## 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>

August 1, 2016

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 new SWSI analysis based on the components shown below, which vary depending on the time of year. The new 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. 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 new DNR SWSI was published. The results are summarized within this monthly report and additional information, maps & data are available at: <u>http://water.state.co.us/DWRDocs/Reports/Pages/SWSIReport.aspx</u>. This document also contains reports about regional conditions prepared by each DWR Division Office.

The SWSI calculation for the summer season is based on the previous month's streamflow as well as reservoir storage. The statewide SWSI values for July (August 1) range from a low of -0.3 in the Yampa-White Basin to a high of 1.9 in the Arkansas River Basin. The following SWSI values were computed for each of the seven major basins for August 1, 2016. The results for each HUC are summarized on the following pages.

Basin	August 1 SWSI	Change from Previous Month	Change from Previous Year
Arkansas	1.9	-0.4	-1.6
Colorado	0.0	-1.8	-0.3
Gunnison	-0.1	-1.6	-2.1
Rio Grande	0.6	-0.4	-0.8
San Juan-Dolores	1.4	-0.1	-1.1
South Platte	1.8	-0.7	-1.9
Yampa-White	-0.3	-0.5	-0.6

				SWSI Scale				
-4	-3	-2	-1	0	1	2	3	4
Severe		Moderate		Near Normal		Above Normal	At	oundant
Drought		Drought		Supply		Supply		Supply



SURFACE WATER SUPPLY INDEX FOR COLORADO BY MAJOR RIVER BASIN



## SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC



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August 1, 2016

Basin	HUC ID	HUC Name	SWSI	SWSI Reservoir Streamflow Storage NEP NEP		Total Vol (AF)
	11020001	D001Arkansas Headwaters-1.24842		262,740		
s	ທ 11020002 Upper Arkansas		1.7	76	32	273,716
2 11020005 Upper A		Upper Arkansas-Lake Meredith	0.3	95	30	109,565
rka	11020006	Huerfano River	-3.3	11	22	2,449
A	11020009	Upper Arkansas-John Martin Reservoir	1.8	73	27	275,837
	11020010	Purgatoire River	1.2	72	25	31,173
	14010001	Colorado Headwaters	0.2	84	43	355,557
opg	14010002	Blue River	-1.0	77	41	195,718
lora	14010003	Eagle River	-0.7	NA	42	42,774
Co	14010004	Roaring Fork	-0.5	34	44	200,185
	14010005	Colorado Headwaters-Plateau	-0.6	55	43	341,345
	14020001	East-Taylor	-2.2	23	34	116,944
	14020002	Upper Gunnison	-0.1	54	41	966,732
uos	14020003	Tomichi Creek	1.1	87	60	11,821
nnis	14020004	North Fork Gunnison	-1.0	10	52	26,525
Gui	14020005	Lower Gunnison	-0.7	NA	41	130,465
	14020006	Uncompahgre River	2.3	52	56	97,495
	14030003 San Miguel		0.2	NA	53	24,403
<u>.</u> 원 13010001	13010001	Rio Grande Headwaters	1.1	80	43	89,424
	13010002	Alamosa-Trinchera	-0.6	46	40	18,922
Gra R	13010004	Saguache Creek	1.9	NA	73	5,704
	13010005	Conejos River	-1.0	46	35	38,087
	14030002	Upper Dolores	2.3	78	52	382,484
έs	14080101	Upper San Juan	-1.3	50	25	135,450
Jua	14080102	Piedra River	-2.1	NA	25	8,126
an , Dolo	14080104	Animas River	-1.0	46	35	76,754
S –	14080105	Middle San Juan	-2.8	50	14	951
	14080107	Mancos River	1.2	41	80	9,287
	10190001	South Platte Headwaters	0.0	53	21	169,881
	10190002	Upper South Platte	0.4	60	41	365,724
itte	10190003	Middle South Platte-Cherry Creek	-0.7	70	40	232,400
Pla	10190004	Clear Creek	-1.2	NA	35	22,837
uth	10190005	St. Vrain River		87	28	100,639
Sol	10190006	Big Thompson River	1.3	71	29	623,600
	10190007	Cache La Poudre	2.9	87	62	233,900
	10190012	Middle South Platte-Sterling	0.6	80	40	314,100
	10180001	North Platte Headwaters	-0.9	NA	39	26,312
ba-	14050001	Upper Yampa	0.3	95	38	77,538
amp Vhit	14050002	Lower Yampa	-0.7	NA	42	43,504
< <sup>ب</sup> ر	14050003	Little Snake	-0.4	NA	45	14,116
	14050005	Upper White	0.1	NA	51	33,911

August 1, 2016 SWSI Values by HUC and Non Exceedance Probabilities (NEP)

NEP is non exceedance percentage for total reservoir storage in HUC and last month's native streamflow volume in HUC (if there is more than one of each type of component, their volumes are added together). Some HUCs do not have any reservoirs considered in the SWSI. Total Vol is the volume of reservoir storage plus last month's streamflow volume in the HUC combined. NEP is calculated compared to the volume of actual natural flow and active storage historically occurring this month during the period 1970-2010. The following table lists each component considered in each HUC.

