Interpreting the Streamflow Forecast Chart

Typically the NRCS has presented streamflow forecasts as a table format showing the five exceedance probabilities compared to the 30 year average as follows:

<table>
<thead>
<tr>
<th>Forecast Period</th>
<th>95% (KAF)</th>
<th>70% (KAF)</th>
<th>50% (KAF)</th>
<th>30% (KAF)</th>
<th>10% (KAF)</th>
<th>30yr Avg (KAF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>APR-JUL</td>
<td>315</td>
<td>375</td>
<td>420</td>
<td>460</td>
<td>525</td>
<td>225</td>
</tr>
</tbody>
</table>

The Forecast Chart provides a visual alternative to the table. The forecast range is represented by a colored bar. Vertical lines on the bar signify the five forecast exceedances.

Below is an example. The numbers above the forecast bar are the five exceedance probability volumes in thousand acre-feet (KAF). Each exceedance forecast’s percent of average can be estimated by looking at the horizontal axis. The gray line centered above 100% on the horizontal axis represents the 1981-2010 historical average streamflow for the forecast period.

In the example, the entire forecast bar is shifted right of the gray line indicating a forecast for above average streamflow. The 50% exceedance is represented by the black line in the green portion of the colored bar. This represents a forecast volume of 420KAF which is ~185% of average. If drier than normal future conditions occur the 70% exceedance forecast may be more likely (375KAF or ~165% of average). If future conditions turn wetter than normal, the 30% exceedance forecast may be more likely (460KAF or ~205% of average). Water users are encouraged to consider the range of forecast exceedances instead of relying solely only on the 50% forecast.
The left control panel at the top of the Forecast Chart controls what forecasts are displayed on the chart.

**Water Supply Forecast Chart**

- **Select State & Basin of Interest**
  - Click for dropdown
  - State: Nevada
  - Basin: Walker River Basin
- **Choose current or past publication dates**
  - Publication Year: 2016
  - Publication Date: January 1
- **Forecast Periods**
  - All
  - February-July
  - February-September
  - March-July
  - March-August
  - March-September
  - April-July
  - April-August
  - April-September
  - May-July
  - May-August
  - May-September
  - June-July
  - June-August
  - June-September

**Forecast Points**

- W Walker R nr Coleville
- Forecast Period: Apr-Jul
- Forecast Exceedance Probabilities:
  - Labels on chart represent volumes of water expressed in thousand acre-feet.
  - Percent of Average (30 Yr Period):
    - 0% to 170%
    - 70 to 280

**Use Shift-click to add multiple forecasts periods**
The center control panel at the top of the Forecast Chart gives controls the chart’s horizontal axis and the labels used for the exceedance forecasts.

Water Supply Forecast Chart

| Normal Type: | • Average  
| Label Units: | • Volume in KAF  
| Forecast Labels: | • All Exceedances  
| Forecast Periods: | • All  

All 5 exceedances displayed, Units expressed as volume in KAF

Water Supply Forecast Chart

| Normal Type: | • Average  
| Label Units: | • Volume in KAF  
| Forecast Labels: | • All Exceedances  
| Forecast Periods: | • All  

Only 50% exceedance label is displayed, units expressed as percent of median

Average used as normal. Based on 1981-2010 period.

Median used as normal. Based on 1981-2010 period.
The right control panel can be used to compare forecasts to historic observed streamflow, as well as, period of record maximums and minimums.
Changing the normal type and label units controls the historic labels (observed, normal, maximum and minimum), as well as, the exceedance probability labels.

**Water Supply Forecast Chart**

**Walker River Basin**
Water Supply Forecasts
January 1, 2016

**Forecast Exceedance Probabilities**

- Labels on chart represent volumes of water expressed in thousand acre-feet.

<table>
<thead>
<tr>
<th>Forecast Point</th>
<th>Forecast Period</th>
<th>Percentiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>W Walker R nr Coleville</td>
<td>Apr-Jul 91 obs</td>
<td>23% (1977) 43% 61% 107% 132% 172%</td>
</tr>
</tbody>
</table>

Period of Record Minimum Streamflow as % (Year)

1981-2010 Normal Streamflow (Average or Median) as %

Period of Record Maximum Streamflow As % (Year)

Observed Streamflow for selected year and forecast period as % (in this case Apr-Jul 2016)
The **chart width** option reduces overlap when charts become crowded. The **export options** provide presentation quality graphics.

The chart uses **Dynamic URLs** which keep track of selections and can be bookmarked, shared, or linked.

https://www.wcc.nrcs.usda.gov/wsf/Fcst_Chart/#state=NV&basin=Walker River Basin&year=2016&pubDate=1-1&period=APR-JUL&chartWidth=800&normalType=MED&labelUnit=VOL&forecastLabels=ALL&showObserved=true&showObservedLabel=true&showNormal=true&showNormalLabel=true&showMax=true&showMaxLabel=true&showMaxYear=true&showMin=true&showMinLabel=true&showMinYear=true&showNumberObservations=false&hideEmpty=true