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
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July 1, 2021

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 1980 and 2020.

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

In 2015, CWCB and the Division of Water Resources (DWR) (both Divisions of the Colorado Department of Natural Resources) completed a software project to implement an automated calculation of the SWSI and to document the underlying hydrologic data. July 1, 2015 was the first month that the automated DNR SWSI was published. The results of each month's analysis are summarized within this report and additional information, maps & data are available at: https://dwr.colorado.gov/services/water-administration/drought-and-swsi. This report also contains updates about current regional conditions and water matters prepared by each DWR Division Office.

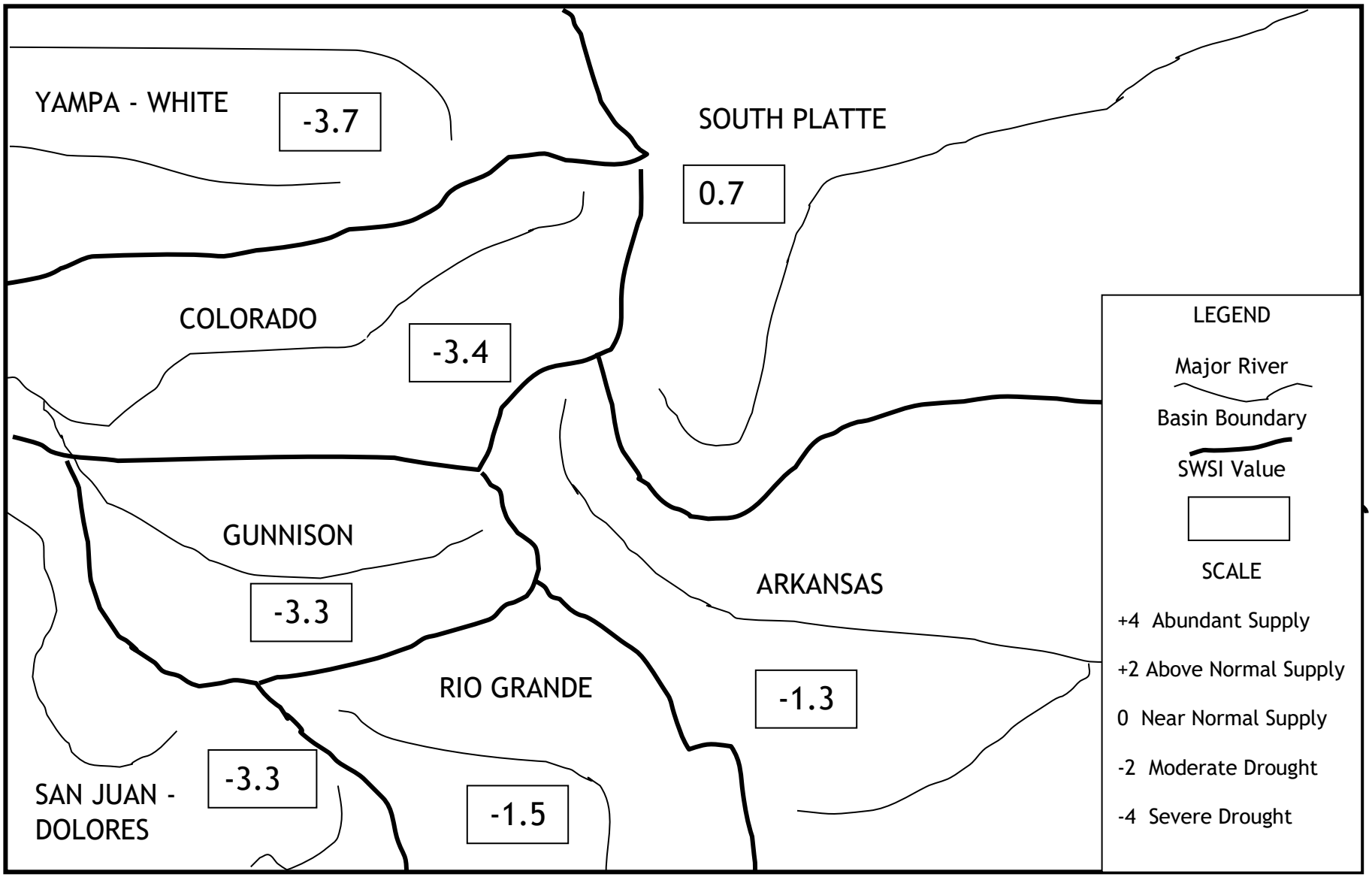
The SWSI calculation for the summer season (July 1 – September 1) is based on reservoir storage at the end of last month, in this case June 30, plus the previous month's streamflow. The following SWSI values were computed for each of the seven major basins for July 1, 2021. Water supply conditions as represented by water in storage and previous month's streamflow, range from normal in the South Platte Basin to well below normal in the Colorado, San-Juan-Dolores, Yampa-White and Gunnison River Basins.

Basin	July 1 SWSI	Change from Previous Month	Change from Previous Year
Arkansas	-1.3	0.0	-0.2
Colorado	-3.4	0.2	-2.3
Gunnison	-3.3	0.7	-0.3
Rio Grande	-1.5	1.0	0.9
San Juan-Dolores	-3.3	0.2	-0.7
South Platte	0.7	0.1	0.6
Yampa-White	-3.7	-0.1	-2.8

SWSI Scale

-4	-3	-2	-1	0	1	2	3	4
Severe Drought		Moderate Drought		Near Normal Supply		Above Normal Supply		Abundant Supply

SURFACE WATER SUPPLY INDEX FOR COLORADO BY MAJOR RIVER BASIN

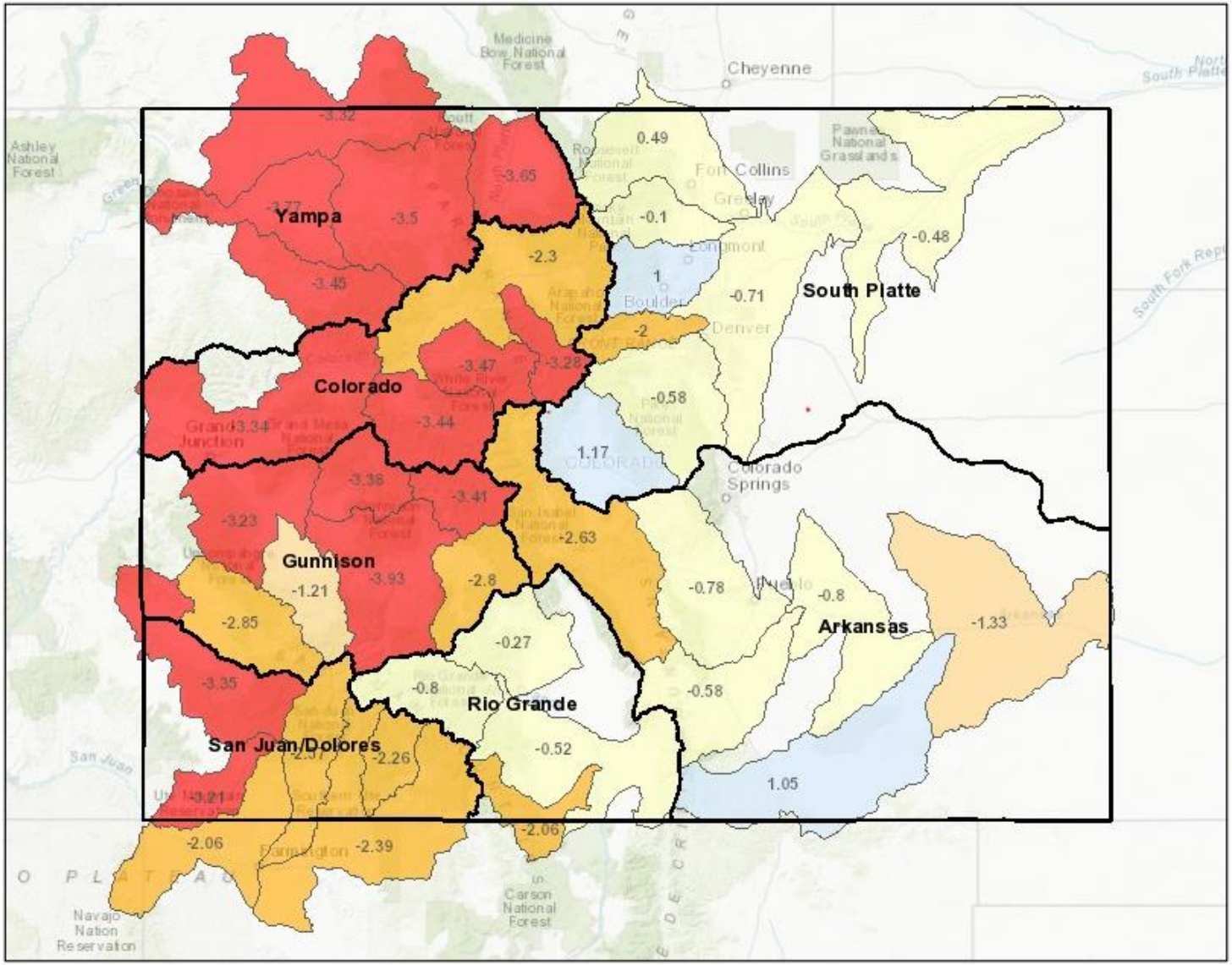


July 1, 2021

SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC

COLORADO
Division of Water Resources
Department of Natural Resources

SWSI July 1, 2021

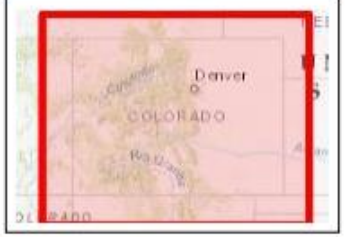


Legend

SWSI - Current Report

- SWSI Not Applicable (-99.99)
- Extremely Dry (-3.0 to -4.2)
- Moderately Dry (-2.0 to -2.9)
- Slightly Dry (-1.0 to -1.9)
- Near Average (-0.9 to 0.9)
- Slightly Wet (1.0 to 1.9)
- Moderately Wet (2.0 to 2.9)
- Extremely Wet (3.0 to 4.2)
- Water Division

Location



Notes

113.64 0 56.82 113.64 Miles

1: 3,600,000

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Date Prepared: 8/10/2021 5:29:28 PM

July 1, 2021 SWSI Values by HUC and Non Exceedance Probabilities (NEP)

Basin	HUC ID	HUC Name	SWSI	Reservoir Storage NEP	Previous Months Streamflow NEP	Total Vol (AF)
Arkansas	11020006	Huerfano	-0.59	16	59	9,238
	11020010	Purgatoire	1.05	68	62	44,175
	11020005	Upper Arkansas-Lake Meredith	-0.81	35	36	147,987
	11020009	Upper Arkansas-John Martin Reservoir	-1.33	37	37	211,942
	11020001	Arkansas Headwaters	-2.63	25	26	277,605
	11020002	Upper Arkansas	-0.79	46	37	308,163
Colorado	14010003	Eagle	-3.47	N/A	8	74,391
	14010002	Blue	-3.28	6	17	168,056
	14010004	Roaring Fork	-3.45	3	12	254,770
	14010001	Colorado Headwaters	-2.30	58	10	465,443
	14010005	Colorado Headwaters-Plateau	-3.35	10	10	507,761
Gunnison	14020003	Tomichi	-2.80	37	18	8,043
	14030003	San Miguel	-2.85	N/A	16	26,475
	14020004	North Fork Gunnison	-3.39	11	10	43,374
	14020006	Uncompahgre	-1.21	46	24	110,105
	14020001	East-Taylor	-3.42	9	9	134,683
	14020005	Lower Gunnison	-3.23	N/A	11	208,114
	14020002	Upper Gunnison	-3.94	1	13	625,245
Rio Grande	13010004	Saguache	-0.27	N/A	47	7,501
	13010002	Alamosa-Trinchera	-0.53	52	45	46,316
	13010005	Conejos	-2.06	27	28	66,266
	13010001	Rio Grande Headwaters	-0.81	59	35	148,575
San Juan-Dolores	14080105	Middle San Juan	-2.06	79	25	2,578
	14080107	Mancos	-3.22	8	41	9,299
	14080102	Piedra	-2.27	N/A	23	26,097
	14080104	Animas	-2.57	10	24	112,665
	14080101	Upper San Juan	-2.40	12	25	183,830
	14030002	Upper Dolores	-3.35	14	18	209,612
South Platte	10190004	Clear	-2.01	N/A	26	38,600
	10190005	St. Vrain	1.00	91	56	159,214
	10190001	South Platte Headwater	1.18	76	36	187,230
	10190007	Cache La Poudre	0.49	72	43	308,670
	10190002	Upper South Platte	-0.58	52	34	374,660
	10190003	Middle South Platte-Cherry Creek	-0.72	53	42	418,067
	10190012	Middle South Platte-Sterling	-0.48	35	42	522,592
	10190006	Big Thompson	-0.10	44	74	611,775
Yampa-White	14050003	Little Snake	-3.33	N/A	10	23,020
	10180001	North Platte Headwaters	-3.66	N/A	6	26,503
	14050005	Upper White	-3.45	N/A	9	30,565
	14050002	Lower Yampa	-3.78	N/A	5	75,274
	14050001	Upper Yampa	-3.51	30	5	103,864

NEP is non exceedance probability 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 1980-2020. The following table lists each component considered in each HUC.

SWSI Color Scale: -4.0 (Severe Drought) | 0.0 (Normal) | 4.0 (Abundant Supply)

July 1, 2021 SWSI Component Information - Streamflow Forecast & Reservoir Storage - By HUC

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
11020001	Arkansas Headwaters	CLEAR CREEK RESERVOIR	6,223	7
		HOMESTAKE RESERVOIR	30,491	23
		TWIN LAKES RESERVOIR	56,095	37
		ARKANSAS RIVER AT SALIDA	85,180	26
		TURQUOISE LAKE	99,616	24
11020006	Huerfano	CUCHARAS RESERVOIR*	0	16
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	4,201	56
		HUERFANO RIVER NEAR REDWING	5,037	62
11020010	Purgatoire	PURGATOIRE RIVER AT TRINIDAD	13,448	62
		TRINIDAD LAKE	30,727	68
11020002	Upper Arkansas	PUEBLO RESERVOIR INFLOW	111,440	37
		PUEBLO RESERVOIR	196,723	46
11020009	Upper Arkansas-John Martin Reservoir	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	4,201	56
		HUERFANO RIVER NEAR REDWING	5,037	62
		PURGATOIRE RIVER AT TRINIDAD	13,448	62
		ADOBE CREEK RESERVOIR	21,687	28
		JOHN MARTIN RESERVOIR	56,129	38
		PUEBLO RESERVOIR INFLOW	111,440	37
11020005	Upper Arkansas-Lake Meredith	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	4,201	56
		HUERFANO RIVER NEAR REDWING	5,037	62
		LAKE HENRY	7,415	64
		MEREDITH RESERVOIR	19,894	34
		PUEBLO RESERVOIR INFLOW	111,440	37
14010002	Blue	BLUE RIVER INFLOW TO GREEN MOUNTAIN RES	74,012	17
		GREEN MOUNTAIN RESERVOIR	94,044	6
14010001	Colorado Headwaters	WOLFORD MOUNTAIN RESERVOIR	64,600	63
		WILLIAMS FORK RESERVOIR	90,300	30
		COLORADO RIVER NEAR DOTSERO	310,543	10
14010005	Colorado Headwaters-Plateau	VEGA RESERVOIR	11,317	10
		COLORADO RIVER NEAR CAMEO	496,444	10
14010003	Eagle	EAGLE RIVER BELOW GYPSUM	74,391	8
14010004	Roaring Fork	RUEDI RESERVOIR	81,940	3
		ROARING FORK AT GLENWOOD SPRINGS	172,830	12
14020001	East-Taylor	TAYLOR R INF TO TAYLOR PARK RESERVOIR	23,629	22
		EAST RIVER AT ALMONT	33,144	8
		TAYLOR PARK RESERVOIR	77,910	9
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	208,114	11
14020004	North Fork Gunnison	PAONIA RESERVOIR	14,762	11
		NORTH FORK GUNNISON R NR SOMERSET	28,612	10
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	26,475	16
14020003	Tomichi	VOUGA RESERVOIR NEAR DOYLEVILLE	235	37
		TOMICHI CREEK AT GUNNISON, CO	7,808	18

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
14020006	Uncompahgre	UNCOMPAHGRE RIVER AT COLONA	32,561	24
		RIDGEWAY RESERVOIR	77,544	46
14020002	Upper Gunnison	FRUITLAND RESERVOIR	428	17
		CRAWFORD RESERVOIR	4,012	10
		SILVER JACK RESERVOIR	12,060	27
		LAKE FORK AT GATEVIEW, CO	42,419	34
		GUNNISON RIVER NEAR GUNNISON, CO	66,118	9
		MORROW POINT RESERVOIR	109,091	6
		BLUE MESA RESERVOIR	391,117	1
13010002	Alamosa-Trinchera	UTE CREEK	3,269	47
		SANGRE DE CRISTO	3,556	67
		TRINCHERA CK	4,598	68
		CULEBRA CREEK AT SAN LUIS	5,335	51
		MOUNTAIN HOME	6,981	61
		TERRACE RESERVOIR	7,106	43
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	15,471	31
13010005	Conejos	PLATORO RESERVOIR	21,140	27
		CONEJOS RIVER NEAR MOGOTE	45,126	28
13010001	Rio Grande Headwaters	CONTINENTAL RESERVOIR	7,949	68
		SANTA MARIA RESERVOIR	11,966	63
		RIO GRANDE RESERVOIR	14,730	52
		RIO GRANDE NEAR DEL NORTE	113,930	35
13010004	Saguache	SAGUACHE CREEK NEAR SAGUACHE, CO	7,501	47
14080104	Animas	FLORIDA RIVER INFLOW TO LEMON RESERVOIR	8,799	25
		LEMON RESERVOIR	14,796	10
		ANIMAS RIVER AT DURANGO	89,070	24
14080107	Mancos	JACKSON GULCH RESERVOIR	3,897	8
		MANCOS RIVER NEAR MANCOS	5,402	42
14080105	Middle San Juan	LONG HOLLOW RESERVOIR	312	79
		LA PLATA RIVER AT HESPERUS	2,266	25
14080102	Piedra	PIEDRA RIVER NEAR ARBOLES	26,097	23
14030002	Upper Dolores	GROUNDHOG RESERVOIR	6,500	3
		DOLORES RIVER BELOW MCPHEE RESERVOIR	21,261	18
		MCPHEE RESERVOIR	181,851	15
14080101	Upper San Juan	LOS PINOS RIVER NEAR BAYFIELD	44,152	27
		SAN JUAN RIVER NEAR CARRACAS	58,332	22
		VALLECITO RESERVOIR	81,346	12
10190006	Big Thompson	MARIANO RESERVOIR	5,100	81
		WILLOW CREEK RESERVOIR	5,567	3
		LAKE LOVELAND RESERVOIR	7,800	10
		LONE TREE RESERVOIR	8,100	55
		BOYD LAKE	45,000	62
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	47,500	74
		CARTER LAKE	99,929	54
		LAKE GRANBY	392,779	47

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
10190007	Cache La Poudre	BLACK HOLLOW RESERVOIR	4,500	75
		HALLIGAN RESERVOIR	6,400	67
		CHAMBERS LAKE	8,000	48
		FOSSIL CREEK RESERVOIR	9,600	46
		CACHE LA POUDRE	9,700	63
		WINDSOR RESERVOIR	11,600	20
		COBB LAKE	22,100	92
		CACHE LA POUDRE R AT CANYON MOUTH	94,100	43
		HORSETOOTH RESERVOIR	142,670	72
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	38,600	26
10190003	Middle South Platte-Cherry Creek	HORSECREEK RESERVOIR	11,500	28
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	14,637	42
		MILTON RESERVOIR	22,107	92
		BOULDER CREEK NEAR ORODELL	23,000	48
		BARR LAKE	26,963	34
		CLEAR CREEK AT GOLDEN	38,600	26
		STANDLEY RESERVOIR	42,100	56
		SAINT VRAIN CREEK AT LYONS	46,800	73
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	47,500	74
		SOUTH PLATTE RIVER AT SOUTH PLATTE	50,760	34
		CACHE LA POUDRE R AT CANYON MOUTH	94,100	43
10190012	Middle South Platte-Sterling	SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	14,637	42
		JULESBURG RESERVOIR	20,503	85
		BOULDER CREEK NEAR ORODELL	23,000	48
		PREWITT RESERVOIR	24,800	93
		JACKSON LAKE RESERVOIR	26,057	72
		EMPIRE RESERVOIR	29,255	41
		CLEAR CREEK AT GOLDEN	38,600	26
		RIVERSIDE RESERVOIR	46,080	26
		SAINT VRAIN CREEK AT LYONS	46,800	73
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	47,500	74
		SOUTH PLATTE RIVER AT SOUTH PLATTE	50,760	34
		POINT OF ROCKS RESERVOIR	60,500	35
		CACHE LA POUDRE R AT CANYON MOUTH	94,100	43
10190001	South Platte Headwater	ELEVENMILE CANYON RESV INFLOW	18,630	36
		ANTERO RESERVOIR	20,100	89
		SPINNEY MOUNTAIN RESERVOIR	48,800	90
		ELEVENMILE CANYON RESERVOIR	99,700	29
10190005	St. Vrain	TERRY RESERVOIR	7,700	73
		MARSHALL RESERVOIR	9,200	35
		UNION RESERVOIR	12,644	91
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	14,637	42
		BUTTONROCK (RALPH PRICE) RESERVOIR	16,233	66
		BOULDER CREEK NEAR ORODELL	23,000	48
		GROSS RESERVOIR	29,000	28
		SAINT VRAIN CREEK AT LYONS	46,800	73

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
10190002	Upper South Platte	SOUTH PLATTE RIVER AT SOUTH PLATTE	50,760	34
		CHEESMAN LAKE	73,500	25
		DILLON RESERVOIR	250,400	80
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	23,020	10
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	75,274	5
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	26,503	6
14050005	Upper White	WHITE RIVER NEAR MEEKER	30,565	9
14050001	Upper Yampa	ELKHEAD CREEK ABOVE LONG GULCH	853	16
		YAMCOLO RESERVOIR	3,379	4
		YAMPA RIVER AT STEAMBOAT SPRINGS	21,726	5
		STAGECOACH RESERVOIR NR OAK CREEK	32,800	46
		ELK RIVER NEAR MILNER, CO	45,106	5

NEP is non exceedance probability for volume of the component compared to this month during the historical period 1980-2020.

