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>

July 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. For July 1, the method for calculating SWSI is a change from the previous month, which included streamflow forecasts. The statewide SWSI values for June (July 1) range from a low of 0.2 in the Yampa-White Basin to a high of 2.5 in the South Platte Basin. The following SWSI values were computed for each of the seven major basins for July 1, 2016. The results for each HUC are summarized on the following pages.

Basin	July 1 SWSI	Change from Previous Month	Change from Previous Year
Arkansas	2.4	0.5	-1.4
Colorado	1.6	1.6	-0.5
Gunnison	1.5	1.1	-0.9
Rio Grande	0.9	1.4	-0.7
San Juan-Dolores	1.5	1.1	-1.2
South Platte	2.5	0.6	-1.5
Yampa-White	0.2	-0.3	0.9

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



SURFACE WATER SUPPLY INDEX FOR COLORADO BY MAJOR RIVER BASIN

July 1, 2016

SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC



July 1, 2016

Basin	HUC ID	HUC Name		Reservoir Storage NEP	Streamflow NEP	Total Vol (AF)
	11020001	Arkansas Headwaters	1.8	57	71	366,800
یو ۲11020002 ۲11020005		Upper Arkansas	2.4	73	74	432,459
		Upper Arkansas-Lake Meredith	2.3	99	74	259,166
rka	11020006	Huerfano River	0.0	14	65	10,107
∢	11020009	Upper Arkansas-John Martin Reservoir	2.3	77	74	483,695
	11020010	Purgatoire River	1.8	77	69	47,829
	14010001	Colorado Headwaters	2.0	83	70	859,488
opt	14010002	Blue River	2.2	76	67	283,173
ora	14010003	Eagle River	1.4	N/A	66	175,260
Col	14010004	Roaring Fork	1.8	68	71	455,593
	14010005	Colorado Headwaters-Plateau	1.3	48	65	1,173,046
	14020001	East-Taylor	0.7	41	57	215,839
	14020002	Upper Gunnison	1.2	70	58	1,152,408
log	14020003	Tomichi Creek	1.7	74	70	35,980
sinc	14020004	North Fork Gunnison	0.6	11	57	101,098
en	14020005	Lower Gunnison	0.6	N/A	58	501,271
	14020006	Uncompahgre River	3.4	53	82	145,291
	14030003	San Miguel	1.5	N/A	68	62,276
	13010001	Rio Grande Headwaters	0.9	66	63	243,645
io nde	13010002	Alamosa-Trinchera	0.6	41	62	60,454
Ri Grai	13010004	Saguache Creek	3.3	N/A	89	16,564
Ŭ	13010005	Conejos River	0.7	41	59	114,332
	14030002	Upper Dolores	2.7	81	57	474,789
έ ω	14080101	Upper San Juan	0.4	89	55	315,006
Juai ore:	14080102	Piedra River	-0.6	N/A	43	49,321
an , Dolo	14080104	Animas River	0.7	55	58	232,024
S. –	14080105	Middle San Juan	0.9	50	58	7,414
	14080107	Mancos	1.4	52	67*	15,805
	10190001	South Platte Headwater	0.6	52	79	180,592
	10190002	Upper South Platte	2.0	73	70	412,767
itte	10190003	Middle South Platte-Cherry Creek	2.1	69	74	527,044
Pla	10190004	Clear Creek	3.0	N/A	86	64,912
lth	10190005	St. Vrain	2.9	90	84	176,764
Sol	10190006	Big Thompson	2.6	84	72	688,000
	10190007	Cache La Poudre	2.1	97	69	352,300
	10190012	Middle South Platte-Sterling	2.1	76	74	651,244
	10180001	North Platte Headwaters	1.4	N/A	67	103,712
e Ja-	14050001	Upper Yampa	1.8	99	66	340,622
amp Vhit	14050002	Lower Yampa	0.2	N/A	53	346,073
≥ ×	14050003	Little Snake	0.3	N/A	53	131,036
	14050005	Upper White	0.1	N/A	52	101,931

July 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). Total Vol is the volume of reservoir storage plus streamflow forecast volume in 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.

*NEP is based on observed flow as native flow is native flow data was not yet available.