## August 1, 2016 SWSI Component Information By HUC

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		ARKANSAS RIVER AT SALIDA	43,640	42
		CLEAR CREEK RESERVOIR	7,100	33
11020001	Headwaters	TURQUOISE LAKE	112,500	38
	ricadimaters	TWIN LAKES RESERVOIR	57,000	39
		HOMESTAKE RESERVOIR	42,500	79
11020002		PUEBLO RESERVOIR INFLOW	58,916	32
Upper Arkansas		PUEBLO RESERVOIR	214,800	76
		PUEBLO RESERVOIR INFLOW	58,916	32
		HUERFANO RIVER NEAR REDWING	848	6
11020005	Upper Arkansas-	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	1,601	49
	Lake Mereditin	MEREDITH RESERVOIR	39,500	90
		LAKE HENRY	8,700	99
		HUERFANO RIVER NEAR REDWING	848	6
11020006	Huerfano River	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	1,601	49
		CUCHARAS RESERVOIR	0	11
		PUEBLO RESERVOIR INFLOW	58.916	32
		HUERFANO RIVER NEAR REDWING	848	6
	Upper Arkansas-	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	1.601	49
11020009	John Martin Reservoir	PURGATOIRE RIVER AT TRINIDAD	4,273	25
			61,600	90
			148,600	71
	1020010 Purgatoire River	PURGATOIRE RIVER AT TRINIDAD	4,273	25
11020010		TRINIDAD LAKE	26,900	72
		COLORADO RIVER NEAR DOTSERO	196 657	43
14010001	Colorado Headwaters		96 100	81
			62 800	78
		BI UF RIVER INFLOW TO GREEN MOUNTAIN RES	49,818	41
14010002	Blue River	GREEN MOUNTAIN RESERVOIR	145,900	77
14010003	Eagle River	FAGLE RIVER BELOW GYPSUM	47,774	47
		ROARING FORK AT GLENWOOD SPRINGS	100.785	44
14010004	Roaring Fork	RUEDI RESERVOIR	99,400	34
	Colorado	COLORADO RIVER NEAR CAMEO	318,145	43
14010005	Headwaters-			
	Plateau	VEGA RESERVOIR	23,200	55
		TAYLOR R INF TO TAYLOR PARK RESERVOIR	11,157	27
14020001	East-Taylor	EAST RIVER AT ALMONT	18,787	39
		TAYLOR PARK RESERVOIR	87,000	23
		GUNNISON RIVER NEAR GUNNISON, CO	42,395	38
		LAKE FORK AT GATEVIEW, CO	20,737	48
14020002		BLUE MESA RESERVOIR	766,000	56
	Upper Gunnison	MORROW POINT RESERVOIR	111,800	24
		FRUITLAND RESERVOIR	4,300	66
		CRAWFORD RESERVOIR	10,800	54
		SILVER JACK RESERVOIR	10,700	64
14020003	Tomichi Creek	TOMICHI CREEK AT GUNNISON, CO	11,121	60
14020003		VOUGA RESERVOIR NEAR DOYLEVILLE	700	87

