# COLORADO WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES ROOM 818, 1313 SHERMAN ST., DENVER, CO 80203 303-866-3581; <u>www.water.state.co.us</u>

October 1, 2017

The Surface Water Supply Index (SWSI) is used as an indicator of water supply conditions in the seven major river basins of the state and in each of the 41 smaller watersheds, or HUCs. The Colorado Water Conservation Board (CWCB) completed a major revision to the Colorado Drought Plan in 2010. At that time, Colorado adopted a revised SWSI analysis based on the components shown below, which vary depending on the time of year. The revised SWSI is based on a ranking of total volume in a HUC or major river basin ranked against similar volumes in historical years. For instance, in January, the total volume in a HUC is based on the forecasted runoff at specific locations plus the volume in storage in specific reservoirs, all within the HUC. That total volume is ranked against similar total volumes that occurred each January between 1970 and 2010.

Time Period	SWSI Components
January 1 - June 1	Forecasted Runoff + Reservoir Storage
July 1 - September 1	Previous Month's Streamflow + Reservoir Storage
October 1 - December 1	Reservoir Storage

In 2015, CWCB and the Division of Water Resources (DWR) (both Divisions of the Colorado Department of Natural Resources) completed a software project to implement an automated calculation of the SWSI and to document the underlying hydrologic data. July 1, 2015 was the first month that the automated DNR SWSI was published. The results of each month's analysis are summarized within this report and additional information, maps & data are available at: <u>http://water.state.co.us/DWRDocs/Reports/Pages/SWSIReport.aspx</u>. This report also contains updates about current regional conditions and water matters prepared by each DWR Division Office.

The SWSI calculation for the fall season (October 1 to December 1) is based solely on reservoir storage at the end of last month, in this case September 30. The following SWSI values were computed for each of the seven major basins for October 1, 2017. Water supply conditions, as represented by water in storage, are above normal for October 1, 2017 statewide.

Basin	October 1 SWSI	Change from Previous Month*	Change from Previous Year
Arkansas	2.9	-0.2	0.9
Colorado	0.7	+0.0	-0.3
Gunnison	2.9	-0.1	3.0
Rio Grande	3.1	+0.1	1.3
San Juan-Dolores	2.0	-0.5	-0.1
South Platte	3.1	+0.0	0.3
Yampa-White	3.5	3.0	-0.1

\*Last month's SWSI, September 1, 2017, is based on streamflow plus reservoir storage. This month's SWSI is based only on reservoir storage. Direct comparisons of the two should be made with caution since they are based on different metrics.

				SWSI Scale				
-4	-3	-2	-1	0	1	2	3	4
Severe		Moderate		Near Normal		Above Normal	Ab	undant
Drought		Drought		Supply		Supply		Supply



