Department of Ecology
Water Supply Update

Water Resources Advisory Committee

February 17 2015
Administrative Drought Trigger

• Water supply conditions where a geographical area or a significant part of a geographical area is receiving, or is projected to receive, less than seventy-five percent of normal water supply as the result of natural conditions and the deficiency causes, or is expected to cause, undue hardship to water users within that area.[WAC 173-166-030(2)]
Normal Water Supply

• “The average amount of water available to a geographical area on an annual basis, based upon evaluation of precipitation, streamflow, snowpack and other hydrological and meteorological factors” [WAC 173-166-030(6)]
Ecology Convenes WSAC

WSAC makes recommendation re: water supply

EWEC makes determination re: hardship

Ecology Issues Drought Declaration Order

Governor’s Office Issues Written Approval

WSAC = Water Supply Availability Committee (Technical)
EWEC = Executive Water Emergency Committee (Policy)
The U.S. Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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National Drought Mitigation Center

http://droughtmonitor.unl.edu/
Effect of Drought Order

- Expedited processing for Emergency Drought Permits
- Temporary transfers of water rights
- Funding assistance for public entities (municipalities, irrigation districts, PUDs, etc.)
- Workshops, public education
- Regulation to protect senior water rights
Public Water Systems

Water Shortage Response Plans
(>1000 connections)

Stage 1
- Advisory Actions
  - Potential shortage

Stage 2
- Voluntary Actions
  - Minor loss of supply

Stage 3
- Mandatory Actions
  - Significant supply reduction

Stage 4
- Emergency Actions
  - Loss of Supply
Past Drought Declarations

• 1994 (Yakima Basin)
• 2001 (Statewide)
• 2005 (Statewide)
• 2006 (Lyre – Hoko, Sol Duc – Hoh)
• 2010 (Drought was funded, but no ultimate declaration)
Water Year 2015
So Far: Much Warmer, with Normal Precipitation
Ave. Temperature dep from Ave (deg F)
2/1/2015 – 2/15/2015

Generated 2/16/2015 at WRCC using provisional data.
NOAA Regional Climate Centers
Regional Snowpack Conditions (Feb 17)

Northwest River Forecast Center
Current Station Snow Conditions

Map Overlays:
- NWRFCC Boundary
- NWRFCC Basins
- NWS HGAs
- Counties

Map Type:
- SWE
- Snow Status
- Snow % of Avg
- Seasonal Peak Status
- Basin Obs Status
- Basin Sim Status
- Dir

Legend:
- SWE (% Avg)
- Zero or No Average
- 0-15
- 16-30
- 31-50
- 51-66
- 67-75
- 76-90
- 91-100
- 101-125
- 126-150
- 151-175
- >176

Stations Displayed: 364

Related Links:
- Station Summary List
- Basin Summary List
Snow Analyses: Today vs. Last Year
WY 2005 vs WY 2015: Percent of Average SWE (February 13th)
Precipitation as Rain: Dungeness SNOTEL Site
Feb 09

Above Normal Rain

Below Normal Snowpack
WHERE'S THE SNOW?

HISTORICALLY LOW SNOWPACK
The ski resorts are quiet, and a local ski club calls it 'the saddest year we've had.' Will it mean summer water woes in the lowlands? Not so far.

Mountain Cam

White Pass
Washington
Closed Today
Open Thurs
Last 24 hrs
3"
Lift, Trails & Web
Maps
Cams

2015-02-09 PST 09:25:18
February’s unseasonably warm temperatures have taken a devastating toll on Mt. Spokane Ski & Snowboard Park’s snowpack, forcing our management staff to make the difficult decision to temporarily suspend operations at the ski area this week. We are very grateful to our passholders a...