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
14020004	North Fork	NORTH FORK GUNNISON R NR SOMERSET	16,935	52
14020004	Gunnison	PAONIA RESERVOIR	9,590	10
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	130,465	41
14020006		UNCOMPAHGRE RIVER AT COLONA	26,095	56
14020000	Uncompangre River	RIDGEWAY RESERVOIR	71,400	52
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	24,403	53
		RIO GRANDE NEAR DEL NORTE	44,824	43
12010001	Rio Grande	RIO GRANDE RESERVOIR	22,900	83
13010001	Headwaters	SANTA MARIA RESERVOIR	8,000	50
		CONTINENTAL RESERVOIR	13,700	89
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	4,742	36
		TRINCHERA CK	1,384	46
		SANGRE DE CRISTO	550	34
13010002	Alamosa-Trinchera	UTE CREEK	1,351	40
		CULEBRA CREEK AT SAN LUIS	1,564	47
		TERRACE RESERVOIR	4,900	49
		MOUNTAIN HOME	4,430	50
13010004	Saguache Creek	SAGUACHE CREEK NEAR SAGUACHE, CO	5,704	73
42040005	Conejos River	CONEJOS RIVER NEAR MOGOTE	12,987	35
13010005		PLATORO RESERVOIR	25,100	46
	Upper Dolores	DOLORES RIVER BELOW MCPHEE RESERVOIR	17,484	52
14030002		GROUNDHOG RESERVOIR	21,700	91
		MCPHEE RESERVOIR	343,300	76
		SAN JUAN RIVER NEAR CARRACAS	15,339	17
14080101	Upper San Juan	LOS PINOS RIVER NEAR BAYFIELD	17,111	28
		VALLECITO RESERVOIR	103,000	50
14080102	Piedra River	PIEDRA RIVER NEAR ARBOLES	8,126	25
		ANIMAS RIVER AT DURANGO	45,848	44
14080104	Animas River	FLORIDA RIVER INFLOW TO LEMON RESERVOIR	2,106	9
		LEMON RESERVOIR	28,800	46
4 40904 05	Middle San Juan	LA PLATA RIVER AT HESPERUS	748	14
14080105		LONG HOLLOW RESERVOIR	203	50
4 40904 07	Managa Diver	MANCOS RIVER NEAR MANCOS	1,987	80
14080107	Mancos River	JACKSON GULCH RESERVOIR	7,300	41
		ELEVENMILE CANYON RESV INFLOW	9,981	21
10100001	South Platte	ANTERO RESERVOIR*	12,700	16
10190001	Headwaters	ELEVENMILE CANYON RESERVOIR	99,300	33
		SPINNEY MOUNTAIN RESERVOIR	47,900	81
		SOUTH PLATTE RIVER AT SOUTH PLATTE	35,094	42
40400000		BEAR CREEK ABV EVERGREEN	3,130	48
10190002	Upper South Platte	CHEESMAN LAKE	79,200	66
		DILLON RESERVOIR	248,300	40

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		SOUTH PLATTE RIVER AT SOUTH PLATTE	35,094	42
		BEAR CREEK ABV EVERGREEN	3,130	48
		CLEAR CREEK AT GOLDEN	22,837	35
		SAINT VRAIN CREEK AT LYONS	13,800	22
		BOULDER CREEK NEAR ORODELL	10,700	39
10100000	Middle South	SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	5,239	42
10190003	Platte-Cherry Creek	BIG THOMPSON R AT MOUTH, NR DRAKE, CO	15,300	29
	Creek	CACHE LA POUDRE R AT CANYON MOUTH	40,000	62
		BARR LAKE	24,100	82
		MILTON RESERVOIR	11,900	36
		STANDLEY RESERVOIR	41,200	57
		HORSECREEK RESERVOIR	9,100	56
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	22,837	35
		SAINT VRAIN CREEK AT LYONS	13,800	22
		BOULDER CREEK NEAR ORODELL	10,700	39
	St. Vrain River	SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	5,239	42
10100005		GROSS RESERVOIR	29,000	81
10190005		MARSHALL RESERVOIR	7,700	47
		BUTTONROCK (RALPH PRICE) RESERVOIR	16,200	90
		TERRY RESERVOIR	6,300	66
		UNION RESERVOIR	11,700	48
	Big Thompson	BIG THOMPSON R AT MOUTH, NR DRAKE, CO	15,300	29
		BOYD LAKE	36,900	51
		CARTER LAKE	95,100	89
10100006		LAKE LOVELAND RESERVOIR	6,300	16
10190000	River	LONE TREE RESERVOIR	3,600	10
		MARIANO RESERVOIR	3,100	50
		LAKE GRANBY	456,100	71
		WILLOW CREEK RESERVOIR	7,200	34
		CACHE LA POUDRE R AT CANYON MOUTH	40,000	62
		BLACK HOLLOW RESERVOIR	5,400	97
10190007		CACHE LA POUDRE	8,400	74
	Cache La Poudre	CHAMBERS LAKE	5,500	41
		COBB LAKE	19,300	78
		FOSSIL CREEK RESERVOIR	7,200	57
		HALLIGAN RESERVOIR	5,800	77
		HORSETOOTH RESERVOIR	136,600	95
		WINDSOR RESERVOIR	5,700	31