SURFACE WATER SUPPLY INDEX FOR COLORADO BY MAJOR RIVER BASIN

# SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC



Basin	HUC ID	HUC Name	SWSI	Reservoir Storage NEP	Total Vol (AF)	
	11020001	Arkansas Headwaters	1.1	63	219,188	
s	11020002	Upper Arkansas	2.6	82	201,400	
nsa	11020005	Upper Arkansas-Lake Meredith	4.0	99	47,500	
rka	11020006	Huerfano River	-2.7	18	0	
A	11020009	Upper Arkansas-John Martin Reservoir	3.1	87	286,600	
	11020010	Purgatoire River	2.8	84	31,300	
	14010001	Colorado Headwaters	2.5	80	131,230	
ę	14010002	Blue River	-1.8	28	100,400	
lora	14010003	Eagle River		N/A		
Co	14010004	Roaring Fork	-3.0	14	80,358	
	14010005	Colorado Headwaters-Plateau	-0.6	43	8,500	
	14020001	East-Taylor	0.3	54	77,417	
	14020002	Upper Gunnison	2.2	76	855,264	
uo	14020003	Tomichi Creek	1.9	73	400	
siuc	14020004	North Fork Gunnison	-4.0	1	28	
en	14020005	Lower Gunnison	N/A			
	14020006	Uncompahgre River	-0.1	48	58,060	
	14030003	San Miguel		N/A		
	13010001	Rio Grande Headwaters	3.6	93	50,876	
o opr	13010002	Alamosa-Trinchera	3.5	92	13,201	
Gra	13010004	Saguache Creek	N/A			
	13010005	Conejos River	1.0	63	25,790	
	14030002	Upper Dolores	2.1	75	311,093	
έs	14080101	Upper San Juan	1.2	65	73,715	
Juai ore:	14080102	Piedra River		N/A		
an , Dolo	14080104	Animas River	-0.3	47	18,841	
_ بې _	14080105	Middle San Juan	0.0	50	969	
	14080107	Mancos	1.8	71	5,497	
	10190001	South Platte Headwaters	1.8	72	157,300	
	10190002	Upper South Platte	3.3	89	313,600	
tte	10190003	Middle South Platte-Cherry Creek	1.8	71	62,700	
Pla	10190004	Clear Creek	N/A			
ıth	10190005	St. Vrain River	0.9	60	55,638	
Sol	10190006	Big Thompson River	2.6	81	556,800	
	10190007	Cache La Poudre	2.7	83	130,700	
	10190012	Middle South Platte-Sterling	2.7	83	71,100	
	10180001	North Platte Headwaters		N/A		
e -	14050001	Upper Yampa	3.5	91	38,277	
amp /hit	14050002	Lower Yampa		N/A		
∑ ∠	14050003	Little Snake		N/A		
	14050005	Upper White		N/A		

October 1, 2017 SWSI Values by HUC and Non Exceedance Probabilities (NEP)

NEP is non exceedance percentage for total reservoir storage in HUC. Some HUCs do not have any reservoirs considered in the SWSI and are shown as "N/A". Total Vol is the volume of reservoir storage in the HUC. NEP is calculated compared to the volume of actual active storage historically occurring this month during the period 1970-2010. The following table lists each component considered in each HUC.

SWSI Color Scale:	-4.0 (Severe Drought)	0 (Normal)	4.0 (Abundant Supply)
-------------------	-----------------------	------------	-----------------------

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		CLEAR CREEK RESERVOIR	5,900	52
11020001		TURQUOISE LAKE	113,000	50
11020001	Arkansas neduwalers	TWIN LAKES RESERVOIR	58,000	60
		HOMESTAKE RESERVOIR	42,288	87
11020002	Upper Arkansas	PUEBLO RESERVOIR	201,400	82
11020005	Upper Arkansas-Lake	MEREDITH RESERVOIR	39,000	98
11020005	Meredith	LAKE HENRY	8,500	99
11020006	Huerfano River	CUCHARAS RESERVOIR*	0	18
11020000	Upper Arkansas-John	ADOBE CREEK RESERVOIR	43,300	88
11020009	Martin Reservoir	JOHN MARTIN RESERVOIR	243,300	86
11020010	Purgatoire River	TRINIDAD LAKE	31,300	84
14010001	Colorado Hoadwators	WILLIAMS FORK RESERVOIR	74,300	38
14010001	Colorado Headwalers	WOLFORD MOUNTAIN RESERVOIR	56,930	95
14010002	Blue River	GREEN MOUNTAIN RESERVOIR	100,400	28
14010004	Roaring Fork	RUEDI RESERVOIR	80,358	14
14010005	Colorado Headwaters- Plateau	VEGA RESERVOIR	8,500	43
14020001	East-Taylor	TAYLOR PARK RESERVOIR	77,417	54
	Upper Gunnison	BLUE MESA RESERVOIR	732,274	77
		MORROW POINT RESERVOIR	113,505	44
14020002		FRUITLAND RESERVOIR	0	25
		CRAWFORD RESERVOIR	4,500	43
		SILVER JACK RESERVOIR	4,985	55
14020003	Tomichi Creek	VOUGA RESERVOIR NEAR DOYLEVILLE	400	73
14020004	North Fork Gunnison	PAONIA RESERVOIR	28	1
14020006	Uncompahgre River	RIDGEWAY RESERVOIR	58,060	48
		RIO GRANDE RESERVOIR	22,615	88
13010001	Rio Grande Headwaters	SANTA MARIA RESERVOIR	15,300	89
		CONTINENTAL RESERVOIR	12,961	99
12010002	Alamosa-Trinchera	TERRACE RESERVOIR	4,700	64
13010002		MOUNTAIN HOME	8,501	99
13010005	Conejos River	PLATORO RESERVOIR	25,790	63
14020002	Upper Dolores	GROUNDHOG RESERVOIR	12,400	40
14030002		MCPHEE RESERVOIR	298,693	76
14080101	Upper San Juan	VALLECITO RESERVOIR	73,715	65
14080104	Animas River	LEMON RESERVOIR	18,841	47
14080105	Middle San Juan	LONG HOLLOW RESERVOIR	969	50
14080107	Mancos	JACKSON GULCH RESERVOIR	5,497	71
		ANTERO RESERVOIR	20,100	92
10190001	South Platte Headwaters	ELEVENMILE CANYON RESERVOIR	99,800	72
		SPINNEY MOUNTAIN RESERVOIR	37,400	63

