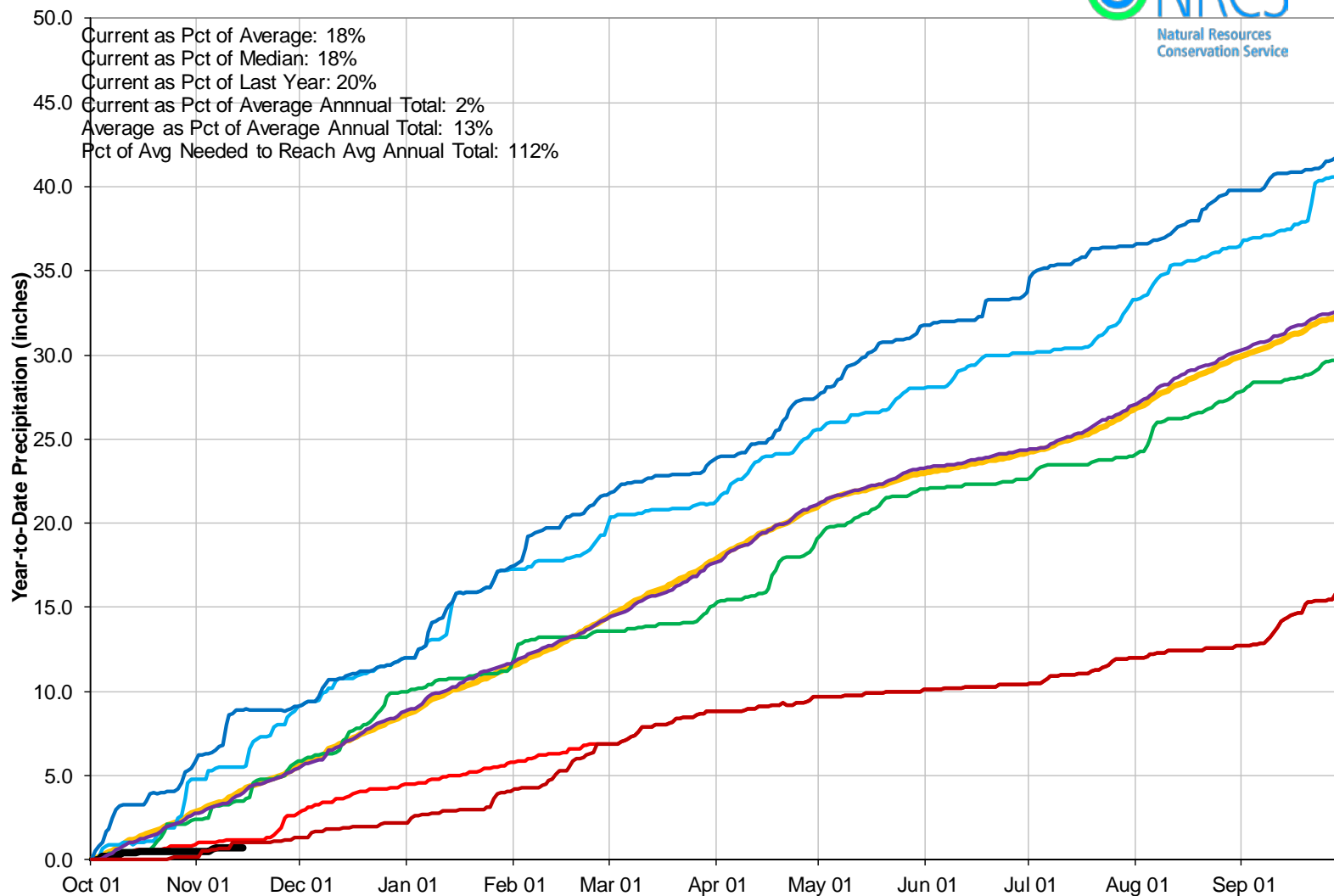
Current as of Nov 14, 2016

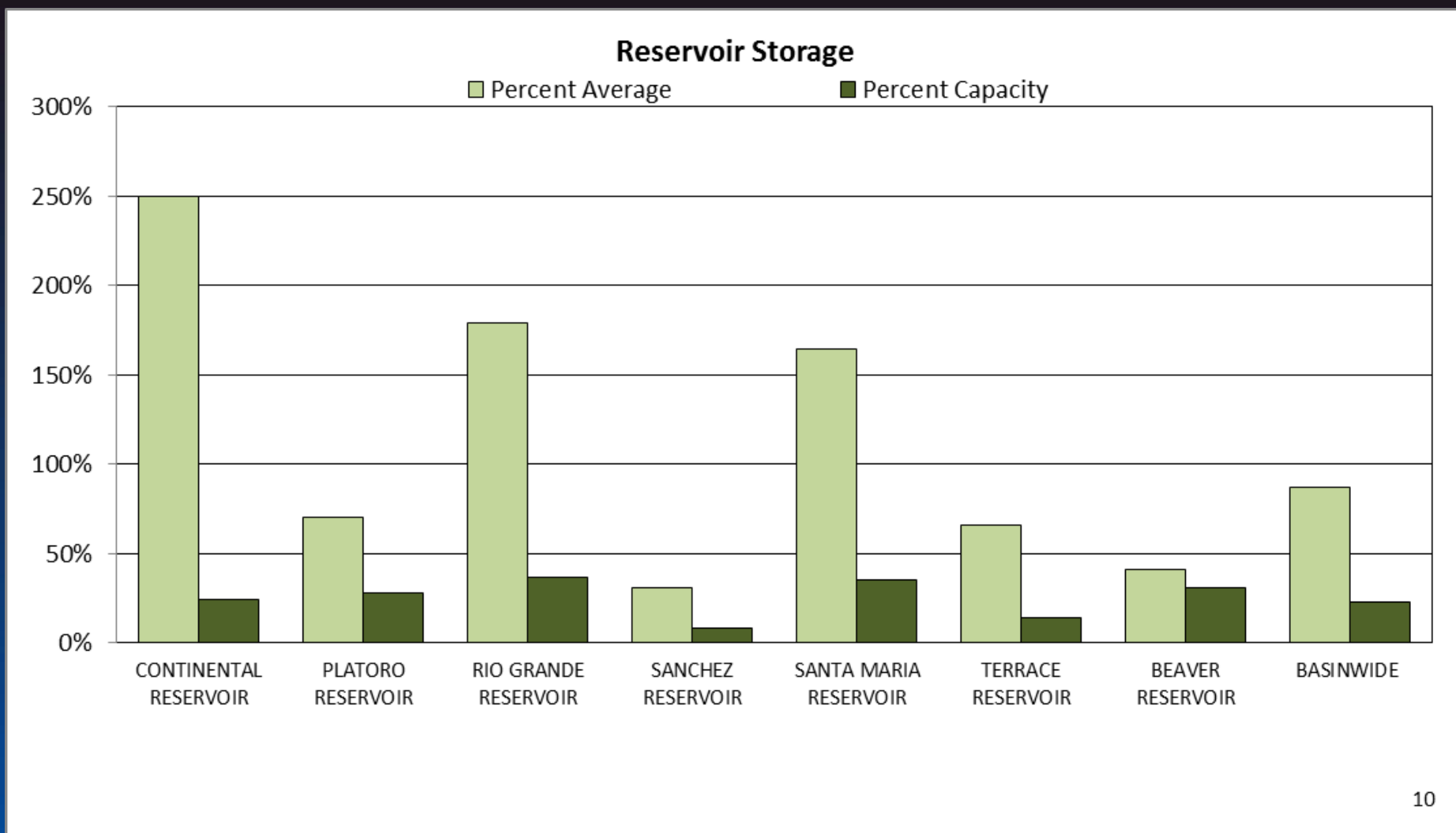




Upper Rio Grande Basin High/Low Year-to-Date Precipitation Summary

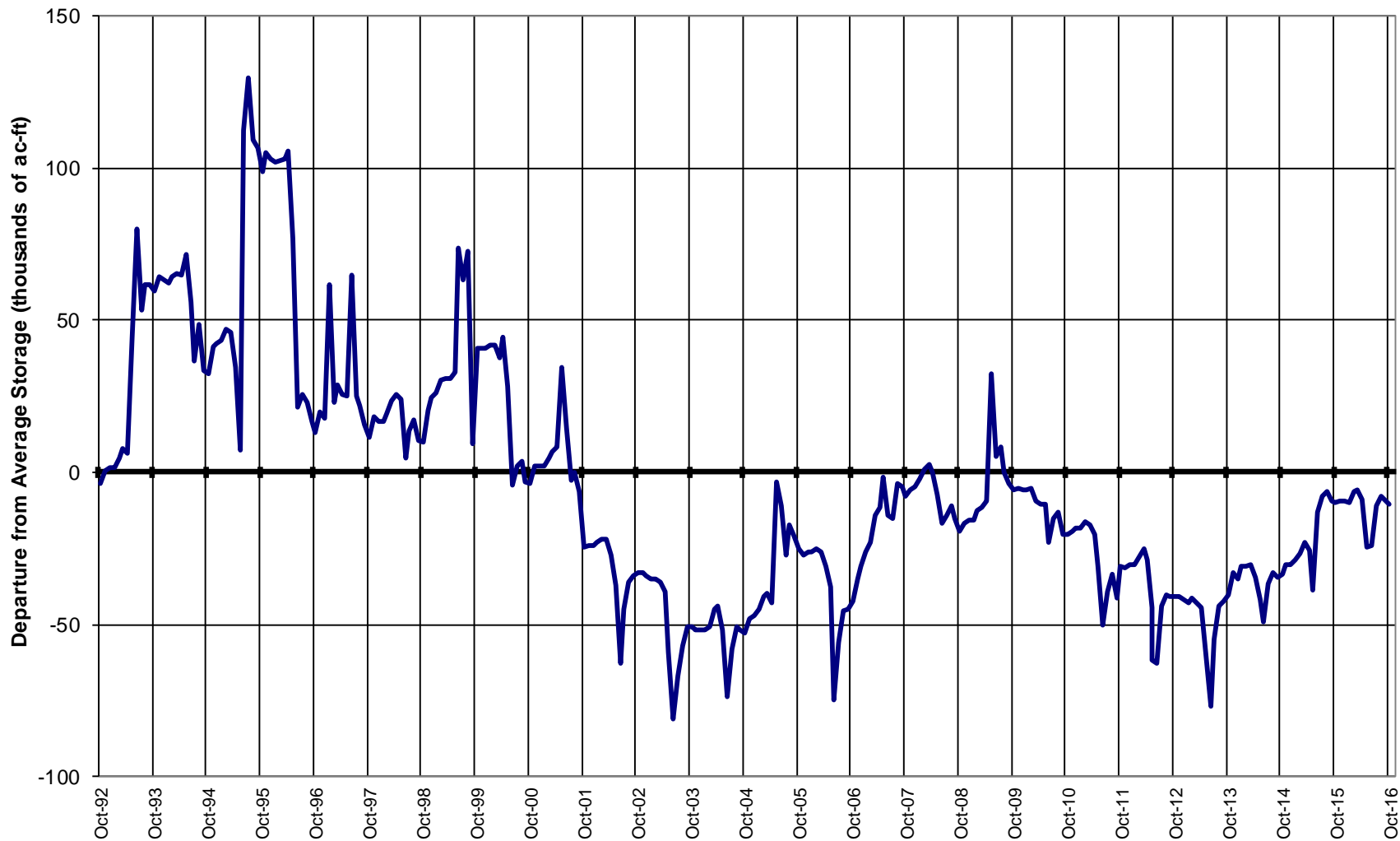
Based on Provisional SNOTEL data as of Nov 14, 2016