*No longer exists

Water Volume NEP Color Scale:	0 (Well Below Normal)	50 (Normal)	100 (Well Above Normal)

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Basinwide Conditions Assessment

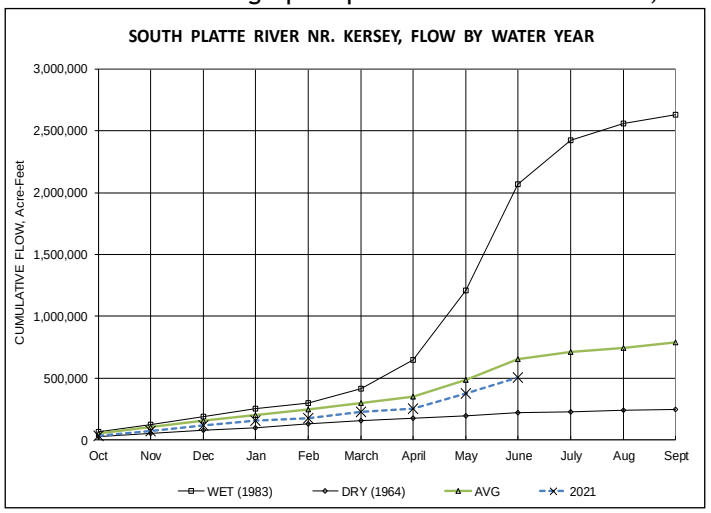
The SWSI value for the month was +0.7.

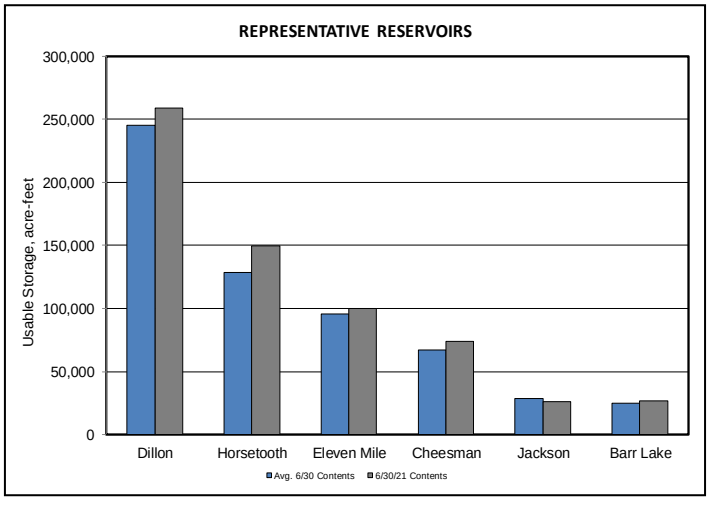
The pattern of above average temperatures and below average precipitation continued during the months of June and July throughout the entire South Platte and Republican River basins. Precipitation throughout the basin was below average ranging from near 75% of average on much of the eastern plains to 50-60% of average in the foothills and mountainous areas throughout the South Platte Basin during the month of July (NOAA Climate.gov 1981-2010 comparison). Temperatures were warmer than average for the month of July as reported by NOAA with the entire basin ranging between 2 and 5-degrees Fahrenheit above average temperatures compared to the 1981-2010 time period.

Below average precipitation and above average temperatures throughout the South Platte and Republican River basins during the months of June and July resulted in limited areas of drought conditions at the end of July 2021. The USDA U.S. Drought Monitor indicates a drought rating of D0 (Abnormally Dry) in the westerly most portions of the mountainous areas near the Continental Divide, as well as portions of the easterly plains located in portions of Yuma, Weld, Logan, Morgan, Sedgwick and Phillips Counties. The remainder of the basin remains without any designation of drought conditions at the end of the month of July.

The below average precipitation and warmer than average temperatures throughout the basin during the months of June resulted in a rapid mountain snowpack melt out during the month of June. The continued trend of above average temperatures and below average precipitation during the month of July, resulted in below average streamflows during the last half of the month of June throughout the month of July. Several large rain producing storms occurred throughout much of the basin in early July and early August that provided intermittent increased water supply and resulting stream diversions, but were short lived in duration. The resulting streamflows at the Kersey stream gage downstream of the City of Greeley for the month of July with average daily flows of approximately 510 cfs, 73% of the historic mean value of 699 cfs. The average daily flow at the Julesburg gage for the month of July was 76.8 cfs, only 24% of the historic mean value of 3256 cfs.

With the snowmelt done in June, above average temperatures and below average precipitation and streamflows, the calls on the South Platte River and tributaries continued to go more senior as demand for water by water users increased during the month of July. The beginning of July through July 8th included a call at the Burlington Canal or a bypass of the Burlington Canal 1909 water right moving downstream from the Lower Platte and Beaver Ditch to the Harmony No. 1 Ditch located near Crook, Colorado. As the flows in the basin continued to drop and demand increase, the calls went more senior with the South Platte River Compact Call being placed on July 5th and remaining on during the entirety of the month of July with a priority date of June 14, 1897 impacting water district 64 from the Washington County westerly line to the state line. Much of the remainder of the month of July was controlled by a call at the Western Ditch located near the Town of Platteville with a bypass priority dates 1886 to 1881 from July 13th through July 18th controlling the upper portions of the South Platte River Basin. The lower portion of the river was controlled by calling water rights or bypassing water rights at the Sterling #1 Canal located near the Town of Sterling or the Harmony Number 1 Canal located near the Town of Crook with water right priorities circa 1897 going more senior toward the end of the month to 1888 Bijou bypass to the Sterling Number 1. Many tributaries maintained good flows curtailing to the downstream South Platte calls during the early portion of July, however with the above trends most tributaries had internal calls senior to the South Platte River downstream calls by mid to late July. With the continued weather conditions and resulting high demand of water exceeding the available supplies, it is anticipated that the calls will continue to be more senior throughout

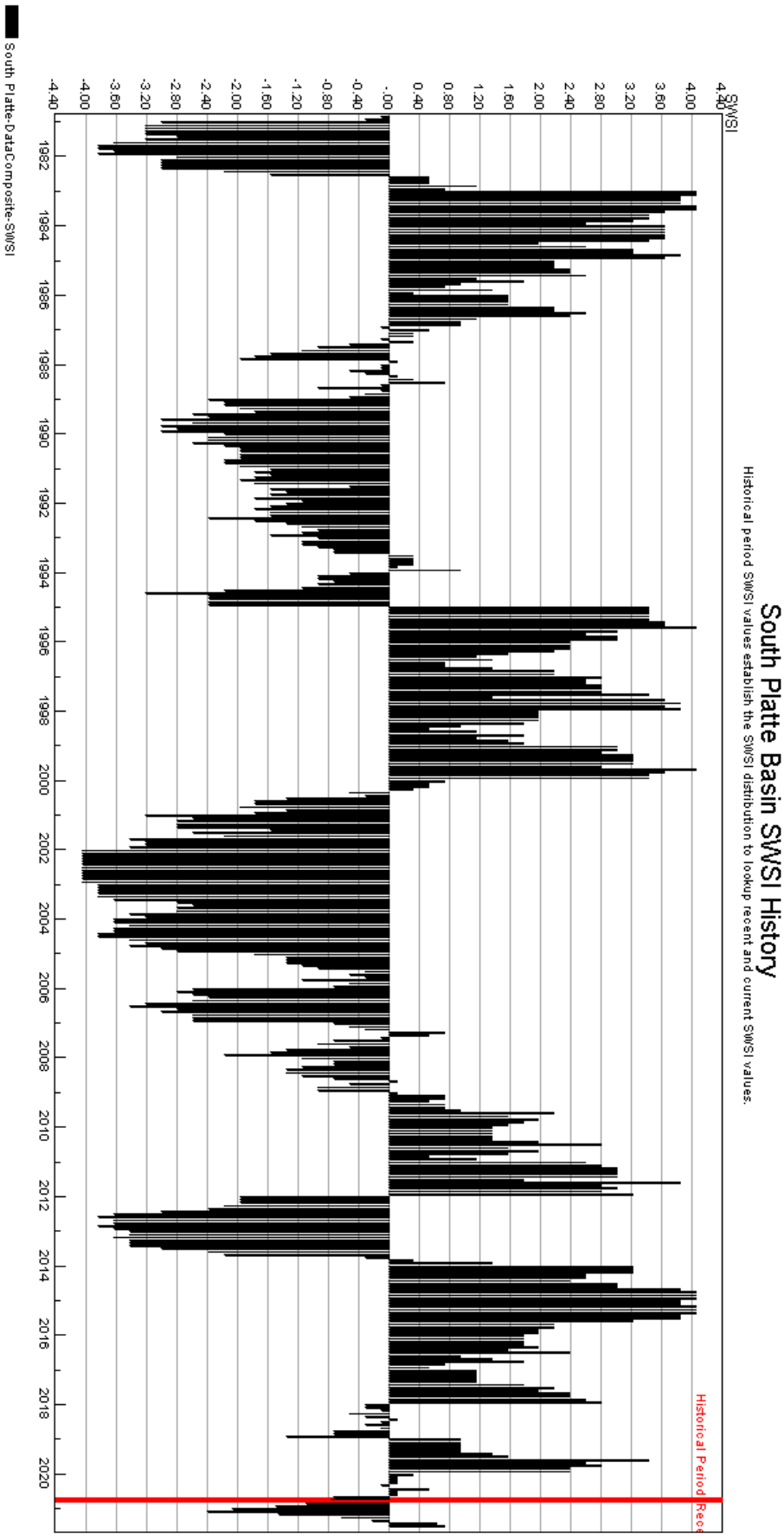




the basin and the need for reservoir releases to increase during the months of August through September.

Reservoir storage levels throughout the South Platte River mainstem ended the month of July above the historical average at the 6 SWSI Representative Reservoirs (Dillon, Horsetooth, Eleven Mile, Cheeseman, Jackson, and Barr Lake) at 617,164 acre-feet volume, which is 108% of the long term average (1961-current). Additionally, 32 indexed reservoirs throughout the Division 1 basin ended the month of July at 113% of the long-term average with a storage volume of 922,927 acre-feet representing 81% of total full capacity for the reservoirs. This is above the long term average of 72% of total full capacity for the end of July storage in the 32 indexed reservoirs throughout Division 1. With the above average temperatures and below average precipitation and native streamflows, the demand by water users for reservoir water releases increased during the month of July into August.

The temperature and precipitation outlook into August, September, and October prepared by the National Weather Service, in northeastern Colorado indicates a 40-50% probability of above average temperatures and a 33-40% probability of below average precipitation throughout the South Platte River Basin and Republican River Basin.



Basinwide Conditions Assessment

The SWSI value for the month was -1.3.

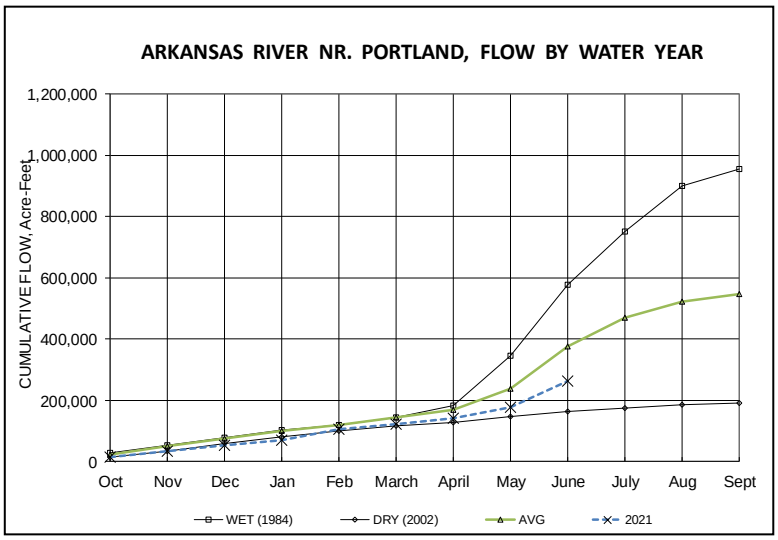
Outlook

June started off with the Fort Lyon Canal call of 3/1/1887 with a pass through to the Amity Canal, but runoff flows allowed it to go up to the 6/9/1890 call on the Colorado Canal but that soon tapered off and the month ended it as it begun with the same exact same call scenario.

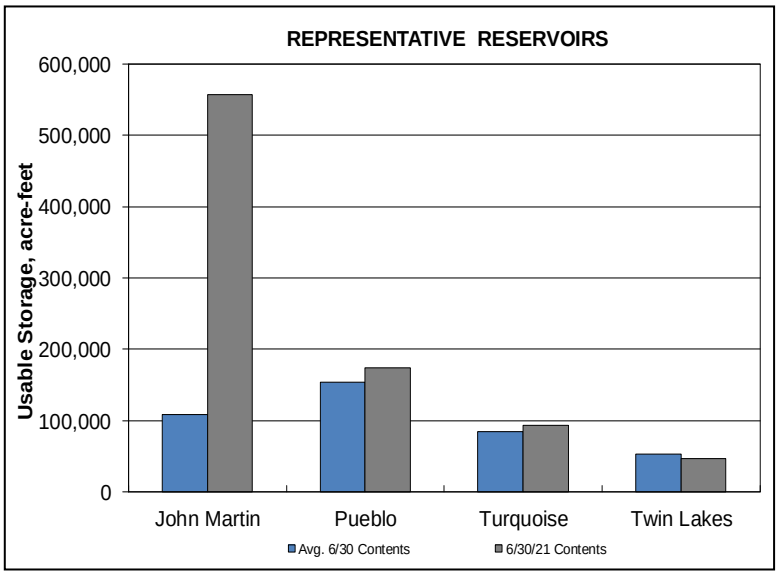
Administrative Concerns

Arkansas River flows peaked early in the month and were below average. Late month precipitation helped bolster water supply temporarily. Flows in the Cucharas Basin were actually above average in June thanks in part to the snow pack as evidenced by the consistent diurnal pattern and late month precipitation. Flows on the upper end of the Huerfano basin were a little higher than average but were largely below average by the time they reached the lower end of the basin. The flows in the Purgatoire Basin trended towards average with baseline flow being a bit below average, but several high flow events caused by widespread and frequent precipitation increased flows.

The City of Aurora and Colorado Springs Utilities both moved water from Pueblo Reservoir to Twin Lakes and Turquoise lakes in June. Kansas started a release of Offset water from John Martin Reservoir. At the start June, the precipitation events on the Purgatoire River put John Martin Reservoir in Conservation Storage and water was stored in the Amity Section III account (Great Plains). The start of June also saw water begin stored in Trinidad Reservoir in the 2/3 and 1/3 accounts.



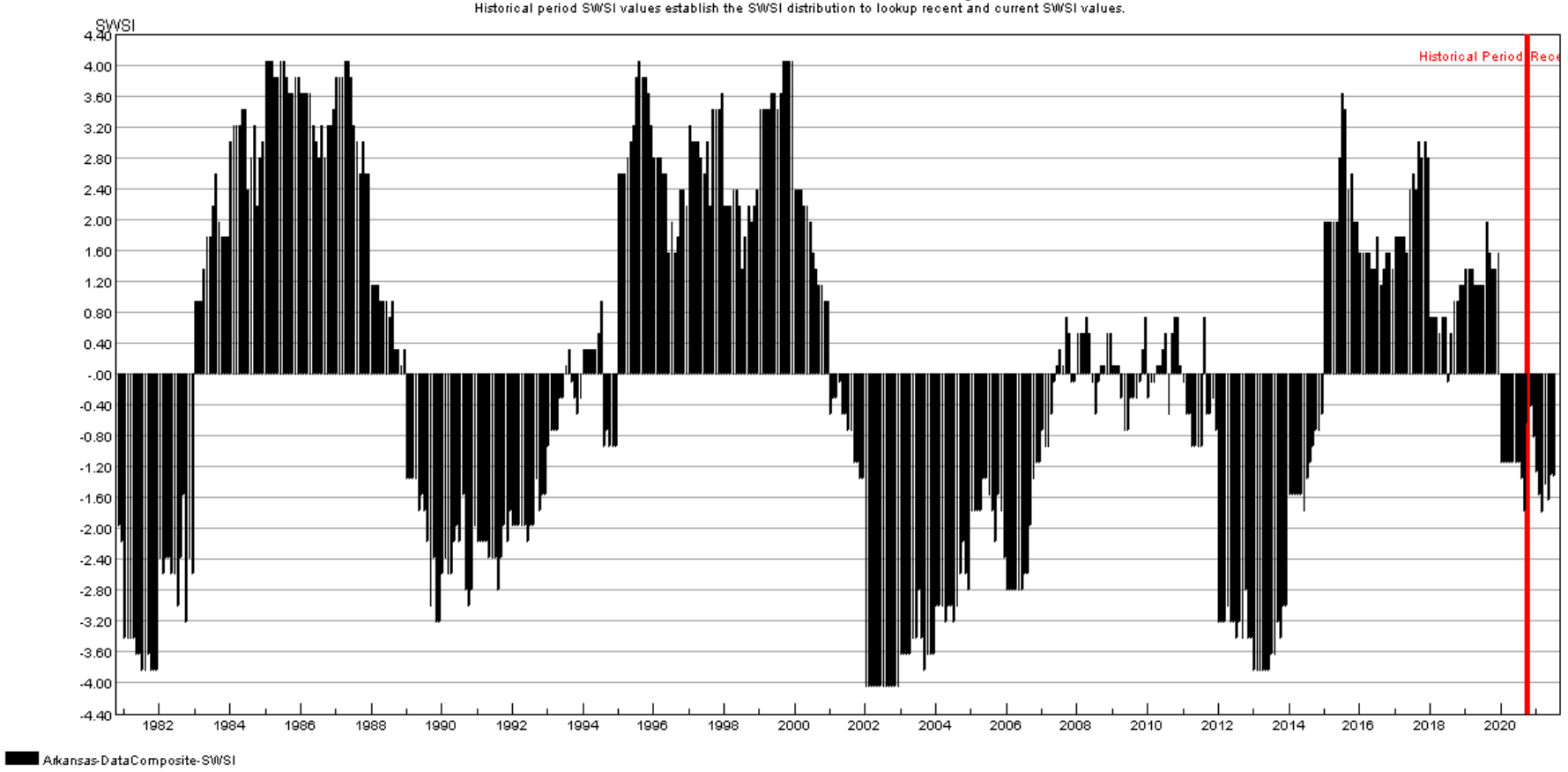
The end of June also saw several large operations involving the Offset Account in John Martin Reservoir. These operations included two typical operations, one where a delivery of water was made by LAWMA to meet the July 1st requirement for use of the changed Highland water right as a source of supply for the permanent fishery pool in John Martin Reservoir and a second for replacement of depletions from post Compact pumping for stateline obligations. The third however was a delivery for Compact compliance to make up for a shortfall of 62 acre-feet that occurred at the stateline as a result of the 10-year rolling average from the H-I Model run showing a deficit. This delivery is notable as it was the first time since the 1980 Operating plan has been administered that there was not a credit at the stateline.



Continued best management practices by the Division and the other agencies and organizations in the Arkansas basin will be critical for managing the water supply into the rest of the summer.

Arkansas 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 gaging station Rio Grande near Del Norte averaged 2050 cfs (69% of normal). The Conejos River near Mogote had a mean flow of 695 cfs (63% of normal). June streamflow was a mixed bag for area streams. The southernmost drainages suffered with 50% of average or less during June. The longer drainages like the Conejos, Alamosa, Saguache and Rio Grande had about 60 to 70% of the average streamflow. Surprisingly, a couple of Sangre de Cristo Range streams, Rito Alto Creek and Trinchera Creek, had normal flow during June. As the warmest part of the summer approaches, the decline in streamflow for all area streams will be steep without significant precipitation.

The higher elevations and the Valley floor received above average precipitation during June. Rainy weeks at the beginning and end of the month bracketed record high temperatures in Mid-June. Four new record daily high temperatures were set in Alamosa during the month.

Outlook

The updated NWS 90-day forecasts for July through September, 2021 and beyond suggest higher than normal temperatures and below average precipitation are in store for the San Luis Valley. It seems the drought within the American southwest will persist into 2022.

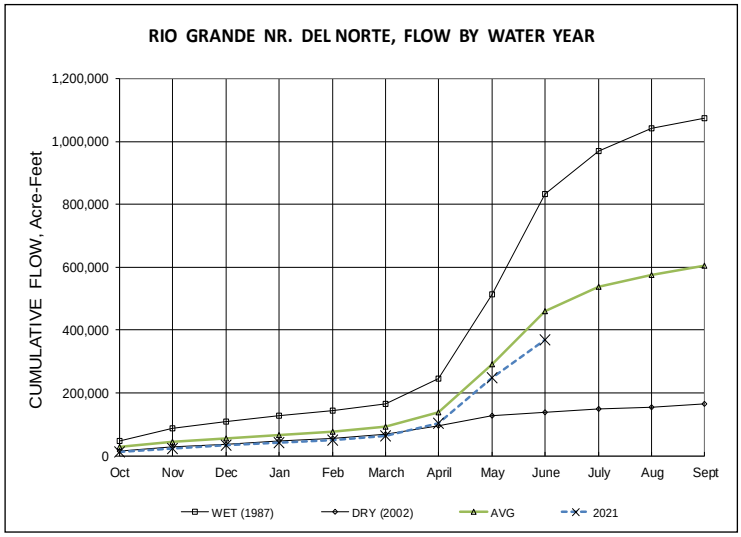
Administrative/Management Concerns

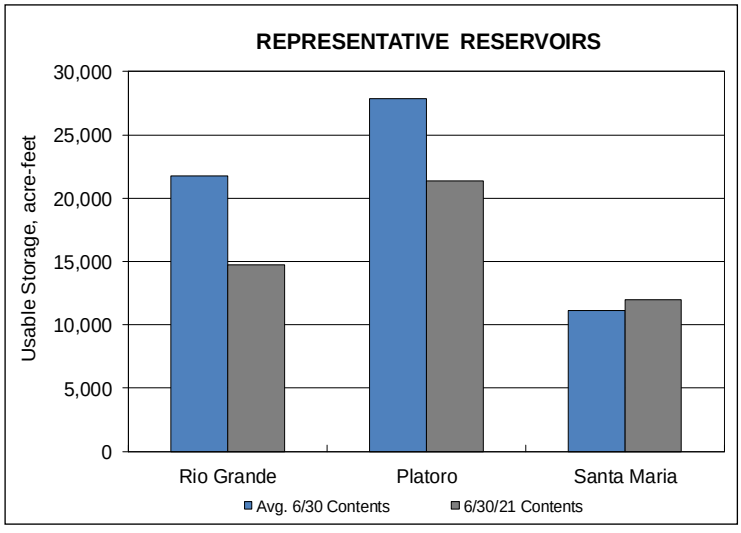
The lack of surface water has increased use of wells throughout the region. Consequently, aquifer levels have already started to decline. Recovery and stabilization of the aquifers is a major need in the basin and a focal point of the implemented Groundwater Use Rules. These Rules went into full effect on March 15, 2021.