July 1, 2016 SWSI Component Information By HUC

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		ARKANSAS RIVER AT SALIDA	139,100	71
11020001		CLEAR CREEK RESERVOIR	9,100	46
	Arkansas Headwaters	TURQUOISE LAKE	115,400	49
	Treadwaters	TWIN LAKES RESERVOIR	61,000	41
		HOMESTAKE RESERVOIR	42,200	79
11020002		PUEBLO RESERVOIR INFLOW	196,759	74
11020002	Upper Arkansas	PUEBLO RESERVOIR	235,700	73
		PUEBLO RESERVOIR INFLOW	196,759	74
		HUERFANO RIVER NEAR REDWING	5,602	71
11020005	Upper Arkansas-	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	4,506	60
	Lake mereulti	MEREDITH RESERVOIR	42,800	99
		LAKE HENRY	9,500	99
		HUERFANO RIVER NEAR REDWING	5,602	71
11020006	Huerfano River	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	4,506	60
		CUCHARAS RESERVOIR	0	14
		PUEBLO RESERVOIR INFLOW	196,759	74
		HUERFANO RIVER NEAR REDWING	5,602	71
44020000	Upper Arkansas- John Martin Reservoir	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	4,506	60
11020009		PURGATOIRE RIVER AT TRINIDAD	14,729	69
		ADOBE CREEK RESERVOIR	75,800	99
		JOHN MARTIN RESERVOIR	186,300	72
11020010	Dumenta ing Dinan	PURGATOIRE RIVER AT TRINIDAD	14,729	69
11020010	Purgatoire River	TRINIDAD LAKE	33,100	77
		COLORADO RIVER NEAR DOTSERO	697,988	70
14010001	Colorado Headwaters	WILLIAMS FORK RESERVOIR	96,700	99
		WOLFORD MOUNTAIN RESERVOIR	64,800	78
4 404 0000	Dive Diver	BLUE RIVER INFLOW TO GREEN MOUNTAIN RES	140,173	67
14010002	blue River	GREEN MOUNTAIN RESERVOIR	143,000	76
14010003	Eagle River	EAGLE RIVER BELOW GYPSUM	175,260	66
14010004	Dearing Fork	ROARING FORK AT GLENWOOD SPRINGS	355,478	71
14010004	Roaring Fork	RUEDI RESERVOIR	100,115	68
	Colorado	COLORADO RIVER NEAR CAMEO	1,142,246	65
14010005	Headwaters- Plateau	VEGA RESERVOIR	30.800	48
	racea	TAYLOR R INF TO TAYLOR PARK RESERVOIR	40.526	52
14020001	East-Taylor	EAST RIVER AT ALMONT	78.212	58
	Lust ruytor	TAYLOR PARK RESERVOIR	97.100	41
		GUNNISON RIVER NEAR GUNNISON, CO	150.063	57
		LAKE FORK AT GATEVIEW. CO	68.344	65
		BLUE MESA RESERVOIR	788,500	72
14020002	Upper Gunnison	MORROW POINT RESERVOIR	111.100	7
		FRUITLAND RESERVOIR	8.100	68
		CRAWFORD RESERVOIR	13.900	57
		SILVER JACK RESERVOIR	12.400	66
4 400 0000	-	TOMICHI CREEK AT GUNNISON. CO	35.280	70
14020003	Tomichi Creek	VOUGA RESERVOIR NEAR DOYLEVILLE	700	74

