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, 2019

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	
February 1 - June 1	Forecasted Runoff + Reservoir Storage	
July 1 - September 1	Previous Month's Streamflow + Reservoir Storage	
October 1 - January 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 summer season (July 1 to September 1) is based on the previous month's natural streamflow (the estimate of flow without the impacts of diversions and imports), combined with reservoir storage at the end of last month, in this case June 30. The statewide SWSI values for June 1 are close to average to above average. The SWSI values range from a low of +1.6 in the Arkansas Basin and a high of +4.0 in the San Juan-Dolores Basin, natural streamflow is above average, however many reservoir levels are still below normal.

Basin	July 1 SWSI	Change from Previous Month*	Change from Previous Year
Arkansas	1.6	-1.3	1.0
Colorado	3.2	-0.2	6.7
Gunnison	3.3	-0.1	7.0
Rio Grande	3.9	0.0	7.5
San Juan-Dolores	4.0	1.5	7.4
South Platte	1.8	0.0	1.9
Yampa-White	3.0	0.6	6.6

*Note that last month's SWSI was calculated using forecasted runoff and reservoir storage and this month's SWSI is based on previous month's streamflow and reservoir storage. Comparison between this month and last month should be made with caution.

				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	Forecast Flow NEP	Total Vol (AF)
	11020006	Huerfano	0.55	21	79	12,788
⊳	11020010	Purgatoire	1.70	75	92	45,088
rka	11020005	Upper Arkansas-Lake Meredith	3.02	90	86	290,216
Insa	11020001	Arkansas Headwaters	1.47	14	92	346,586
SE	11020009	Upper Arkansas-John Martin Reservoir	1.94	62	87	435,718
	11020002	Upper Arkansas	2.82	58	85	470,057
	14010003	Eagle	3.73	95	95	238,828
6	14010002	Blue	3.02	34	86	296,635
lora	14010004	Roaring Fork	2.96	N/A	86	512,433
obi	14010001	Colorado Headwaters	3.38	21	86	984,515
	14010005	Colorado Headwaters-Plateau	3.12	58	87	1,450,382
	14020003	Tomichi	3.60	20	93	67,141
	14030003	San Miguel	3.21	46	88	72,069
Gu	14020006	Uncompahgre	3.46	96	82	146,127
nni	14020004	North Fork Gunnison	3.01	72	87	168,726
son	14020001	East-Taylor	2.96	N/A	90	276,998
	14020005	Lower Gunnison	3.51	48	92	952,134
	14020002	Upper Gunnison	2.96 N/A 90 3.51 48 92 2.12 N/A 93 4.04 89 98 2.35 71 79 3.85 N/A 93	1,188,499		
Rio	13010004	Saguache	4.04	89	98	20,426
0 G	13010002	Alamosa-Trinchera	2.35	71	79	91,150
ran	13010005	Conejos	3.85	N/A	93	180,836
de	13010001	Rio Grande Headwaters	4.04	82	98	461,121
Sa	14080105	Middle San Juan	4.02	99	96	24,492
n Jı	14080107	Mancos	3.19	91	88	31,422
Jan	14080102	Piedra	3.36	N/A	90	121,190
-Do	14080104	Animas	3.95	66	97	377,921
olor	14080101	Upper San Juan	3.86	50	96	523,023
es	14030002	Upper Dolores	3.99	90	94	585,144
	10190004	Clear	1.39	89	67	51,830
	10190005	St. Vrain	-1.07	40	35	138,826
Sot	10190001	South Platte Headwater	3.49	86	87	202,610
ıth	10190007	Cache La Poudre	1.47	N/A	44	323,375
Pla	10190002	Upper South Platte	2.06	81	81	408,339
tte	10190003	Middle South Platte-Cherry Creek	1.16	68	64	467,457
	10190012	Middle South Platte-Sterling	1.19	88	64	588,557
	10190006	Big Thompson	1.42	81	73	658,257
Ya	14050003	Little Snake	1.38	N/A	67	152,038
mp	10180001	North Platte Headwaters	3.44	99	91	155,602
ia-V	14050005	Upper White	2.85	N/A	84	161,236
Vhi	14050001	Upper Yampa	3.48	N/A	87	440,295
fe	14050002	Lower Yampa	2.91	N/A	85	492,053