All Groundwater Management Subdistricts of the Rio Grande Water Conservation District have approved Plans of Water Management for the 2021 irrigation season with the exception of the Saguache Creek Subdistrict. This Subdistrict has struggled to find wet-water replacement supplies or forbearance contracts. As such, the State Engineer did not approve their 2021 Annual Replacement Plan. The subsequent appeal filed with the Court allows the non-exempt wells in this Subdistrict to operate while the appeal is resolved.

Public Use Impacts

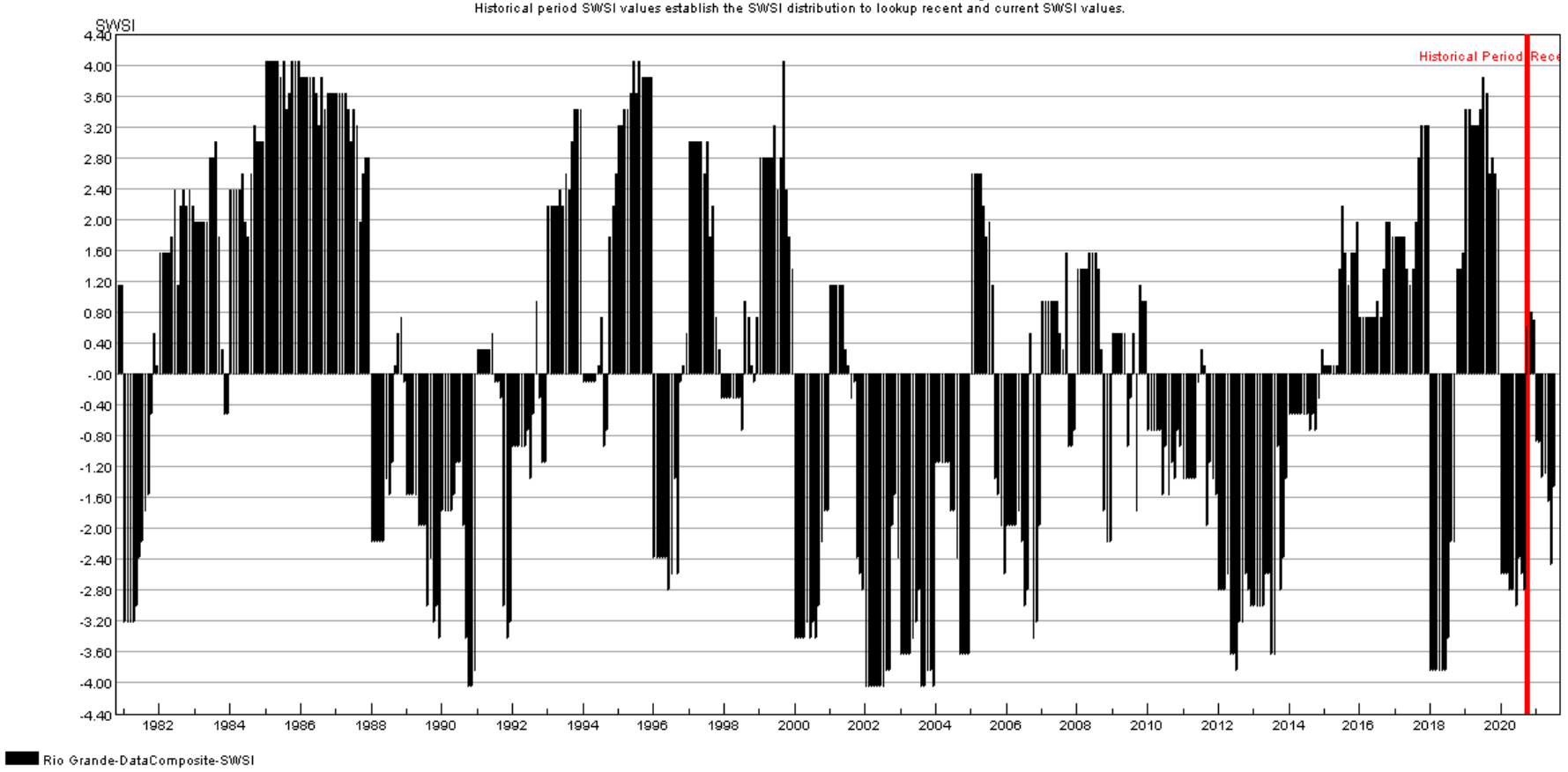
Sporadic weather conditions have made crop development difficult the past two months. The normally reliable first cutting of alfalfa was rained on. Hail damaged some of the potato and barley crops in the central part of the Valley.





Rio Grande 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 -3.3.

Basin Wide Conditions Outlook

The weather changed quickly in June with temperature soaring to 100 degrees in the lower valleys by the end of the first week of June. Consequently, the snow melt runoff began in earnest, as streamflows peaked around June 5th throughout the Gunnison Basin. Turns out, June 2021 was also one of the wettest Junes on record, with monsoonal moisture making its way to the Rockies in the latter half of the month. But, precipitation varied widely in the Gunnison basin during June. Southern areas, such as the upper Uncompahgre River and Lake Fork Gunnison River, greater than average precipitation; while the northeastern areas, such as the Grand Mesa and Paonia Reservoir received less than average. Gunnison basin streams stayed below average flows for the entire month of June and Colorado Basin River Forecast Center runoff predictions held true due to very dry antecedent soil moisture conditions.

Outlook

National Climate Prediction Center forecasts for the July to September period now predict lower than average precipitation combined with much above average temperatures for the August to October period. Even so, as of the preparation of this report, more monsoonal moisture is now predicted for the last ten days of July.

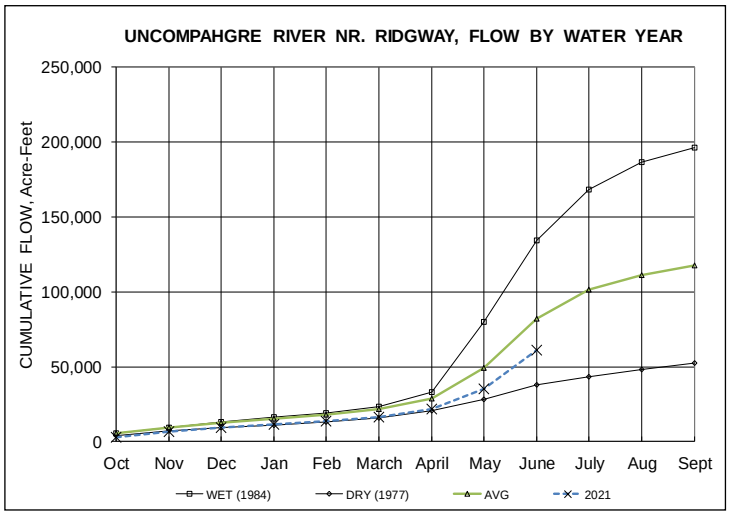
Administrative/Management Concerns

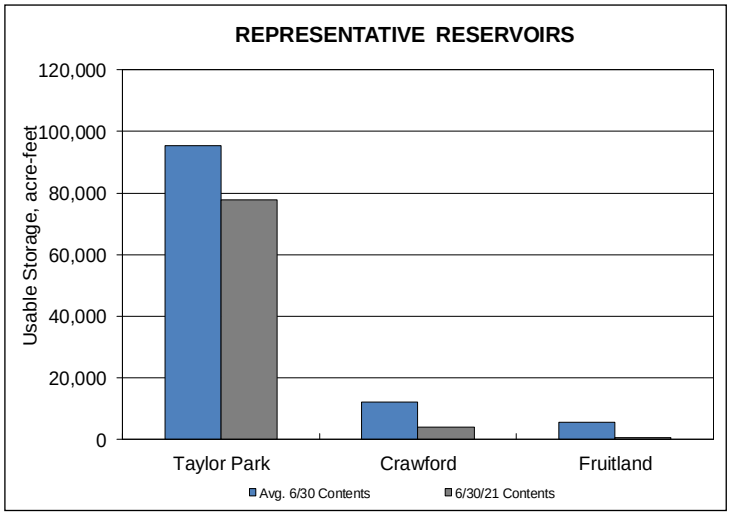
Natural inflow remained great enough to supply the Uncompahgre Valley Water Users (UVWUA) diversions at the Gunnison Tunnel through the end of June. Consequently, no Taylor Park Reservoir storage was used during June. However, on July 4th, the Gunnison Tunnel began diverting water stored in the Taylor Park Reservoir second fill account that is released from Taylor Park at rates determined in concert with the Taylor Park Local Users Group (TLUG) to satisfy agricultural and recreational uses between Taylor Park and Blue Mesa Reservoirs. Additionally, on July 6th the Gunnison Tunnel began diverting Taylor Park first fill storage released from the account in Blue Mesa Reservoir.

Inflows to Ridgway Reservoir didn't drop below releases needed to satisfy UVWUA diversions in their main canals until after the fourth of July. So, none of the UVWUA storage accounts were used in June, which will really help late season finishing of various crops in the Uncompahgre Valley come late summer. Storage water released for irrigation is generally depended upon for late season irrigation demands.

Based on "Dry" year type and the storage in Blue Mesa is below 600,000 acre-feet, drought rules are in effect for the base flow targets specified in the Aspinall Record of Decision (ROD) for the Gunnison River at Whitewater. The target flow is 900 cfs for June and July. Reclamation has maintained releases from Crystal Dam throughout June to keep flows stable in the Black Canyon at 650 cfs and to maintain the flow in the Gunnison River gauge near Grand Junction well above the 900 cfs target range.

A call was placed by the Paonia Ditch on the North Fork Gunnison River on June 22nd. This is a few weeks earlier than normal and prompts administration of numerous tributaries above the Town of Paonia. This also triggers the release of Paonia Reservoir storage to effectuate the Ragged Mountain Exchange, which allows a number of diversions above Paonia Reservoir on Muddy Creek to remain on.



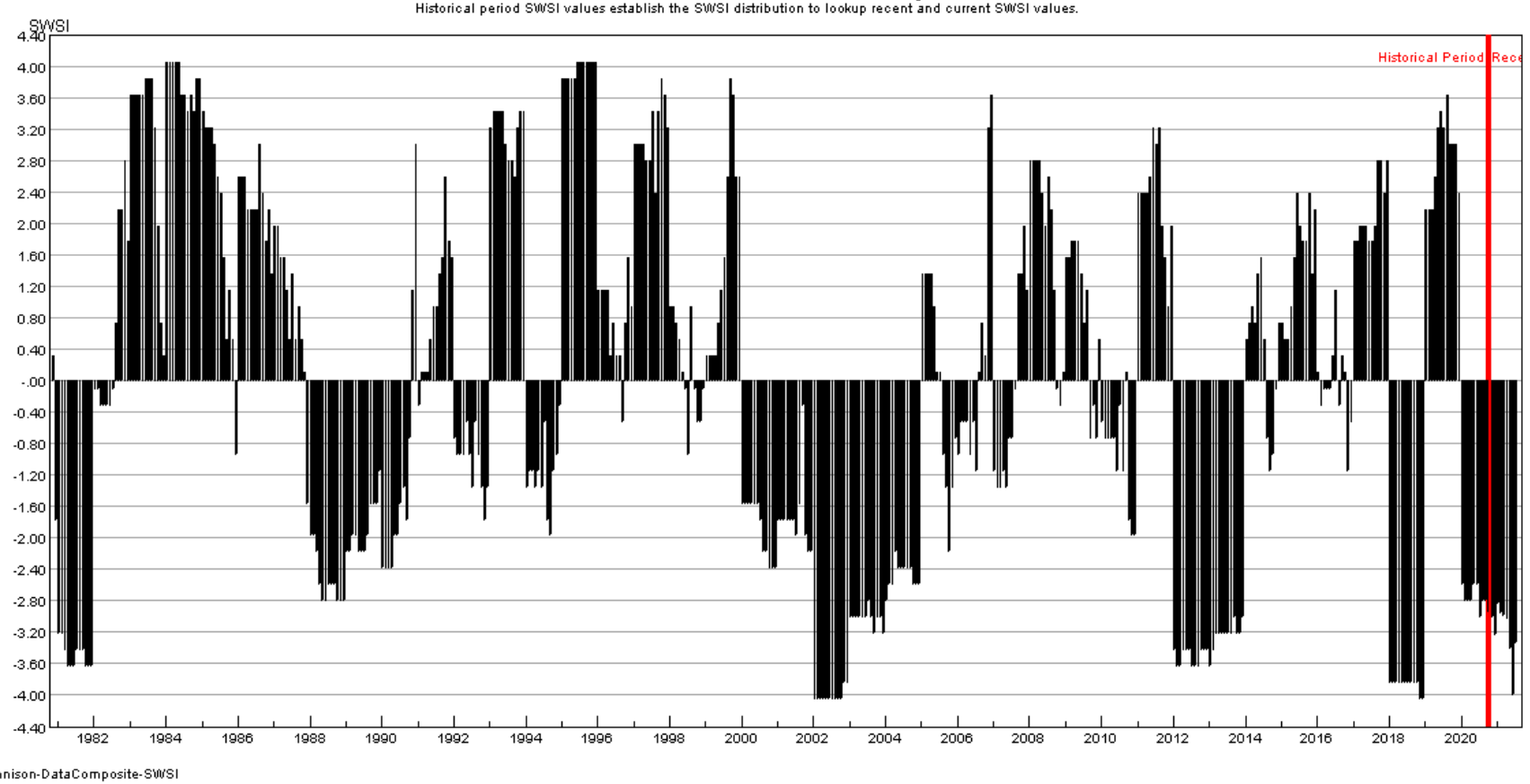


Public Use Impacts

While voluntary closures for fishing on the Yampa, Upper Colorado, and Dolores Rivers are in effect due to elevated surface water temperatures, fishing opportunities still abound in the Gunnison Basin, especially in the Black Canyon of the Gunnison, San Miguel, and the Taylor Rivers. Hot weather and dry soil conditions have resulted in elevated fire danger throughout western Colorado. However, monsoonal moisture has kept fire restrictions to stage 1. The stage 1 fire restrictions do not allow open burning of any kind, which includes agricultural burning, open campfires, and fireworks. Smoking cigarettes outdoors is not allowed, unless in an enclosed vehicle or building or in a developed recreation site. Campfires in a pre-approved campground, State Park/KOA, or enclosed fire pits are permitted.

Gunnison Basin SWSI History

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



Basinwide Conditions Assessment

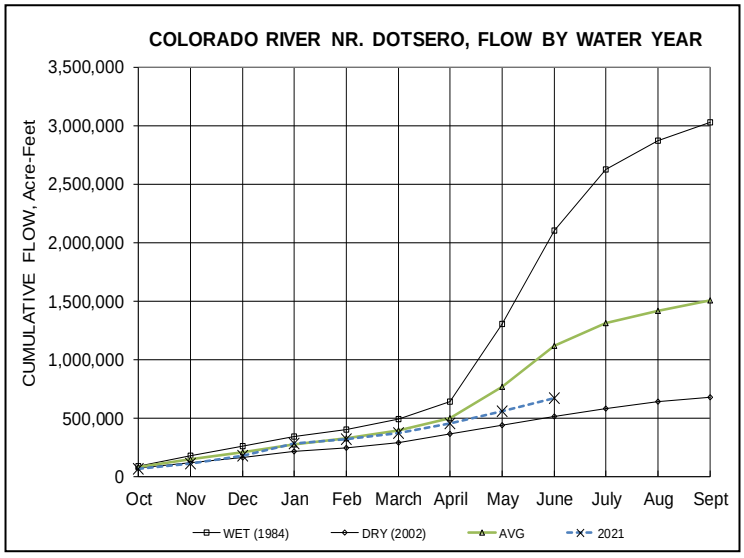
The SWSI value for the month was -3.4.

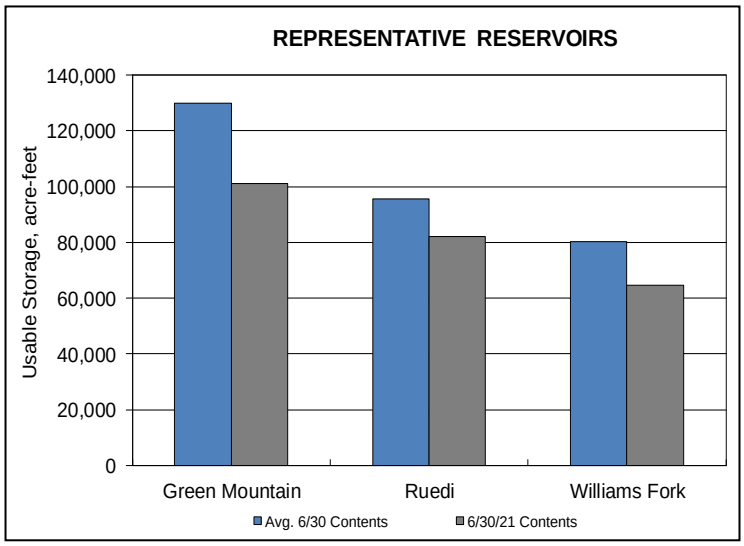
Outlook

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

Administrative/Management Concerns

The Shoshone Power Plan is down, therefore there is no call at Shoshone. The Cameo call is the Grand Valley Canal (WDID 7200645) with the Alva B Adams Tunnel (CBT) priority (WDID 5104634). Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) continue at or near full capacity. Green Mountain Reservoir is administering for the Shoshone Outage Protocol and releasing Historic User Pool replacement, water contract, power pool storage, Silt Project replacement, and bypassed reservoir flow. Ruedi Reservoir is releasing to meet the demands of the call.



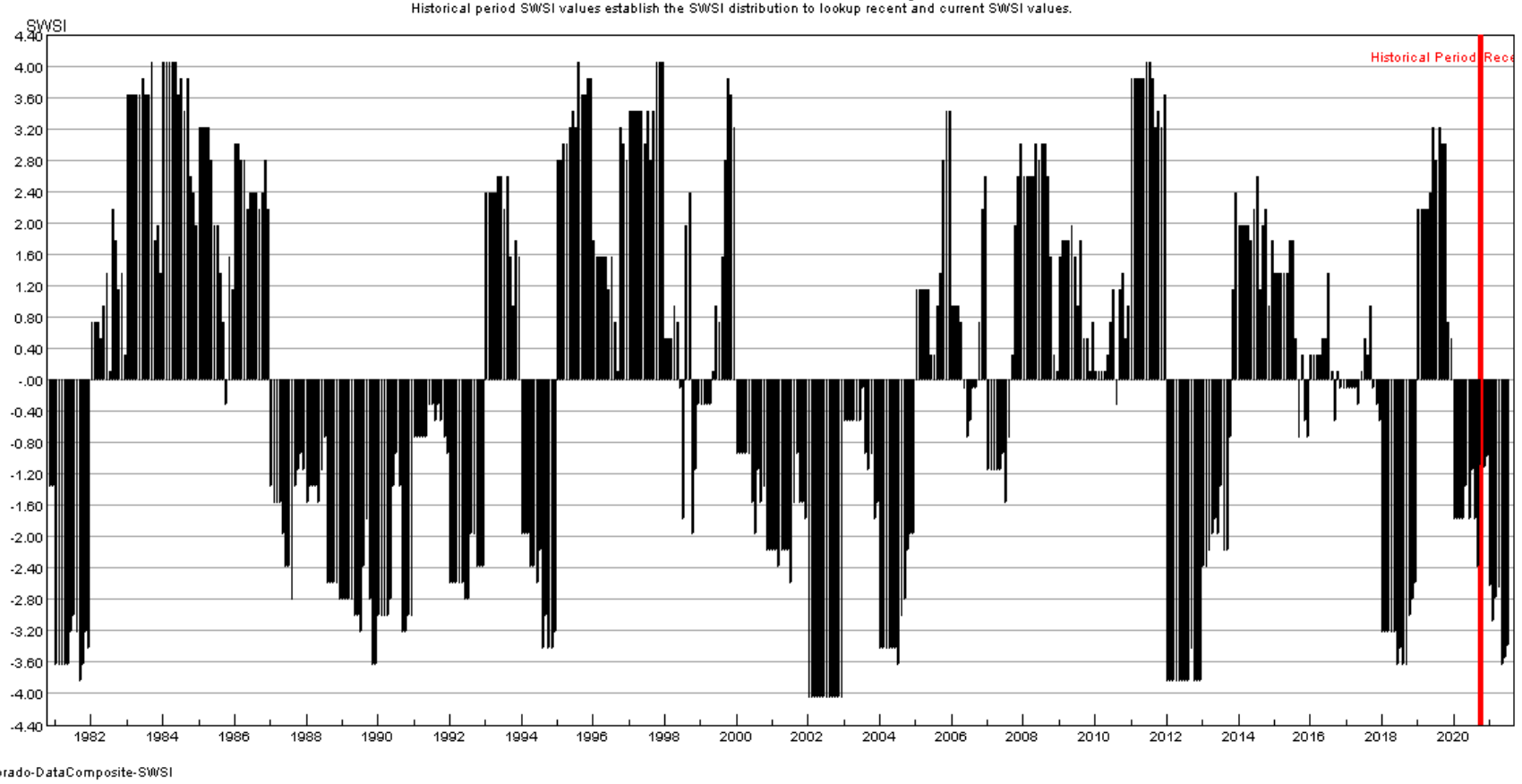


Public Use Impacts

Due to heat, drought and low water levels contributing to elevated water temperatures, Colorado Parks and Wildlife has asked anglers to voluntarily avoid fishing on the Colorado River between Kremmling and Rifle. The higher temperatures deplete oxygen levels leaving trout vulnerable as they stop feeding and become more susceptible to disease when temperatures exceed 70 degree.