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
14020004	North Fork	NORTH FORK GUNNISON R NR SOMERSET	85,598	57
14020004	Gunnison	PAONIA RESERVOIR	15,500	11
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	501,271	58
14020006	Uncomponente Divor	UNCOMPAHGRE RIVER AT COLONA	69,891	82
14020006	Uncompangre River	RIDGEWAY RESERVOIR	75,400	53
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	62,276	68
		RIO GRANDE NEAR DEL NORTE	196,645	63
42040004	Rio Grande	RIO GRANDE RESERVOIR	25,500	66
13010001	Headwaters	SANTA MARIA RESERVOIR	8,900	44
		CONTINENTAL RESERVOIR	12,600	80
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	27,965	61
		TRINCHERA CK	4,041	54
		SANGRE DE CRISTO	2,627	55
13010002	Alamosa-Trinchera	UTE CREEK	4,515	65
		CULEBRA CREEK AT SAN LUIS	7,868	59
		TERRACE RESERVOIR	7,200	40
		MOUNTAIN HOME	6,238	47
13010004	Saguache Creek	SAGUACHE CREEK NEAR SAGUACHE, CO	16,564	89
12010005	Conejos River	CONEJOS RIVER NEAR MOGOTE	85,032	59
13010005		PLATORO RESERVOIR	29,300	41
	Upper Dolores	DOLORES RIVER BELOW MCPHEE RESERVOIR	77,889	57
14030002		GROUNDHOG RESERVOIR	25,500	99
		MCPHEE RESERVOIR	371,400	72
		SAN JUAN RIVER NEAR CARRACAS	114,672	52
14080101	Upper San Juan	LOS PINOS RIVER NEAR BAYFIELD	76,834	60
		VALLECITO RESERVOIR	123,500	89
14080102	Piedra River	PIEDRA RIVER NEAR ARBOLES	49,321	43
		ANIMAS RIVER AT DURANGO	170,499	58
14080104	Animas River	FLORIDA RIVER INFLOW TO LEMON RESERVOIR	23,125	60
		LEMON RESERVOIR	38,400	55
4 40004.05		LA PLATA RIVER AT HESPERUS	6,950	58
14080105	Middle San Juan	LONG HOLLOW RESERVOIR	464	50
4 40004 07	Managa	MANCOS RIVER NEAR MANCOS*	6,105	67
14080107	Mancos	JACKSON GULCH RESERVOIR	9,700	52
		ELEVENMILE CANYON RESV INFLOW	25,492	79
40400004	South Platte	ANTERO RESERVOIR	11,000	15
10190001	Headwaters	ELEVENMILE CANYON RESERVOIR	99,100	31
		SPINNEY MOUNTAIN RESERVOIR	45,000	67
		SOUTH PLATTE RIVER AT SOUTH PLATTE	75,019	70
40400000	Linn on Courth Diotto	BEAR CREEK ABV EVERGREEN	5,748	63
10190002	Upper South Platte	CHEESMAN LAKE	79,200	61
		DILLON RESERVOIR	252,800	66
		SOUTH PLATTE RIVER AT SOUTH PLATTE	75,019	70
		BEAR CREEK ABV EVERGREEN	5,748	63
40400000	Middle South	CLEAR CREEK AT GOLDEN	64.912	86
10190003	Platte-Cherry	SAINT VRAIN CREEK AT LYONS	47,400	73
	CIECK	BOULDER CREEK NEAR ORODELL	35,400	95
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	19,664	62

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	46,800	72
		CACHE LA POUDRE R AT CANYON MOUTH	130,100	69
		BARR LAKE	29,900	83
		MILTON RESERVOIR	18,400	55
		STANDLEY RESERVOIR	41,200	41
		HORSECREEK RESERVOIR	12,500	41
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	64,912	86
		SAINT VRAIN CREEK AT LYONS	47,400	73
		BOULDER CREEK NEAR ORODELL	35,400	95
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	19,664	62
10190005	St. Vrain	GROSS RESERVOIR	29,100	30
10170005	Jt. viam	MARSHALL RESERVOIR	9,200	40
		BUTTONROCK (RALPH PRICE) RESERVOIR	16,200	90
		TERRY RESERVOIR	7,500	79
		UNION RESERVOIR	12,300	34
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	46,800	72
		BOYD LAKE	43,200	49
	Big Thompson	CARTER LAKE	105,300	72
10190006		LAKE LOVELAND RESERVOIR	9,600	60
10170000		LONE TREE RESERVOIR	8,300	77
		MARIANO RESERVOIR	4,900	47
		LAKE GRANBY	461,900	84
		WILLOW CREEK RESERVOIR	8,000	59
		CACHE LA POUDRE R AT CANYON MOUTH	130,100	69
		BLACK HOLLOW RESERVOIR	4,900	97
		CACHE LA POUDRE	10,500	96
		CHAMBERS LAKE	8,500	72
10190007	Cache La Poudre	COBB LAKE	21,400	87
		FOSSIL CREEK RESERVOIR	9,600	58
		HALLIGAN RESERVOIR	6,400	70
		HORSETOOTH RESERVOIR	147,600	97
		WINDSOR RESERVOIR	13,300	50
		SOUTH PLATTE RIVER AT SOUTH PLATTE	75,019	70
		BEAR CREEK ABV EVERGREEN	5,748	63
		CLEAR CREEK AT GOLDEN	64,912	86
		SAINT VRAIN CREEK AT LYONS	47,400	73
		BOULDER CREEK NEAR ORODELL	35,400	95
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	19,664	62
10190012	Middle South	BIG THOMPSON R AT MOUTH, NR DRAKE, CO	46,800	72
10170012	Platte-Sterling	CACHE LA POUDRE R AT CANYON MOUTH	130,100	69
		EMPIRE RESERVOIR	35,800	98
		JACKSON LAKE RESERVOIR	25,800	45
		JULESBURG RESERVOIR	19,700	60
		POINT OF ROCKS RESERVOIR	68,600	77
		PREWITT RESERVOIR	22,800	42
		RIVERSIDE RESERVOIR	53,500	74

