Today’s Presentation

• Review of Fall/Early Winter
  • Weather
  • Precipitation

• Current Conditions Impacting Forecasts
  • Soil Moisture (modeled)
  • Snow
  • El Niño event

• 2016 Water Supply Forecasts

• Weather Outlooks

• Website Demo
New Precipitation Display

LEGACY
(averaged by USGS HUC)

NEW
(averaged by CBRFC model basin)

Monthly Precipitation for September 2015

(Averaged by Hydrologic Unit)

% Average

- > 150%
- 129 - 150%
- 110 - 129%
- 100 - 109%
- 90 - 99%
- 70 - 89%
- 50 - 69%
- < 50%
- Not Reported

Prepared by
NOAA, National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah, www.cbrfc.noaa.gov
Fall 2015 Precipitation

<table>
<thead>
<tr>
<th>Month</th>
<th>Duchesne</th>
<th>Provo</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>68%</td>
<td>92%</td>
</tr>
<tr>
<td>October</td>
<td>82%</td>
<td>62%</td>
</tr>
<tr>
<td>November</td>
<td>87%</td>
<td>62%</td>
</tr>
</tbody>
</table>
December Weather

Upper Atmosphere Pattern

December 1-10 2015: Early December temperatures +20 above normal

December 17-23 2015: Strong moisture influx into the region second half of December
January Weather

January 7th Satellite Image
Splitting Storm Systems – Various Precipitation Impacts
January Weather

January 28th Satellite Image
Significant Pacific Moisture – Widespread Precipitation
Winter Precipitation

Monthly Precipitation for December 2015
(Averaged by Hydrologic Unit)

% Average
- > 150%
- 129 - 150%
- 110 - 129%
- 100 - 109%
- 90 - 99%
- 70 - 89%
- 60 - 69%
- < 50%
- Not Reported

Duchesne: 125%
Provo: 140%

Monthly Precipitation for January 2016
(Averaged by Hydrologic Unit)

% Average
- > 150%
- 129 - 150%
- 110 - 129%
- 100 - 109%
- 90 - 99%
- 70 - 89%
- 60 - 69%
- < 50%
- Not Reported

Duchesne: 92%
Provo: 120%
Seasonal Precipitation: October-January

Duchesne: 95%
Provo: 98%
Below average precipitation so far for February
Forecast Drivers: Soil Moisture

Soil Moisture
November 15, 2015

Soil Moisture representation from the CBRFC hydrologic model
Forecast Drivers: Snow Conditions

SNOW (% median): February 3 2016

SNOW (% median): February 17 2016

Legend:
- No Data
- < 25%
- 25-50%
- 50-75%
- 75-90%
- 90-110%
- 110-125%
- 125-150%
- 150-175%
- >175%
Colorado Basin River Forecast Center
CWHU1 - CHEPETA

68% Median
46% Peak

Accumulation rate 0.0 in/day averaged over last 3 days.

Colorado Basin River Forecast Center
KGCU1 - KINGS CABIN

94% Median
61% Peak

Accumulation rate 0.0 in/day averaged over last 3 days.

Median 1981-2010  2016  2015
Forecast Drivers: Snow - CBRFC Hydro Model

Feb 1st 2016
Significant Runoff Areas

Feb 17th 2016
Significant Runoff Areas

% Median SWE
- >500%
- 300-500%
- 200-300%
- 150-200%
- 130-150%
- 110-130%
- 100-110%
- 90-100%
- 70-90%
- 50-70%
- 30-50%
- 0-30%
Forecast Drivers: El Niño Event

- Characterized by unusually warm temperatures in Pacific Ocean
- Recent Sea Surface Temperatures (SST) anomalies > 2 degrees c.
- Expected to remain strong through winter 2015-2016, ENSO neutral by early summer
**Forecast Drivers: El Niño Event**

Observed monthly sea surface temperature 2015-16 and 1997-98

Forecast monthly sea surface temperatures through September 2016 - trending toward neutral/La Nina conditions
Forecast Drivers: El Niño Event

Typical Impacts

- Enhanced southern jet stream / increased precipitation southern tier of the U.S.
- Warmer / drier conditions more common over the northern tier of the U.S.
- Primary impact period follows the peak - Impacts typically the Dec – March period.
February 1st Water Supply Forecasts

April-July Forecast Streamflow Volumes (% of 1981-2010 average)

- 85%
- 86%
- 84%
- 74%
- 65%
- 85%
- 80%
- 87%
- 85%
- 83%
- 74%
- 74%
Daily Ensemble Streamflow Prediction (ESP) Model Run & Official

Available at: www.cbrfc.noaa.gov Select: Water Supply  Click: Point of Interest

The latest (2016-01-06) 50% ESP forecast is 694 kaf.

Plot Created 2016-01-06 11:43:26, NOAA / NWS / CBRFC
Forecasts in the forecast target period include observed values.
Forecasts: Provo nr Hailstone

Feb 1 Forecast:
10% - 131
50% - 94 KAF (85%)
90% - 64

Provo - Hailstone- Nr (PVHU1)
2016-02-01 Apr-Jul Official 50% Forecast: 94 kaf (85% of average)
ESP is Unregulated and No Precipitation Forecast Included

Over Forecast
Under Forecast
Forecasts: Strawberry nr Solider Springs

Feb 1 Forecast:
10% - 80
50% - 40 KAF (56%)
90% - 25
Forecasts: Starvation Reservoir

Feb 1 Forecast:
10% - 135
50% - 75 KAF (67%)
90% - 49
Forecasts: West Fork below Vat

Feb 1 Forecast:
10% - 19.1
50% - 11.7 KAF (63%)
90% - 7.8
Forecasts: Upper Stillwater Reservoir

Feb 1 Forecast:
10% - 94
50% - 63 KAF (85%)
90% - 48

ESP is Unregulated and No Precipitation Forecast Included
Weather Outlook

- Quick moving storm system for Thursday
- Snow in mountains, rain in valleys before changing to snow

February 17th 12pm MST

2/18-2/19 Forecasted Precipitation
Weather Outlook

- A few weak systems for the weekend - mostly Northern Utah/Wyoming
- High pressure/drying conditions return for next week
Weather Outlook: February-April

Seasonal Precipitation Outlook
Feb-Mar-Apr 2016

Seasonal Temperature Outlook
Feb-Mar-Apr 2016

Climate Prediction Center
Issued: 01/21/14
Weather Outlook: April-July

Seasonal Precipitation Outlook
Apr-May-Jun 2016

Seasonal Temperature Outlook
Apr-May-Jun 2016
Discussion/Website Demo

• Forecast Discussion
  • Peak Flow Forecasts in March
• Operations Discussion
• Next briefing date?
  • Week of March 14th?

Other webinars:
- 2/23 @11am Live Web Page Demo
- 3/7 @10am Great Basin Webinar