Colorado 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 -3.7.

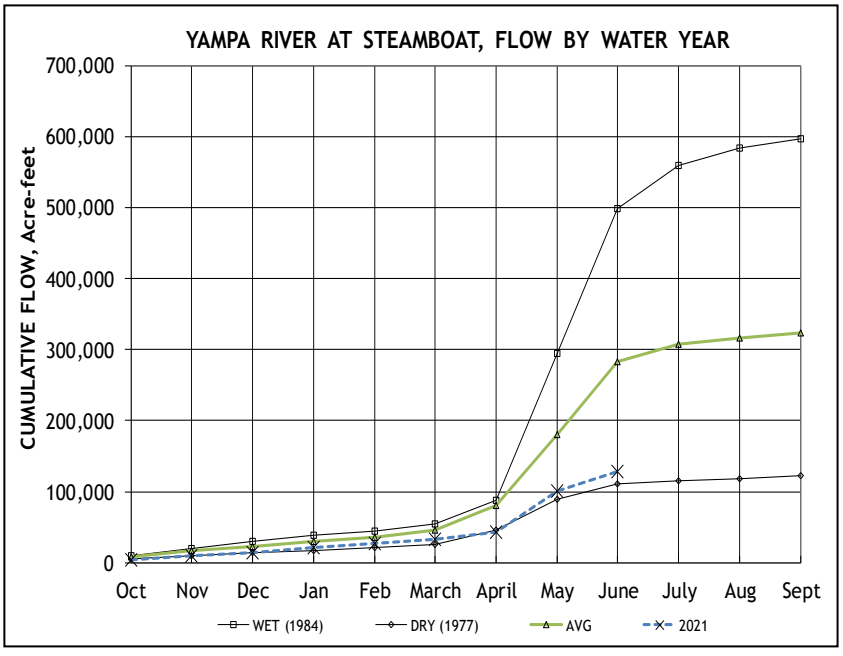
Wide Conditions Assessment:

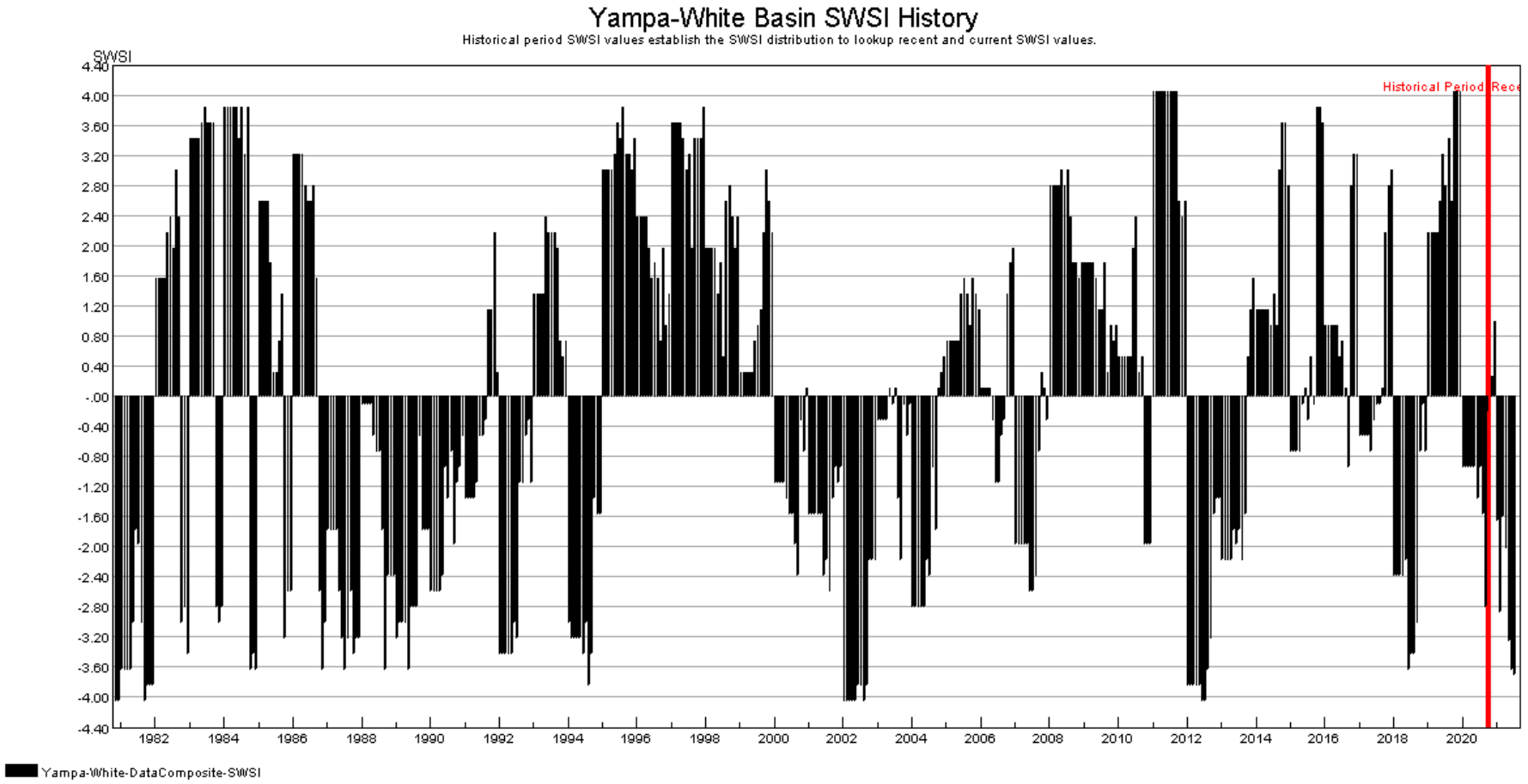
Precipitation (24 sites) – Yampa and White River basins were **57%** of the monthly average, putting the basin at 70% of average for the water year to date. This is down from last year's monthly average of 70%, and down from last year's water year to date of 92%. North Platte River basin was **33%** of the monthly average, putting the basin at 79% for the water year to date. This is down from last year's monthly average of 63%, and down from last year's water year to date of 100%. For the entire Yampa, White and North Platte River basins the lowest percent of average, at 6%, was the Columbine SNOTEL station. The highest, at 211%, was the Elk River SNOTEL station, with 3.8 inches.
**Averages are from 1981-2010 records*

Temperatures – The average monthly temperature for NOAA Colorado Climate Division 2: Colorado River Drainage was **63.7° F**. This is +6.2°F from the average of 57.5°F. This temperature ranks 126 for the lowest of the previous 127 years of data. For the NOAA Colorado Climate Division 4: Platte Drainage, the average temperature was **65.7°F**, +4.7°F from the average of 61.0°F, ranking 118.
**Averages are from 1901-2000 records*

Reservoir Outlook

Elkhead Reservoir – June 30, 2021 capacity level was 24,270 AF of 25,550 AF – 95.0% capacity.
Fish Creek Reservoir – June 30, 2021 elevation was 9886' at 4,147 AF of 4,160 AF – 99.7% capacity.
Stagecoach Reservoir –June 30, 2021 capacity level was 32,800 AF of 36,500 AF – 89.9% of capacity, 102% of average, 90.1% of last year.
Yamcolo Reservoir – June 30, 2021 capacity level was at 3,400 AF of 8,700 AF – 39% of capacity, 150% of average.
**Averages are from 1981-2010 records*




Yampa-White Basin SWSI History
Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.
SWSI
4.40
4.00
3.60
3.20
2.80
2.40
2.00
1.60
1.20
0.80
0.40
-.00
-0.40
-0.80
-1.20
-1.60
-2.00
-2.40
-2.80
-3.20
-3.60
-4.00
-4.40
Historical Period
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Yampa-White-DataComposite-SWSI

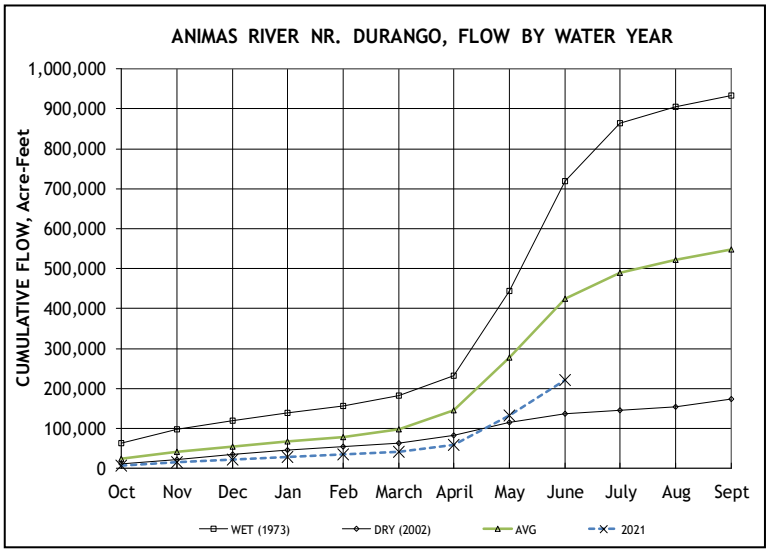
Basinwide Conditions Assessment

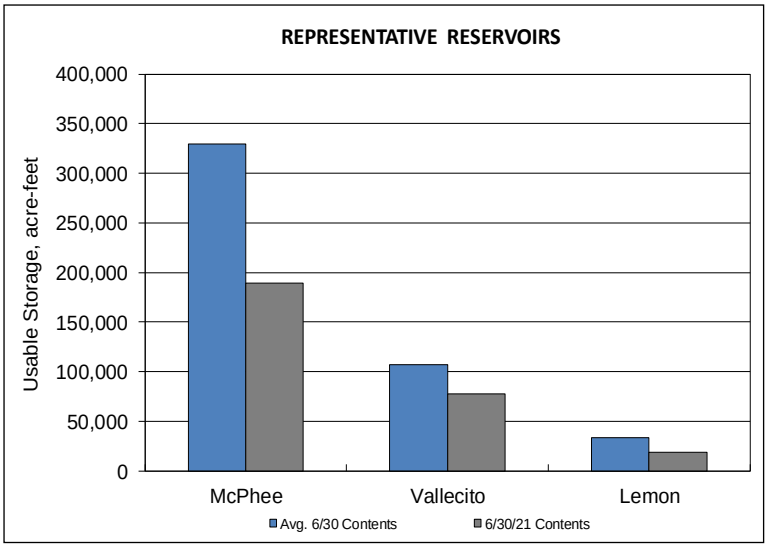
The SWSI value for the month was -3.3.

Flows at the Animas River at Durango averaged 1,498 cfs (54% of average). The flow at the Dolores River at Dolores averaged 343 cfs (26% of average). The La Plata River at Hesperus averaged 38.1 cfs (31% of average). Precipitation in Durango was 0.80 inches for the month, 138% of the 30-year average of 0.58 inches. Precipitation to date in Durango, for the water year is 8.16 inches, 62% of the 30-year average of 13.13 inches. The average high and low temperatures for the month of June in Durango were 88° and 48°. In comparison, the 30-year average high and low for the month is 83° and 47°. At the end of the month Vallecito Reservoir contained 82,166 acre-feet compared to its average content of 105,223 acre-feet (78% of average). McPhee Reservoir was up to 181,933 acre-feet compared to its average content of 333,644 (55% of average), while Lemon Reservoir was up to 15,145 acre-feet as compared to its average content of 32,802 acre-feet (46% of average).

Outlook

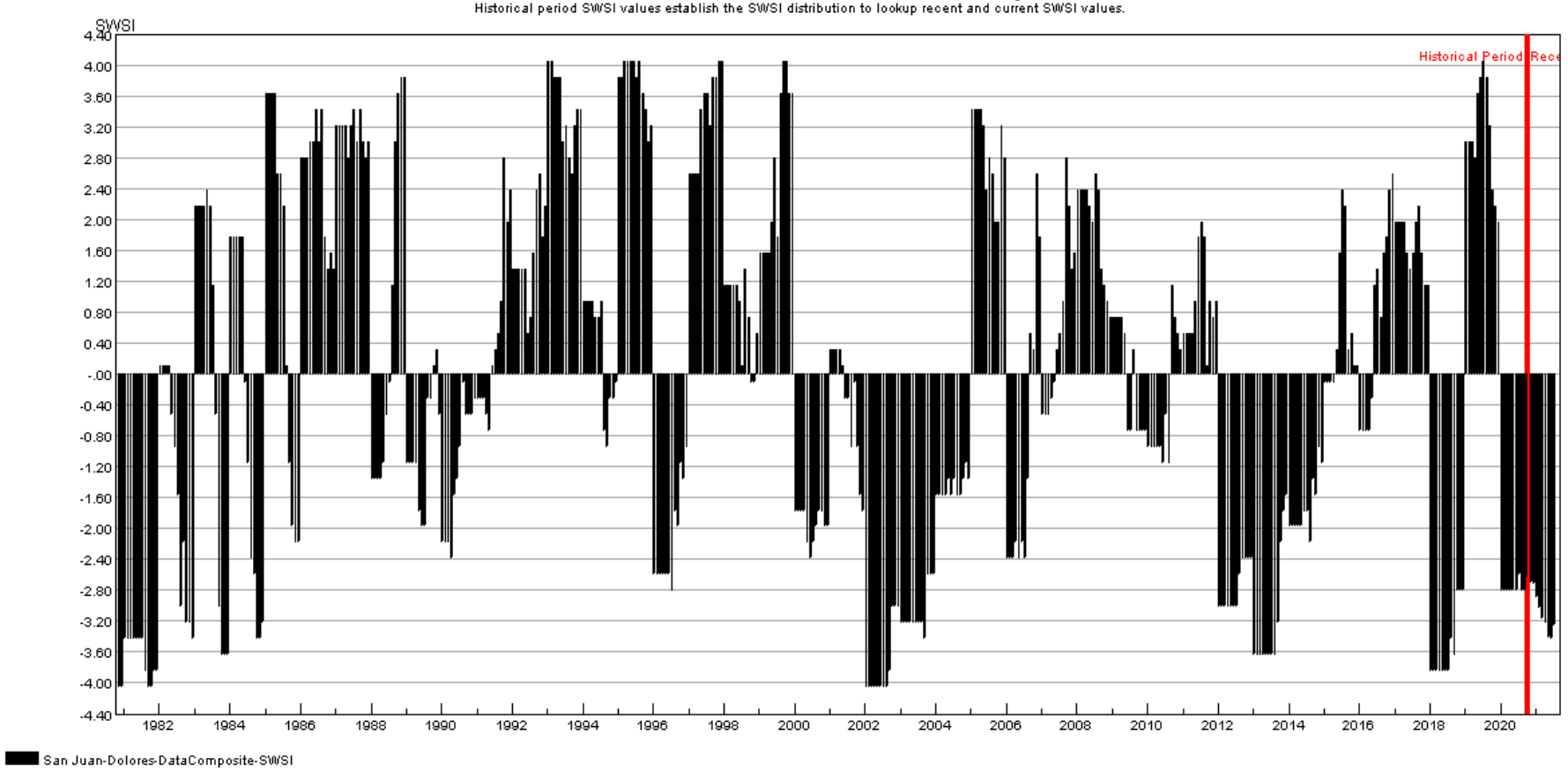
Precipitation (0.80 inches) was above average for June in Durango. There were 49 years out of 126 years of record where there was more precipitation than this year. With the lack of moisture in the area, the flows in the rivers remain well below average for the month. There were 91 out of 110 years of record where there was more flow at the Animas River at Durango gage than this year. There were 99 out of 110 years of record where the total flow past the Dolores stream gauge was more than this year. There were 86 out of 104 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. All of the reservoirs within the basin are well below average for this time of year.





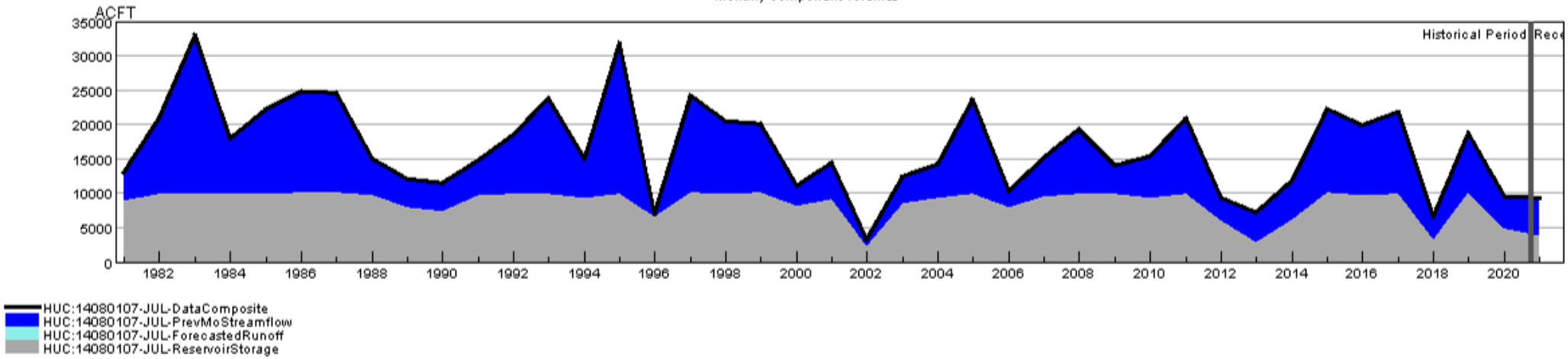
San Juan-Dolores Basin SWSI History

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



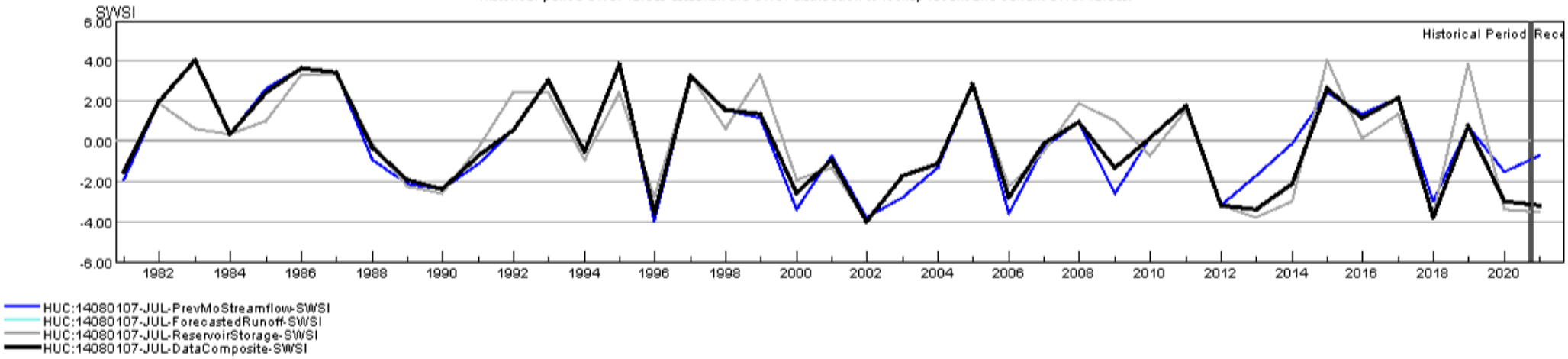
HUC 14080107 (Mancos) Surface Water Supply - JUL

Monthly component volumes



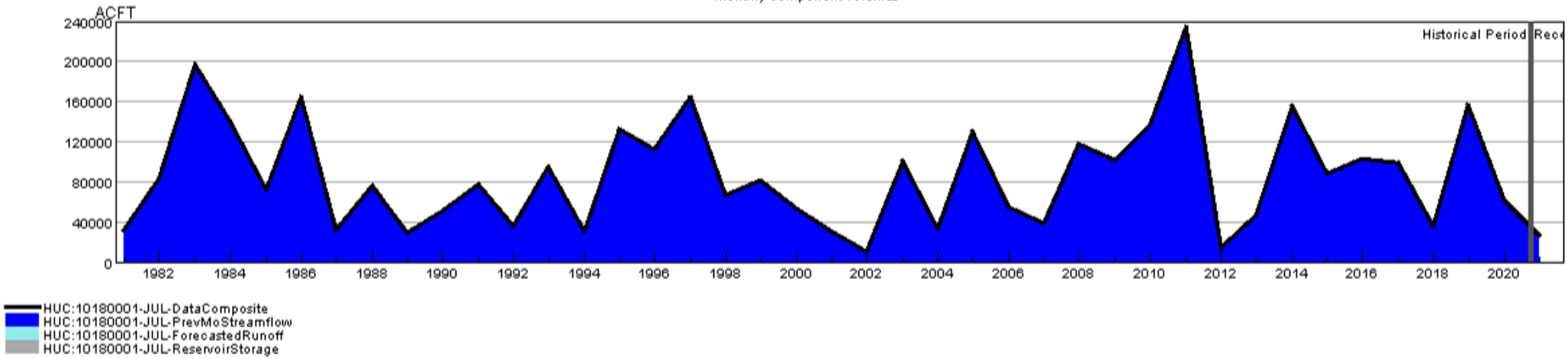
HUC 14080107 (Mancos) SWSI Values - JUL

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



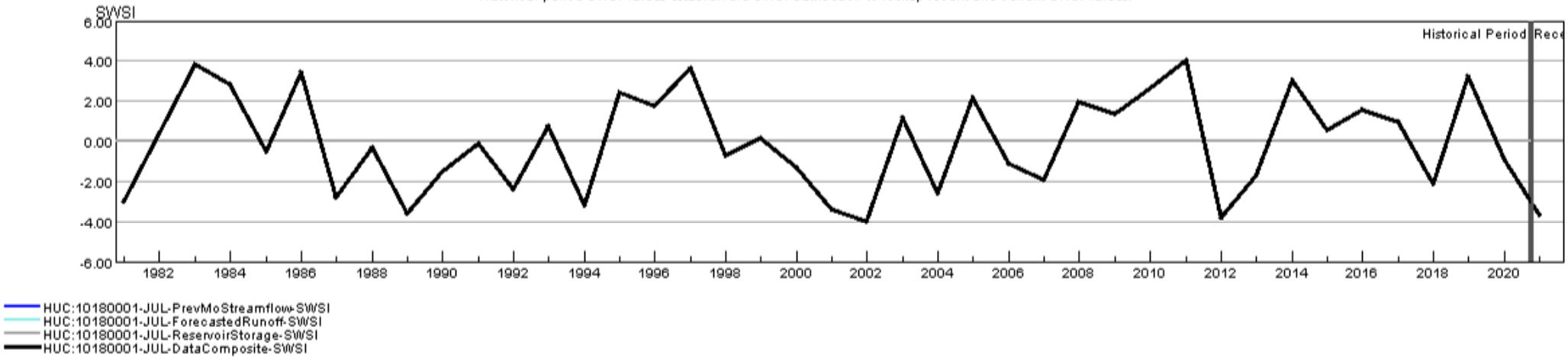
HUC 10180001 (North Platte Headwaters) Surface Water Supply - JUL