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	103,712	67
14050001		YAMPA RIVER AT STEAMBOAT SPRINGS	123,841	69
	Upper Yampa	ELK RIVER NEAR MILNER, CO	162,391	66
		ELKHEAD CREEK ABOVE LONG GULCH	10,191	47
		STAGECOACH RESERVOIR NR OAK CREEK	36,400	99
		YAMCOLO RESERVOIR	7,800	75
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	346,073	53
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	131,036	53
14050005	Upper White	WHITE RIVER NEAR MEEKER	101,931	52

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

Basinwide Conditions Assessment

The SWSI value for the month was +2.5. The weather in June was in sharp contrast to April and May weather pattern in northeast Colorado. While April and May were generally cool and damp, things turned hot and dryer in June. June temperatures were uniformly above normal and precipitation over most of the basin moved from above average in May to average or below average in June. The warm temperatures did bring the snowmelt runoff out of the mountains more quickly than expected in June, but fortunately increasing demand (also due to the warm temperatures) meant that only very minor low land flooding happened in a few areas.

The flows in the South Platte reflected the June weather change. Though the overall monthly flows at both the Kersey and Julesburg index gages continued to be above normal, as they have for most of Irrigation Year 2016, there was a distinct "break" from well above average to near or even below average in mid-June. Even with these "breaks" in flow the overall May mean flow at the Kersey gage was 3850 cfs or approximately 167% of the period of record mean flow of 2308 cfs. The overall May mean flow at the Julesburg gage was 3080 cfs or approximately 216% of the period of record mean flow of 1426 cfs.

The call on the South Platte mainstem also reflected the June weather change. For the first time since September 30, 2015, the South Platte mainstem above approximately the town of Brush went under call on June 27, 2016. This run of practically 9 continuous months of free river on the mainstem is almost unprecedented. Many of the major South Platte tributaries were under internal calls senior to the South Platte call by the end of June as well.

Storage is the one area that had not begun to show the impact of the June weather change by the end of June. Overall reservoir storage in the South Platte basin continued to be above average for the 33rd month in a row at the end of June. The average end of June storage is about 84% of reservoir capacity. The end of June 2016 storage was at about 94% of capacity.







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

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Basinwide Conditions Assessment

The SWSI value for the month was +2.4.

<u>Outlook</u>

Snowmelt runoff peaked on June 6, 2016 at the Arkansas River at Canon City gage at 4,220 cubic feet per second, well below the 2015 peak flow at this same gage. Nevertheless, runoff remained strong throughout June providing a good supply for downstream water rights. Some rain events on the Fountain Creek watershed occurred, however none were as robust as those experienced in June 2015 when peak flows reached nearly 6000 cfs at the Fountain Creek at Pueblo gage.