July 1, 2019 SWSI Values by HUC and Non Exceedance Probabilities (NEP)

NEP is non exceedance percentage for total reservoir storage and streamflow forecast 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 plus the streamflow forecast. NEP is calculated compared to the volume 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)	0.0 (Normal)	4.0 (Abundant Supply)

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		CLEAR CREEK RESERVOIR	9,904	64
11020001		HOMESTAKE RESERVOIR	31,419	39
	Arkansas Headwaters	TWIN LAKES RESERVOIR	55,324	49
		TURQUOISE LAKE	73,355	9
		ARKANSAS RIVER AT SALIDA	176,584	92
		CUCHARAS RESERVOIR*	0	14
11020006	Huerfano	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	6,016	81
		HUERFANO RIVER NEAR REDWING	6,772	79
11020010	Durgatoiro	PURGATOIRE RIVER AT TRINIDAD	21,138	92
11020010	Fulgatone	TRINIDAD LAKE	23,950	58
11020002	Upper Arkansas	PUEBLO RESERVOIR INFLOW	229,157	85
11020002	opper Arkansas	PUEBLO RESERVOIR	240,900	75
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	6,016	81
		HUERFANO RIVER NEAR REDWING	6,772	79
11020000	Upper Arkansas-	ADOBE CREEK RESERVOIR	10,208	24
11020009	Reservoir	PURGATOIRE RIVER AT TRINIDAD	21,138	92
		JOHN MARTIN RESERVOIR	162,427	68
		PUEBLO RESERVOIR INFLOW	229,157	85
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	6,016	81
	Upper Arkansas- Lake Meredith	HUERFANO RIVER NEAR REDWING	6,772	79
11020005		LAKE HENRY	8,614	92
		MEREDITH RESERVOIR	39,657	81
		PUEBLO RESERVOIR INFLOW	229,157	85
1 40 1 00 0 2	Plue	GREEN MOUNTAIN RESERVOIR	127,511	34
14010002	Blue	BLUE RIVER INFLOW TO GREEN MOUNTAIN RES	169,124	86
		WOLFORD MOUNTAIN RESERVOIR	66,950	99
14010001	Colorado Headwaters	WILLIAMS FORK RESERVOIR	95,800	75
	neudwaters	COLORADO RIVER NEAR DOTSERO	821,765	86
1 401 0005	Colorado	VEGA RESERVOIR	32,977	58
14010005	Headwaters-Plateau	COLORADO RIVER NEAR CAMEO	1,417,405	87
14010003	Eagle	EAGLE RIVER BELOW GYPSUM	238,828	95
1 40 1 000 4	Deering Fork	RUEDI RESERVOIR	93,540	21
14010004	Roaring Fork	ROARING FORK AT GLENWOOD SPRINGS	418,893	86
		TAYLOR R INF TO TAYLOR PARK RESERVOIR	67,930	88
14020001	East-Taylor	TAYLOR PARK RESERVOIR	88,628	20
		EAST RIVER AT ALMONT	120,440	90
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	952,134	92
4 402000 4	North Fork	PAONIA RESERVOIR	15,728	72
14020004	Gunnison	NORTH FORK GUNNISON R NR SOMERSET	152,998	87
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	72,069	88
1 4020002	T k *	VOUGA RESERVOIR NEAR DOYLEVILLE	933	96
14020003	romichi	TOMICHI CREEK AT GUNNISON, CO	66,208	93