Monthly component volumes



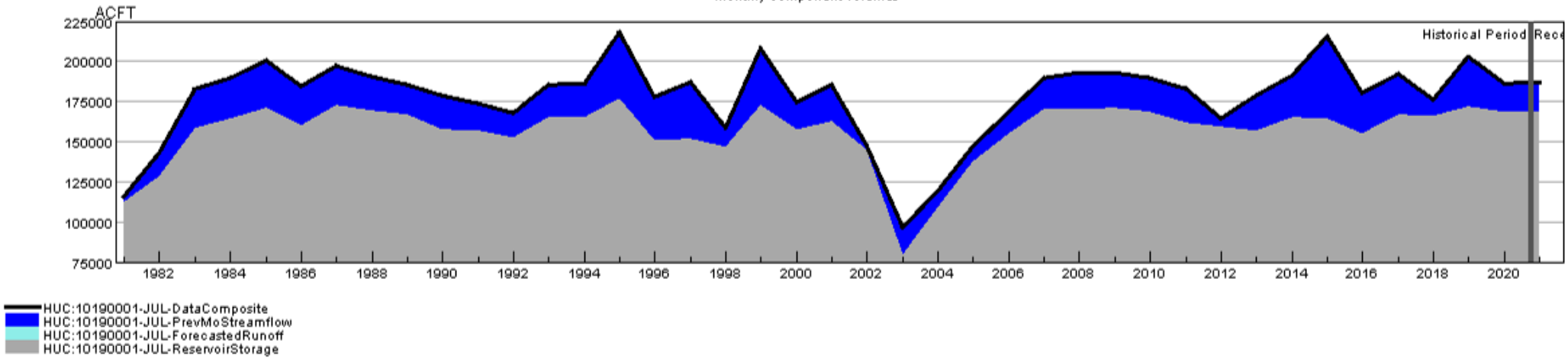
HUC 10180001 (North Platte Headwaters) SWSI Values - JUL

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



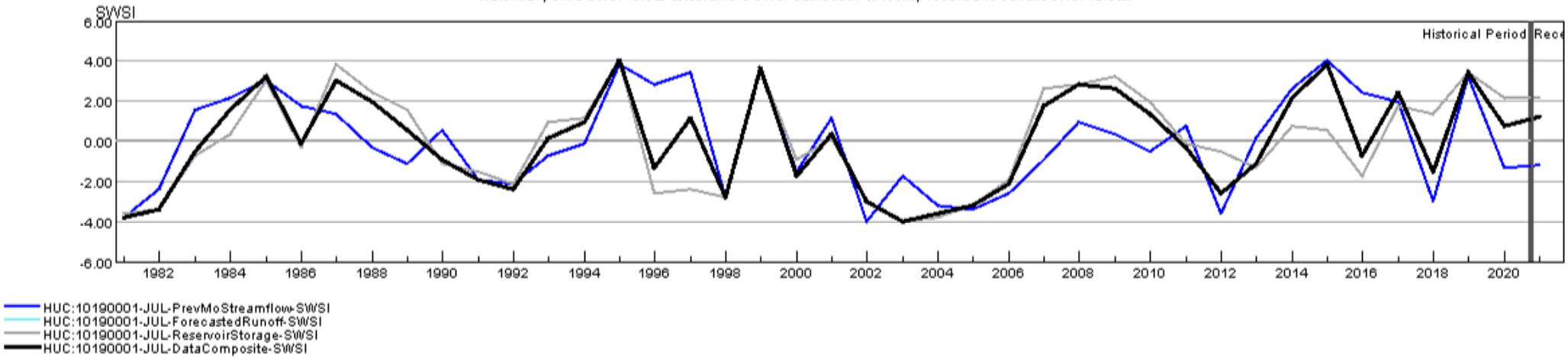
HUC 10190001 (South Platte Headwater) Surface Water Supply - JUL

Monthly component volumes



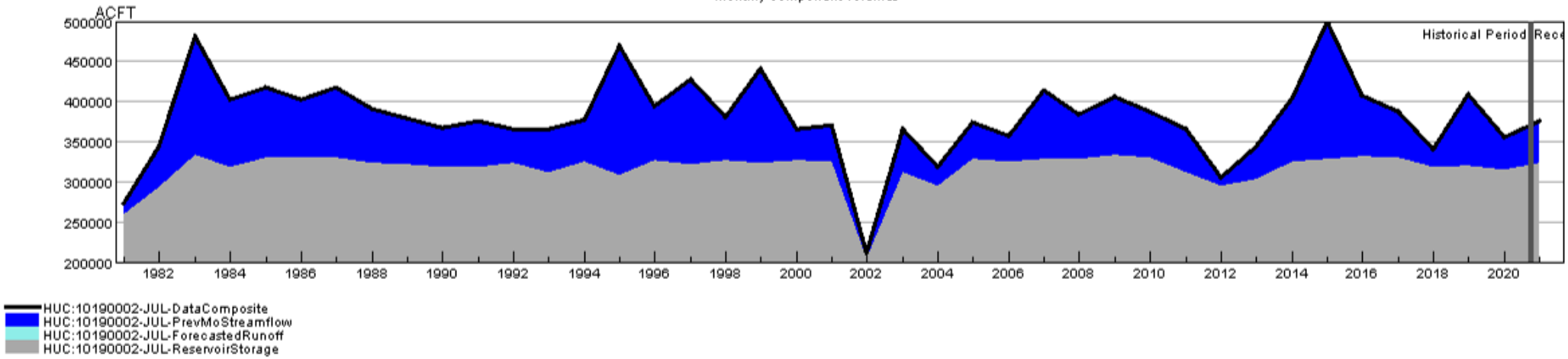
HUC 10190001 (South Platte Headwater) SWSI Values - JUL

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



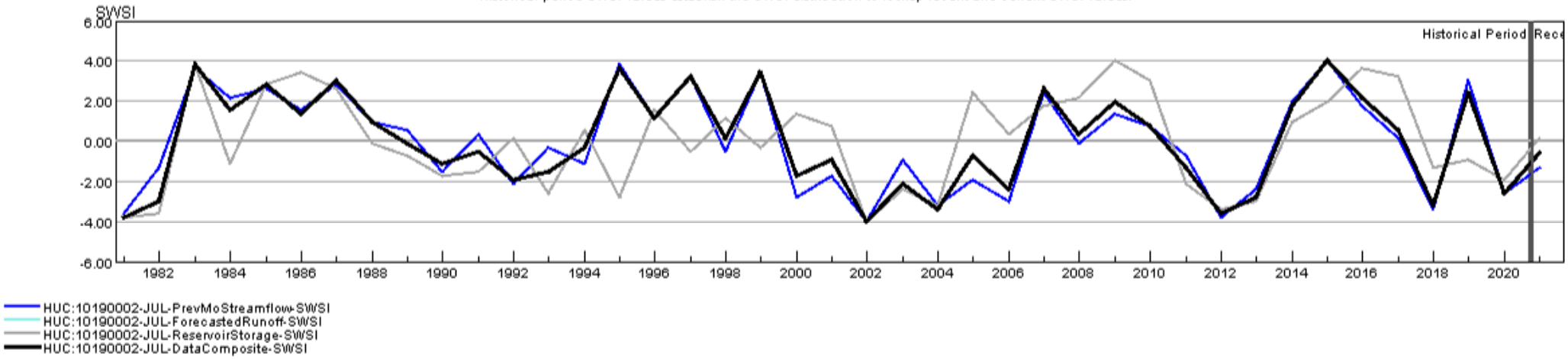
HUC 10190002 (Upper South Platte) Surface Water Supply - JUL

Monthly component volumes



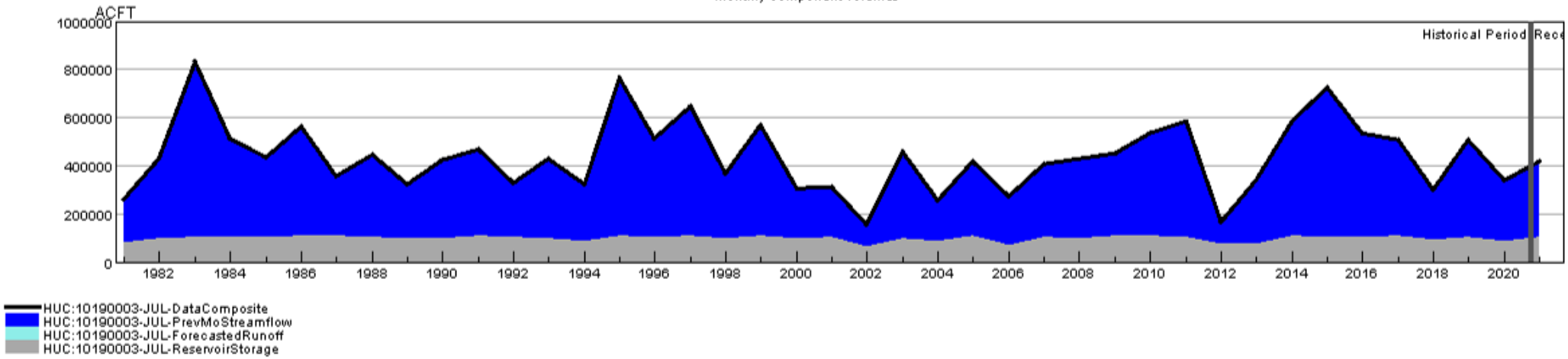
HUC 10190002 (Upper South Platte) SWSI Values - JUL

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



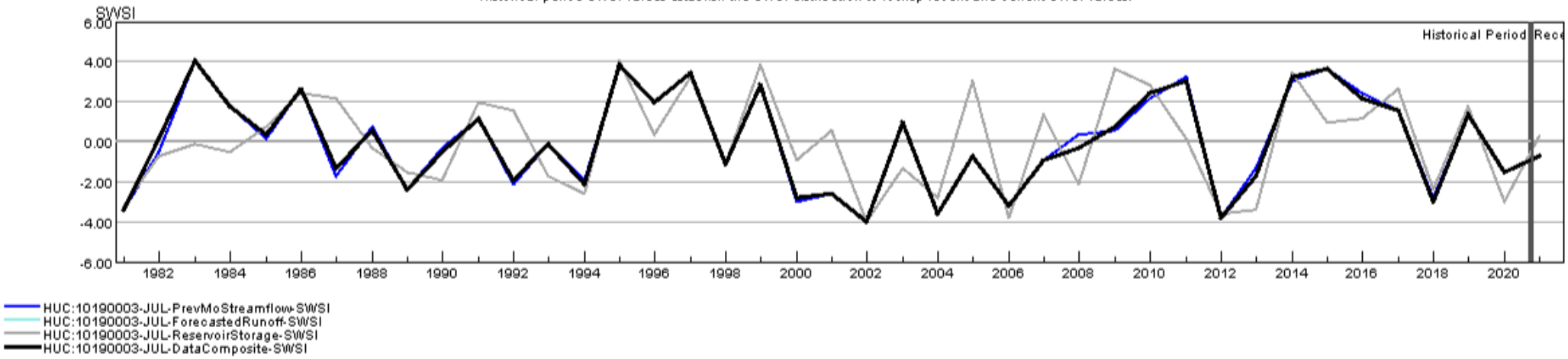
HUC 10190003 (Middle South Platte-Cherry Creek) Surface Water Supply - JUL

Monthly component volumes



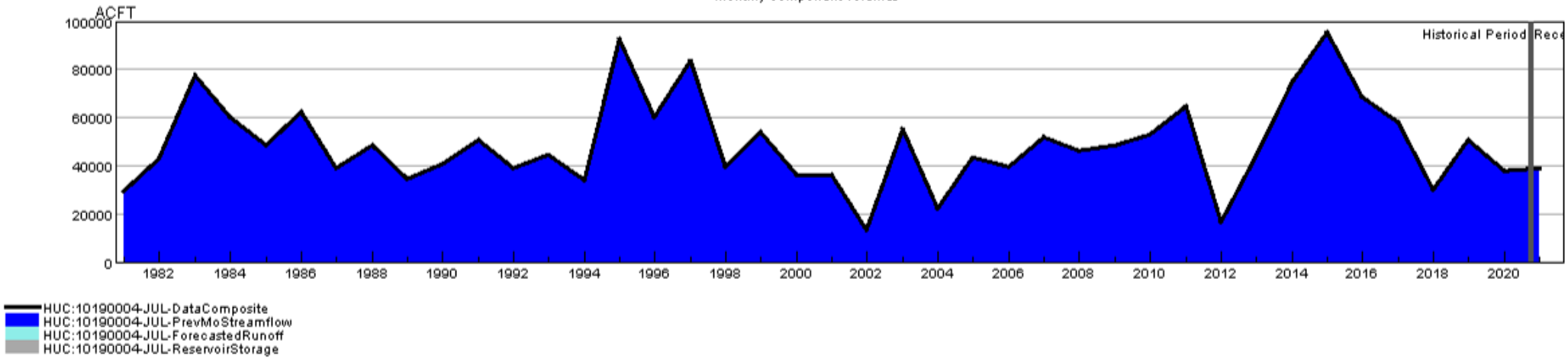
HUC 10190003 (Middle South Platte-Cherry Creek) SWSI Values - JUL

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



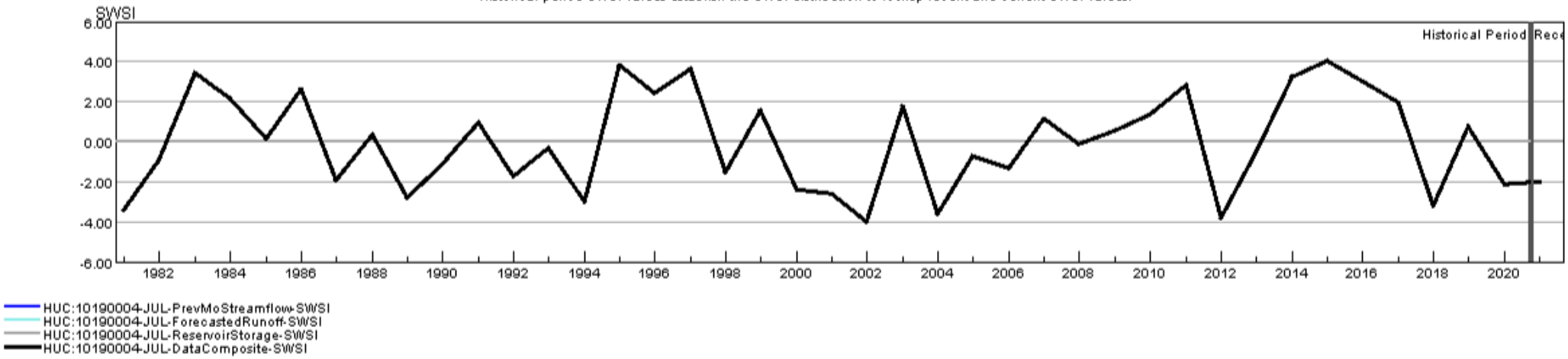
HUC 10190004 (Clear) Surface Water Supply - JUL

Monthly component volumes



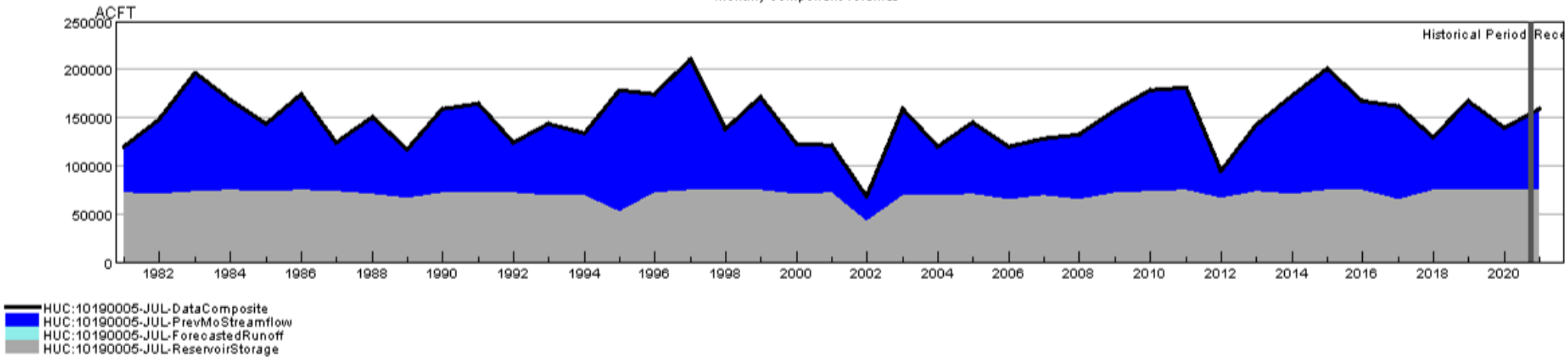
HUC 10190004 (Clear) SWSI Values - JUL

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



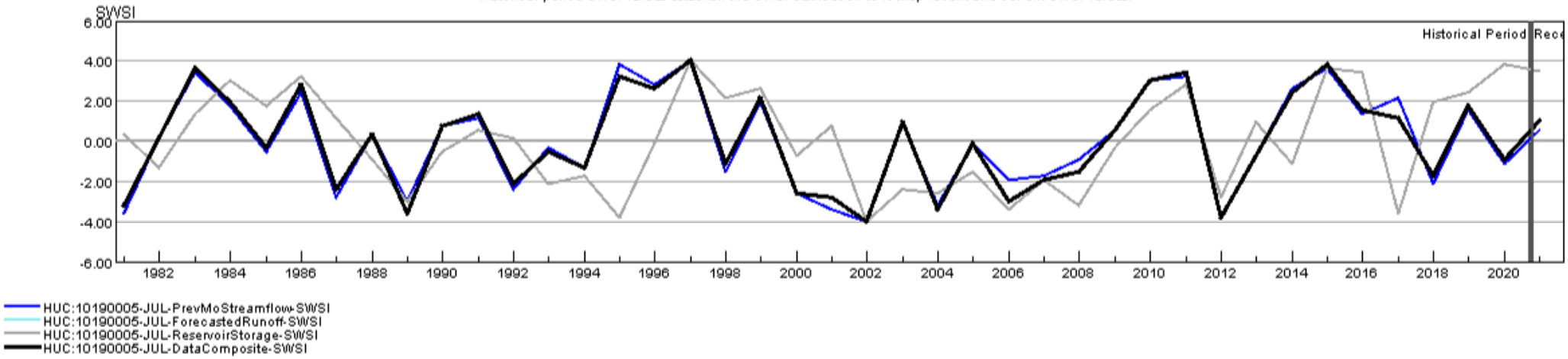
HUC 10190005 (St. Vrain) Surface Water Supply - JUL

Monthly component volumes



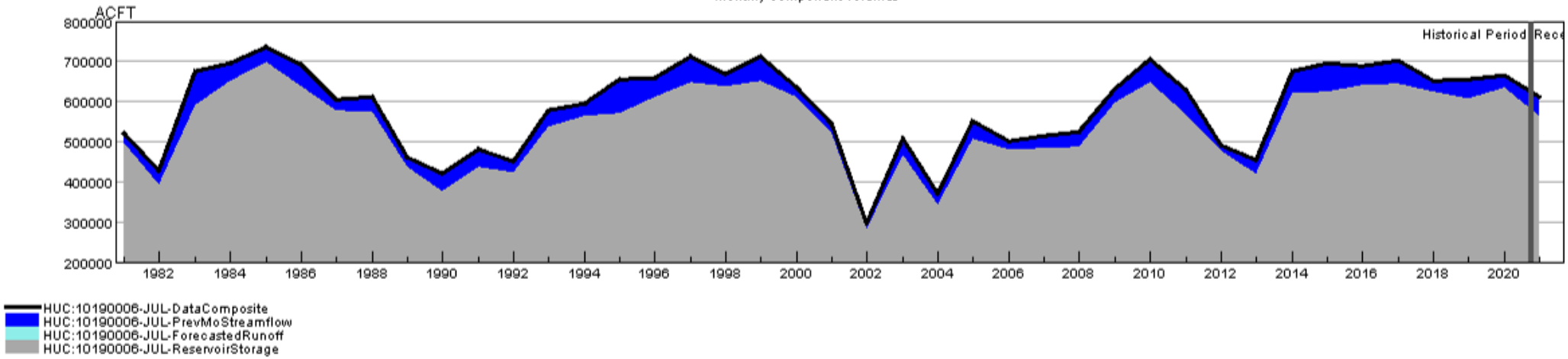
HUC 10190005 (St. Vrain) SWSI Values - JUL