Administrative/Management Concerns

Management of water supplies related to the emerging cannabis industry in the Arkansas Basin (marijuana and industrial hemp) has become an intense workload for Division 2 staff as well as

their counterparts at the State Engineer's Office. Over twenty new substitute water supply plans have been created with many more expected to occur in 2016. Ensuring a legal and reliable source of supply, as well as avoiding conflicts with the Bureau of Reclamation's policy on "Use of Reclamation Water or Facilities for Activities Prohibited by the Controlled Substances Act of 1970", have been two of the major areas of concern.







Basinwide Conditions Assessment

The SWSI value for the month was +0.9. Flow at the gaging station Rio Grande near Del Norte averaged 3496 cfs (118% of normal). The Conejos River near Mogote had a mean flow of 1195 cfs (108% of normal). Streamflow in the upper Rio Grande basin was erratic during June as some streams were already peaked and in the hard decline (Rio San Antonio, Sangre de Cristo Creek, and the Los Pinos River) while others had a late start to the runoff and peaked near June 6th (Ute Creek, Saguache Creek, North Crestone Creek). Unfortunately, by the end of the month, most streams in the basin had declined to below average flow.

The higher elevations and the Valley floor received near average precipitation during June. Temperatures in the San Luis Valley were above normal during June with a few 90+ degree days. June 18 and 19 in Alamosa featured 50 degree temperature swings from lows of about 40 degrees to highs of 90 degrees.

<u>Outlook</u>

As the month of June came to a close, some monsoonal-type activity began, replacing the warm and dry conditions of early June. The NOAA 90-day forecasts for July through September suggest higher than normal temperatures and a below normal precipitation.

Administrative/Management Concerns

Some of the upper Rio Grande basin streamflows have not been as prolific as forecasted. The result is the lessening of water right curtailment on the Rio Grande and the Conejos to meet the Rio Grande Compact delivery obligation.

The vast network of satellite-monitored gauging stations in Division 3 is a great benefit to water administrators, farmers, ranchers, and recreators. The Colorado Division of Water Resources website at www.water.state.co.us provides easy access to over 80 satellite-monitored gauges in Division 3 alone. The gauges include local creeks and rivers, ditches and canals, reservoir elevations, and access to an additional 20 stations monitored by the U.S. Geological Survey in Colorado and New Mexico essential for administration of the Rio Grande and Costilla Creek Compacts. Current flows can be monitored against historic average daily flows, with many stations having over 70 years of data.

Public Use Impact

Consistently sunny conditions favored the farmers and ranchers aiding the growth of crops and grazing land during June. The first cutting of hay and alfalfa yielded very well.







Basinwide Conditions Assessment

The SWSI value for the month was +1.5. In terms of precipitation June was about as varied across the Gunnison basin as you can get. Some parts of the basin, such as the Taylor River drainage, received as low as 30% of average precipitation while others, such as the top of the Grand Mesa received up to 130% of average. Temperatures across the basin were not nearly as variable and ranged from 3 to 7 degrees above average. Peak streamflows occurred early in the month on June 6th or 7th in most basin streams, which is close to the average date.

<u>Outlook</u>

The National Weather Service 90-day climate forecast, which includes July through September, indicates that higher than average temperatures are expected for the latter part of summer in the Gunnison basin while there are equal chances of below or above average precipitation.

Administrative/Management Concerns

The Taylor Park Reservoir second fill account contained almost 93,000 acre-feet of water on July 1st while all of the first fill account had been moved into the Aspinall Unit per the decree in 86CW203. This means that in addition to a full Ridgway Reservoir, the biggest water user in the Gunnison basin, the Uncompanyer Valley Water Users Association, has ample storage going into the season when it will be needed. The

Gunnison Tunnel was still running on natural flow as inflows into the Aspinall Unit had not dropped below Tunnel diversions as of July 1st.

Hot weather in June did produce a number of calls on smaller tributary streams as flows in many of the smaller tributaries, specifically in the North Fork Gunnison River and Surface Creek drainages, dropped quickly in late June.

Public Use Impacts

The extended runoff season produced a long rafting season for many boating guides, but it appears that continued hot weather will reduce flows for much of July.







<u>Outlook</u>

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

Administrative/Management Concerns

There is currently 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, Wolford and Green Mountain Reservoir releases are generally decreasing and reservoir storage is at or near capacity.