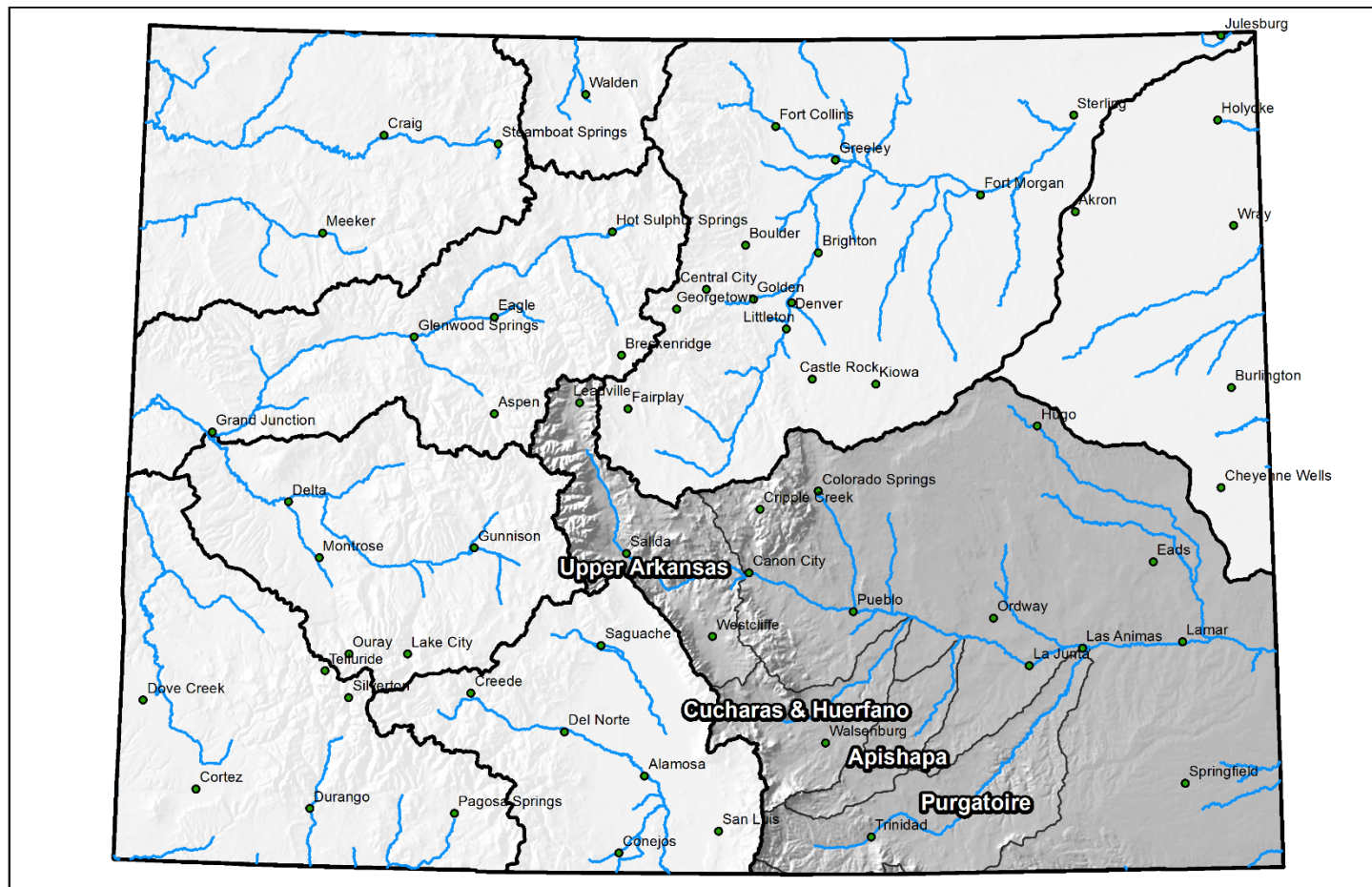


UPPER RIO GRANDE BASIN Reservoir Storage Departure from Average



Major Basin Summary

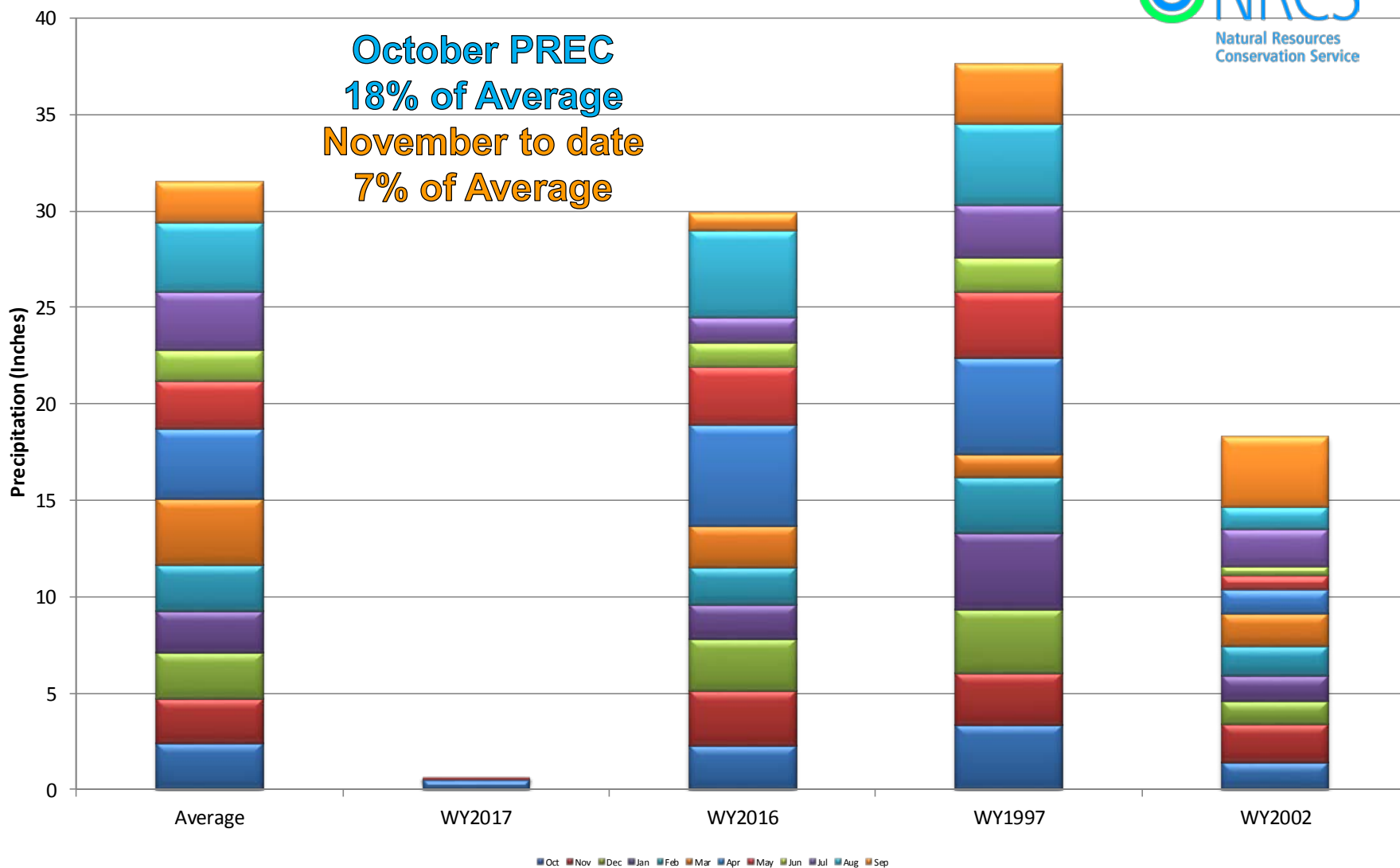
Arkansas River Basin



0 25 50 100 150 200 Miles

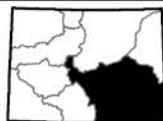
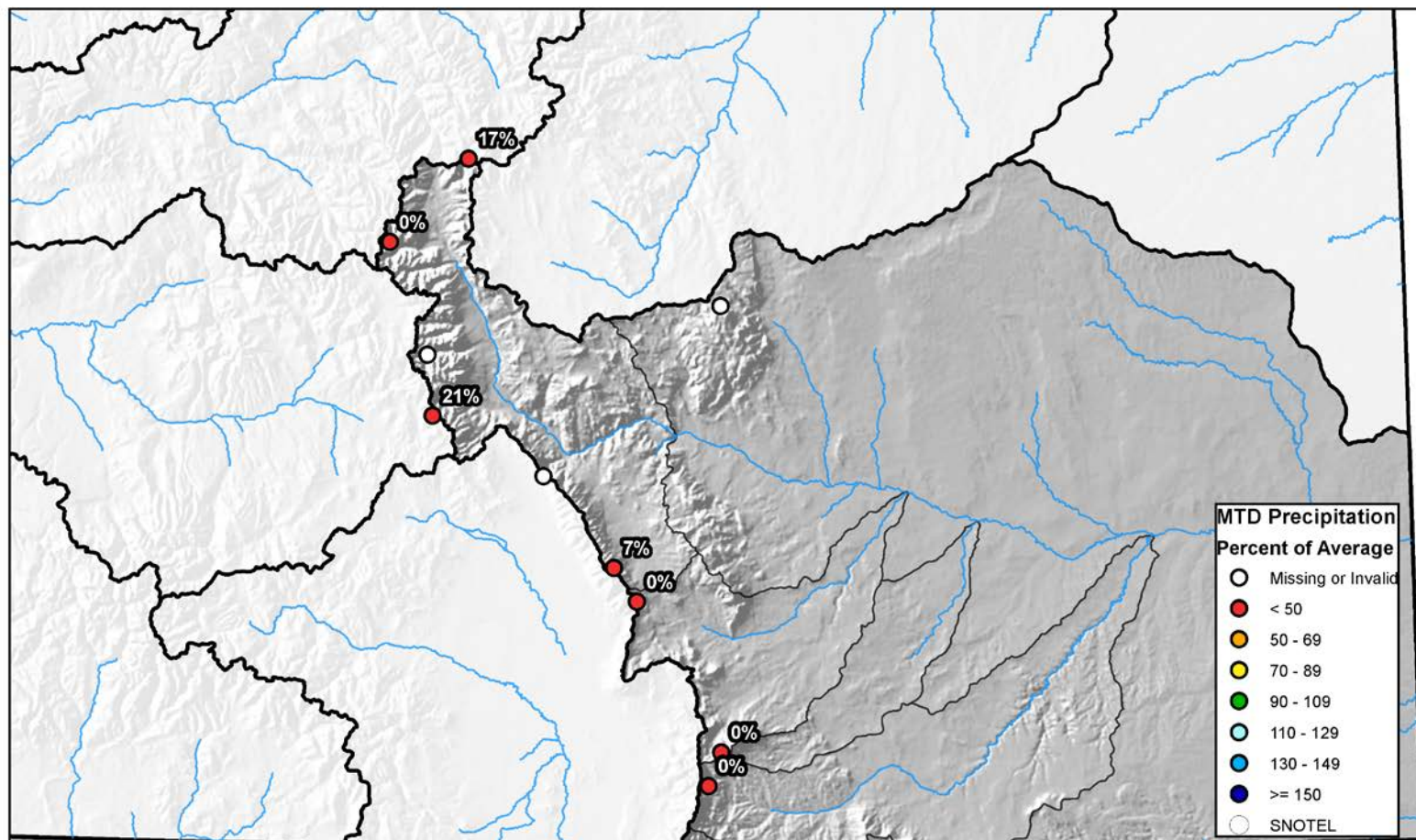
Arkansas River Basin High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