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



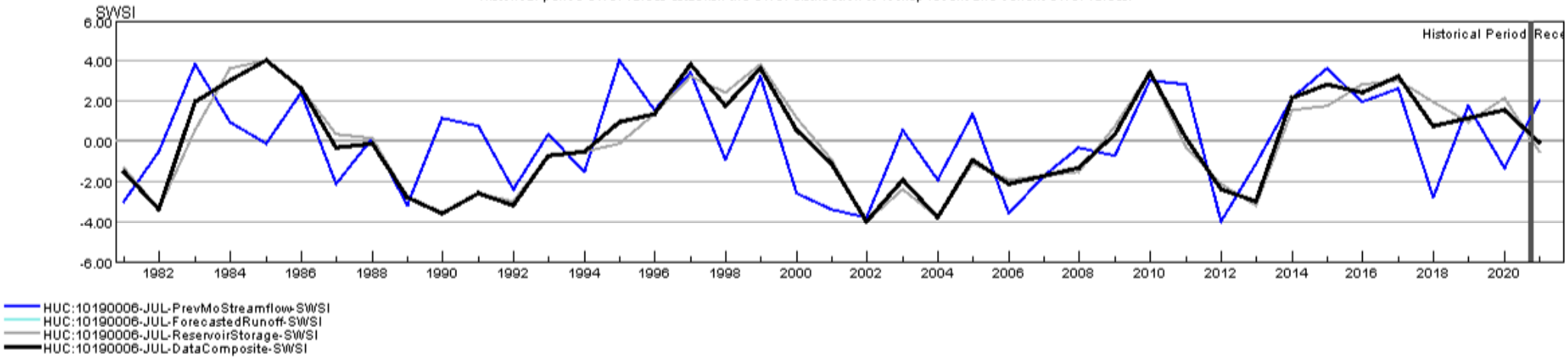
HUC 10190006 (Big Thompson) Surface Water Supply - JUL

Monthly component volumes



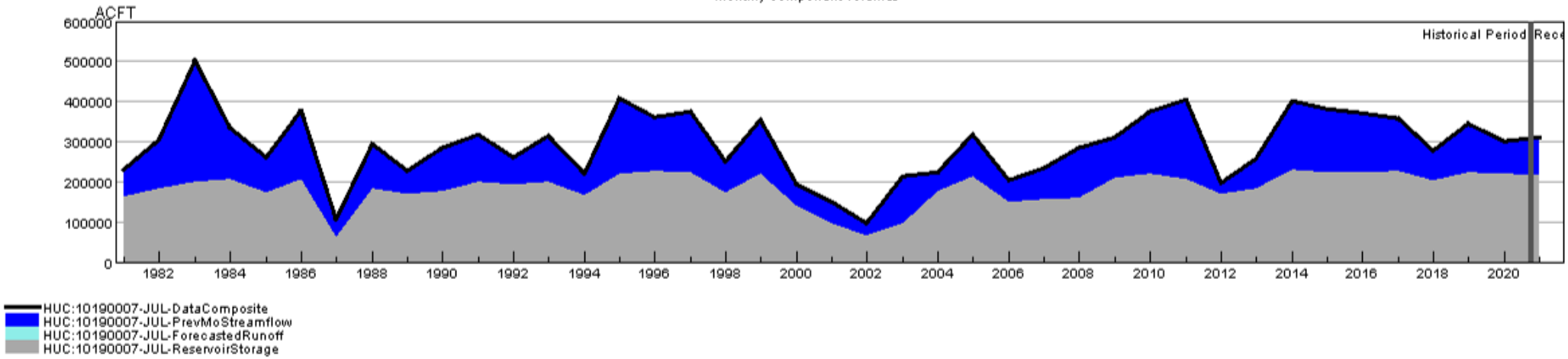
HUC 10190006 (Big Thompson) SWSI Values - JUL

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



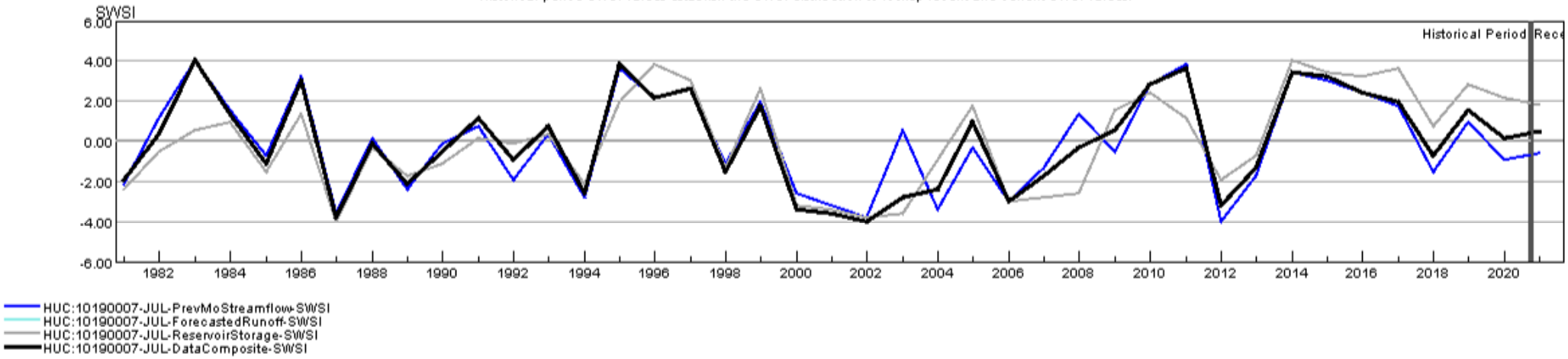
HUC 10190007 (Cache La Poudre) Surface Water Supply - JUL

Monthly component volumes



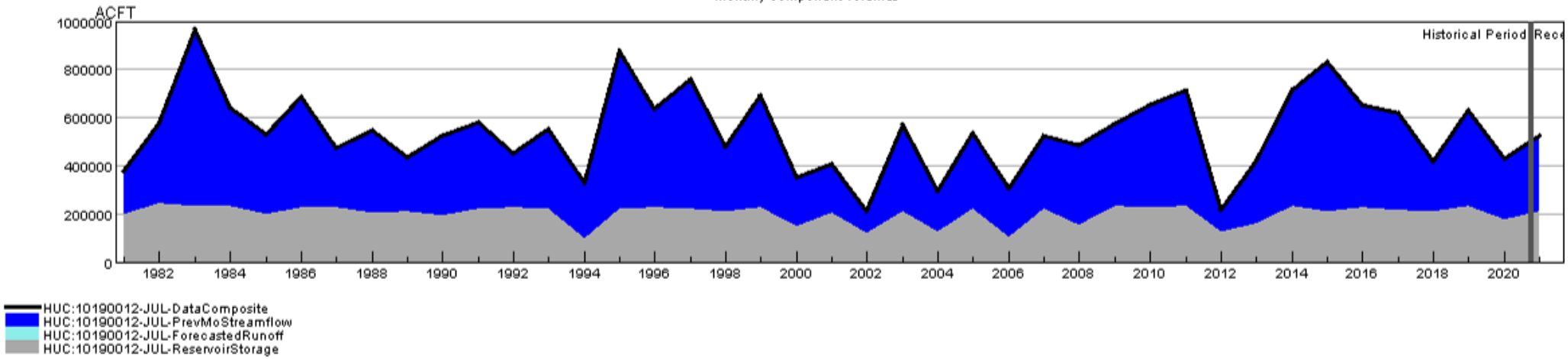
HUC 10190007 (Cache La Poudre) SWSI Values - JUL

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



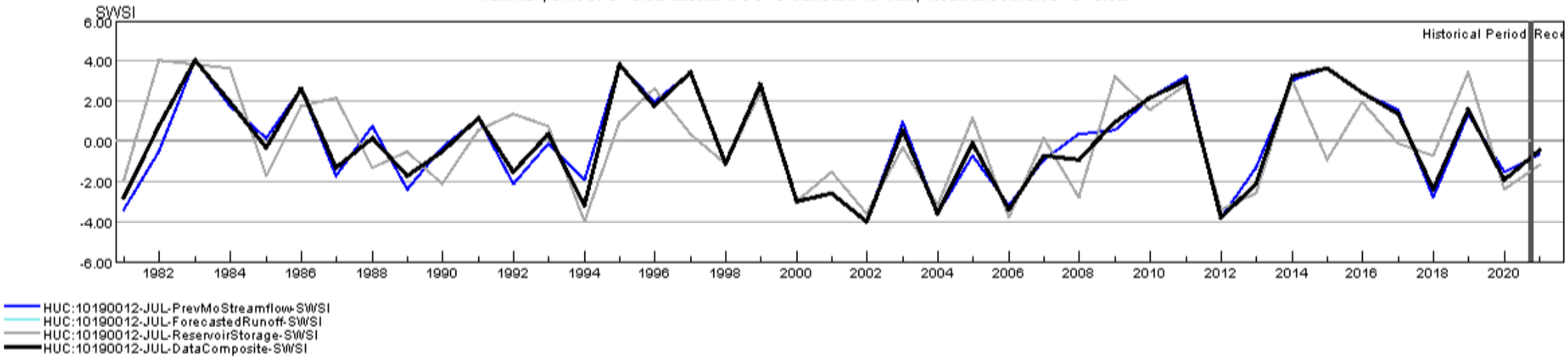
HUC 10190012 (Middle South Platte-Sterling) Surface Water Supply - JUL

Monthly component volumes



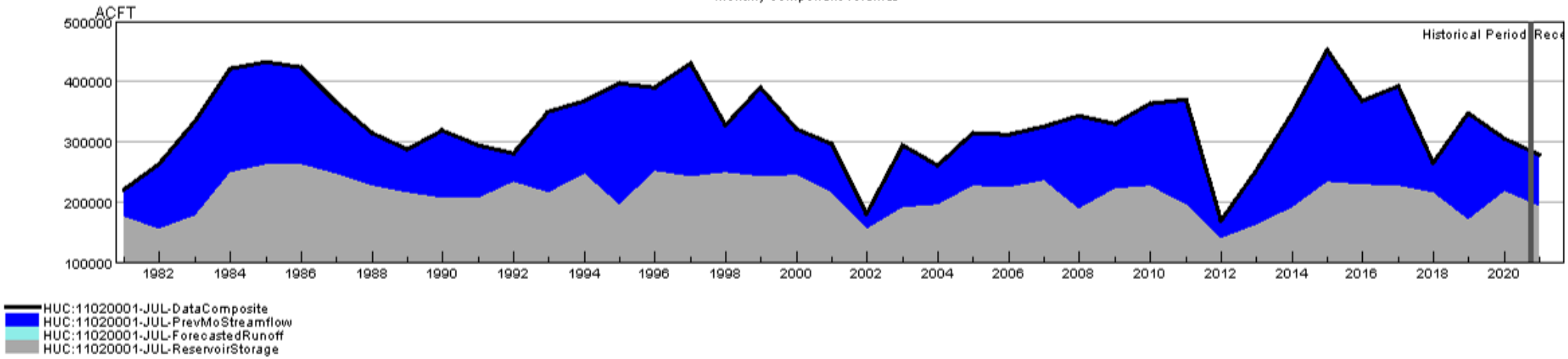
HUC 10190012 (Middle South Platte-Sterling) SWSI Values - JUL

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



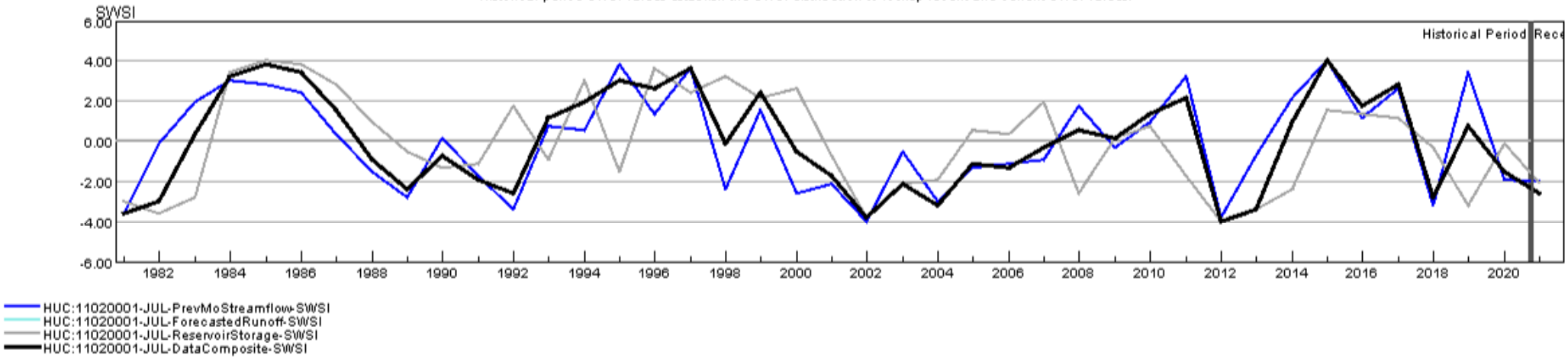
HUC 11020001 (Arkansas Headwaters) Surface Water Supply - JUL

Monthly component volumes



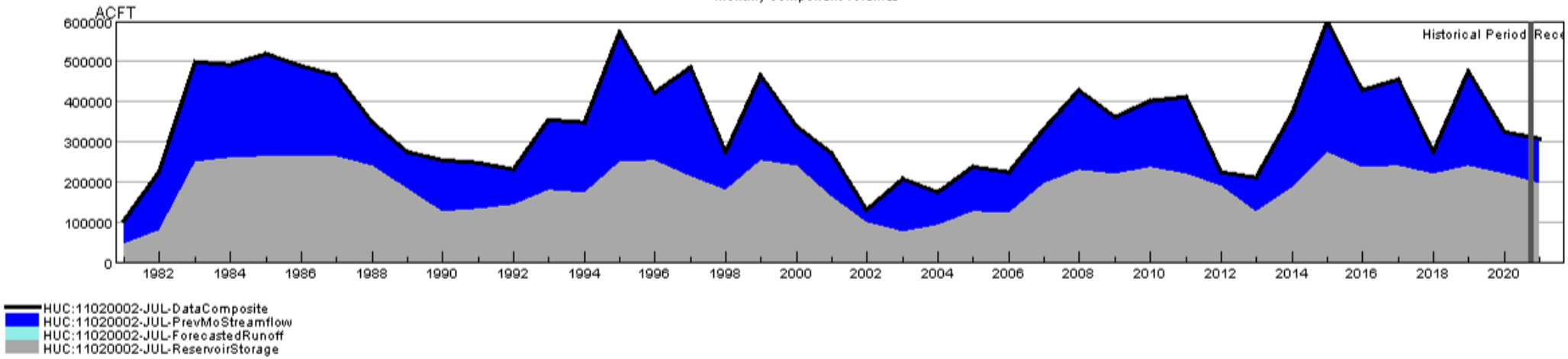
HUC 11020001 (Arkansas Headwaters) SWSI Values - JUL

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



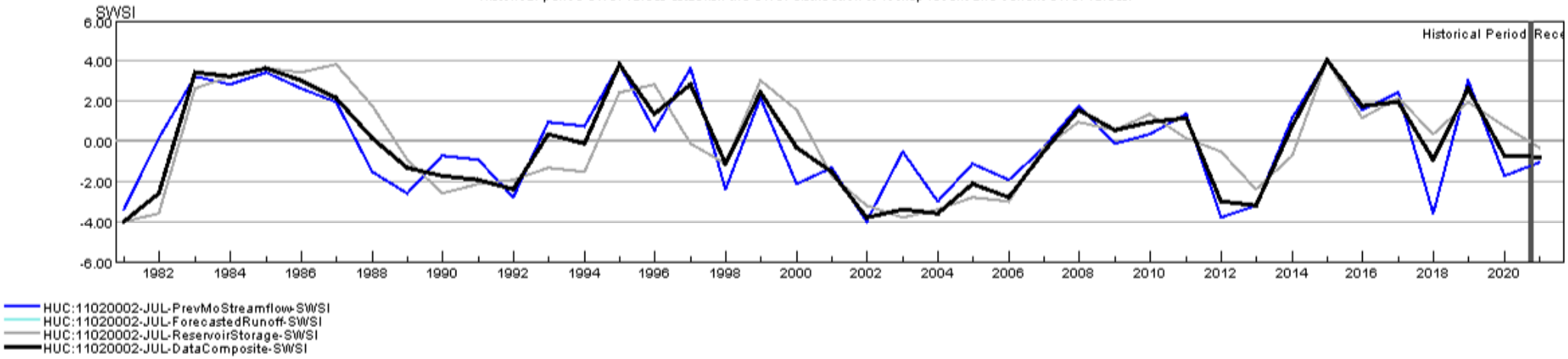
HUC 11020002 (Upper Arkansas) Surface Water Supply - JUL

Monthly component volumes



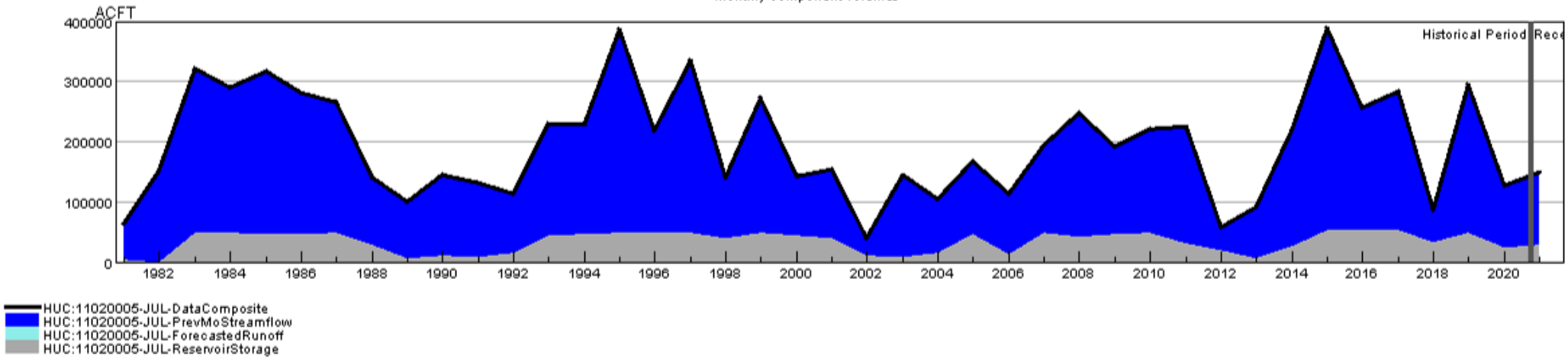
HUC 11020002 (Upper Arkansas) SWSI Values - JUL

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



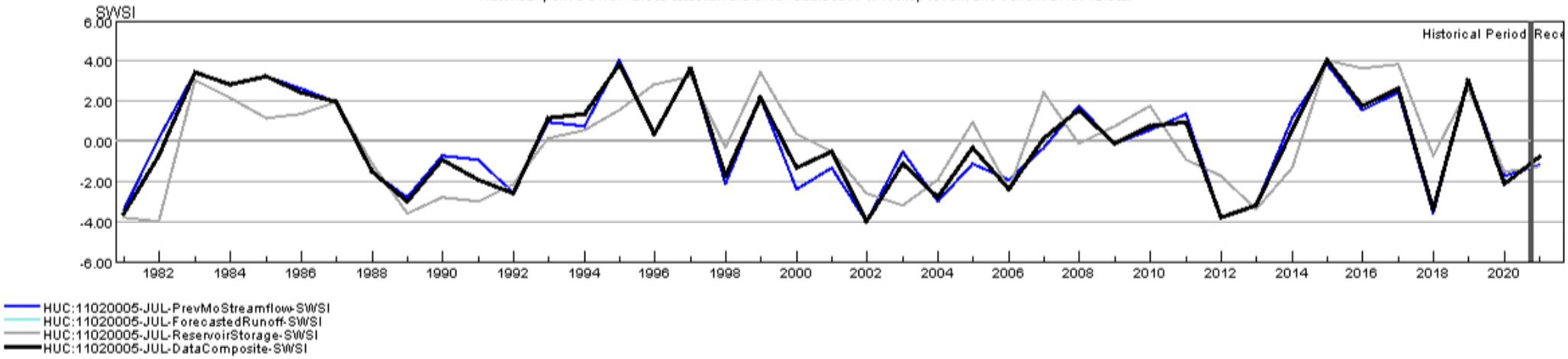
HUC 11020005 (Upper Arkansas-Lake Meredith) Surface Water Supply - JUL

Monthly component volumes



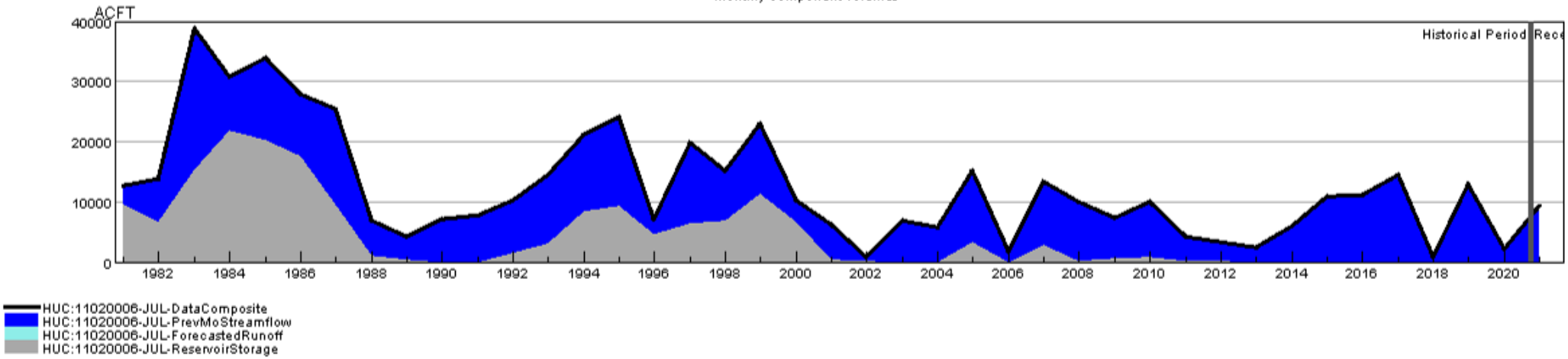
HUC 11020005 (Upper Arkansas-Lake Meredith) SWSI Values - JUL

