



## MAY

### *Snowpack*

SNOTEL Station	Collection Date	Snow Depth (in)	SWE (in)	SWE % Avg	Avg. SWE (in)
Sacajawea	<b>May 3, 2017</b>	<b>20</b>	<b>8.1</b>	<b>91</b>	<b>8.9</b>
	May 3, 2016	9	4.8	54	
Lick Creek	<b>May 3, 2017</b>	<b>35</b>	<b>8.9</b>	<b>105</b>	<b>8.5</b>
	May 3, 2016	20	7.7	91	

- As of May 3rd, **Sacajawea snowpack** is slightly below average . This time last year, **Sacajawea snowpack** was also below average.
- **Lick Creek snowpack** is above average.

Shower Falls	<b>May 3, 2017</b>	<b>80</b>	<b>25.4</b>	<b>102</b>	<b>25</b>
	May 3, 2016	57	21.7	87	
Carrot Basin	<b>May 3, 2017</b>	<b>106</b>	<b>35.9</b>	<b>125</b>	<b>28.8</b>
	May 3, 2016	65	25.3	88	

- As of May 3rd, **Shower Falls snowpack** is above average. This time last year, **Shower Falls snowpack** was below average.
- **Carrot Basin snowpack** is above average.

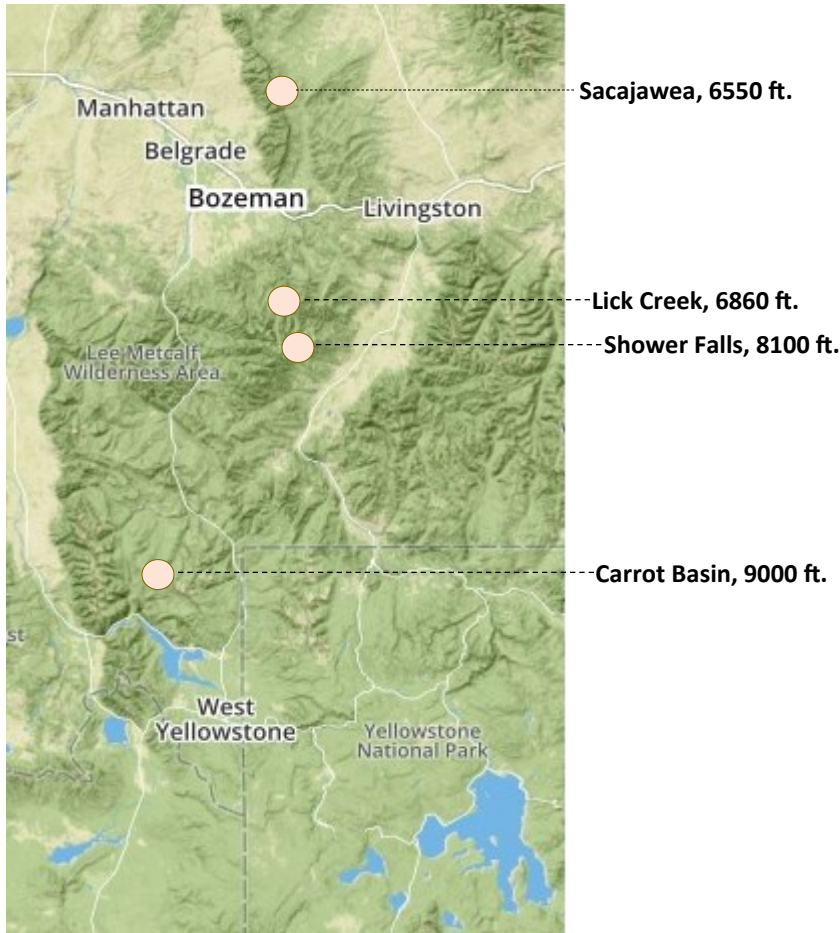
## Understanding the Data

**Snow Depth** — The amount of snow, typically reported in inches, received in a location

**Snow Water Equivalent (SWE)** — The amount of water contained within the snowpack. SWE is a product of snow depth and snow density. It can be thought of as the theoretical depth of water that would result if all of the snowpack at a given site melted instantly (Source: [NASA](#))

**SWE Percent of Average** — The current SWE value compared to the average, or normal, SWE value for that site (Source: [NRCS](#))

**Average SWE** — The average SWE value, calculated from the period of 1981 to 2010



## What is SNOTEL?

**SNOTEL (SNOWpack TElemetry)** is a method of collecting snowpack data, including snow depth, snow density, and snow water equivalent values. SNOTEL data is hosted and collected by the Natural Resource Conservation Service (NRCS) to develop products like water supply forecasts and support agencies in other resource management activities. SNOTEL sites are typically located in mountainous areas and are made up of various sensors that measure snow and weather conditions. The NRCS also hosts an interactive map that allows users to select specific SNOTEL sites and view that site's data. For more information about SNOTEL, visit the [NRCS Snow Survey and Water Supply webpage](#).