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		SOUTH PLATTE RIVER AT SOUTH PLATTE	35,094	42
		BEAR CREEK ABV EVERGREEN	3,130	48
		CLEAR CREEK AT GOLDEN	22,837	35
		SAINT VRAIN CREEK AT LYONS	13,800	22
		BOULDER CREEK NEAR ORODELL	10,700	39
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	5,239	42
10190012	Middle South	BIG THOMPSON R AT MOUTH, NR DRAKE, CO	15,300	29
10170012	Platte-Sterling	CACHE LA POUDRE R AT CANYON MOUTH	40,000	62
		EMPIRE RESERVOIR	24,900	90
		JACKSON LAKE RESERVOIR	23,300	56
		JULESBURG RESERVOIR	16,200	82
		POINT OF ROCKS RESERVOIR	45,200	81
		PREWITT RESERVOIR	21,800	87
		RIVERSIDE RESERVOIR	36,600	80
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	26,312	39
		YAMPA RIVER AT STEAMBOAT SPRINGS	12,581	42
		ELK RIVER NEAR MILNER, CO	23,720	30
14050001	Upper Yampa	ELKHEAD CREEK ABOVE LONG GULCH	936	47
		STAGECOACH RESERVOIR NR OAK CREEK	36,000	99
		YAMCOLO RESERVOIR	4,300	62
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	43,504	42
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	14,116	45
14050005	Upper White	WHITE RIVER NEAR MEEKER	33,911	51

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

### **Basinwide Conditions Assessment**

The SWSI value for the month was +1.8. July in northeast Colorado continued a very similar weather pattern as in June. Temperatures over pretty much the entire area were above too well above average in July. Precipitation however, displayed a distinct difference between areas generally east and west of the I25 corridor. Precipitation east of the I25 corridor was generally near to above normal. Precipitation west of the I25 corridor was generally below to well below normal. This lack of precipitation is also reflected in the USDA Drought Monitor, which indicates that only a small "Abnormally Dry (D0)" area west of I25 at the end of June grew to cover much of the area west of I25 and north of I70 by the end of July.

The flows in the South Platte followed the general change in the precipitation pattern just discussed. The overall monthly flows at both the Kersey and Julesburg index gages were, at best, near average and mostly well below average for the entire month. The overall July mean flow at the Kersey gage was 407 cfs or approximately 60% of the period of record mean flow of 675 cfs. The overall July mean flow at the Julesburg gage was170 cfs or approximately 55% of the period of record mean flow of 311 cfs.

The call on the South Platte mainstem also reflected the dry July weather and low stream flows. Most of the South Platte mainstem was under a call the entire month and the South Platte Compact call was on twice for a total of 7 days. Most of the major South Platte tributaries were under either the South Platte call or, more likely, an internal call senior to the South Platte call the entire month of July.

Though storage in the South Platte basin was drawn on significantly in July, it started the month so far ahead of average that it was still above average by the end of the month. The end of July 2016 storage was at about 82% of capacity. The average end of July storage is about 71% of reservoir capacity.







South Platte-DataComposite-SWSI

### **Basinwide Conditions Assessment**

The SWSI value for the month was +1.9.

## <u>Outlook</u>

River flow remained fairly strong in July with calls ranging from 12/3/1884 (Catlin Canal) to 6/9/1890 (Colorado Canal) during the month for the mainstem above John Martin Reservoir.

A forest fire in the Hayden Pass area occurred during July burning nearly 17,000 acres. This area is south of Highway 50 and the Arkansas River near Coaldale, Colorado. Mitigation efforts to prevent damage from storm runoff will begin fairly soon to prevent damage to important water infrastructure as well as protect public safety.

### Administrative/Management Concerns

Imports via the Fryingpan-Arkansas Project were less than projected causing the Southeastern Colorado Water Conservancy District to freeze the final 20% of the 2016-17 allocation. This water supply provides supplemental irrigation water and well augmentation and return flow maintenance water that are important to the water rights within the SECWCD boundaries.







#### Basinwide Conditions Assessment

The SWSI value for the month was +0.6. Flow at the gaging station Rio Grande near Del Norte averaged 794 cfs (63% of normal). The Conejos River near Mogote had a mean flow of 298 cfs (66% of normal). Stream flow levels in the basin's rivers and creeks fell off drastically during the latter part of June and throughout July as a result of the high temperatures and lack of precipitation. Most streams in the upper Rio Grande basin flowed only one-half to two-thirds of the normal amount during July.

The exceptions were Major and Garner Creeks, located up in the northeast part of San Luis Valley. These small drainages produced above average flow throughout July. The creeks combine to irrigate a family farm and ranch northeast of Moffat.