Arkansas River Basin Month to Date Precipitation Summary

Current as of Nov 14, 2016

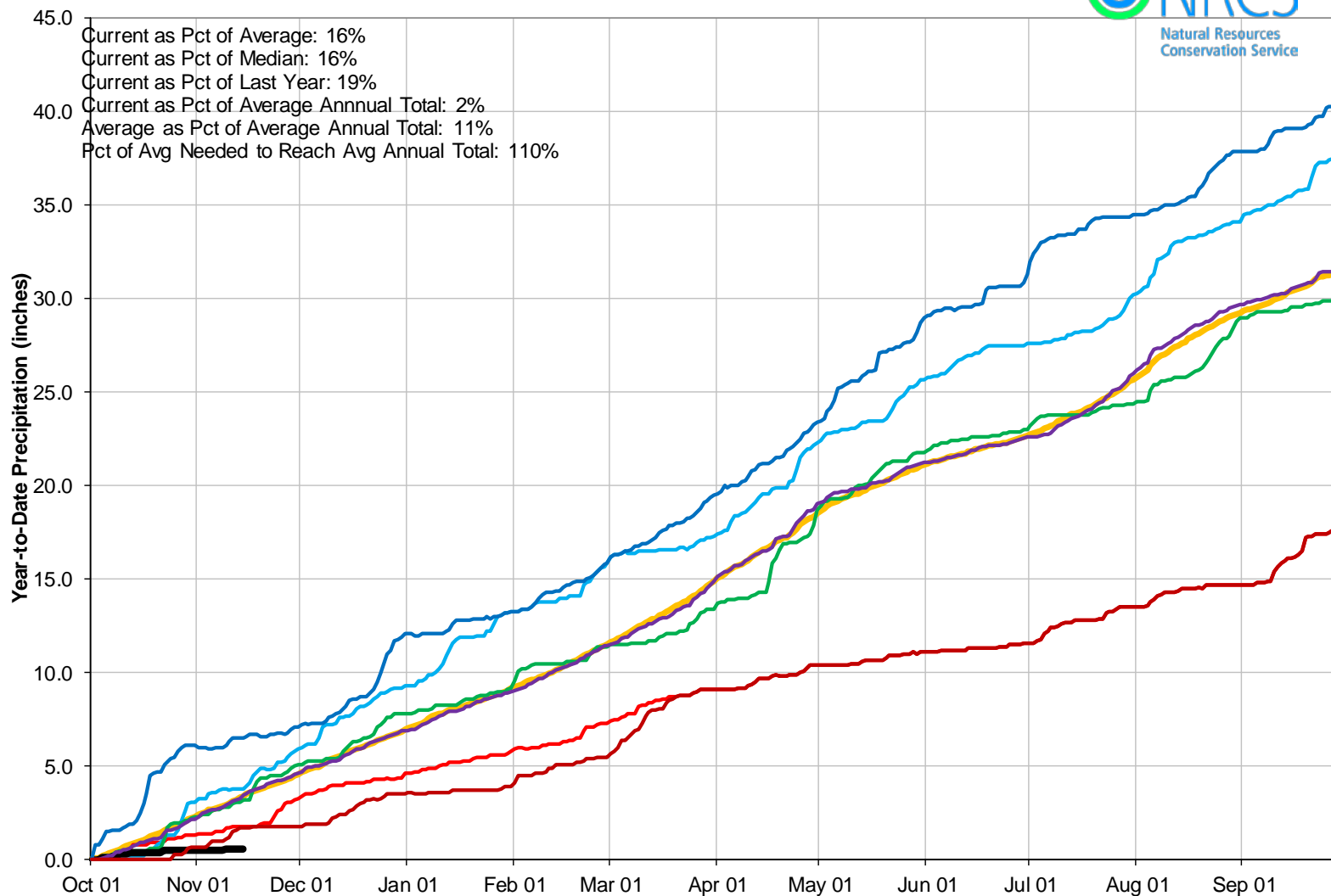


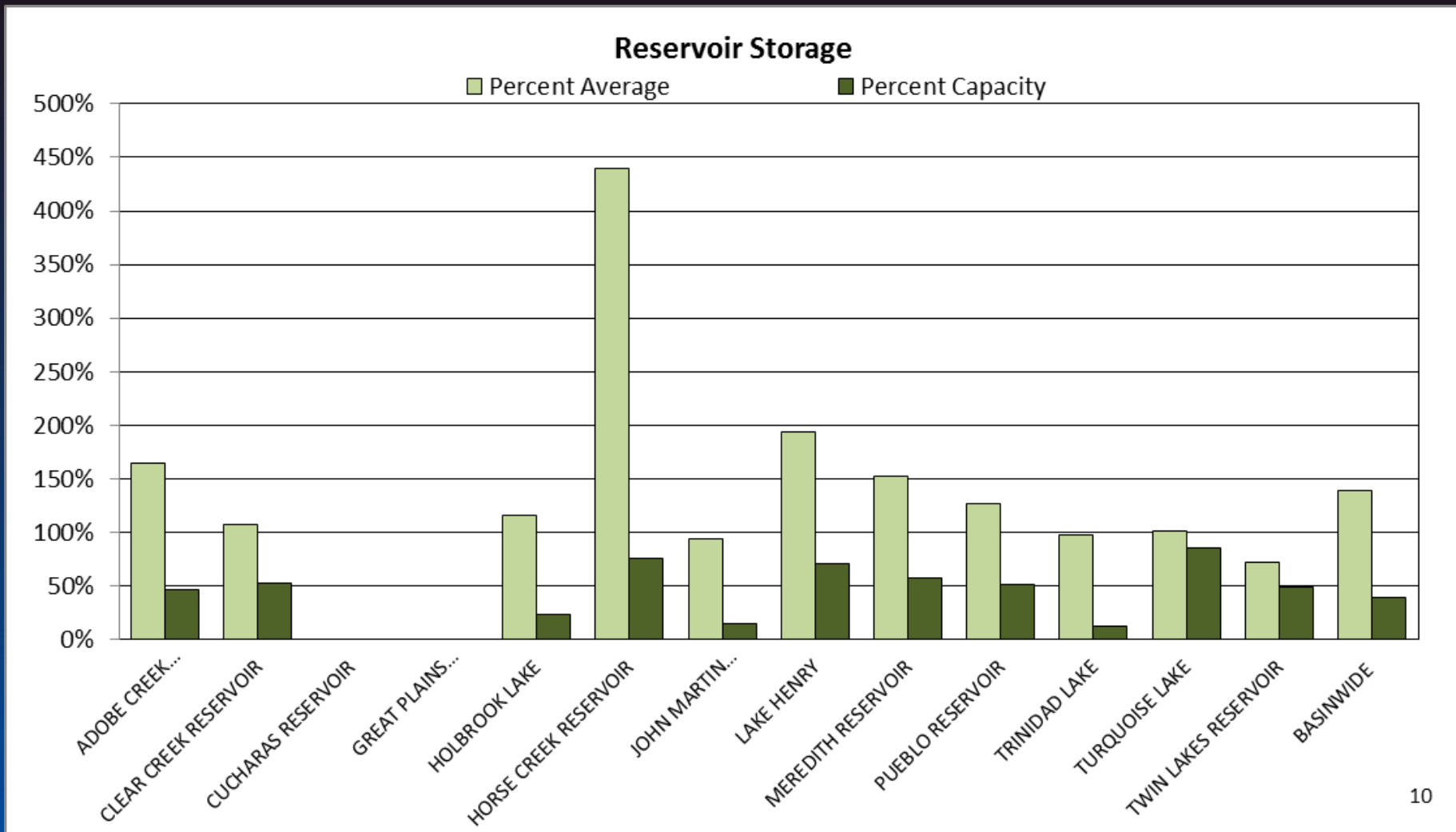
0 10 20 40 60 80 Miles



Arkansas River Basin High/Low Year-to-Date Precipitation Summary

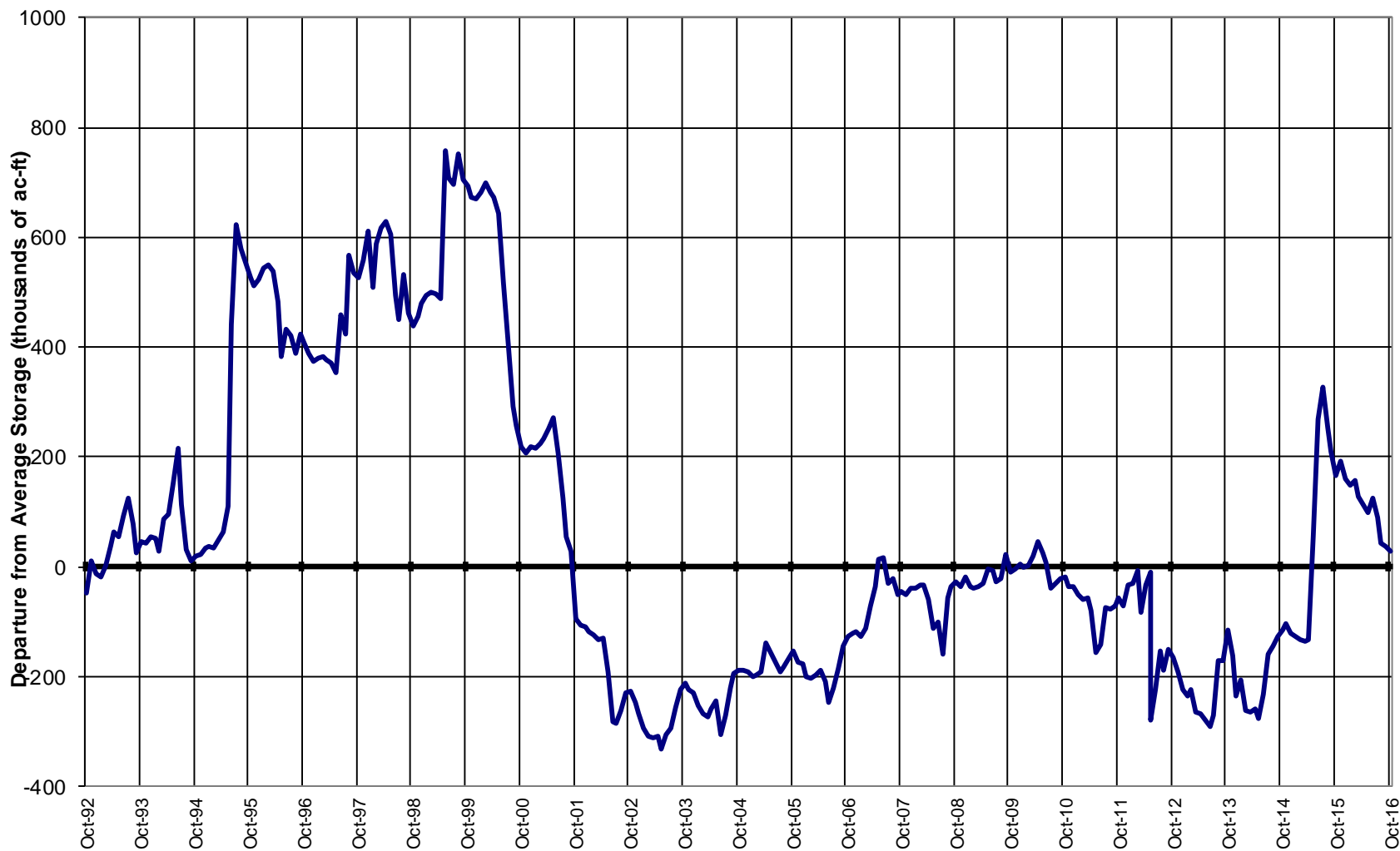
Based on Provisional SNOTEL data as of Nov 14, 2016