October 1, 2017 SWSI Component Information By HUC

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
10100002	Upper South Platte	CHEESMAN LAKE	76,500	83
10190002		DILLON RESERVOIR	237,100	52
		BARR LAKE	15,900	91
10100002	Middle South Platte-Cherry	MILTON RESERVOIR	10,300	64
10190003	Creek	STANDLEY RESERVOIR	36,500	72
		HORSECREEK RESERVOIR	0	10
		GROSS RESERVOIR	21,300	54
		MARSHALL RESERVOIR	5,700	80
10190005	St. Vrain River	BUTTONROCK (RALPH PRICE) RESERVOIR	14,438	51
		TERRY RESERVOIR	2,500	8
		UNION RESERVOIR	11,700	84
		BOYD LAKE	31,200	61
		CARTER LAKE	64,800	87
		LAKE LOVELAND RESERVOIR	6,200	31
10190006	Big Thompson River	LONE TREE RESERVOIR	4,300	80
		MARIANO RESERVOIR	700	56
		LAKE GRANBY	444,300	84
		WILLOW CREEK RESERVOIR	5,300	3
	Cache La Poudre	BLACK HOLLOW RESERVOIR	3,600	99
		CACHE LA POUDRE	7,900	97
		CHAMBERS LAKE	6,400	94
10100007		COBB LAKE	19,500	86
10190007		FOSSIL CREEK RESERVOIR	8,800	99
		HALLIGAN RESERVOIR	500	26
		HORSETOOTH RESERVOIR	76,600	55
		WINDSOR RESERVOIR	7,400	91
		EMPIRE RESERVOIR	13,600	91
	Middle South Platte- Sterling	JACKSON LAKE RESERVOIR	15,700	72
10100012		JULESBURG RESERVOIR	11,000	76
10190012		POINT OF ROCKS RESERVOIR	9,100	61
		PREWITT RESERVOIR	9,300	34
		RIVERSIDE RESERVOIR	12,400	78
1/050001	Upper Vampa	STAGECOACH RESERVOIR NR OAK CREEK	33,100	94
14000001	оррег таппра	YAMCOLO RESERVOIR	5,177	66

NEP is non exceedance percentage (percentile) for volume of the component compared to this month during the historical period 1970-2010. \*Empty, filling restriction

Water Volume NEP Color Scale:

0 (Well Below Normal)

100 (Well Above Normal) 50 (Normal)

The SWSI value for the month was +3.1. September 2017 was a bit dryer and warmer than normal in northeast Colorado, but not extremely so. September started with a continuation of the dry and warm conditions that ended August before shifting over the course of the month to somewhat wetter and cooler conditions. As a result, September precipitation as a whole was near or slightly below normal over most of the area while temperatures were slightly above normal over most of the area.

The relatively normal temperature and precipitation conditions experienced by northeastern Colorado in September resulted in very little change in the USDA Drought Monitor rating during September. At the end of August only a fairly small area near the northeast corner of Colorado had in a D0 "Abnormally Dry" rating. By the end of September, the only change in the drought rating was that the end of August area shrank by about half.