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
14020006	Uncompabore	RIDGEWAY RESERVOIR	72,624	48
14020000	Uncompanyre	UNCOMPAHGRE RIVER AT COLONA	73,503	82
		FRUITLAND RESERVOIR	9,000	89
		SILVER JACK RESERVOIR	12,610	36
		CRAWFORD RESERVOIR	14,520	99
14020002	Upper Gunnison	LAKE FORK AT GATEVIEW, CO	86,555	95
		MORROW POINT RESERVOIR	113,090	42
		GUNNISON RIVER NEAR GUNNISON, CO	256,954	92
		BLUE MESA RESERVOIR	695,770	45
		SANGRE DE CRISTO	3,463	59
		MOUNTAIN HOME	5,563	45
		UTE CREEK	5,881	77
13010002	Alamosa-Trinchera	TRINCHERA CK	6,351	72
		CULEBRA CREEK AT SAN LUIS	8,794	60
		TERRACE RESERVOIR	14,671	95
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	46,427	95
	c :	PLATORO RESERVOIR	49,340	82
13010005	Conejos	CONEJOS RIVER NEAR MOGOTE	131,496	93
		CONTINENTAL RESERVOIR	20,892	99
	Rio Grande Headwaters	SANTA MARIA RESERVOIR	24,643	92
13010001		RIO GRANDE RESERVOIR	39,346	74
		RIO GRANDE NEAR DEL NORTE	376,240	98
13010004	Saguache	SAGUACHE CREEK NEAR SAGUACHE, CO	20,426	98
	Animas	LEMON RESERVOIR	39,128	66
14080104		FLORIDA RIVER INFLOW TO LEMON RESERVOIR	45,616	89
		ANIMAS RIVER AT DURANGO	293,177	98
		JACKSON GULCH RESERVOIR	10,006	90
14080107	Mancos	MANCOS RIVER NEAR MANCOS	21,416	88
4 4000405		LONG HOLLOW RESERVOIR	4,393	50
14080105	Middle San Juan	LA PLATA RIVER AT HESPERUS	20,099	96
14080102	Piedra	PIEDRA RIVER NEAR ARBOLES	121,190	90
		GROUNDHOG RESERVOIR	22,400	95
14030002	Upper Dolores	DOLORES RIVER BELOW MCPHEE RESERVOIR	181,474	94
		MCPHEE RESERVOIR	381,270	95
		VALLECITO RESERVOIR	123,692	91
14080101	Upper San Juan	LOS PINOS RIVER NEAR BAYFIELD	160,221	98
		SAN JUAN RIVER NEAR CARRACAS	239,110	92
		MARIANO RESERVOIR	5,100	72
		WILLOW CREEK RESERVOIR	7,038	34
		LONE TREE RESERVOIR	8,600	99
		LAKE LOVELAND RESERVOIR	10.100	77
10190006	Big Thompson	BOYD LAKE	48.300	88
		BIG THOMPSON R AT MOUTH. NR DRAKE, CO	50.037	73
		CARTER LAKE	106.894	82
		LAKE GRANBY	422,188	64

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		BLACK HOLLOW RESERVOIR	4,700	96
		HALLIGAN RESERVOIR	6,400	70
		CHAMBERS LAKE	8,300	62
		FOSSIL CREEK RESERVOIR	10,100	71
10190007	Cache La Poudre	CACHE LA POUDRE	10,600	98
		WINDSOR RESERVOIR	14,800	35
		COBB LAKE	22,100	94
		CACHE LA POUDRE R AT CANYON MOUTH	104,565	44
		HORSETOOTH RESERVOIR	141,810	84
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	51,830	67
		HORSECREEK RESERVOIR	12,800	31
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	15,798	43
		BOULDER CREEK NEAR ORODELL	19,132	34
		MILTON RESERVOIR	22,500	98
	Middle South	BARR LAKE	29,800	82
10190003	Platte-Cherry Creek	SAINT VRAIN CREEK AT LYONS	30,234	35
		STANDLEY RESERVOIR	42,100	58
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	50,037	73
		CLEAR CREEK AT GOLDEN	51,830	67
		SOUTH PLATTE RIVER AT SOUTH PLATTE	88,661	81
		CACHE LA POUDRE R AT CANYON MOUTH	104,565	44
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	15,798	43
		BOULDER CREEK NEAR ORODELL	19,132	34
		JULESBURG RESERVOIR	20,300	71
		PREWITT RESERVOIR	24,500	80
		JACKSON LAKE RESERVOIR	26,000	51
		SAINT VRAIN CREEK AT LYONS	30,234	35
10190012	Platte-Sterling	EMPIRE RESERVOIR	32,600	65
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	50,037	73
		CLEAR CREEK AT GOLDEN	51,830	67
		RIVERSIDE RESERVOIR	55,200	81
		POINT OF ROCKS RESERVOIR	69,700	83
		SOUTH PLATTE RIVER AT SOUTH PLATTE	88,661	81
		CACHE LA POUDRE R AT CANYON MOUTH	104,565	44
		ANTERO RESERVOIR	19,900	56
10100001	South Platte	ELEVENMILE CANYON RESV INFLOW	31,210	87
10190001	Headwater	SPINNEY MOUNTAIN RESERVOIR	48,200	76
		ELEVENMILE CANYON RESERVOIR	103,300	97
		TERRY RESERVOIR	7,900	93
		MARSHALL RESERVOIR	9,100	36
		UNION RESERVOIR	12,528	50
1010000	St Vrain	SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	15,798	43
10120002		BUTTONROCK (RALPH PRICE) RESERVOIR	16,283	90
		BOULDER CREEK NEAR ORODELL	19,132	34
		GROSS RESERVOIR	27,851	16
		SAINT VRAIN CREEK AT LYONS	30,234	35