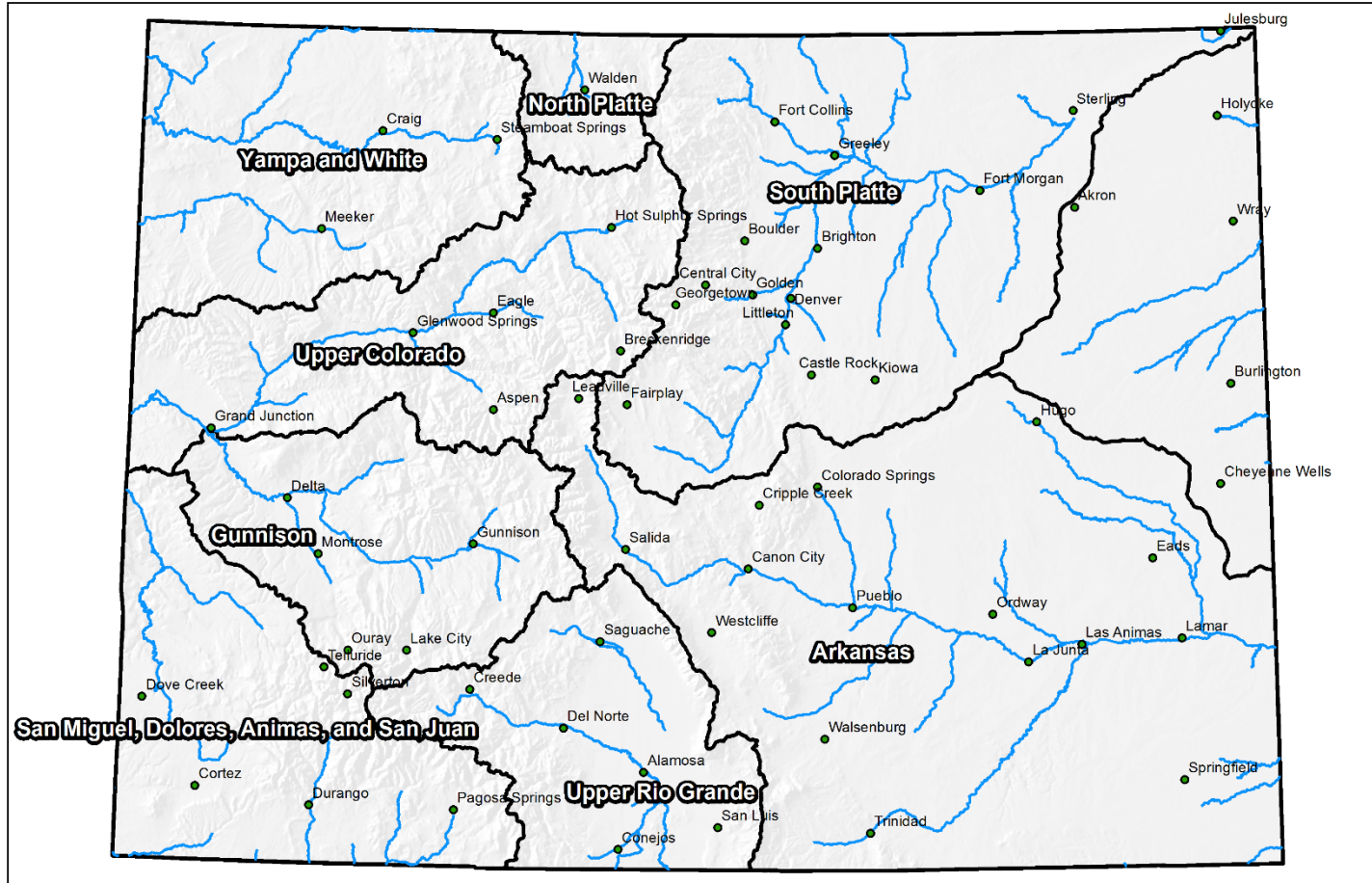


ARKANSAS RIVER BASIN Reservoir Storage Departure from Average



Colorado Statewide Summary

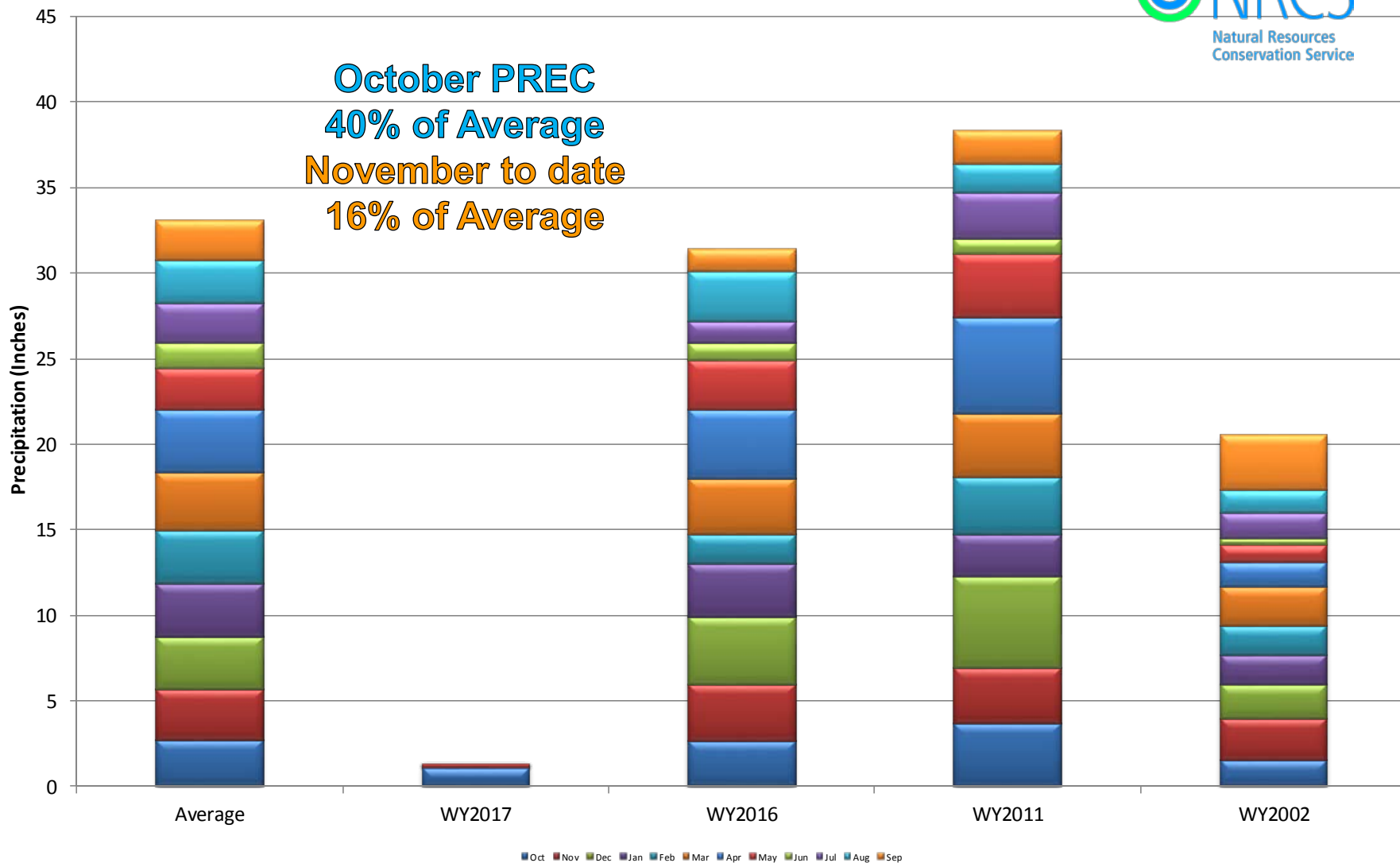
Colorado Major Basins



0 25 50 100 150 200 Miles

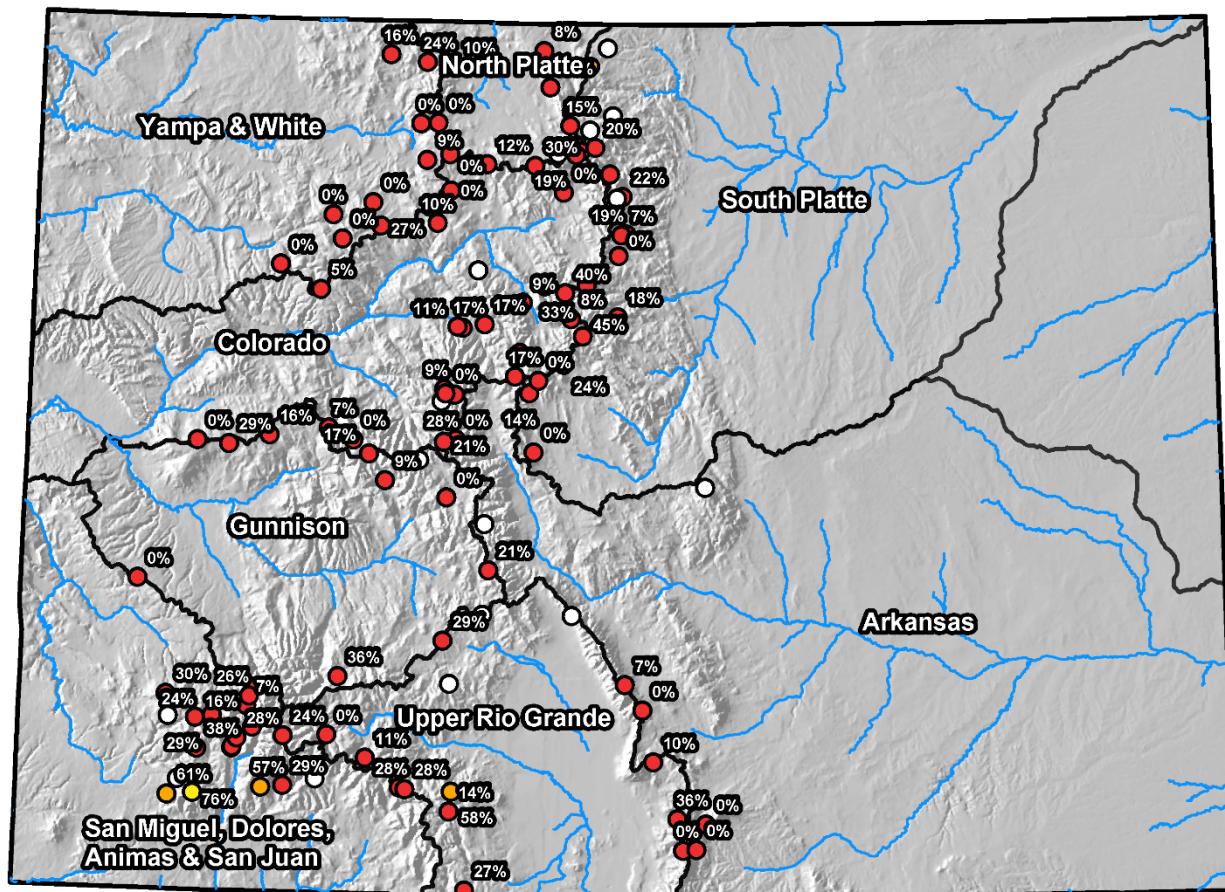
Colorado Statewide High/Low Monthly Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



Colorado SNOTEL Month-to-Date Precipitation

Current as of Nov 14, 2016



MTD Precipitation Percent of Average

- Missing or Invalid
- < 50
- 50 - 69
- 70 - 89
- 90 - 109
- 110 - 129
- 130 - 149
- >= 150
- SNOTEL