As in August, the flows at the Kersey and Julesburg index gages were above and below, respectively, the long term mean flow. The Kersey gage was well above the historic mean for about the first  $\frac{1}{4}$  of September, then near the historic mean for about the middle  $\frac{1}{2}$  of the month, and then jumped back to well above the mean for the

last <sup>1</sup>/<sub>4</sub> of the month. The overall September mean flow at the Kersey gage was 645 cfs or 120% of the long term mean flow of 539 cfs. The Julesburg flows were below the historic mean flow for the entire month of September. The overall September mean flow at the Julesburg gage was 117 cfs. This represents a flow of about 41% of the long term mean flow of 284 cfs.

The warm and dry conditions that continued from August into September in northeast Colorado contributed to the somewhat more senior than normal calls into September as well. By the end of September the combination of near normal precipitation and the decreasing irrigation demand resulted in much more normal call seniorities on the South Platte main stem. The South Platte Compact call, which impacts only Water District 64, was on at the start of September and remained on to September 16, when the state line flow went above 120 cfs and remained there through the end of September. Calls on the major South Platte tributaries followed the expected pattern similar to the mainstem and were generally near normal by the end of September.

The warmer and dryer conditions in September led to a significant draw on reservoirs, but the storage volumes in the area still ended September in good shape with only one month left to go in the 2017 Irrigation Year. The overall end of September storage was about 61% of capacity. This compares to the long term average end of September storage of about 52% of capacity. Another way to look at this is that September 2017 saw a storage decline of 13% of capacity while the average decline is 6% of capacity.





South Platte-DataComposite-SWSI



The SWSI value for the month was +2.9.

# <u>Outlook</u>

River calls during September ranged from the Amity Canal 2/21/1887 call during the first part of the month to a senior call of 12/3/1884 Catlin Canal during the third week of the month. Conditions changed drastically from that point forward with the Arkansas River Basin receiving widespread precipitation that pushed the river call more junior to allow the 6/9/1890 Colorado Canal call to control upstream with more junior rights coming into priority below the Colorado Canal due to tributary inflows.

# Administrative/Management Concerns

A second above average precipitation year in 2016, coupled with some storage restrictions on

several key Arkansas Basin Reservoirs, has created a storage surplus unlike any conditions we have seen since 1999. Movement of Fryingpan-Arkansas Project water from upstream reservoirs to Pueblo Reservoir make risk of spill of Pueblo Reservoir very high, if not a certainty, by April of 2018. Storage levels in John Martin Reservoir are much higher than previous end of September storage levels have been since 1999 making a spill from John Martin Reservoir a possibility during runoff in 2018.

Because of this storage shortage situation, many water owners with stored water at risk of spill are seeking alternatives to a loss of control via spill. Innovative approaches to recharge are being explored to preserve fully consumable water destined for augmentation or municipal purposes.









Arkansas Basin SWSI History Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

The SWSI value for the month was +3.1. Flow at the gaging station Rio Grande near Del Norte averaged 415 cfs (81% of normal). The Conejos River near Mogote had a mean flow of 226 cfs (151% of normal). Streamflow in the upper Rio Grande basin was generally at or below long-term levels until rainfall in the mountains the last week of September increased streamflow throughout the basin.

# <u>Outlook</u>

The month of September had generally warmer and wetter conditions due to rainfall in the second half of the month. Year to date precipitation is above normal for the San Luis Valley. NOAA weather forecasts for the next month and beyond call for normal precipitation and warmer than normal temperatures.

# Administrative/Management Concerns

On September 23, 2015 the State Engineer filed the long-awaited "Rules Governing the Withdrawal of Groundwater in Water Division No. 3...". Now two years later, the State Engineer is still in

negotiations with several opposers to the case. An 8-week trial has been scheduled in front of Water Judge Swift for January and February, 2018.

# Administrative/Management Concerns

Although the early runoff season was better than normal, many irrigators felt the pinch of dry conditions and ditches going out of priority as August turned into September. Reservoir releases, if available, and well pumping helped meet the demand for irrigation supplies during the latter part of the irrigation season. As October approaches, this demand eases as farmers continue their harvest. Crop yields were down a bit in the San Luis Valley this year. But crop quality continues to increase. Crop prices are good at this time for potatoes and alfalfa.





Rio Grande-DataComposite-SWSI



The SWSI value for the month was +2.9. Conditions remained drier than average in the Gunnison basin during September with only 70-90% of average basin-wide. Temperatures during September were near average in the lower elevations and slightly above average in the high country (1-3 degrees above average).