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
		CHEESMAN LAKE	79,278	63
10190002	Upper South Platte	SOUTH PLATTE RIVER AT SOUTH PLATTE	88,661	81
		DILLON RESERVOIR	240,400	25
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	152,038	67
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	492,053	85
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	155,602	91
14050005	Upper White	WHITE RIVER NEAR MEEKER	161,236	84
		YAMCOLO RESERVOIR	8,169	64
	Upper Yampa	ELKHEAD CREEK ABOVE LONG GULCH	19,230	82
14050001		STAGECOACH RESERVOIR NR OAK CREEK	36,400	99
		YAMPA RIVER AT STEAMBOAT SPRINGS	172,694	88
		ELK RIVER NEAR MILNER, CO	203,802	84

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

*No longer exists

Water Volume NEP Color Scale:

0 (Well Below Normal)

100 (Well Above Normal)

50 (Normal)

Basinwide Conditions Assessment

The SWSI value for the month was +1.8.

The weather pattern, like most of the state, continued with below average temperatures and above average precipitation throughout the South Platte Basin in northeastern Colorado during the month of June. Overall basin precipitation was 141% of average starting the month of June and ending the month at 134% of average, ranging from snow in the mountainous areas and foothills to late snow and rain in the foothills and eastern plains. Streamflow forecasts for the South Platte River basin is 139% of average for June through July period. Basin wide average snowpack starting June 1 was 392% of average.

Widespread above average precipitation throughout the South Platte River basin in May and June continued the much welcomed trend of no drought conditions ending the month of June in the South Platte River basin. Cooler than normal temperatures, especially in the high mountainous area has resulted in anticipated delays in peak snowmelt runoff in streams and rivers throughout the basin. The flows peaked on the South Platte River basin near the end of June, several weeks later than normal, with several tributaries peaking in early July, more than 3 weeks later than normal. Peak streamflows were well above average on the South Platte and tributaries during the month of June.

The overall basin above average precipitation, mostly in the form of high mountain snow, and slightly below average temperatures during the month of June has resulted in a delayed peak snowmelt and runoff resulting in below average flows in streams during the first portion of the month near 50% of average. As snow melt ramped up in the middle of June through the end of June, the streamflows increased to flows near 200% of normal. The flows at the Kersey gage downstream of the City of Greeley, with the average daily flows for the month of June of approximately 2000 cfs. 83% of the historic mean value of 2,422 cfs. Due to the delayed peak runoff flows, the daily flows at the Julesburg gage for the month of June was 10 to 50% of average during the first two-thirds of June and over 200% of average for the last third of the month resulting in average flow of 734 cfs, 47% of the historic mean value of 1,564 cfs. The below average flows at these gages and in the tributaries throughout the South Platte basin are due to delayed runoff from mountain snowmelt and increasing demand for water diversions to storage and irrigation use during the month. It is anticipated that the delayed runoff will peak during the first part of July, resulting in above average flows during the month of July.