Precipitation in Alamosa was only 0.31 inches, 0.66 inches below normal. Annual precipitation in Alamosa remains slightly above average for the year to date.

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

The most recent National Weather Service forecasts call for well below normal precipitation during August for the San Luis Valley. The outlook gets bleaker for the autumn and winter as temperatures are expected to be above normal and precipitation below normal.

above normal and precipitation below normal.

#### Administrative/Management Concerns

The large decrease in streamflow at the upper index gaging stations on the Rio Grande and Conejos systems enabled water administrators to reduce the amount of water curtailed from diversion to meet Compact delivery requirements during July.

Without consistent rainfall during August and September, junior water right owners in Division 3 should expect senior calls to keep them out of priority for the rest of the irrigation season.

#### Public Use Impact

Rainfall around the San Luis Valley has been very erratic this summer. However, a monsoonal pattern moved into the region in early August, bringing much-needed precipitation and a slight increase in streamflow. Irrigators are now relying heavily on well water and reservoir releases.







Rio Grande-DataComposite-SW/SI

2008

2010

2012

2014

2016

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

**Historical Period** 

**Recent Period** 

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### Basinwide Conditions Assessment

The SWSI value for the month was -0.1. Precipitation in July was at or above average in most areas of the Gunnison basin, with the highest amounts falling in the southwest portion of the basin where precipitation was over 150% of average due to monsoonal moisture. In fact, heavy rainfall caused mudslides between Placerville and Telluride that closed Highway 145 during late July and early August. Temperatures across the basin were near average for the month of July.

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

The National Weather Service 90-day climate forecast, which includes August through October, indicates that higher than average temperatures are expected for the late summer and early fall in the Gunnison basin while there are equal chances of below or above average precipitation during that same period.

#### Administrative/Management Concerns

The Taylor Park Reservoir second fill account stored an additional 9,000 acre-feet in July, bringing the cumulative amount stored by August 1st. Gunnison Tunnel demand was satisfied by natural inflow to the Aspinall Unit for all but 5 days during July. This results in only about 1,000 acre-feet of Taylor Park storage used to satisfy Tunnel demand so far in 2016.

Most smaller tributary streams were on call, especially in the North Fork Gunnison River drainage by the end of July. In addition, a senior call was placed on Washington Gulch, which is tributary to the Slate River in Crested Butte, in July that resulted in administration by the Division of Water Resources (DWR). Storage was heavily used to satisfy demand for agriculture in the Surface Creek and North Fork basins during July. Water commissioners on the Grand Mesa worked hard with the Grand Mesa Water Users Association to arrange storage releases to satisfy that demand to occur first from four reservoirs that are planning to line their outlets during the fall of 2016. The biggest of those reservoirs, Eggleston Reservoir, was already close to being empty at the end of August.

#### Public Use Impacts

The draining of four reservoirs on the Grand Mesa, particularly Eggleston Reservoir, has created some concern about fishing interests, but the outlet lining projects cannot be completed while the reservoirs are storing water above their outlets.





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Gunnison Basin SWSI History Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values. <u>Basinwide Conditions Assessment</u> The SWSI value for the month was 0.0.

## <u>Outlook</u>

Colorado River flows are running slightly above average with tributary flows running slightly below average and forecasted to remain around average throughout August. Above average temperatures and normal precipitation are forecast for August. Reservoir releases in general, will gradually decrease throughout August as inflows fall.

## Administrative/Management Concerns

As of August 9, there is no call on the Colorado River. Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) continue at or near full capacity. Ruedi Reservoir releases have increased to Support the fish recovery efforts in the 15 mile reach. Wolford Mountain releases have also increased to release HUP surplus water and accommodate the Endangered Fish Recovery.

## Public Use Impacts

Excess algae growth has blanketed the lower Roaring Fork River in what some are calling the "emerald carpet". The water is being tested to see if it still meets the state standard for dissolved oxygen, although it hasn't seemed to affect the health of the fishery. The cause is due to the river levels dropping quickly after the runoff in combination with hot weather.







## Basinwide Conditions Assessment

The SWSI value for the month was -0.3. July precipitation was well below 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 44% of average for the combined 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 July was 100%.

All gages in Division 6 are currently open and measurements are ongoing. All gages are recording below average flow as of August 15, 2016.

## <u>Outlook</u>

As of July 31st Fish Creek Reservoir was storing approximately 4,167 AF, 100% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir was storing 4,300 AF at the end of July 2016. The capacity of Yamcolo Reservoir is 8,700 AF. On July 31st, 2016, Stagecoach Reservoir was storing 36,000 AF which is 108% of capacity. On July 31st, Elkhead Creek Reservoir was 94% full and storing 23,347.