Public Use Impacts

The transbasin diversions from the Roaring Fork River through the Twin Lakes Tunnel ramps back up this month after being shut down for a couple of weeks due to wet conditions on the Arkansas River. Twin Lakes Reservoir and Canal Co. had already diverted 54,452 acre-feet of water from the Roaring Fork River to store in Twin Lakes Reservoir.







Basinwide Conditions Assessment

The SWSI value for the month was +0.2. June 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 41% 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 June was 103%.

All gages in Division 6 are currently open and measurements are ongoing. All gages are recording below average flow as of July 13, 2016.

<u>Outlook</u>

As of June 30th 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 7,800 AF at the end of June 2016. The capacity of Yamcolo Reservoir is 8,700 AF. On June 30th, 2016, Stagecoach Reservoir was storing 36,400 AF which is 109% of capacity. On June 30th, Elkhead Creek Reservoir was 97% full and storing 24,062AF.

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.

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 burning north of Walden has grown to over 20,000 acres. As of now, 5% of the fire has been contained.





Yampa-White 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 +1.5. Flow at the Animas River at Durango averaged 2,865 cfs (104% of average). The flow at the Dolores River at Dolores averaged 1,272 cfs (98% of average). The La Plata River at Hesperus averaged 122 cfs (99% of average). Precipitation in Durango was 0.21 inches for the month, 31% of the 30-year average of 0.68 inches. Precipitation was the 89th highest amount recorded in June, in Durango, out of 122 years of record. Precipitation to date in Durango, for the water year, is 14.33 inches, 109% of the 30-year average of 13.16 inches. End of last month precipitation to date, for the water year was 114% of average. The average high and low temperatures for the month of June in Durango were 880 and 480. In comparison, the 30-year average high and low for the month is 820 and 460. At the end of the month Vallecito Reservoir contained 124,400 acre-feet compared to its average content of 104,869 acre-feet (119% of average). McPhee Reservoir was up to 372,382 acre-feet compared to its average content of 33,057 acre-feet (118% of average).

Outlook

Precipitation (0.21 inches) was below average for June in Durango. There were 89 years out of 122 of record where vears there was more precipitation than this year. June is typically the driest month of the year in Durango. The flows in the rivers within the basin were near average. There were 44 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 49 out of 105 years of record where the total flow past the Dolores stream gauge was more than this year and 37 out of 99 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 ourent SWSI values. Results are computed using observed flow data for the previous month's streamflow component for 1 station(s).

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- HUC:14050002-JUL-DataComposite-SWSI



HUC 14050003 (Little Snake) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:14050003-JUL-PrevMoStreamflow-SWSI HUC:14050003-JUL-ForecastedRunoff-SWSI HUC:14050003-JUL-ReservoirStorage-SWSI HUC:14050003-JUL-DataComposite-SWSI



HUC:14050005-JUL-DataComposite HUC:14050005-JUL-PrevMoStreamflow HUC:14050005-JUL-ForeoastedRunoff HUC:14050005-JUL-ReservoirStorage

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



= HUC:14050005-JUL-PrevMoStreamflow-SWSI = HUC:14050005-JUL-PrecastedRunoff-SWSI = HUC:14050005-JUL-ReservoirStorage-SWSI = HUC:14050005-JUL-DataComposite-SWSI



HUC:14080101-JUL-DataComposite HUC:14080101-JUL-PrevMoStreamflow HUC:14080101-JUL-ForeoastedRunoff HUC:14080101-JUL-ReservoirStorage

HUC 14080101 (Upper San Juan) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



HUC:14080101-JUL-PrevMoStreamflow-SWSI HUC:14080101-JUL-ForecastedRunoff-SWSI HUC:14080101-JUL-ReservoirStorage-SWSI HUC:14080101-JUL-DataComposite-SWSI



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

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



HUC:14080102-JUL-PrevMoStreamflow-SWSI HUC:14080102-JUL-ForecastedRunoff-SWSI HUC:14080102-JUL-ReservoirStorage-SWSI HUC:14080102-JUL-DataComposite-SWSI



HUC:14080104-JUL-DataComposite HUC:14080104-JUL-PrevMoStreamflow HUC:14080104-JUL-ForecastedRunoff HUC:14080104-JUL-ReservoirStorage

HUC 14080104 (Animas) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.





