

OFFICIAL FORECAST

Last Updated: Jan-2019

North Platte River Basin Forecasts

Location	Variable	Time Period	Forecast Value	Forecast Category ⓘ
Lewellen gage (NE)	streamflow	May-July	102,400 acre-feet	Low Average
Glendo reservoir (WY)	inflow	May-July	399,300 acre-feet	Average
Alcova reservoir (WY)	inflow	May-July	297,000 acre-feet	Low Average
Pathfinder reservoir (WY)	inflow	May-July	218,800 acre-feet	Low Average
Seminole Reservoir (WY)	inflow	May-July	403,000 acre-feet	Low Average

South Platte River Basin Forecasts

Location	Variable	Time Period	Forecast Value	Forecast Category ⓘ
Julesburg gage (CO)	streamflow	May-July	87,800 acre-feet	Average
Kersey gage (CO)	streamflow	May-July	230,700 acre-feet	Average
South Platte higher elevations	max snow water equivalent	N/A	17.8 inches	Average
South Platte lower elevations	precipitation	April-June	Probability >50%: 71% Probability <33%: <5%	N/A

Forecast Category	Exceed %	Lewellen	Glendo	Alcova	Pathfinder	Seminole
Above Average	<20%	>372	>562	>523	>531	>885
High Average	20-40%	226-372	414-562	397-523	368-531	761-885
Average	40-60%	154-226	366-414	332-397	290-368	503-761
Low Average	60-80%	100-154	322-366	289-332	209-290	316-503
Below Average	>80%	<100	<322	<289	<209	<316

units: thousands of acre-feet

Forecast Category	Exceed %	Julesburg	Kersey
Above Average	<20%	>332	>554
High Average	20-40%	101-332	272-554
Average	40-60%	38-101	143-272
Low Average	60-80%	14-38	58-143
Below Average	>80%	<14	<58

units: thousands of acre-feet

Discussion

The moderate strength El Nino event continues in the eastern Tropical Pacific. Its affect on the atmosphere has been negligible for a large part of this winter season. However, some changes in the atmospheric circulation were noted beginning in late December and into early January, characterized by reduced ridging in the western United States and more frequent disturbances traversing the southwest United States. However, while these changes brought cooler temperatures to the North and South Platte basin, precipitation was light. Overall, the South Platte basin tends to benefit more during El Nino events compared to the North Platte, and this effect is usually manifested later in the winter season.

North Platte and South Platte basin snowpack is currently tracking very close to seasonal normal, which is a positive sign given some dryness seen at lower elevations.

The latest forecast showed little change compared to December, with generally below normal flow expected in the North Platte basin and near normal flow projected in the South Platte. The Lewellen projected flow increased by about 25% from around 80K acre-feet to just over 100K acre-feet, a positive sign.

PROBABILITY OF LOW FLOW

During 2018, additional forecasts were developed to inform the probability of “Low Flow” for (i) Guernsey April-September outflow and (ii) Lewellen May-July streamflow. These forecasts are being used operationally for the first time. Note that Low Flow was defined as flow below the 25th percentile at each site. This translates to 2,931 c.f.s. for Guernsey outflow and 621 c.f.s. for Lewellen.

Table 1 shows the probability of Low Flow continues to be significantly higher at Lewellen than Guernsey, although the value at Lewellen fell markedly from 41% to 30%.

Table 1: Probability of low flow at Lewellen and Guernsey Reservoir.

Forecast Location	Time Period	Probability of flow <25%				
		Forecast Time				
		Nov '18	Dec '18	Jan '19	Feb '19	Mar '19
Guernsey res. outflow	Apr - Sep	17%	16%	13%		
Lewellen streamflow	May - Jul	44%	41%	30%		

RESERVOIR STORAGE

As of January 1, 2019, the total reservoir storage at the five main reservoirs upstream of Lake McConaughy (Seminoe, Pathfinder, Alcova, Glendo and Guernsey) was 1,689,048 acre-feet. Using data from 1959-present, this value is in the 54th percentile for January 1, 2019, with little change from the 53rd percentile observed in December. Although total storage has decreased significantly over the past 2 years, it continues to remain high enough to buffer against any significant precipitation deficits for at least one more runoff season during winter/spring 2019.

COMPARISON TO OTHER FORECASTS

Forecasts developed herein are compared to similar forecasts from the US Bureau of Reclamation (USBR), the Natural Resources Conservation Service (NRCS) and the Climate Prediction Center (CPC).

USBR

Forecasts for WY2019 should start in January, but were not updated as of January 11, 2019.

NRCS

Forecasts for WY2019 are not available until February due to current staffing constraints. The latest (Jan 1, 2019) NRCS Colorado Water Supply Outlook Reports can be found at the links below. The Wyoming report was not updated at the time of this forecast.

<https://www.wcc.nrcs.usda.gov/ftpref/states/co/wsor/borco119.pdf>

CPC

The graphic below shows the March-May 2019 precipitation forecast from the CPC. Both the North Platte and South Platte are expected to see above normal springtime precipitation. Furthermore, probabilities of above normal flow have increased to 40% in the South Platte basin. However, note that this forecast states there is only a 33-40% chance of above normal precipitation. This implies that there is a 60-67% chance of NOT seeing above normal precipitation. In other words, there is still a higher chance that precipitation is either in the normal or below normal category. This represents a significant limitation of the CPC forecasts, as has been previously documented.