The Calls on the South Platte River were indicative of the weather pattern throughout May into June with cooler weather delaying the typical average peak snowmelt runoff flows in the streams and rivers. The delayed snowmelt and resulting increased streamflows resulted in senior calls and reservoir releases in the lower portion of the basin as irrigation demands increased beyond the available supply of water in the rivers. The Calls on the mainstem of the South Platte River were reflected the delayed snow melt and resulting runoff starting the month of June with no call on the mainstem of the South Platte. However as irrigation demands ramped up with the weather warming up in the lower portion of the basin, calls for water were placed beginning June 7 through June 8 at the middle portion of the system below Denver, going as senior as a 1909 Burlington direct call bypass at the

Western Ditch headgate. More storms were welcomed in the first part of June resulting in free river from June 9 through June 11. The middle portion of June represented an increase in irrigation demand while the stream flows were still below average and the snowmelt delayed, with a junior 1995 call on the lower end of the basin on June 11 going more senior to a 1948 priority on the lower portion of the mainstem through June 18. The delayed runoff started ramping up as temperatures began to warm in the mountainous areas resulting in increased snowmelt peaking in late June and early July, two to three weeks later than average peak runoff. Free river conditions with no call started again on June 18 through the first part of July.

Typically the reservoir fill season is between November 1 and April 1 of each year, with irrigation season direct flows starting around April 1. The delayed runoff of snowmelt in the month of May and June limited some reservoirs abilities to fill at a fast pace, however the cooler weather and precipitation in late May through the middle of June allowed many reservoirs to continue to fill as well as some junior recharge rights to come into priority towards the end of May into June. As the flows increased in late June as a result of snow melt, many reservoirs were able to continue to fill resulting in most reservoirs full or near full at the end of June. Reservoirs storage levels throughout the South Platte River mainstem ended the month of June above the average at the 6 SWSI Representative Reservoirs at 636,179 acre-feet volume, which is 108% of the long term average of 589,366. Additionally, 32 indexed reservoirs throughout Division 1 basin at 127% of the long term average (1981 - 2010) with a storage volume of 1,084,111 acre-feet at the end of June, representing approximately 95% of full capacity. This is ahead of the long term average of 75% for the end of June storage in the 32 indexed reservoirs throughout Division 1.

The temperature and precipitation outlook into August, September and October 2019, prepared by the National Weather Service, in northeastern Colorado indicates a trend toward slightly above average temperatures and above average precipitation in the South Platte River Basin.



Eleven Mile

Avg. 6/30 Contents 6/30/19 Contents

Cheesman

Jackson

Barr Lake

50.000

0

Dillon

Horsetooth

South Platte-DataComposite-SWSI



Basinwide Conditions Assessment

The SWSI value for the month was +1.6.

<u>Outlook</u>

A slow run-off, cooler weather, and precipitation events contributed to river calls beginning with the Fort Lyon Canal call of 3/1/1887 and ending the month with the Amity Canal call of 8/30/1893 with a pass thru to the Holbrook Canal. Precipitation events allowed The Fort Lyon Storage Canal right of 1/25/1906 to come in. June of 2019 was very different from the drought conditions of the same time in 2018.

Administrative/Management Concerns

Arkansas River flows have continued to remain steady due to cooler day and night time temperatures in the mountains, which have discouraged a rapid run-off. There appeared to be one peak, but then temperatures cooled and the flow subsided, but then picked up again later on.



Arkansas-DataComposite-SWSI



Basinwide Conditions Assessment

The SWSI value for the month was +3.9.

Flow at the gaging station Rio Grande near Del Norte averaged 5630 cfs (191% of normal). The Conejos River near Mogote had a mean flow of 1700 cfs (154% of normal). Area streams with higher elevation headwaters peaked between June 5 and 15. These more lengthy drainages experienced exceptional flow during June. Some streams carried around twice the normal June volume. Localized flooding was an issue, but damage was generally slight. It has been many years since these kind of flows have been seen in this basin. In many locations, the stream channels did not hold the entire flow.