Map illustrating SNOTEL sites for Gallatin and surrounding counties

(Source: [NRCS SNOTEL Interactive Map](#))

## Streamflow

USGS Stream Gage Site Number	Site Name	Collection Date	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Temperature (°F)
06052500	Gallatin River at Logan, MT	May 3, 2017	1,310	5.41	44.6
		May 3, 2016	1060	---	55.8
06048650	E Gallatin R ab Water Reclamation Fa nr Bozeman, MT	May 3, 2017	393	5.11	---
		May 3, 2016	217	---	---

USGS Stream Gage Site Number	Site Name	Collection Date	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Temperature (°F)
06043500	Gallatin River near Gallatin Gateway, MT	May 3, 2017	745	1.96	---
		May 3, 2016	1090	---	---

## Reservoir

DNRC Water Project Name	Collection Date	Reservoir Elevation (ft)	Reservoir Volume (acre-ft)	% Capacity	% Avg (for April)
Middle Creek Dam (Hyalite)	May 3, 2017	6,704.3	6,621	64	102
				77 (2016)	148 (2016)
30-Yr Avg for April (acre-ft)		6,406			

### Understanding Streamgage Data

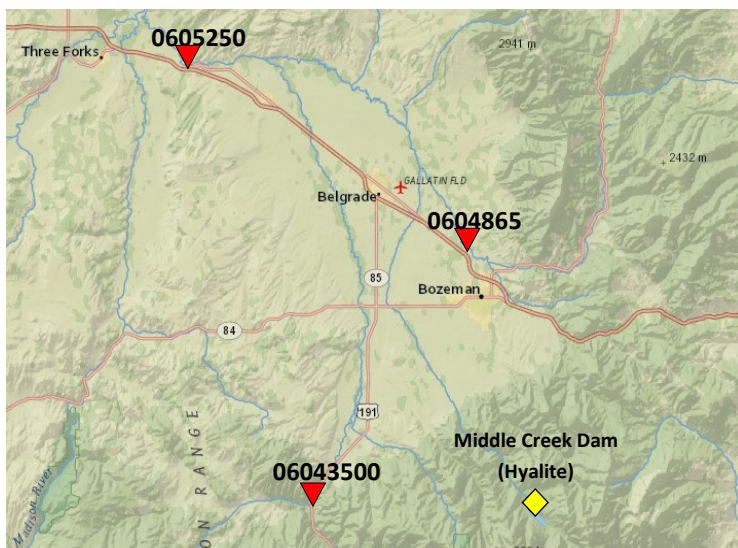
**Discharge** — the volume of water flowing past a given point in a stream in a given period of time ([USGS](#))

**Gage Height** — the height of the water in the stream above a reference point ([USGS](#))

**Temperature** — the temperature of a stream, in degrees Fahrenheit, recorded at a reference point

#### What is a streamgage?

A **USGS streamgage** is an active, continuously functioning measuring device located in the field that computes or estimates a mean daily streamflow or other set of unit values. USGS streamgages measure the elevation of water in a river or stream (the stage) which is then converted to a streamflow (discharge) using a curve that relates the elevation to a set of actual discharge measurements. The stage is typically measured every 15 minutes and data is transmitted to the USGS every 1 to 4 hours, after which stage and streamflow data is calculated and put on to the USGS website. For more information, [visit the USGS webpage on streamgages](#).

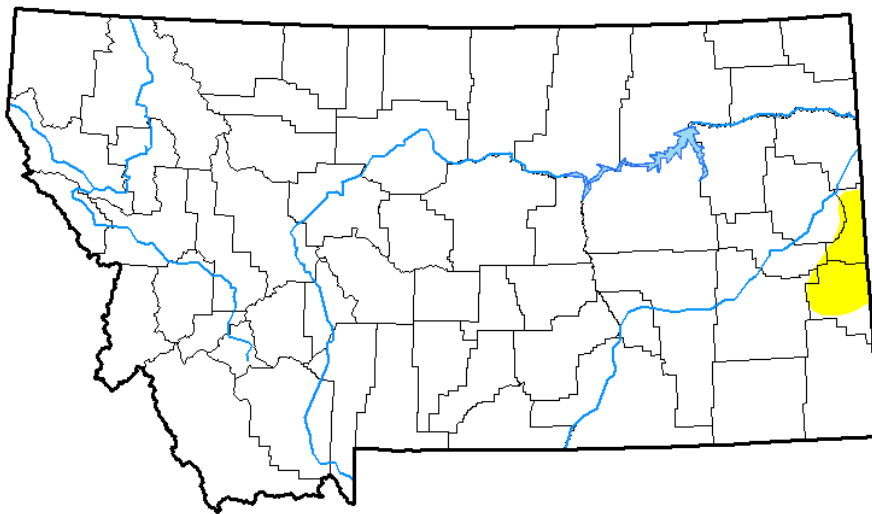


Map illustrating select USGS streamgage sites and Middle Creek Dam site for Gallatin County (Source: [USGS](#), [MT DNRC](#))

### Middle Creek Dam (Hyalite)

Middle Creek Dam (Hyalite), completed in 1951, is owned by the Montana DNRC and managed by the State Water Projects Bureau through a U.S. Forest Service Special Use Permit.