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



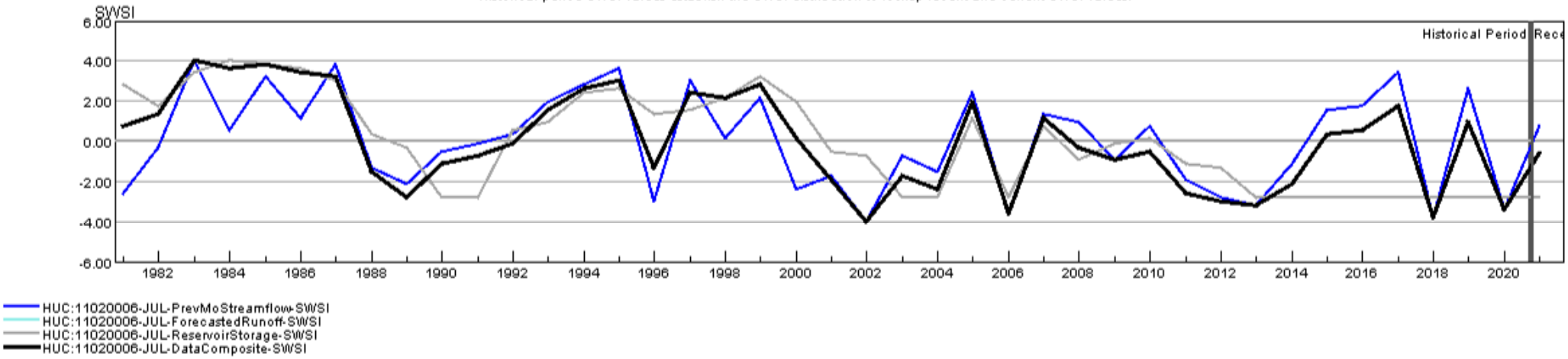
HUC 11020006 (Huerfano) Surface Water Supply - JUL

Monthly component volumes



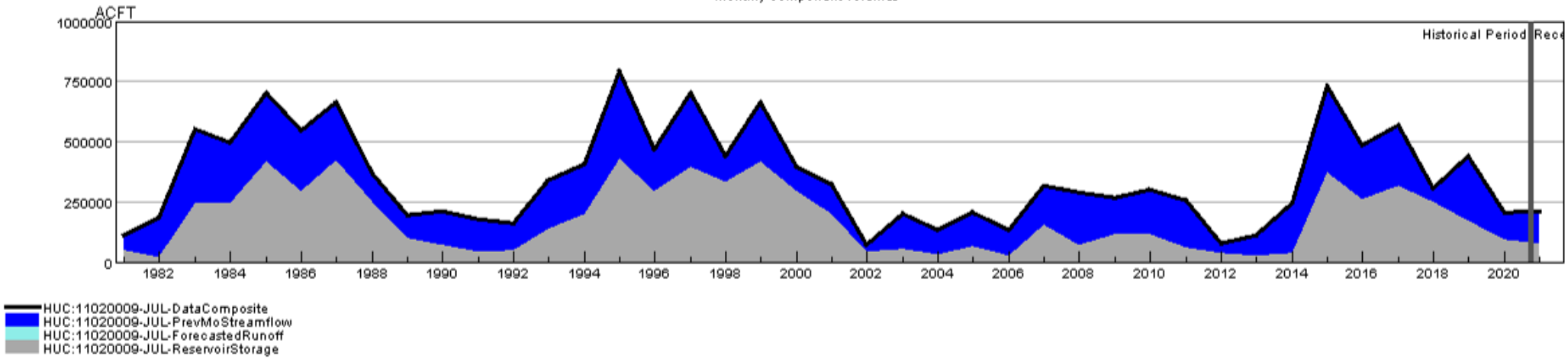
HUC 11020006 (Huerfano) SWSI Values - JUL

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



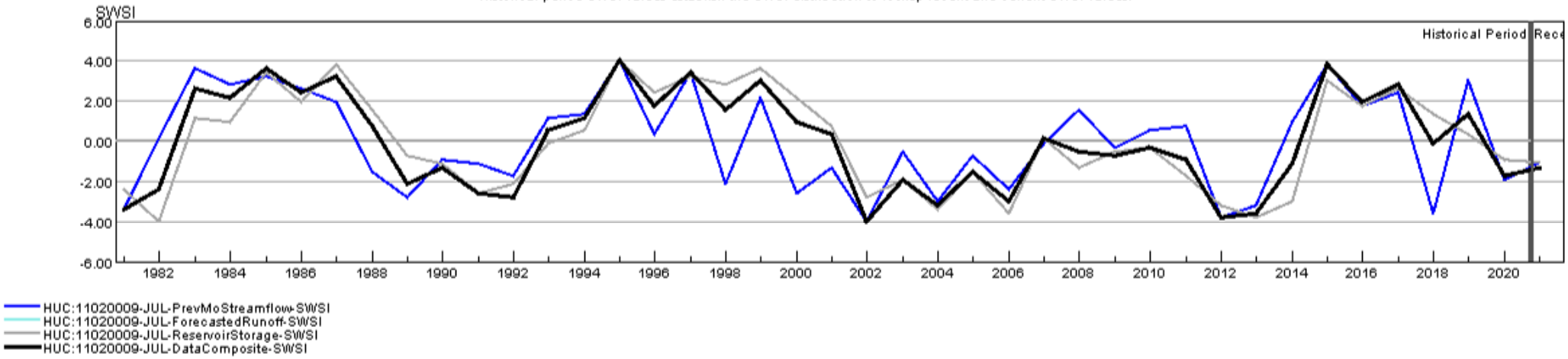
HUC 11020009 (Upper Arkansas-John Martin Reservoir) Surface Water Supply - JUL

Monthly component volumes



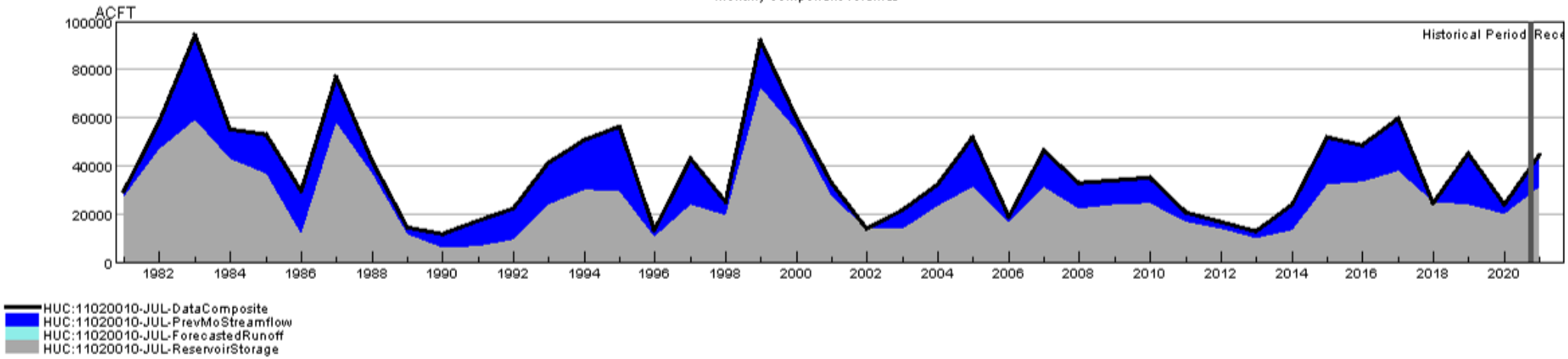
HUC 11020009 (Upper Arkansas-John Martin Reservoir) SWSI Values - JUL

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



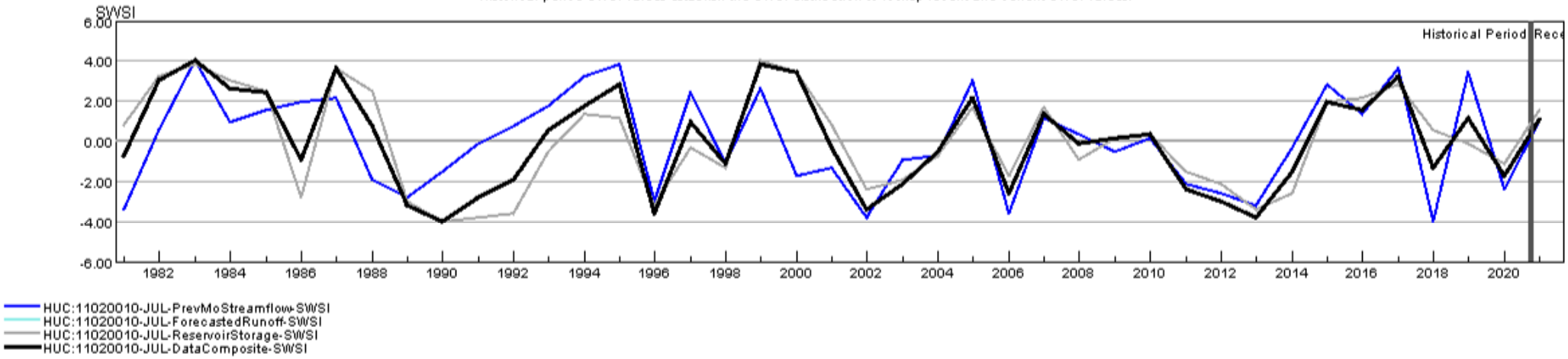
HUC 11020010 (Purgatoire) Surface Water Supply - JUL

Monthly component volumes



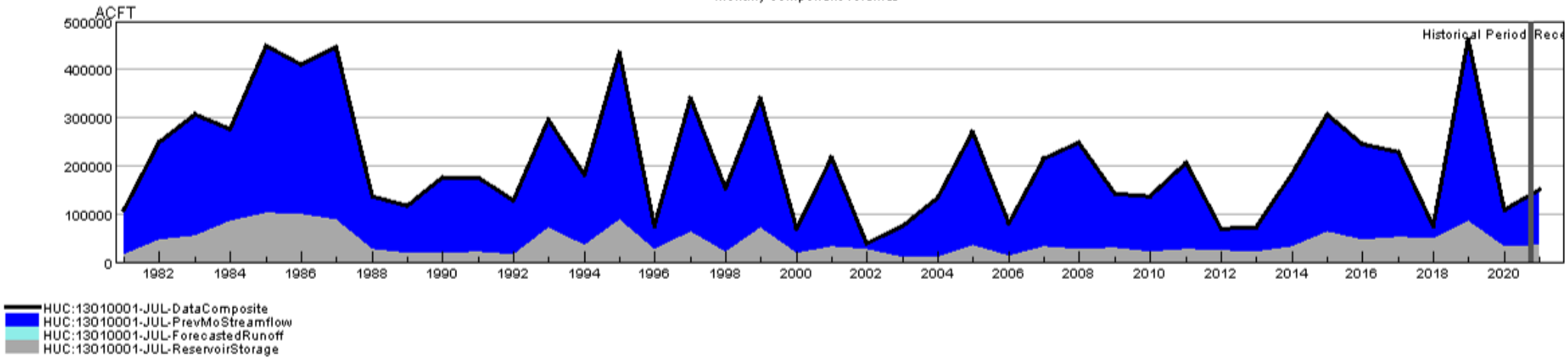
HUC 11020010 (Purgatoire) SWSI Values - JUL

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



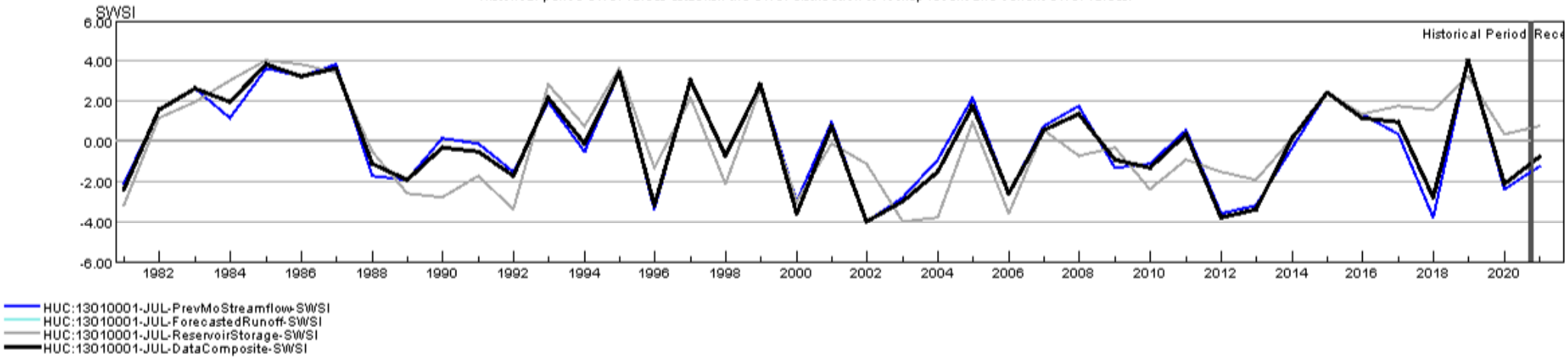
HUC 13010001 (Rio Grande Headwaters) Surface Water Supply - JUL

Monthly component volumes



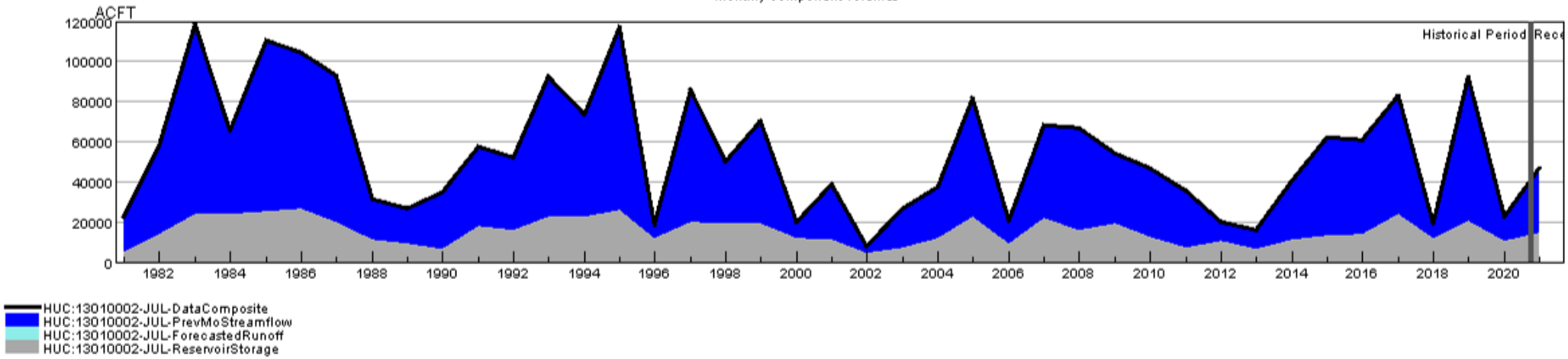
HUC 13010001 (Rio Grande Headwaters) SWSI Values - JUL

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



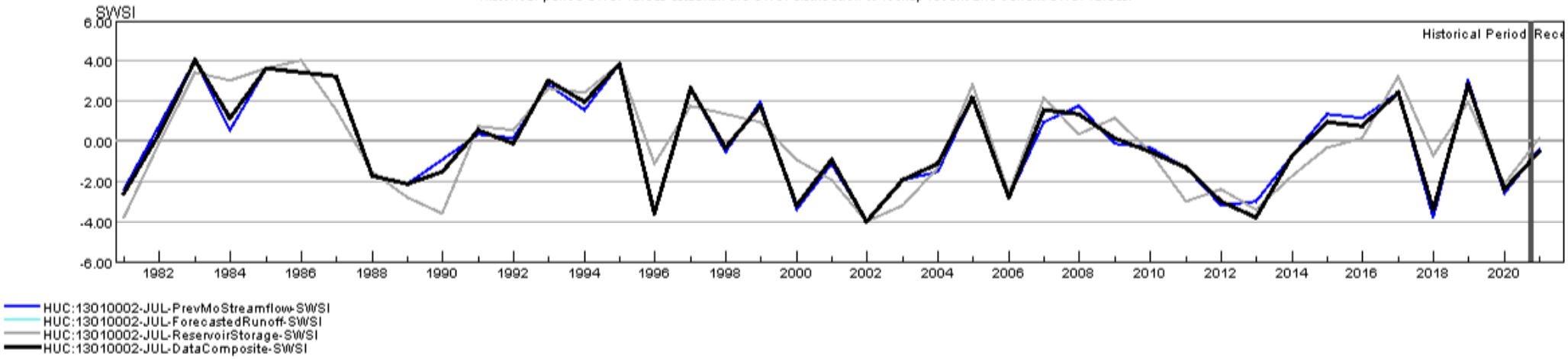
HUC 13010002 (Alamosa-Trinchera) Surface Water Supply - JUL

Monthly component volumes



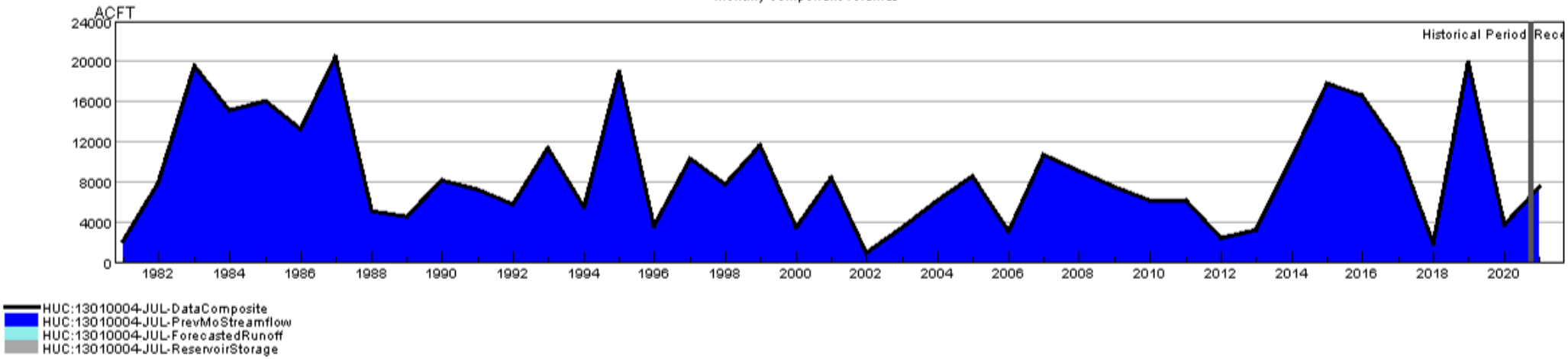
HUC 13010002 (Alamosa-Trinchera) SWSI Values - JUL

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



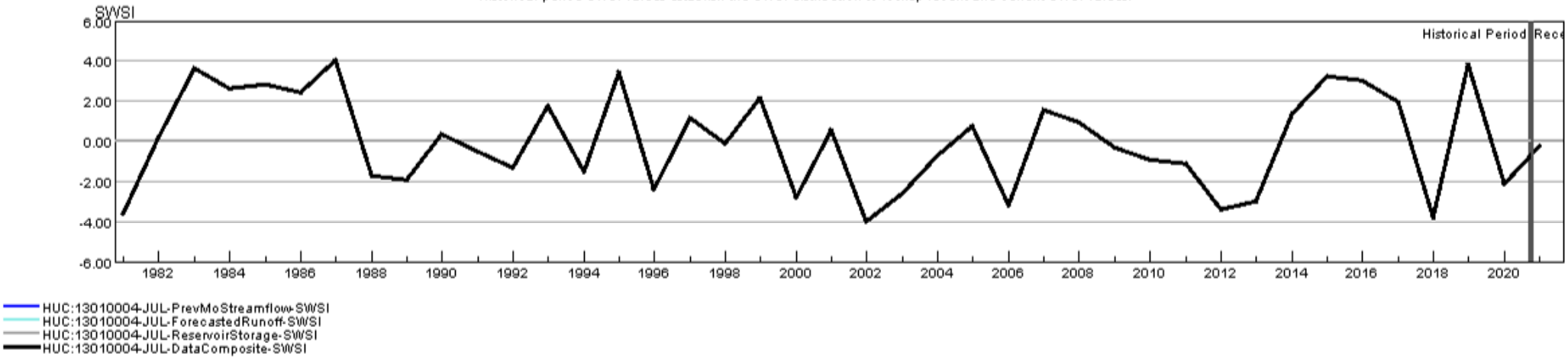
HUC 13010004 (Saguache) Surface Water Supply - JUL

Monthly component volumes



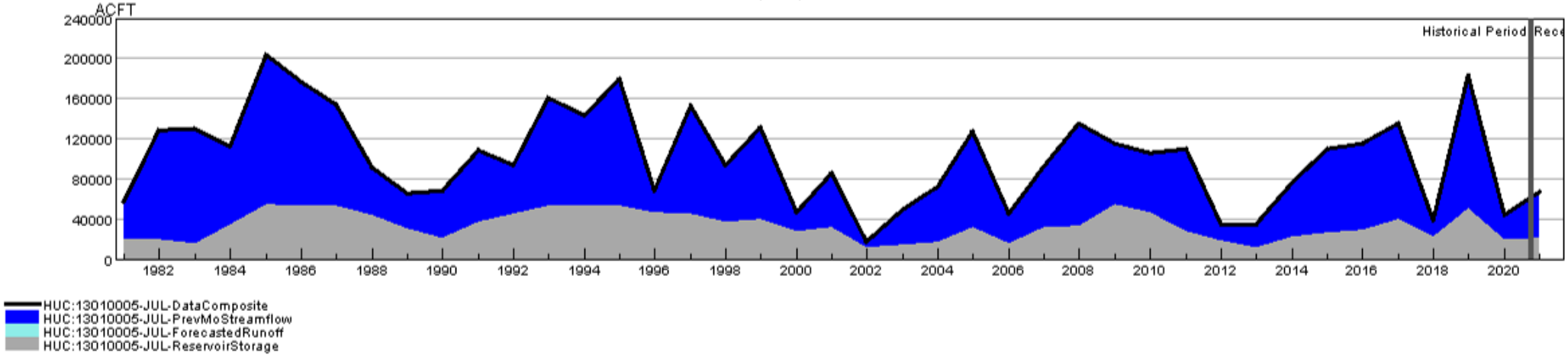
HUC 13010004 (Saguache) SWSI Values - JUL