+ READ THE STORY
Snow depth of 60 inches required. 46 inches as of Feb 09.
Photo taken of the Olympic Mountain range from Hurricane Ridge on January 27th. Hurricane Ridge snow course reported zero snow which has only happened twice since 1960 (1977 & 2005). Photo by Bill Baccus, Olympic National Park.
February 17
Freezing Level @ Paradise, Mt. Rainier, Last 12 Months (March 2014 – Feb 14 2015)

Paradise Elevation = 5400’

Historic Median January Freezing Level: elev. 3881 feet
January 2015 Median Freezing Level: elev. 7407 feet
Percent of October – January Precipitation Falling as Snow is the Lowest in 65 years

4 Months Ending in January % of Precip as Snow 46.79°N, 121.74°W 2000m

% Precip as Snow

35%
Northwest River Forecast Center Flow Volume Projections for the April – September Time Period
Regulating Columbia River Users

- Average runoff at The Dalles is about 93 Million Acre Feet (MAF) between April and September
- On March 1, a forecast of Less than 88 MAF but above 60 MAF triggers voluntary conservation
- If the March 1 forecast is equal to or less than 60 MAF, then users are subject to regulation
- Current Forecast is for 82.2 MAF (February 17)
Focus on Yakima Basin

- Five federal reservoirs. Snowpack is the “6th reservoir.”
- Snowpack is currently about 34 percent of normal.
- Reservoir storage is currently 176 percent of average (93 percent of total capacity).
- Bureau of Reclamation will announce March 9th official forecast for water supply.
CEDAR, SNOQUALMIE, SKYKOMISH Time Series Snowpack Summary
Based on Provisional SNOTEL data as of Feb 09, 2015

- Current as Pct of Median: 18%
- Current as Pct of Last Year: 34%
- Current as Pct of Max: 13%
- Median as Pct of Max: 76%
- Pct of Median Needed to Reach Max: 361%
- Date of Maximum Median Value: Apr 01
SNOTEL Current Snow Water Equivalent (SWE) Records

Feb 17, 2015

NOTE: Until further notice, record calculations are based on period of record through water year 2012; water years 2013 and 2014 are not analyzed.

Current Snow Water (SWE) Equivalent Records

- New High
- Near High
- Non-Record
- New Low
- Near Low
- Snow Free

Analysis includes sites with more than 20 years of historical data. "Near" record means that one other year of the period of record is more extreme.
SNOTEL 7-Day Snow Depth Change (Inches)

Feb 17, 2015

7-day Snow Depth Change (Inches)

- ▲ > 36" gain
- ▲ 19 - 36"
- ▲ 13 - 18"
- ▲ 4 - 12"
- ▲ 1 - 3"
- ▲ 0"
- ▲ -3 - .1"
- ▲ -12 - .4"
- ▲ -18 - .13"
- ▲ -36 - .19"
- ▲ < -36" loss
- ● Snow free
- ● Unavailable*
- ● Data spike**

* Data unavailable at time of posting or snow depth sensor not available at site
** A "data spike" is a gain or loss of more than 100 inches in 24 hours
Map of 7-day average streamflow compared to historical streamflow for the day of the year (Washington)

Monday, February 16, 2015
CURRENT SEASONAL OUTLOOK
FEBRUARY - APRIL

Temperature Outlook: Above Normal

Precipitation Outlook: Below Normal
LATE SUMMER OUTLOOK
AUGUST - OCTOBER

Temperature Outlook: Above Normal

Precipitation Outlook: Equal Chance of Above, Neutral or Below Normal
EARLY SUMMER OUTLOOK
MAY - JULY

Temperature Outlook: May - July
Above Normal

Precipitation Outlook: May - July
Equal Chance of Above, Neutral or Below
Summary Points

• Washington’s water supply forecast varies across the state.
• Snowpack is most problematic in the Cascades and Olympic Mountains.
• Key date for Bureau of Reclamation Yakima water supply forecast is March 9th.
• The State Water Supply Availability Committee will meet March 10th.
• NOAA predicts continued warmer than normal temperatures this spring and summer.
• Ecology is preparing for drought in case of a declaration.
Thank you!

For more information, please contact

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http://www.ecy.wa.gov/programs/wr/ws/wtrsupply.html