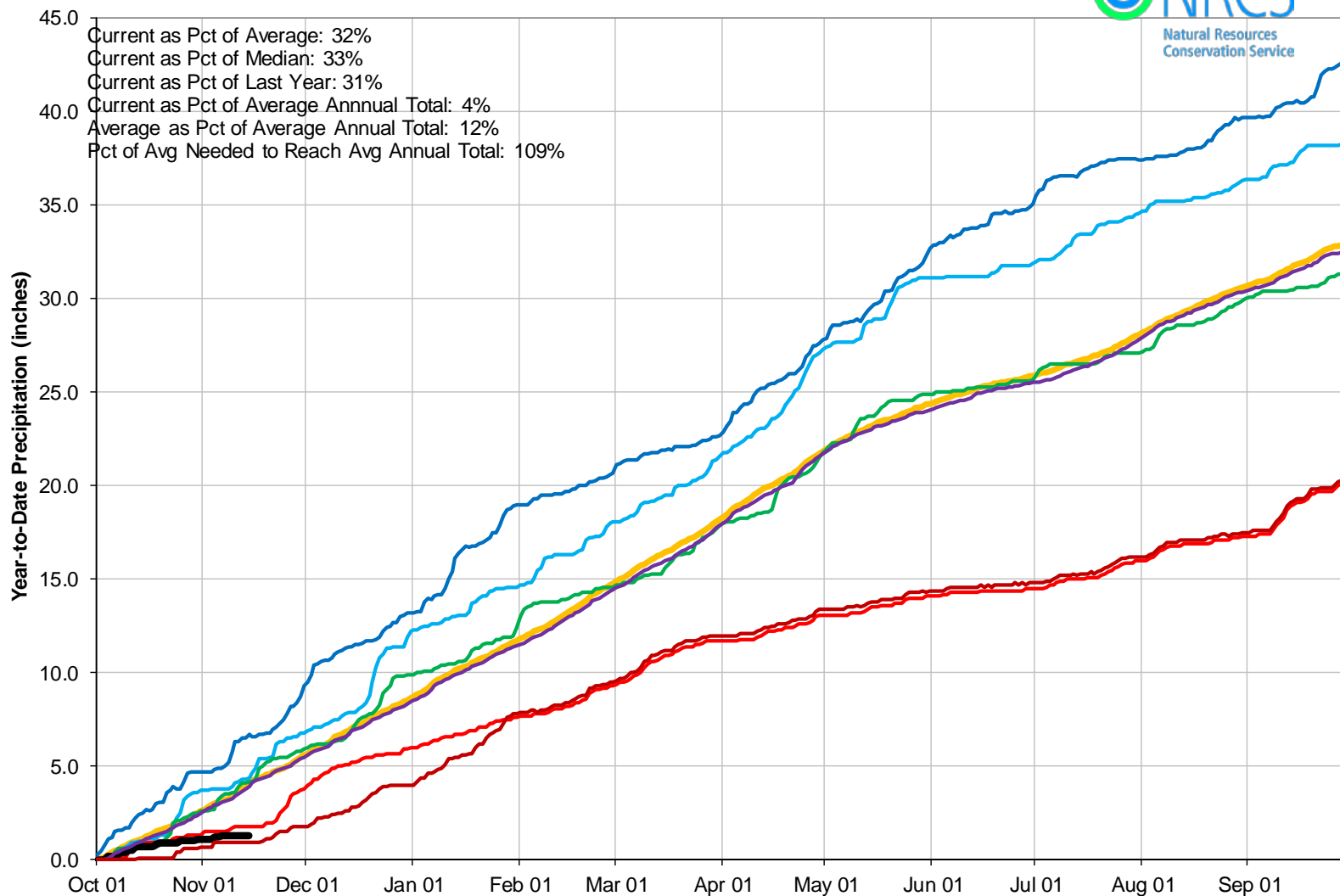


0 25 50 100 150 200 Miles



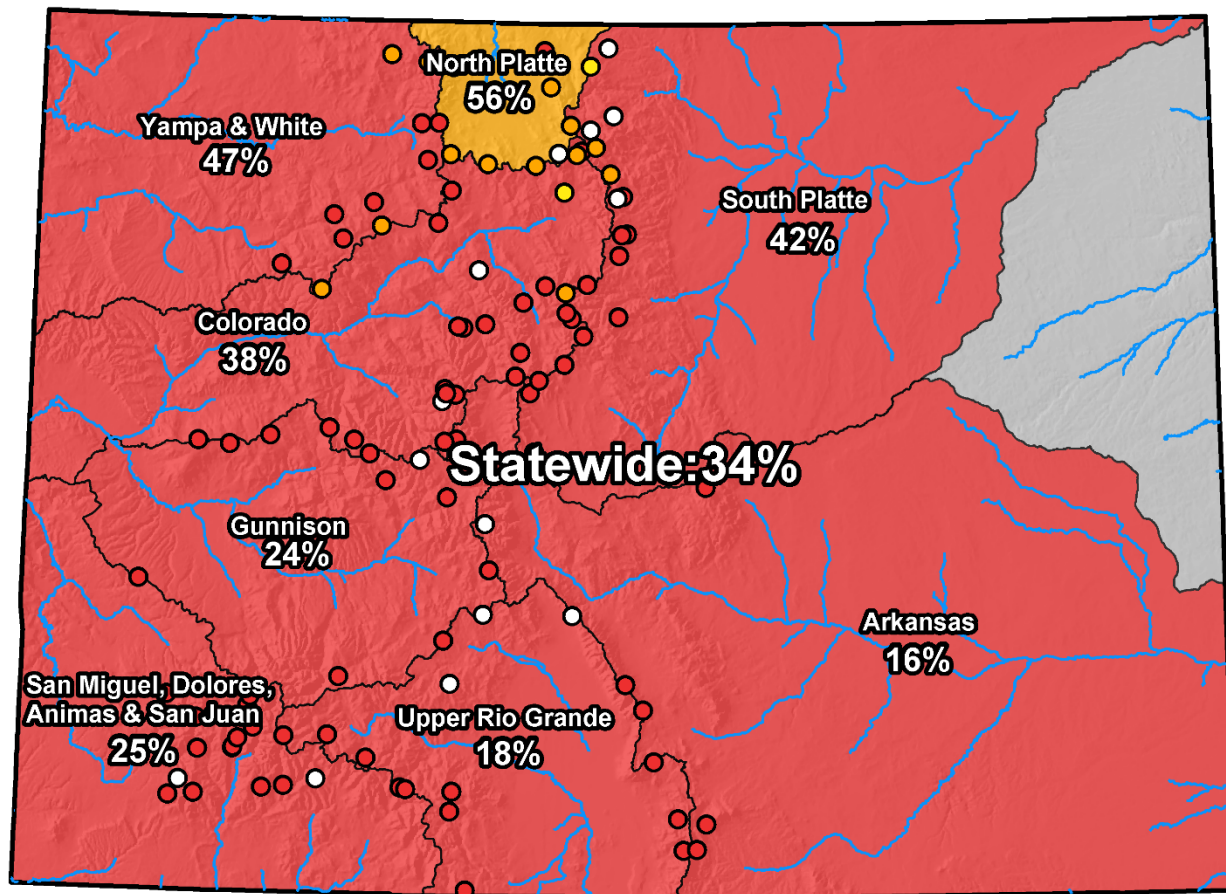
Colorado Statewide High/Low Year-to-Date Precipitation Summary