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

## Public Use Impacts

At Steamboat Lake State all boat ramps, roads and campgrounds are open. The swimming beach is open. Fishing has been slow mid afternoon. Early morning and later evening have been more productive.

At Stagecoach Reservoir State Park all boat ramps, roads and campgrounds are open as well as the swimming beach. For details on fishing, please visit the Stagecoach Park conditions site at www.cpw@state.gov.us.

The Beaver Creek fire continues to burn north of Walden.







#### SAN JUAN-DOLORES BASIN

#### **Basinwide Conditions Assessment**

The SWSI value for the month was +1.4. Flow at the Animas River at Durango averaged 770 cfs (67% of average). The flow at the Dolores River at Dolores averaged 253 cfs (66% of average). The La Plata River at Hesperus averaged 13 cfs (38% of average). Precipitation in Durango was 1.16 inches for the month, 59% of the 30-year average of 1.95 inches. Precipitation was the 91st highest amount recorded in July, in Durango, out of 122 years of record. Precipitation to date in Durango, for the water year, is 15.49 inches, 103% of the 30-year average of 15.09 inches. End of last month precipitation to date, for the water year was 109% of average. The average high and low temperatures for the month of July in Durango were 890 and 520. In comparison, the 30-year average high and low for the month is 860 and 540. At the end of the month Vallecito Reservoir contained 124,400 acre-feet compared to its average content of 103,007 acre-feet (115% of average). McPhee Reservoir was up to 343,264 acre-feet compared to its average content of 308,570 (111% of average), while Lemon Reservoir was up to 29,160 acre-feet as compared to its average).

#### Outlook

Precipitation (1.16 inches) was below average for July in Durango. There were 91 years out of 122 vears of record where there was more precipitation than this year. July is typically the beginning of the monsoon season. Although precipitation for the month was below average, there were 12 days out of 31 were measurable precipitation was recorded in Durango. Flows in the rivers within the basin fell below average. There were 64 out of 105 years of record where the total flow past the Animas River at Durango stream gauge was more than this year. There were 66 out of 106 years of record where the total flow past the Dolores stream gauge was more than this year and 85 out of 99 years of record where the total flow past the La Plata

River at Hesperus gauge was more than this year.











HUC:14080107-AUG-DataComposite HUC:14080107-AUG-PrevMoStreamflow [\*\*Results are computed using observed flow data for the previous month's streamflow component for 1 station(s).] HUC:14080107-AUG-ForecastedRunoff HUC:14080107-AUG-ReservoirStorage

# HUC 14080107 (Mancos) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:14080107-AUG-PrevMoStreamflow-SWSI HUC:14080107-AUG-ForecastedRunoff-SWSI HUC:14080107-AUG-ReservoirStorage-SWSI HUC:14080107-AUG-DataComposite-SWSI



HUC 10180001 (North Platte Headwaters) Surface Water Supply - AUG

HUC:10180001-AUG-PrevMoStreamflow-SWSI HUC:10180001-AUG-ForecastedRunoff-SWSI HUC:10180001-AUG-ReservoirStorage-SWSI HUC:10180001-AUG-DataComposite-SWSI



HUC:10190001-AUG-ReservoirStorage-SWSI

HUC:10190001-AUG-DataComposite-SWSI



HUC:10190002-AUG-DataComposite HUC:10190002-AUG-PrevMoStreamflow HUC:10190002-AUG-ForecastedRunoff HUC:10190002-AUG-ReservoirStorage

HUC 10190002 (Upper South Platte) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.





= HUC:10190002-AUG-PrevMoStreamflow-SWSI = HUC:10190002-AUG-ForecastedRunoff-SWSI = HUC:10190002-AUG-ReservoirStorage-SWSI = HUC:10190002-AUG-DataComposite-SWSI



HUC:10190003-AUG-ReservoirStorage-SWSI

<sup>-</sup>HUC:10190003-AUG-DataComposite-SWSI



HUC:10190004-AUG-DataComposite HUC:10190004-AUG-PrevMoStreamflow HUC:10190004-AUG-ForecastedRunoff HUC:10190004-AUG-ReservoirStorage

HUC 10190004 (Clear) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:10190004-AUG-PrevMoStreamflow-SWSI HUC:10190004-AUG-ForecastedRunoff-SWSI HUC:10190004-AUG-ReservoirStorage-SWSI HUC:10190004-AUG-DataComposite-SWSI