#### <u>Outlook</u>

The most recent NWS forecast for October through December continues to place the Gunnison basin in an area with equal chances of an above average or below average start to the water year. The forecast, however, still includes above average chances for greater than average temperatures in the Gunnison basin.

#### Administrative/Management Concerns

The Uncompany Valley Water Users Association (UVWUA) kept Gunnison Tunnel diversions near 1,000 cfs for the month of September, but reduced them by 75 cfs on October 10th with further reductions planned for later October. Diversions at the Gunnison Tunnel were greater than inflows to the Aspinall Unit by an average of 250 cfs during September, which resulted in the use of nearly 15,000 acre-feet of storage from the second fill account in Taylor Park Reservoir. The UVWUA heavily used their other storage bucket, Ridgway Reservoir as well, especially during the dry months of August and September. This resulted in the

exhaustion of their irrigation credits on October 10th and caused Tri-County Water Conservancy District (TCWCD) to reduce releases from Ridgway to 60 cfs, which is the amount needed to run their small hydropower turbine. Uncompany River flows below the dam decreased from 172 cfs to 60 cfs with that change.

The North Fork Gunnison River remained on free river conditions because water was still being bypassed through Paonia Reservoir while the Fire Mountain Canal & Reservoir Company completes rehabilitation work on the outlet bulkhead. The outlet rehabilitation is nearly complete and the Reservoir will begin storing water in October, but most likely close enough to the end of the irrigation season that the call will remain off for the rest of 2017.

#### Public Use Impacts

The October 10th reduction in releases from Ridgway Reservoir places the flow in the Uncompany River below the 30 year average during early October of 100 cfs. Although not ideal for fisherman, this will likely be more common in the future as TCWCD wants to preserve storage for the efficient use of their hydropower facilities.









Gunnison Basin SWSI History Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values. Basinwide Conditions Assessment The SWSI value for the month was +0.7.

# <u>Outlook</u>

Colorado River flows are running above average with tributary flows also running above average although forecasted to drop to average flows by the end of October. Below average precipitation with above average temperature is forecast for western Colorado through October.

# Administrative/Management Concerns

As of October 8, the call on the Colorado River main stem is the Shoshone Hydro Power Right for 1250 cfs administered with a Bypass Priority of the CBT Project. Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) continue at or near full capacity. Green Mountain is releasing to pass inflows, release contract water, CB-T replacement water and HUP water. Wolford Mountain is releasing inflows and contract water and recently increased flows for a few days to pay back water owed to the river. Ruedi Reservoir is ramping down to winter.

# Public Use Impacts

An environmental group call the Deep Green Resistance is calling themselves the guardians of the Colorado River Basin and has filed a federal lawsuit against Governor Hickenlooper on behalf of the Colorado River ecosystem asking the court to declare the ecosystem a right to "exist, flourish, regenerate, be restored, and naturally evolve." They would like the Colorado River to be declared a person so they can sue the state over how it's regulated as the threats to the ecosystem are threats to life and, therefore, must be able to protect itself from threats to survival.





Colorado-DataComposite-SWSI



The SWSI value for the month was +3.5.

September precipitation was above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at 106% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of September remained at 103%.

All Division 6 stream gages will be closed by the end of October with the exception of WMFKMHCO and YAMABVCO.

### Outlook

As of September 30th Fish Creek Reservoir was storing approximately 3,427 AF, 82% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir was storing 5,200 AF at the end of September 2017. The capacity of Yamcolo Reservoir is 8,700 AF. The G3 web server is not functioning currently for Elkhead Creek Reservoir. The capacity of Elkhead Creek Reservoir is

24,778 AF. On September 31, 2017, Stagecoach Reservoir was storing 33,100 AF, 91% of capacity.

Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Reservoir municipal, Creek for industrial, fish recreational. and recovery releases. Stagecoach Reservoir is primarily used for recreation though a significant amount of stored water is allocated for municipal, industrial, irrigation and augmentation uses.

### Public Use Impacts

Boat ramps at Stagecoach Reservoir State Park are open through October 31st. The swim beach is closed. Limited campsites will be open for



YAMPA RIVER AT STEAMBOAT. FLOW BY WATER YEAR

winter camping on a first-come first-served basis. Please check the Stagecoach Reservoir State Park website for a detailed fishing report or call 970-879-6552 for the latest fishing conditions.