Based on Provisional SNOTEL data as of Nov 14, 2016



Colorado SNOTEL Water Year to Date Precipitation

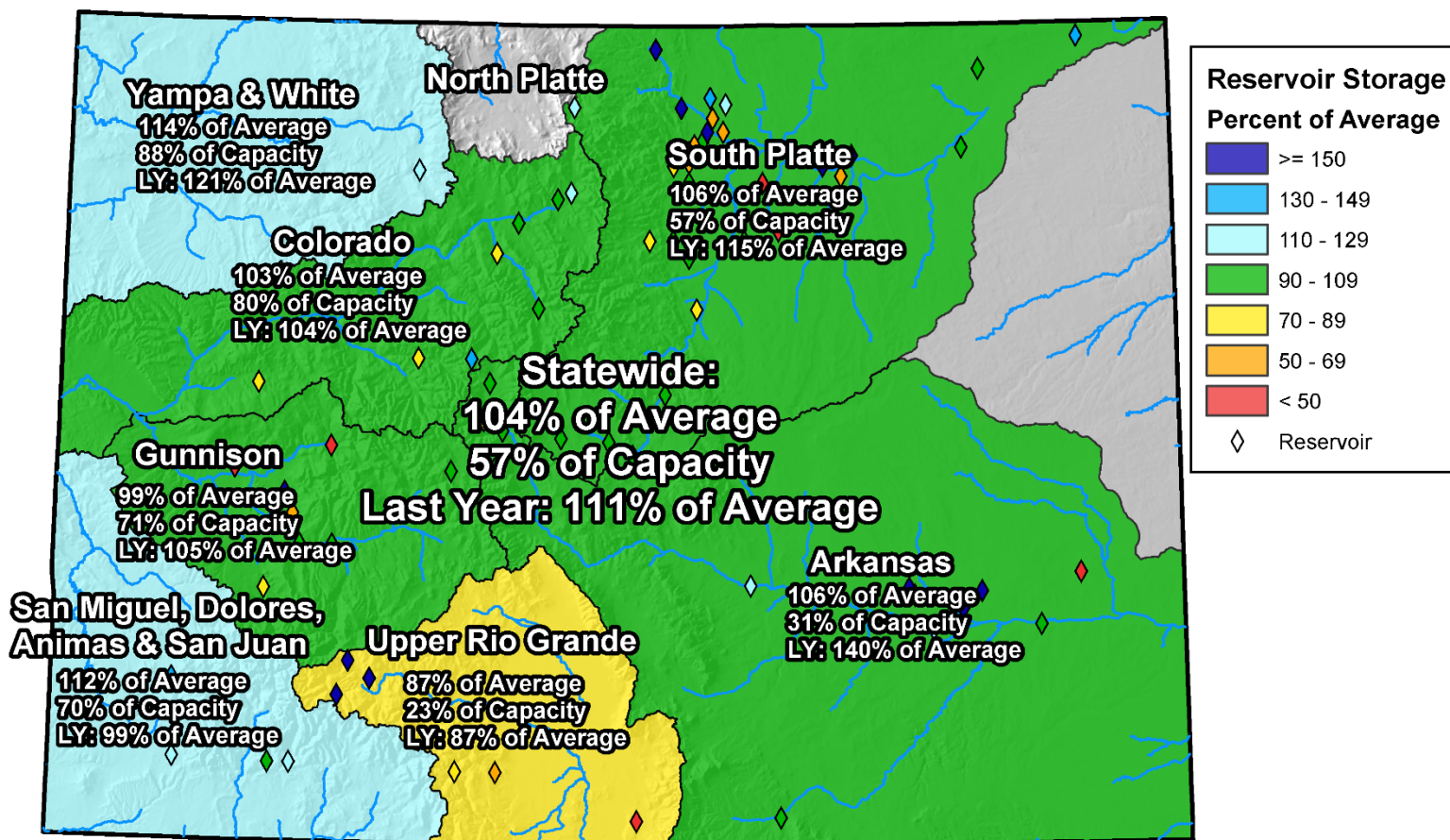
Current as of Nov 14, 2016



0 25 50 100 150 200 Miles

Colorado Monthly Reservoir Storage Summary