HUC 10190005 (St. Vrain) SWSI Values - AUG

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



HUC:10190005-AUG-PrevMoStreamflow-SWSI HUC:10190005-AUG-ForecastedRunoff-SWSI HUC:10190005-AUG-ReservoirStorage-SWSI HUC:10190005-AUG-DataComposite-SWSI



-5.00 1972 1974 1976 1978 1980 HUC:10190006-AUG-PrevMoStreamflow-SWSI HUC:10190006-AUG-ForecastedRunoff-SWSI HUC:10190006-AUG-ReservoirStorage-SWSI =HUC:10190006-AUG-DataComposite-SWSI -6.00



HUC:10190007-AUG-DataComposite HUC:10190007-AUG-PrevMoStreamflow HUC:10190007-AUG-ForecastedRunoff HUC:10190007-AUG-ReservoirStorage

HUC 10190007 (Cache La Poudre) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.





= HUC:10190007-AUG-PrevMoStreamflow-SWSI = HUC:10190007-AUG-ForecastedRunoff-SWSI = HUC:10190007-AUG-ReservoirStorage-SWSI = HUC:10190007-AUG-DataComposite-SWSI



HUC:10190012-AUG-ReservoirStorage-SWSI

HUC:10190012-AUG-DataComposite-SWSI



HUC:11020001-AUG-PrevMoStreamflow-SWSI HUC:11020001-AUG-ForecastedRunoff-SWSI HUC:11020001-AUG-ReservoirStorage-SWSI

HUC:11020001-AUG-DataComposite-SWSI





HUC:11020002-AUG-PrevMoStreamflow-SWSI HUC:11020002-AUG-ForeoastedRunoff/SWSI HUC:11020002-AUG-ReservoirStorage-SWSI HUC:11020002-AUG-DataComposite-SWSI



HUC:11020005-AUG-DataComposite-SWSI



= HUC:11020006-AUG-PrevMoStreamflow-SWSI = HUC:11020006-AUG-ForecastedRunoff-SWSI = HUC:11020006-AUG-ReservoirStorage-SWSI = HUC:11020006-AUG-DataComposite-SWSI



HUC:11020009-AUG-ReservoirStorage-SWSI

HUC:11020009-AUG-DataComposite-SWSI





HUC:13010001-AUG-ForecastedRunoff-SWS HUC:13010001-AUG-ReservoirStorage-SWSI

HUC:13010001-AUG-DataComposite-SWSI





HUC:13010004-AUG-DataComposite HUC:13010004-AUG-PrevMoStreamflow HUC:13010004-AUG-ForecastedRunoff HUC:13010004-AUG-ReservoirStorage

HUC 13010004 (Saguache) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:13010004-AUG-PrevMoStreamflow-SWSI HUC:13010004-AUG-ForecastedRunoff-SWSI HUC:13010004-AUG-ReservoirStorage-SWSI HUC:13010004AUG-DataComposite-SWSI





= HUC:13010005-AUG-PrevMoStreamflow-SWSI = HUC:13010005-AUG-ForecastedRunoff-SWSI = HUC:13010005-AUG-ReservoirStorage-SWSI = HUC:13010005-AUG-DataComposite-SWSI





HUC 14010002 (Blue) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



= HUC:14010002-AUG-PrevMoStreamflow-SWSI = HUC:14010002-AUG-ForecastedRunoff-SWSI = HUC:14010002-AUG-ReservoirStorage-SWSI = HUC:14010002-AUG-DataComposite-SWSI



HUC:14010003-AUG-DataComposite HUC:14010003-AUG-PrevMoStreamflow HUC:14010003-AUG-ForecastedRunoff HUC:14010003-AUG-ReservoirStorage

# HUC 14010003 (Eagle) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



= HUC:14010003-AUG-PrevMoStreamflow-SWSI = HUC:14010003-AUG-ForecastedRunoff-SWSI = HUC:14010003-AUG-ReservoirStorage-SWSI = HUC:14010003-AUG-DataComposite-SWSI



HUC 14010004 (Roaring Fork) Surface Water Supply - AUG

HUC:14010004-AUG-PrevMoStreamflow-SWSI HUC:14010004-AUG-ForecastedRunoff/SWSI HUC:14010004-AUG-ReservoirStorage-SWSI HUC:14010004-AUG-DataComposite-SWSI

-6.00





HUC 14020001 (East-Taylor) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:14020001-AUG-PrevMoStreamflow-SWSI HUC:14020001-AUG-ForecastedRunoff-SWSI HUC:14020001-AUG-ReservoirStorage-SWSI HUC:14020001-AUG-DataComposite-SWSI



HUC:14020002-AUG-DataComposite HUC:14020002-AUG-PrevMoStreamflow HUC:14020002-AUG-ForecastedRunoff HUC:14020002-AUG-ReservoirStorage

HUC 14020002 (Upper Gunnison) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.





