

PRODUCT DESCRIPTION:

The Graphic

Displayed is a plot of the April-July forecast volume and model guidance for the site referenced. The blue vertical lines on the plot are guidance from the Ensemble Streamflow Prediction (ESP) model. Each blue line represents a range of probabilities of the April-July runoff volume from the ESP model on that particular day.

The dark blue dot in the middle of each is the 50% exceedance probability.

The lower end of the line is the 90% exceedance probability.

The top of the line is the 10% exceedance probability.

The change in color shade from dark to light blue represent the 30% and 70% exceedance values.

The red vertical lines are the official forecasts made on the 1st of each month (January to June). Official forecasts differ from the model guidance in that a water supply forecaster has specifically provided this value. The official forecast value is achieved through a more rigorous analysis of model guidance, hydrologic conditions, and verification statistics by the forecaster.

The red square in the middle is the 50% exceedance probability forecast.

The lower end of red vertical line is the 90% exceedance probability forecast.

The top of the red vertical line is the 10% exceedance probability forecast.

The 30/70% are not displayed in the official forecast.

PRODUCT INTERPRETATION:

Trends in the Guidance:

The ESP model is run each day and therefore has a different starting point each day due a change in initial model states. These model states change based on:

Precipitation – This is the primary driver of the snow states in the model throughout the winter and spring season. Periods of wet or dry weather impact the snow conditions in the model. The guidance will trend higher or lower based on the condition of the snowpack.

Manual Adjustment – On occasion manual adjustment of model states may occur. This usually occurs if a model state (such as snow conditions) appears too high or too low. How accurately the model may represent snowpack is often limited by the observation network and quality of data inputs. These types of adjustments tend to show up as minor sudden increases or decreases in the guidance.

Future Precipitation – The ability exists to view the guidance with 5 days of forecast precipitation included. The default plot does not use forecast precipitation and instead assumes climatological conditions (based on the 1981-2010 period) will occur into the future. For guidance that includes forecast precipitation, climatology is used beyond 5 days. The guidance that utilizes precipitation forecasts may show more variation from day to day as precipitation forecasts change each day.

Future Temperature – Model guidance utilizes 10 days of forecast temperatures. Beyond the 10 days climatology (1981-2010) is used. Changes in temperature forecasts have greater influence on timing of streamflow runoff and less influence on the seasonal streamflow volumes.

Missing Guidance:

In some instances guidance may be missing from the plot (evident by missing vertical blue lines). This is usually due to technical issues that may have prevented the model from running that particular day.

Observations:

After April 1st, observations are included on the graphic where available. Vertical orange lines denote these observations. Each orange line indicates accumulated streamflow volume since April 1st. Beyond April 1st, the value of the observation is added to the ESP model guidance in order to represent a total April-July runoff volume. If observed data is missing, then guidance is denoted by a purple line and does not represent total April-July volume, only the volume forecast from that day of the model guidance through end of July.

PRODUCT MENU OPTIONS:

Default plot and menu:

The ESP forecast plot options are described below. Each plot option can be turned on or off by selecting it. Blue indicates the option is off and orange the option is on.

Water Year: 2013 2014

Plot Options (on/off): QPF ESP Official Forecasts Observations Max/Min Historical Unapproved

Water Year: The current and previous water years are available

QPF (Quantitative Precipitation Forecast): Display guidance that includes 5 days of forecast precipitation. The default is to not include precipitation and only use climatology.

ESP (Ensemble Streamflow Prediction): Display the model guidance. The default is to display the model guidance. However this can be turned off to only display official forecasts.

Official Forecasts: Display official forecasts. The default is to display the forecasts.

Observations: The default is to include observations. If this option is turned off, then beyond April 1st the guidance only indicates volumes from that date through July. A purple line will denote this type of guidance.

Max/Min: The maximum and minimum April-July observed volumes are displayed for the period of record. The default is on for this option.

Historical: The observed volume for each year in the period of record is displayed. The default for this option is off.