Steamboat Lake campgrounds are closed. The Steamboat Lake Dam will be undergoing a year-long project to complete required maintenance and repairs. Sage Flats day use area and all access to the dam will be closed for the year. All other Park facilities and activities will be open and available for seasonal use. Please check the Steamboat Lake State Park for current fishing conditions.





Yampa-White Basin SWSI History
Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

#### SAN JUAN-DOLORES BASIN

The SWSI value for the month was +2.0. Flow at the Animas River at Durango averaged 236 cfs (52% of average). The flow at the Dolores River at Dolores averaged 181 cfs (76% of average). The La Plata River at Hesperus averaged 6.3 cfs (32% of average). Precipitation in Durango was 1.49 inches for the month, 62% of the 30-year average of 2.40 inches. Precipitation was the 75th highest amount recorded in September, in Durango, out of 123 years of record. Precipitation to date in Durango, for the water year, is 19.46 inches, 100% of the 30-year average of 19.46 inches. End of last month precipitation to date, for the water year was 103% of average. The average high and low temperatures for the month of September in Durango were 780 and 440. In comparison, the 30-year average high and low for the month is 770 and 450. At the end of the month Vallecito Reservoir contained 74,567 acre-feet compared to its average content of 58,176 acre-feet (128% of average). McPhee Reservoir was up to 298,801 acre-feet compared to its average content of 268,930 (111% of average), while Lemon Reservoir was up to 19,190 acre-feet as compared to its average content of 18,723 acre-feet (102% of average).

### **Outlook**

Precipitation (1.47 inches) was well below average for September in Durango. The monsoon rains typically begin in July and continue to the first weeks in October, unfortunately September monsoon rains were also a miss this year. There were 75 years out of 123 years of record where there was more precipitation than this year. The flows in the rivers within the basin fell below average for this time of year. There was only 94 out of 106 years of record where the total flow past the Animas River at Durango stream gauge was more than this year. There were 55 out of 108 years of record where the total flow past the Dolores stream gauge was more than this year and 89 out of 101 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year.









San Juan-Dolores Basin SWSI History Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.















![](_page_26_Figure_0.jpeg)

![](_page_27_Figure_0.jpeg)

![](_page_28_Figure_0.jpeg)

![](_page_29_Figure_0.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_31_Figure_0.jpeg)

![](_page_32_Figure_0.jpeg)

![](_page_33_Figure_0.jpeg)

![](_page_34_Figure_0.jpeg)

![](_page_35_Figure_0.jpeg)

![](_page_36_Figure_0.jpeg)

![](_page_37_Figure_0.jpeg)

![](_page_38_Figure_0.jpeg)

= HUC:14010004-0CT-PrevMoStreamflow-SWSI = HUC:14010004-0CT-ForeoastedRunoff-SWSI = HUC:14010004-0CT-ReservoirStorage-SWSI = HUC:14010004-0CT-DataComposite-SWSI

0.00 -2.00 -4.00 -6.00

![](_page_39_Figure_0.jpeg)

![](_page_40_Figure_0.jpeg)

![](_page_41_Figure_0.jpeg)

![](_page_42_Figure_0.jpeg)

![](_page_43_Figure_0.jpeg)

![](_page_44_Figure_0.jpeg)

# HUC 11020010 (Purgatoire) Surface Water Supply - OCT

![](_page_45_Figure_0.jpeg)

![](_page_46_Figure_0.jpeg)

![](_page_47_Figure_0.jpeg)

![](_page_48_Figure_0.jpeg)

HUC 14020006 (Uncompany SWSI Values - OCT Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

![](_page_48_Figure_2.jpeg)

![](_page_48_Figure_3.jpeg)

# HUC 14020003 (Tomichi) Surface Water Supply - OCT

![](_page_49_Figure_1.jpeg)

= HUC:14020003-0CT-PrevMoStreamflow-SWSI = HUC:14020003-0CT-ForeoastedRunoff-SWSI = HUC:14020003-0CT-ReservoirStorage-SWSI = HUC:14020003-0CT-DataComposite-SWSI