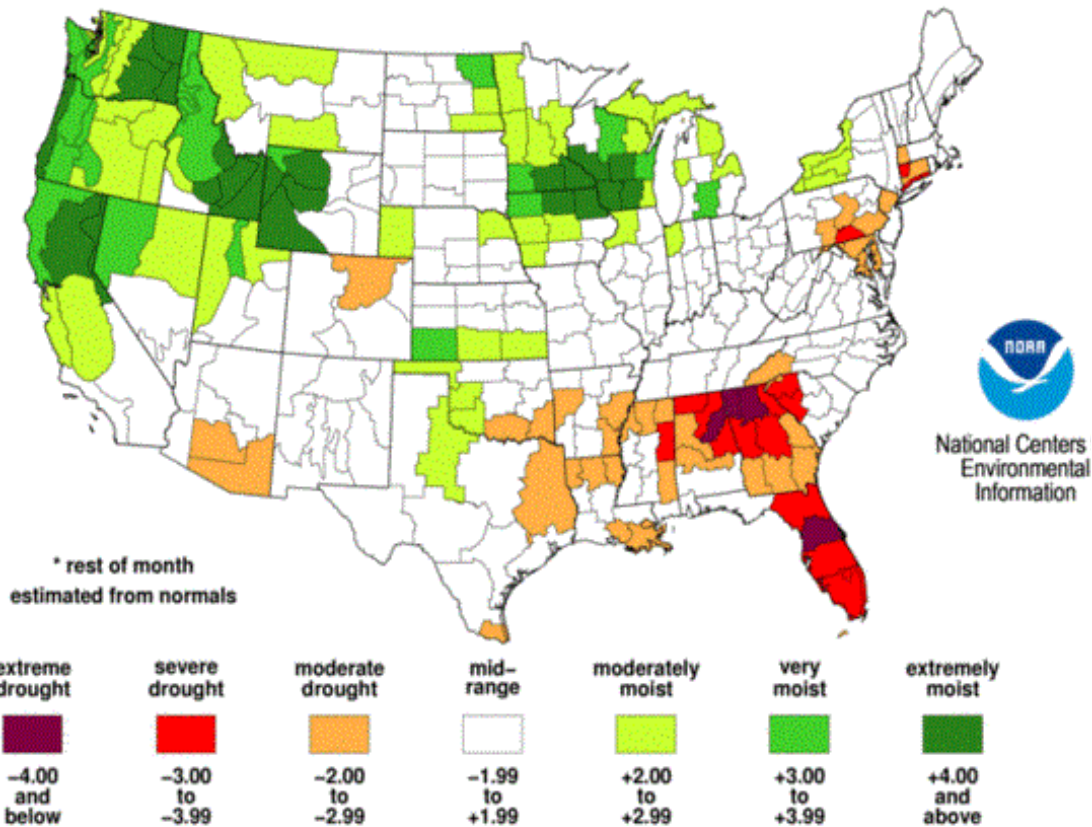
The reservoir stores 10,184 acre-feet of water and provides irrigation water for 73 farms and ranches and drinking water for 2,000 households. The reservoir is also used for recreational purposes. For more information, [visit the Montana DNRC State Water Projects Bureau webpage](#).



**Intensity:**

- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

**U.S. Drought Monitor—Montana** - displays areas experiencing drought conditions (current as of May 2). The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements. **Author(s):** Brian Fuchs, National Drought Mitigation Center. **Source:** [U.S. Drought Monitor](#)



**Palmer Drought Severity Index (PDSI)** - current as of April 29, 2017. The PDSI uses temperature and precipitation data to estimate relative dryness through a standardized index ranging from -4 (dry) to +4 (wet). **Source:** [Climate Data Guide](#)

If you are interested in receiving any more information on snowpack, stream flow, and drought resiliency contact Madison Boone, *Big Sky Watershed Corps Member*, at MSU Extension in Gallatin County. [madison.boone@montana.edu](mailto:madison.boone@montana.edu) OR (406) 582-3287  
 The Gallatin County Drought Resiliency Index can be found online at <http://www.msuextension.org/gallatin/NaturalResourcesDroughtIndex.html>.  
 All map and graph data can also be accessed by clicking on the image.


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