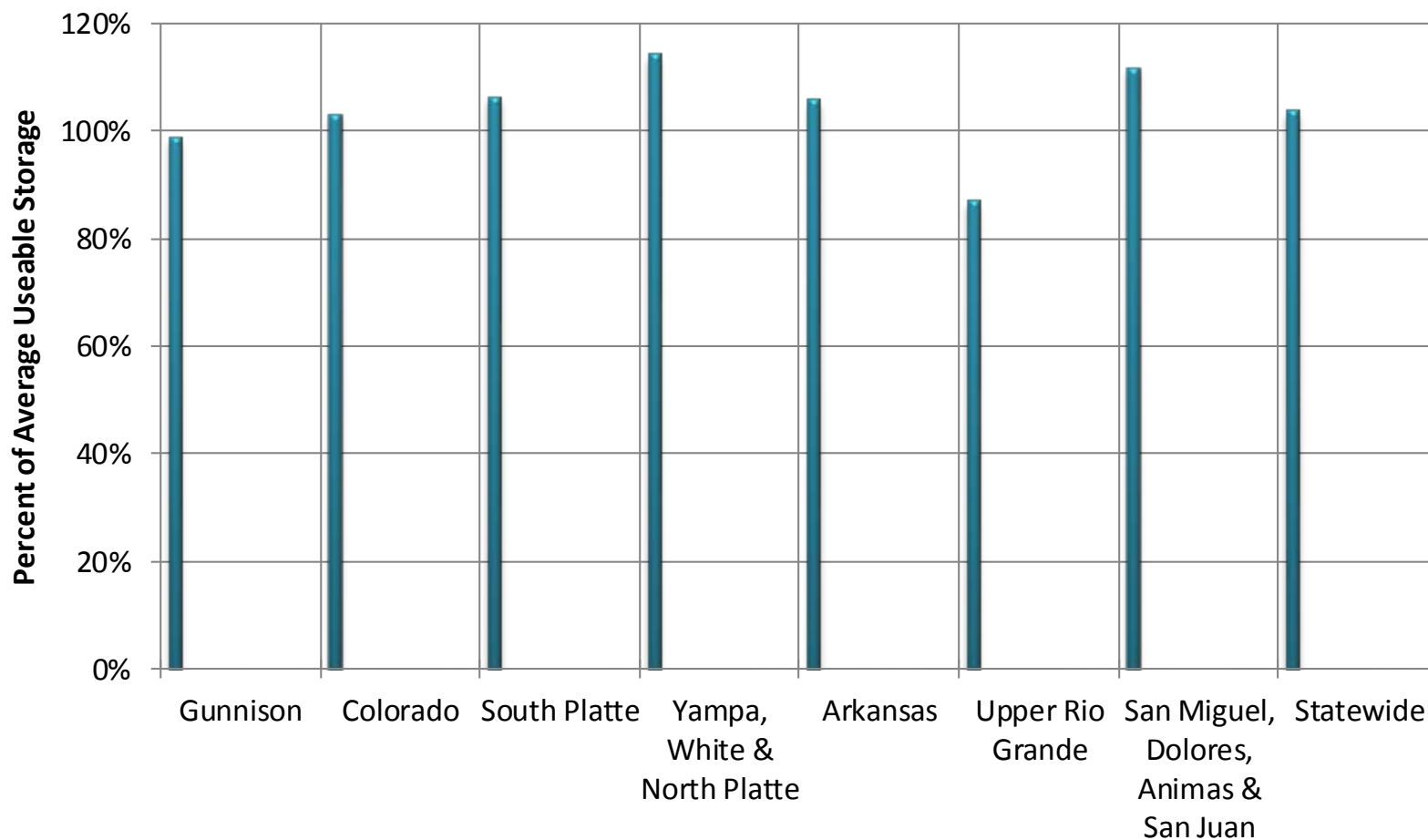
End of October 2016



0 25 50 100 150 200 Miles

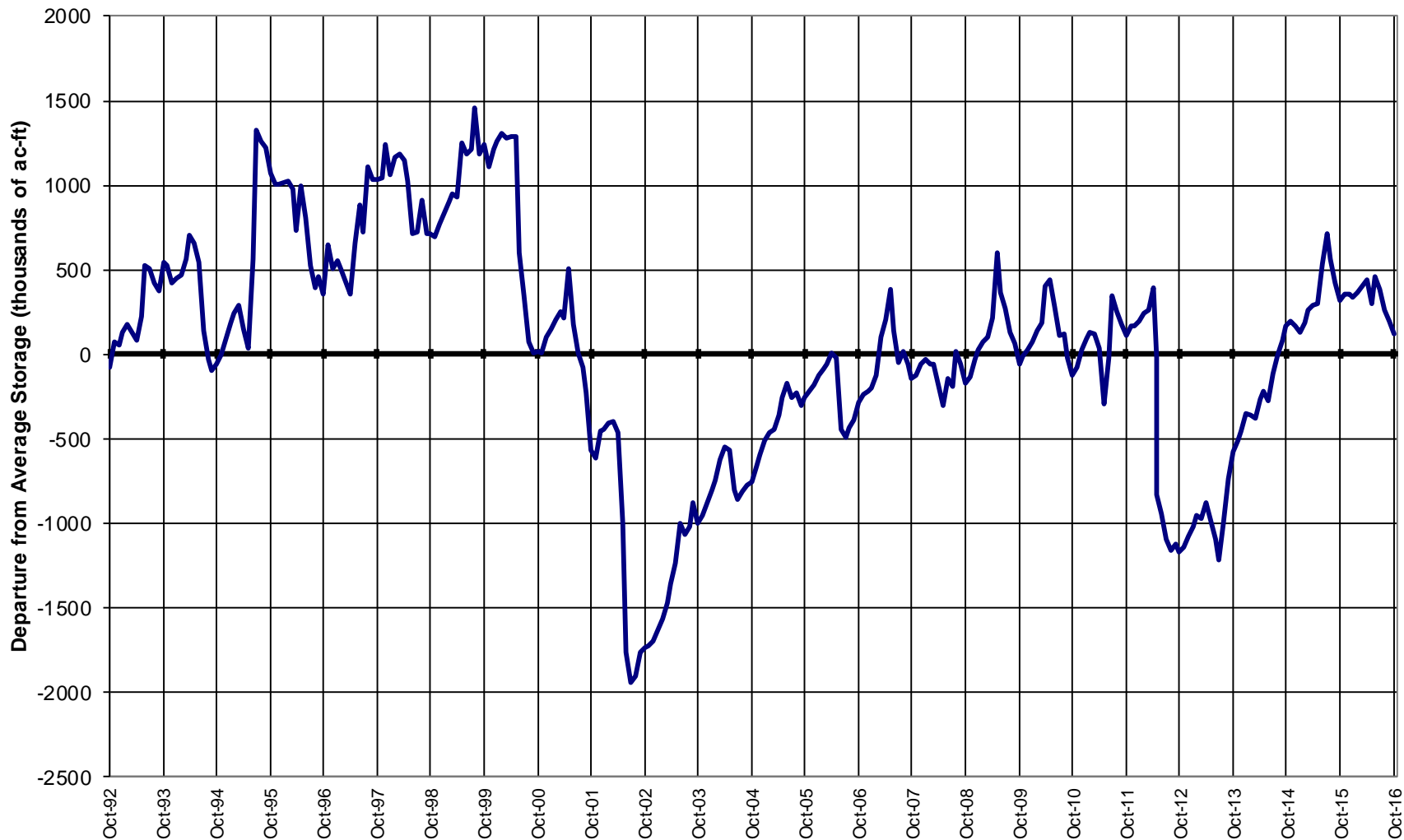
Colorado Reservoir Storage

Oct-16 Nov-16 Dec-16 Jan-17 Feb-17 Mar-17
 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17