= HUC:14080104-JUL-PrevMoStreamflow-SWSI = HUC:14080104-JUL-ForeoastedRunoff-SWSI = HUC:14080104-JUL-ReservoirStorage-SWSI = HUC:14080104-JUL-DataComposite-SWSI



= HUC:14080105-JUL-PrevMoStreamflow-SWSI = HUC:14080105-JUL-ForeoastedRunoff-SWSI = HUC:14080105-JUL-ReservoirStorage-SWSI = HUC:14080105-JUL-DataComposite-SWSI

-4.00 -6.00



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

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



= HUC:14080107-JUL-PrevMoStreamflow-SWSI = HUC:14080107-JUL-ForeoastedRunoff-SWSI = HUC:14080107-JUL-ReservoirStorage-SWSI = HUC:14080107-JUL-DataComposite-SWSI



HUC:10180001-JUL-DataComposite-SWSI



HUC:10190001-JUL-DataComposite-SWSI



HUC:10190002-JUL-DataComposite-SWSI



HUC:10190003-JUL-DataComposite-SWSI



HUC:10190004-JUL-DataComposite HUC:10190004-JUL-PrevMoStreamflow HUC:10190004-JUL-ForeoastedRunoff HUC:10190004-JUL-ReservoirStorage

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





= HUC:10190004-JUL-PrevMoStreamflow-SWSI = HUC:10190004-JUL-ForeoastedRunoff-SWSI = HUC:10190004-JUL-ReservoirStorage-SWSI = HUC:10190004-JUL-DataComposite-SWSI



HUC:10190005-JUL-DataComposite HUC:10190005-JUL-PrevMoStreamflow HUC:10190005-JUL-ForeoastedRunoff HUC:10190005-JUL-ReservoirStorage

HUC 10190005 (St. Vrain) SWSI Values - JUL



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

HUC:10190005-JUL-PrevMoStreamflow-SWSI HUC:10190005-JUL-PorecastedRunoff-SWSI HUC:10190005-JUL-ReservoirStorage-SWSI HUC:10190005-JUL-DataComposite-SWSI

-6.00 4 1972 1974 1976 1978 1980 1982 1984 = HUC:10190006-JUL-PrevMoStreamflow-SWSI = HUC:10190006-JUL-ForecastedRunoff-SWSI = HUC:10190006-JUL-ReservoirStorage-SWSI = HUC:10190006-JUL-DataComposite-SWSI = HUC:10190006-JUL-DataComposite-SWSI

HUC:10190007-JUL-DataComposite HUC:10190007-JUL-PrevMoStreamflow HUC:10190007-JUL-ForeoastedRunoff HUC:10190007-JUL-ReservoirStorage

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

= HUC:10190007-JUL-PrevMoStreamflow-SWSI = HUC:10190007-JUL-ForeoastedRunoff-SWSI = HUC:10190007-JUL-ReservoirStorage-SWSI = HUC:10190007-JUL-DataComposite-SWSI

HUC:11020001-JUL-DataComposite-SWSI

HUC:11020002-JUL-DataComposite HUC:11020002-JUL-PrevMoStreamflow HUC:11020002-JUL-FreeoastedRunoff HUC:11020002-JUL-ReservoirStorage

HUC 11020002 (Upper Arkansas) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

HUC:11020002-JUL-PrevMoStreamflow-SWSI HUC:11020002-JUL-ForecastedRunoff-SWSI HUC:11020002-JUL-ReservoirStorage-SWSI HUC:11020002-JUL-DataComposite-SWSI

HUC:11020006-JUL-DataComposite-SWSI

HUC:11020009-JUL-DataComposite-SWSI

HUC:11020010-JUL-DataComposite-SWSI

HUC:13010001-JUL-DataComposite-SWSI

HUC:13010002-JUL-DataComposite-SWSI

HUC:13010004JUL-DataComposite HUC:13010004JUL-PrevMoStreamflow HUC:13010004JUL-ForeoastedRunoff HUC:13010004JUL-ReservoirStorage