The higher elevations and the Valley floor experienced near average precipitation and temperatures during June. These conditions did not adversely affect the abundant runoff. Much of the extraordinary runoff is refilling the depleted aquifers of the San Luis Valley.

<u>Outlook</u>

The NWS 90-day forecasts for July through September suggest near normal temperatures and a chance for above average precipitation.

Administrative/Management Concerns

Some of the upper Rio Grande basin streamflows were more plentiful than originally expected. The result was the increase of water right curtailment on the Rio Grande and the Conejos to meet the Rio Grande Compact delivery obligation.

On a positive note, the very good runoff has resulted in the full or nearly full Smith, Platoro, Terrace, Beaver, and Continental Reservoirs. Each saw significant storage gains.

Public Use Impact

Consistently sunny conditions favored the farmers and ranchers and aided the growth of crops and grazing land during the last three weeks of June. There was some catching up to do after a cool May. The first cutting of hay and alfalfa yielded fairly well and was put up without being rained on.





Rio Grande-DataComposite-SWSI



June was the first month since December where precipitation was below average in much of the Gunnison basin. Southern areas, such as the Uncompany River basin received 70-90% of average precipitation while northern areas such as the Grand Mesa received upwards of 150% of average precipitation. Temperatures basin wide remained about 1 to 3 degrees cooler than average, however, which kept the runoff from occurring at a rapid pace and prevented streams from reaching flooding levels in most locations.

<u>Outlook</u>

April to July runoff forecasts released by the Colorado Basin River Forecast Center (CBRFC) on June 1st increased once again as the end of that period is only a month away and significant snowpack remained. The April - July inflow forecast for Blue Mesa Reservoir increased to 1,040,000 acre-feet, which is 181 percent of the 30-year median. Interestingly, the effects of the cooler spring are apparent when comparing the June and July projected inflow, which is 220% of the median, showing that a larger portion than normal is melting later.

The area expected to receive greater than average precipitation has shifted north of the Gunnison basin in the most recent climate forecasts for the next 30 and 90 day periods as the monsoon is expected to be drier than average.

Administrative/Management Concerns

While there weren't record peaks on streams this spring despite the high snowpack, runoff volumes basin wide have been much higher than average. As an example, Blue Mesa Reservoir rose a whopping 33.27 feet during June, which equates to an increase of 254,236 acre-feet of storage. Amazingly, after recording the lowest end of season volume ever recorded on November 1, 2018 and releasing nearly 8,000 cfs for 10 days at Crystal Dam for ROD operations, Reclamation is now increasing releases from Blue Mesa again in order to prevent a spill.

Gunnison Tunnel demand was met all month by natural inflow. As a result, Taylor Park Reservoir continued to fill all of June. The first fill account contained a full 106,230 acre-feet on June 13th. Of that, 65,847 acre-feet was stored in Taylor Park and 39,851 acre-feet had been moved down to the Aspinall Unit pursuant to the accounting in the 86CW203 decree. Following completion of first fill, the Taylor Park second fill account already stood at 45,603 acre-feet on June 30th.

As a result of the high and extended runoff there are only three active calls in Water Division 4, on the small tributaries of Bell Creek and Bieser Creek. No calls had been placed in the Surface Creek system and therefore, no reservoir water has yet been used

from any of the reservoirs on the Grand Mesa. This is very late for all tributaries in that system to still contain enough natural flow to satisfy all irrigators, which is a far cry from last year when the call on Surface Creek went on April 1st.

Public Use Impacts

Flooding that was anticipated due to the high snowpack was limited due to the extended runoff season. There were a few areas where banks collapsed, such as on the Uncompany River, but no major damage has been reported. Rafting season should be longer than normal due to the extended flows, but has started slowly due to closures of local streams. In fact, the Gunnison River near Gunnison was closed for an extended period and unfortunately two lives were lost in boating accidents during June.



Gunnison-DataComposite-SWSI



Basinwide Conditions Assessment The SWSI value for the month was +3.2.