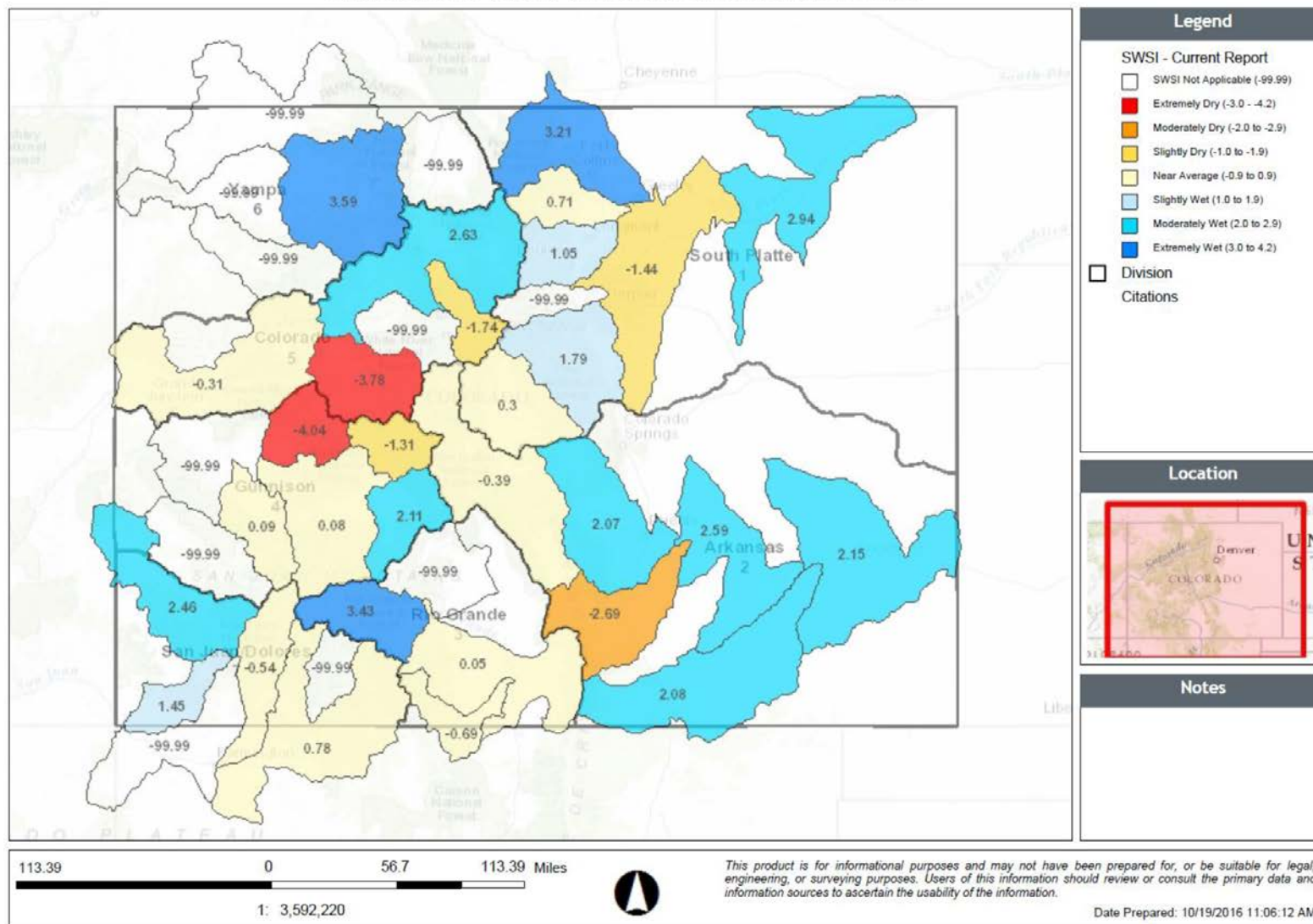




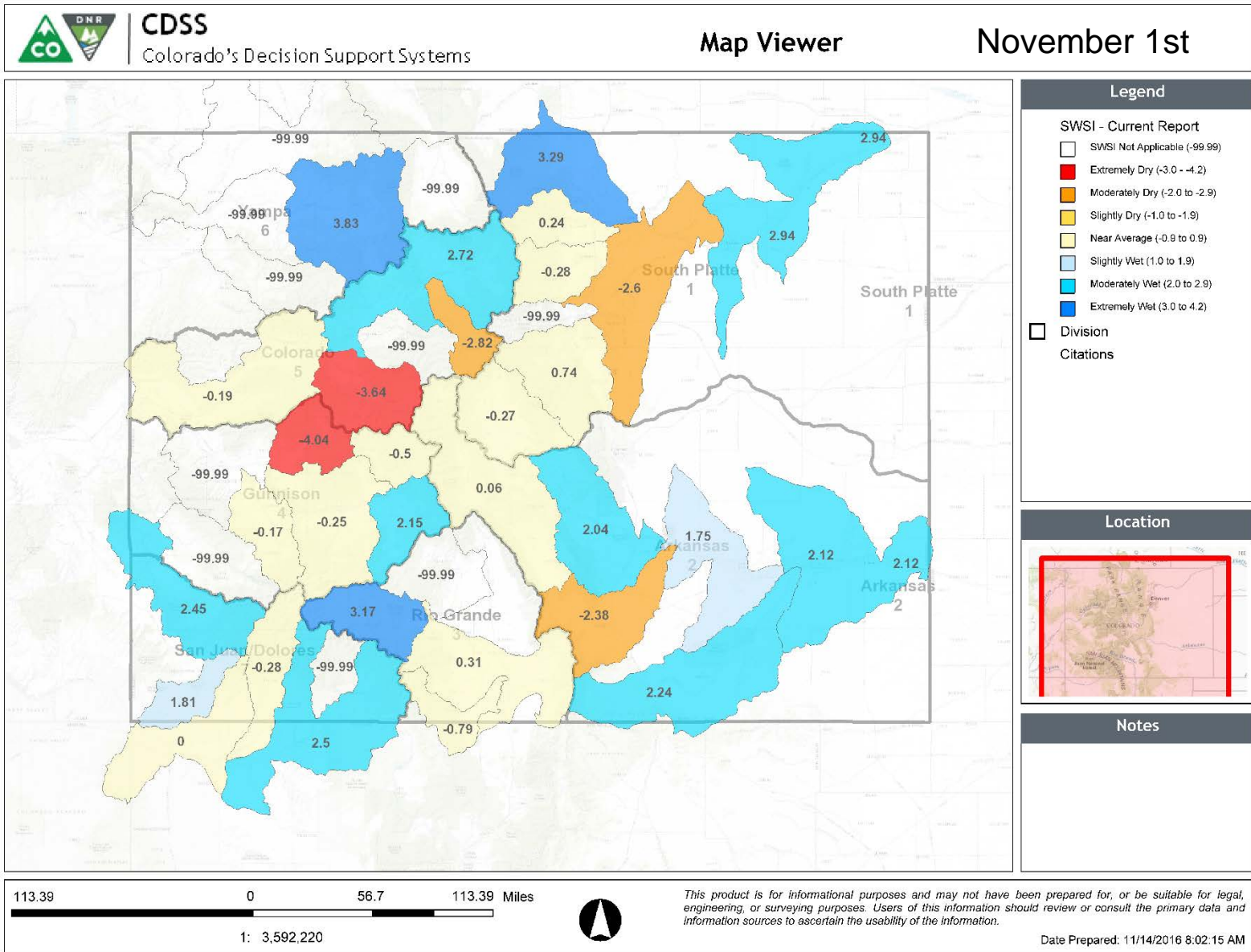
COLORADO STATEWIDE Reservoir Storage Departure from Average



SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC

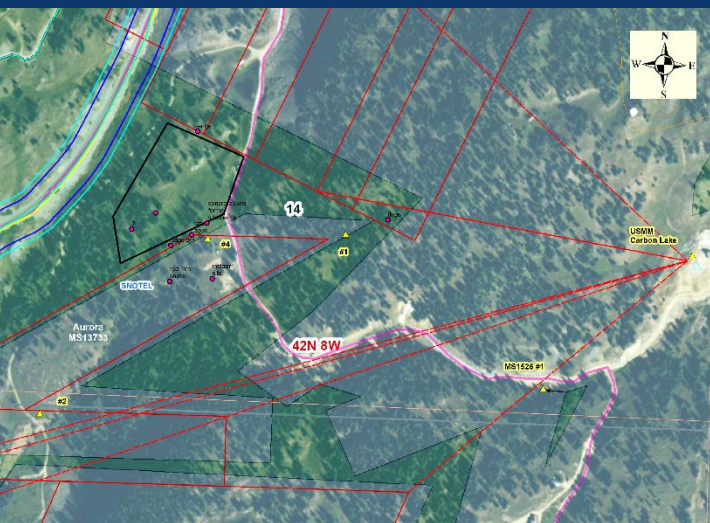


October 1, 2016



Red Mountain SNOTEL

- Landowner has asked NRCS to remove site after 38 years on record
- We are investigating installing a site 200 ft away on USFS land
 - This comes with risks that new site is not exactly the same
 - Will take nearly a decade to determine if the new site is truly suitable and the records can be melded
 - We will visit the land and perform manual surveys to gather potential and present site comparisons
- He wishes to sell the land
 - Believes that the land is more valuable and appealing to buyers without the site
 - With the site removed buyers could build a cabin on the land



• Red Mtn. SNOTEL is the highest SNOTEL in the area and provides some of the only late season snowpack information when snow remains at the higher elevations.

• Example May and June snowpack observations

Red Mountain SNOTEL

- Red Mountain SNOTEL was installed on a patented mining claim back in 1978
- Has direct impact on 5 forecast points:
 Animas Ridgeway Uncompahgre San Miguel Lake Fork
- Large number of indirect or routed forecast points affected from the above including:
 San Juan Bluff Gunnison @ GJ Colorado @ Cisco Lake Powell



- Simulations without Red Mtn. SNOTEL would increase forecast uncertainty during June 1 forecast date:
 - 19% at Ridgeway
 - average 1.3 KAF (max 10.4 KAF)
 - 15% at Animas R at Durango
 - Average 3.3 KAF (max 13.41 KAF)

Summary

- Worst statewide start to a mountain snowpack season in since at least 1986. Daily snowpack records only go back to 1986.
- Statewide snowpack as of 11/14/2016
 - Typically we are at 2.1 inches of Snow Water Equivalent (SWE)
 - Currently at 0.1 inches SWE (6% of CO's median Snowpack at this time)
 - Second worst year was 2000 at 0.2 inches SWE
- CO would have to receive 114% of normal snowpack accumulation for remainder of season to get to a normal peak
- October mountain precipitation poor across the state, November so far is near broke, as of Nov 14th – 1.4 inches
 - 2nd worst start for mountain precip, only 2000 (0.9 inches) worse
 - 2002 slightly better start at 1.9 inches
- Reservoir storage is the only bright spot, at 104% of normal



United States Department of Agriculture

Colorado Snow Surveys

Water Availability Task Force Meeting

November 15th, 2016

NRCS Snow Survey and Water Supply Forecasting Program

Brian Domonkos
Snow Survey Supervisor
720-544-2852

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/co/snow/>



Colorado Statewide Snowpack with Select Analog Years

Based on Provisional SNOTEL Data as of Nov 14, 2016