= HUC:14020002-AUG-PrevMoStreamflow-SWSI = HUC:14020002-AUG-ForecastedRunoff-SWSI = HUC:14020002-AUG-ReservoirStorage-SWSI = HUC:14020002-AUG-DataComposite-SWSI



HUC 14020003 (Tomichi) SWSI Values - AUG





= HUC:14020003-AUG-PrevMoStreamflow-SWSI = HUC:14020003-AUG-ForecastedRunoff-SWSI = HUC:14020003-AUG-ReservoirStorage-SWSI = HUC:14020003-AUG-DataComposite-SWSI



HUC:14020004-AUG-DataComposite-SWSI



= HUC:14020005-AUG-PrevMoStreamflow-SWSI = HUC:14020005-AUG-ForecastedRunoff-SWSI = HUC:14020005-AUG-ReservoirStorage-SWSI = HUC:14020005-AUG-DataComposite-SWSI

-2.00 -4.00 -6.00



HUC:14020006-AUG-DataComposite HUC:14020006-AUG-PrevMoStreamflow HUC:14020006-AUG-ForecastedRunoff HUC:14020006-AUG-ReservoirStorage

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





HUC:14020006-AUG-PrevMoStreamflow-SWSI HUC:14020006-AUG-ForecastedRunoff-SWSI HUC:14020006-AUG-ReservoirStorage-SWSI HUC:14020006-AUG-DataComposite-SWSI





HUC:14030003-AUG-DataComposite HUC:14030003-AUG-PrevMoStreamflow HUC:14030003-AUG-ForecastedRunoff HUC:14030003-AUG-ReservoirStorage

HUC 14030003 (San Miguel) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



= HUC:14030003-AUG-PrevMoStreamflow-SWSI = HUC:14030003-AUG-ForecastedRunoff-SWSI = HUC:14030003-AUG-ReservoirStorage-SWSI = HUC:14030003-AUG-DataComposite-SWSI



HUC:14050001-AUG-PrevMoStreamflow-SWSI HUC:14050001-AUG-ForecastedRunoff-SWSI HUC:14050001-AUG-ReservoirStorage-SWSI

HUC:14050001-AUG-DataComposite-SWSI



= HUC:14050002-AUG-PrevMoStreamflow-SWSI = HUC:14050002-AUG-ForecastedRunoff-SWSI = HUC:14050002-AUG-ReservoirStorage-SWSI = HUC:14050002-AUG-DataComposite-SWSI



#### HUC:14050003-AUG-PrevMoStreamflow-SWSI HUC:14050003-AUG-ForecastedRunoff-SWSI HUC:14050003-AUG-ReservoirStorage-SWSI HUC:14050003-AUG-DataComposite-SWSI

-4.00



HUC:14050005-AUG-DataComposite HUC:14050005-AUG-PrevMoStreamflow HUC:14050005-AUG-ForecastedRunoff HUC:14050005-AUG-ReservoirStorage

HUC 14050005 (Upper White) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:14050005-AUG-PrevMoStreamflow-SWSI HUC:14050005-AUG-ForecastedRunoff-SWSI HUC:14050005-AUG-ReservoirStorage-SWSI HUC:14050005-AUG-DataComposite-SWSI



= HUC:14080101-AUG-PrevMoStreamflow-SWSI = HUC:14080101-AUG-ForecastedRunoff-SWSI = HUC:14080101-AUG-ReservoirStorage-SWSI = HUC:14080101-AUG-DataComposite-SWSI



HUC:14080102-AUG-DataComposite HUC:14080102-AUG-PrevMoStreamflow HUC:14080102-AUG-ForecastedRunoff HUC:14080102-AUG-ReservoirStorage

HUC 14080102 (Piedra) SWSI Values - AUG Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.





= HUC:14080102-AUG-PrevMoStreamflow-SWSI = HUC:14080102-AUG-ForecastedRunoff-SWSI = HUC:14080102-AUG-ReservoirStorage-SWSI = HUC:14080102-AUG-DataComposite-SWSI



HUC:14080104-AUG-PrevMoStreamflow-SWSI HUC:14080104-AUG-ForeoastedRunoff-SWSI HUC:14080104-AUG-ReservoirStorage-SWSI HUC:14080104-AUG-DataComposite-SWSI