<u>Outlook</u>

Colorado River flows and tributary flows are running above average. River flows are forecasted to continue above average through July. Above average temperatures and below average precipitation are forecast for July.

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. Major reservoirs will fill this month and most will spill.

Public Use Impacts

The mosquito population is high this year with the higher moisture level, although the majority breed is not the breed that carries the West Nile Virus. It does not take much water to breed a large number of mosquitos, including a soda cap full of water, so eliminate standing water as much as possible.





Colorado-DataComposite-SWSI



Basinwide Conditions Assessment

The SWSI value for the month was +3.0.

Snowpack: June 1, 2019 snowpack in the combined Yampa, White, and North Platte rivers basins was 260% of the median.

Precipitation: June continued to be witness to an above average pattern...portions of the basin received double the June average...South Routt County monitors reported 3.2 inches for the month...with the storm of June 22-23 producing 1.84 inches and a foot of new snow at Stillwater Reservoir.

Runoff: The entire basin experienced flow rates two, three, four times the historic median flow rates. Typical seasonal River Calls were in place on the Bear River and Talamantes Creek during the month of June.

Reservoir Outlook

- Stagecoach Reservoir was spilling as of June 30; the capacity of Stagecoach is 36,439 AF.
- Yamcolo Reservoir was storing 8140 AF as of June 30; the capacity of Yamcolo is 9,621 AF / 84% of capacity.
- Elkhead Creek Reservoir was spilling as of June 30; the capacity of Elkhead Creek is 24,778 AF.
- Fish Creek Reservoir was storing 3626 AF as of June 30: the capacity of Fish Creek is 4,167 AF
 / 87% of capacity.

In general, water stored in Fish Creek Reservoir is for municipal purposes, in Yamcolo for irrigation purposes, Elkhead Creek for municipal, industrial, recreation, and fish recovery purposes. Stagecoach for recreation, but has a significant amount of stored water allocated for agriculture, municipal, industrial, and augmentation uses.

Public Use Impacts

Local recreation water users experienced a larger than average runoff period...which lead to limited access for commercial and private rafters. Local anglers experienced limited success as the runoff continued well into June. More recently, flows rates have subsided and more recreation opportunities have increased throughout the basin.



Yampa-White-DataComposite-SWSI



Flow at the Animas River at Durango averaged 4,734 cfs (172% of average). The flow at the Dolores River at Dolores averaged 2,669 cfs (207% of average). The La Plata River at Hesperus averaged 327 cfs (266% of average). Precipitation in Durango was 0.33 inches for the month, 56% of the 30-year average of 0.59 inches. Precipitation to date in Durango, for the water year is 18.87 inches, 144% of the 30-year average of 12.87 inches. End of last month precipitation to date, for the water year was 150% of average. The average high and low temperatures for the month of May in Durango were 82° and 44°. In comparison, the 30-year average high and low for the month is 83° and 46°. At the end of the month Vallecito Reservoir contained 124,481 acre-feet compared to its average content of 334,398 (114% of average), while Lemon Reservoir was up to 39,450 acre-feet as compared to its average content of 32,831 acre-feet (120% of average).

<u>Outlook</u>

Precipitation (0.33 inches) was below average for June in Durango. There were 77 years out of 124 years of record where there was more precipitation than this vear. June is the driest month in Durango. The flows in the rivers within the basin grew to well above average for this time of the year. There are 7 out of 108 years of record where the total flow past the Animas River at Durango stream gauge was more than this year. There were 7 out of 108 years of record where the total flow past the Dolores stream gauge was more than this year and 6 out of 102 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. Most of the reservoirs within the basin are full. Vallecito began releasing excess water on March 21 to prepare for the expected spring runoff within that basin.









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



HUC 14080107 (Mancos) Surface Water Supply - JUL































HUC 14020004 (North Fork Gunnison) Surface Water Supply - JUL

HUC 14030002 (Upper Dolores) Surface Water Supply - JUL

HUC 14030003 (San Miguel) Surface Water Supply - JUL

HUC 14050003 (Little Snake) Surface Water Supply - JUL

HUC 14080102 (Piedra) Surface Water Supply - JUL