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

= HUC:13010004-JUL-PrevMoStreamflow-SWSI = HUC:13010004-JUL-ForeoastedRunoff-SWSI = HUC:13010004-JUL-ReservoirStorage-SWSI = HUC:13010004-JUL-DataComposite-SWSI

= HUC:13010005-JUL-PrevMoStreamflow-SWSI = HUC:13010005-JUL-ForeoastedRunoff-SWSI = HUC:13010005-JUL-ReservoirStorage-SWSI = HUC:13010005-JUL-DataComposite-SWSI

HUC:14010001-JUL-DataComposite-SWSI

HUC:14010002-JUL-DataComposite HUC:14010002-JUL-PrevMoStreamflow HUC:14010002-JUL-ForeoastedRunoff HUC:14010002-JUL-ReservoirStorage

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

HUC:14010002-JUL-PrevMoStreamflow-SWSI HUC:14010002-JUL-ForecastedRunoff-SWSI HUC:14010002-JUL-ReservoirStorage-SWSI HUC:14010002-JUL-DataComposite-SWSI

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

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

HUC:14010003-JUL-PrevMoStreamflow-SWSI HUC:14010003-JUL-ForecastedRunoff-SWSI HUC:14010003-JUL-ReservoirStorage-SWSI HUC:14010003-JUL-DataComposite-SWSI

HUC:14010004-JUL-DataComposite HUC:14010004-JUL-PrevMoStreamflow HUC:14010004-JUL-ForeoastedRunoff HUC:14010004-JUL-ReservoirStorage

HUC 14010004 (Roaring Fork) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

= HUC:14010004-JUL-PrevMoStreamflow-SWSI = HUC:14010004-JUL-ForeoastedRunoff-SWSI = HUC:14010004-JUL-ReservoirStorage-SWSI = HUC:14010004-JUL-DataComposite-SWSI

HUC:14020001-JUL-DataComposite HUC:14020001-JUL-PrevMoStreamflow HUC:14020001-JUL-ForeoastedRunoff HUC:14020001-JUL-ReservoirStorage

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

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

HUC:14020002-JUL-DataComposite HUC:14020002-JUL-PrevMoStreamflow HUC:14020002-JUL-ForeoastedRunoff HUC:14020002-JUL-ReservoirStorage

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

HUC:14020002-JUL-PrevMoStreamflow-SWSI HUC:14020002-JUL-ForecastedRunoff-SWSI HUC:14020002-JUL-ReservoirStorage-SWSI

HUC:14020002-JUL-DataComposite-SWSI

HUC:14020003-JUL-DataComposite HUC:14020003-JUL-PrevMoStreamflow HUC:14020003-JUL-ForeoastedRunoff HUC:14020003-JUL-ReservoirStorage

HUC 14020003 (Tomichi) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

HUC:14020003-JUL-PrevMoStreamflow-SWSI HUC:14020003-JUL-ForecastedRunoff-SWSI HUC:14020003-JUL-ReservoirStorage-SWSI HUC:14020003-JUL-DataComposite-SWSI

HUC 14020005 (Lower Gunnison) SWSI Values - JUL Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.

= HUC:14020005-JUL-PrevMoStreamflow-SWSI = HUC:14020005-JUL-PrecastedRunoff-SWSI = HUC:14020005-JUL-ReservoirStorage-SWSI = HUC:14020005-JUL-DataComposite-SWSI

HUC:14020006-JUL-DataComposite HUC:14020006-JUL-PrevMoStreamflow HUC:14020006-JUL-ForeoastedRunoff HUC:14020006-JUL-ReservoirStorage

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

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

HUC:14030002-JUL-DataComposite-SWSI

HUC:14030003-JUL-DataComposite HUC:14030003-JUL-PrevMoStreamflow HUC:14030003-JUL-ForeoastedRunoff HUC:14030003-JUL-ReservoirStorage

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

HUC:14030003-JUL-PrevMoStreamflow-SWSI HUC:14030003-JUL-ForecastedRunoff-SWSI HUC:14030003-JUL-ReservoirStorage-SWSI HUC:14030003-JUL-DataComposite-SWSI

HUC:14050001-JUL-DataComposite-SWSI