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



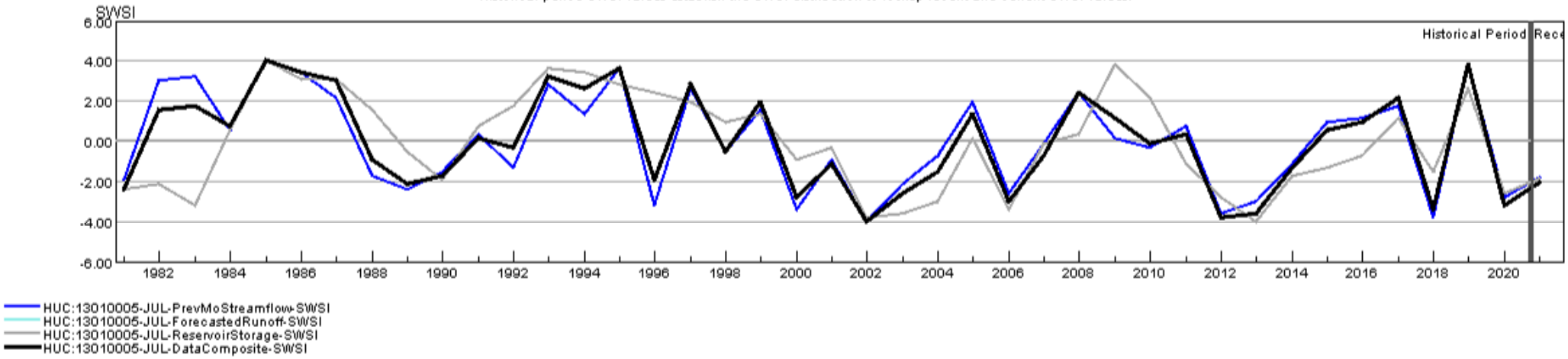
HUC 13010005 (Conejos) Surface Water Supply - JUL

Monthly component volumes



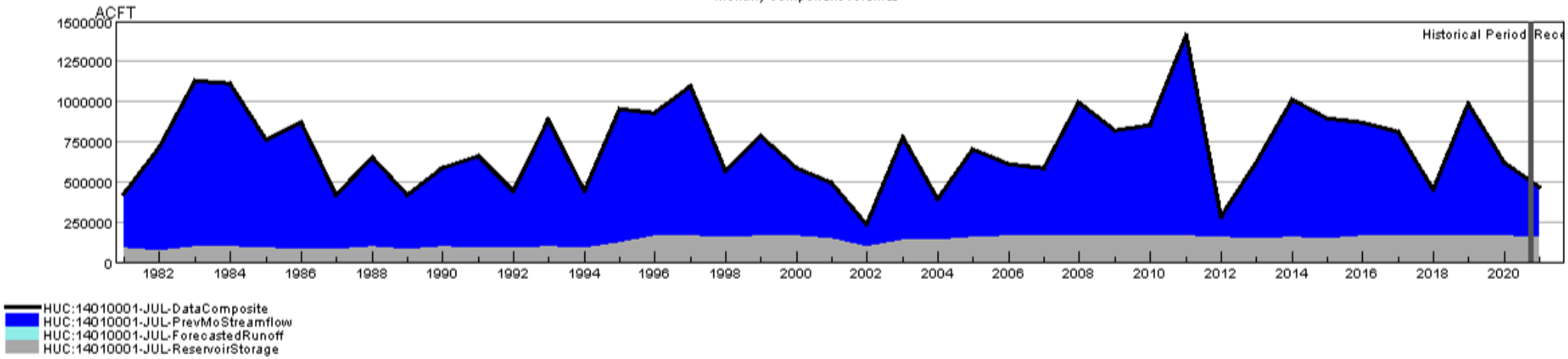
HUC 13010005 (Conejos) SWSI Values - JUL

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



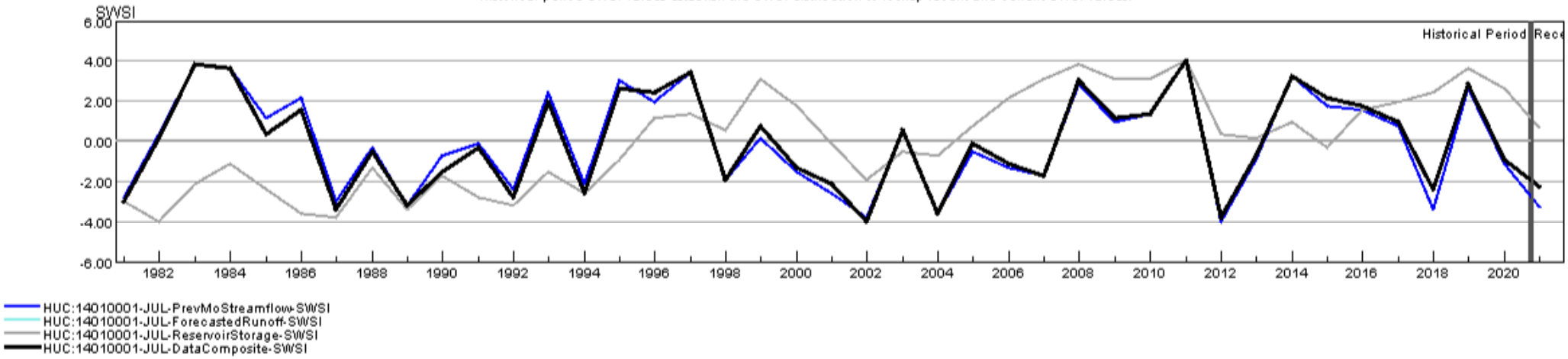
HUC 14010001 (Colorado Headwaters) Surface Water Supply - JUL

Monthly component volumes



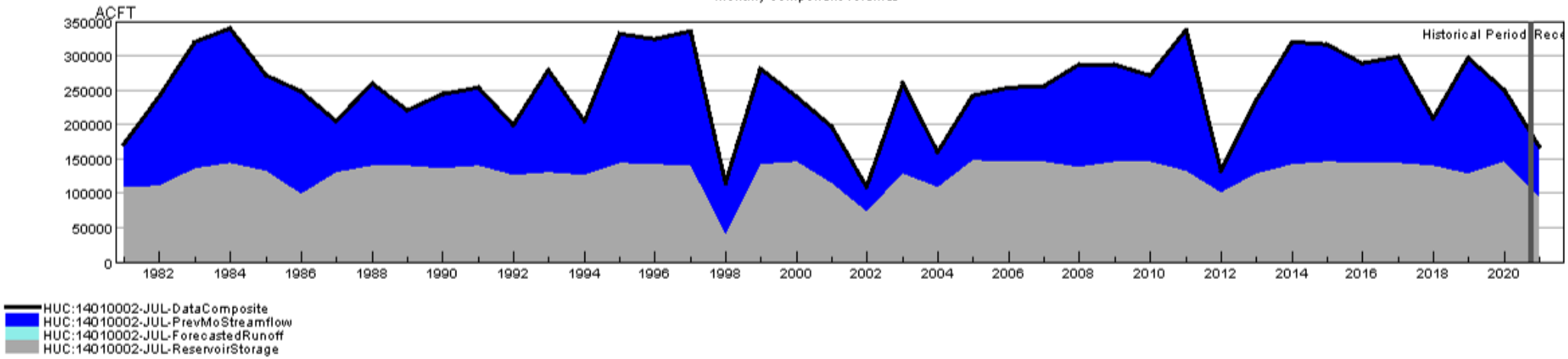
HUC 14010001 (Colorado Headwaters) SWSI Values - JUL

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



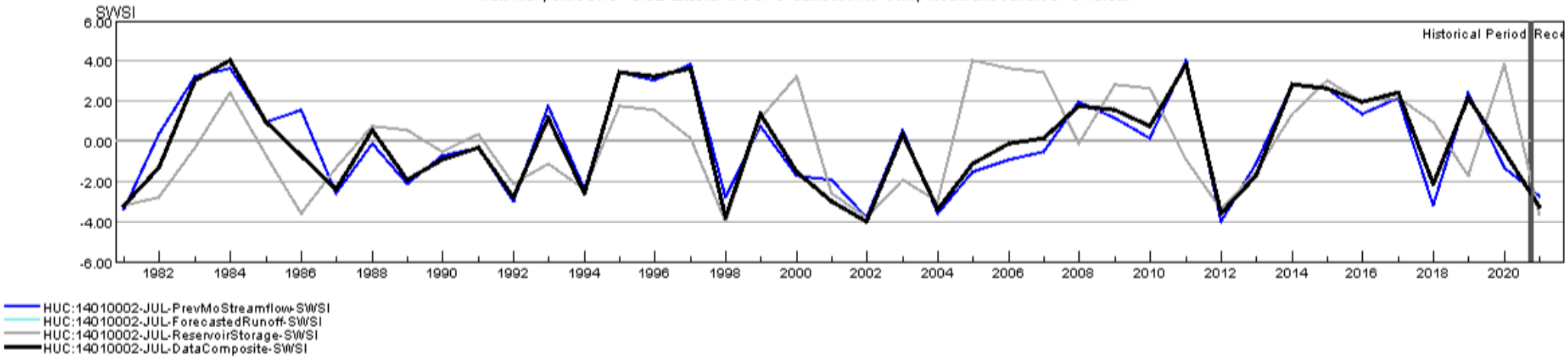
HUC 14010002 (Blue) Surface Water Supply - JUL

Monthly component volumes



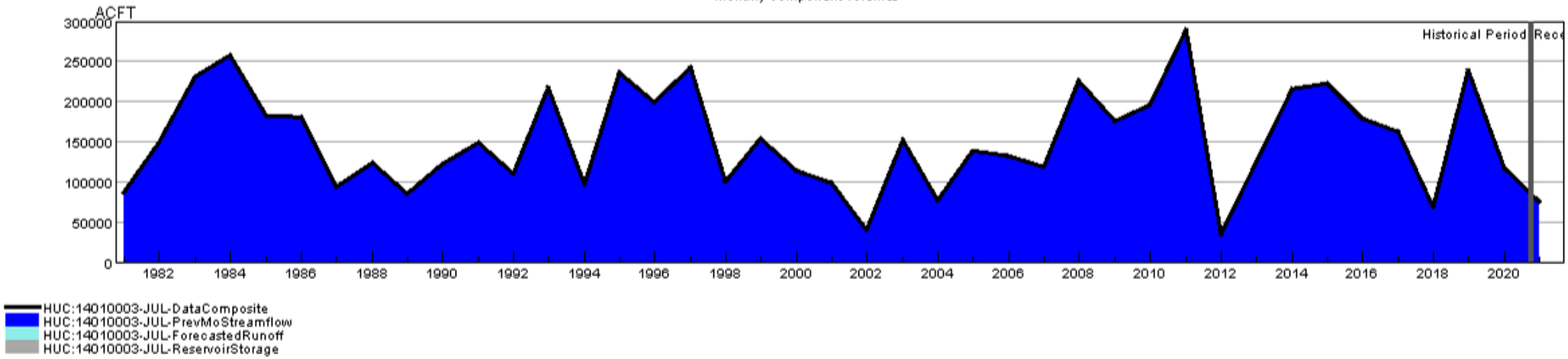
HUC 14010002 (Blue) SWSI Values - JUL

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



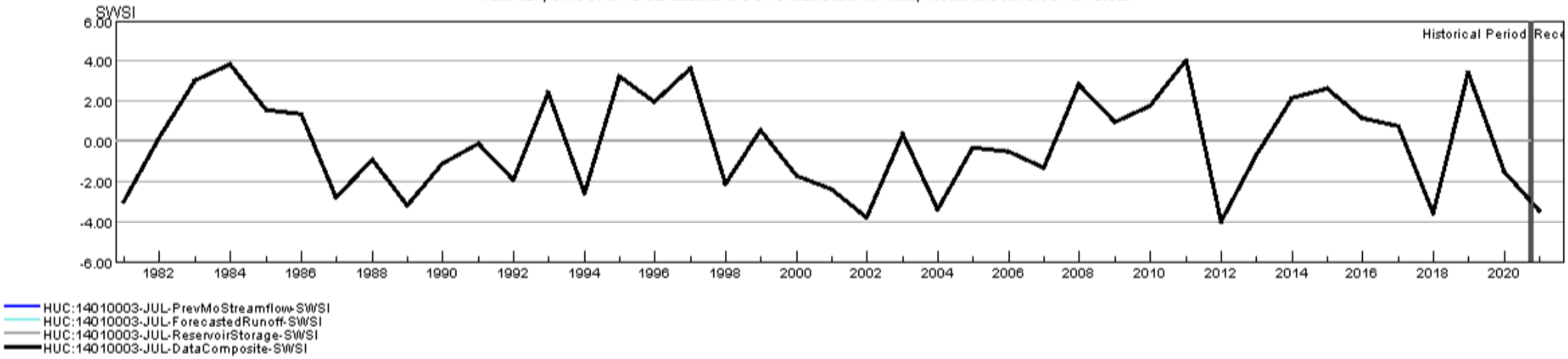
HUC 14010003 (Eagle) Surface Water Supply - JUL

Monthly component volumes



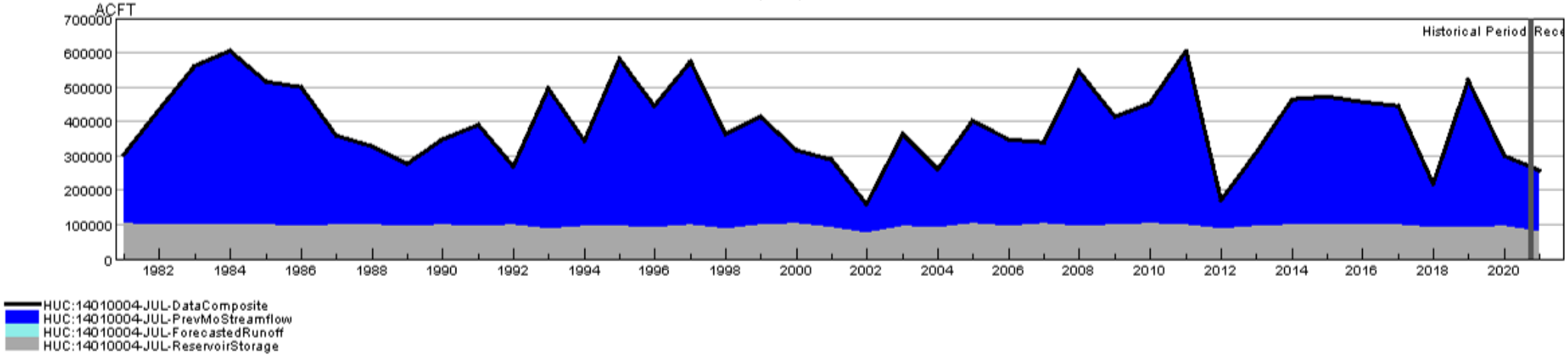
HUC 14010003 (Eagle) SWSI Values - JUL

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



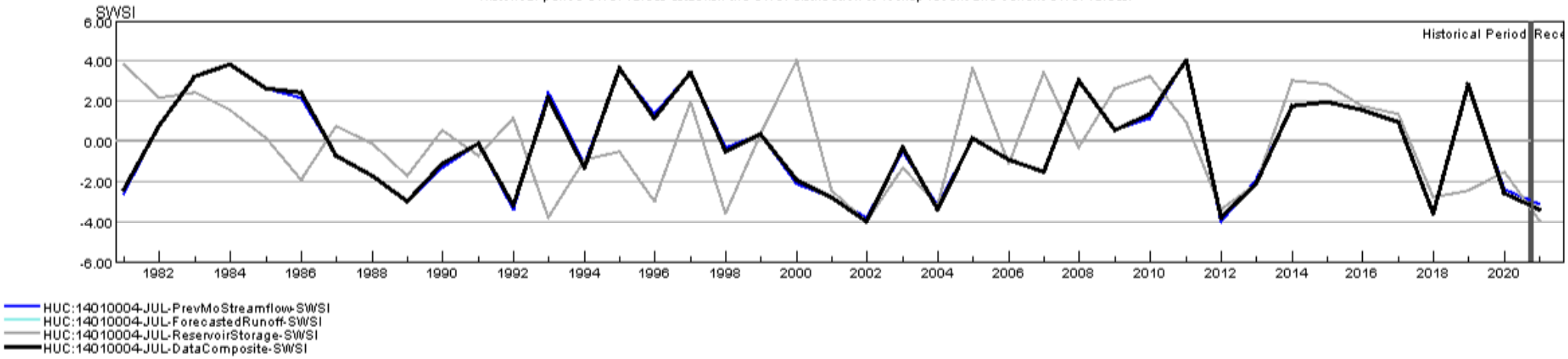
HUC 14010004 (Roaring Fork) Surface Water Supply - JUL

Monthly component volumes



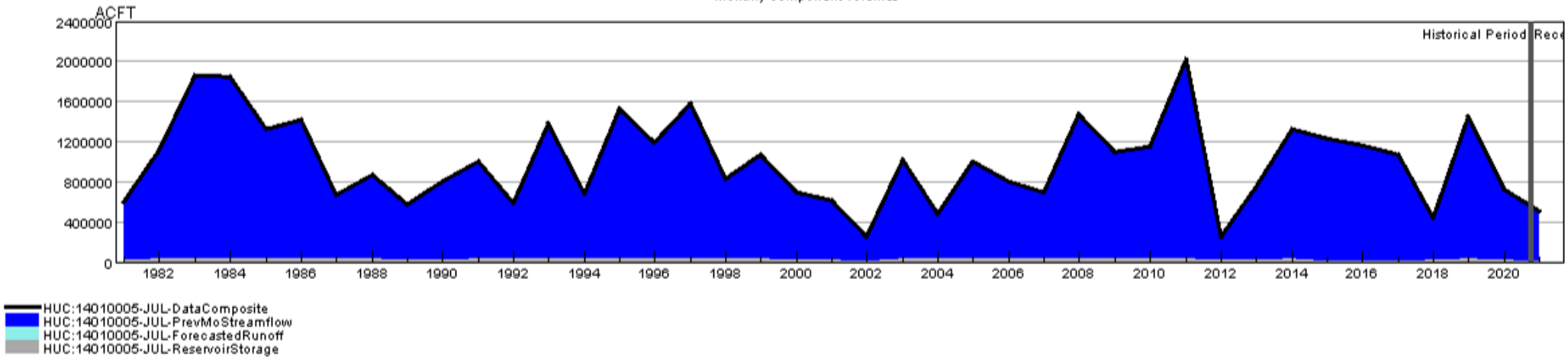
HUC 14010004 (Roaring Fork) SWSI Values - JUL

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



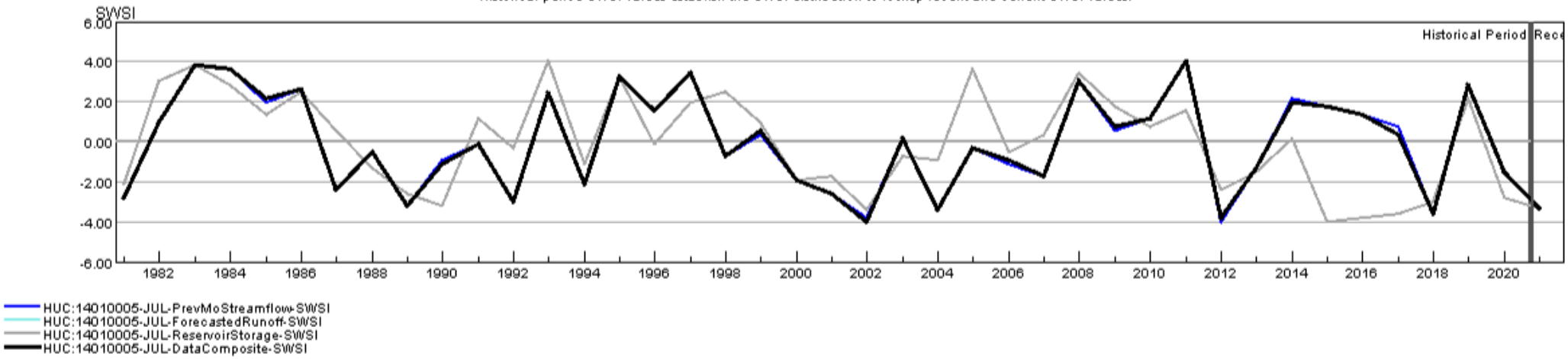
HUC 14010005 (Colorado Headwaters-Plateau) Surface Water Supply - JUL

Monthly component volumes



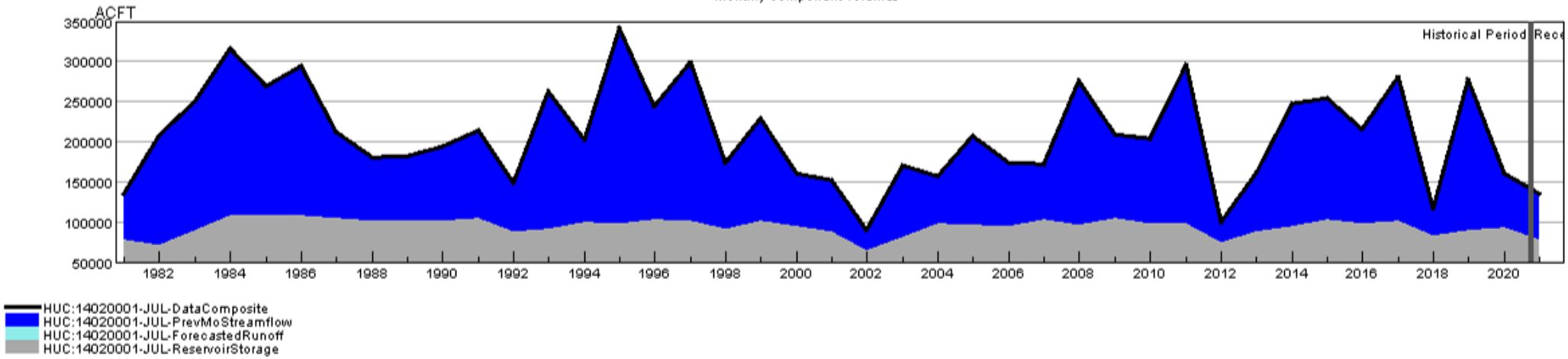
HUC 14010005 (Colorado Headwaters-Plateau) SWSI Values - JUL

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



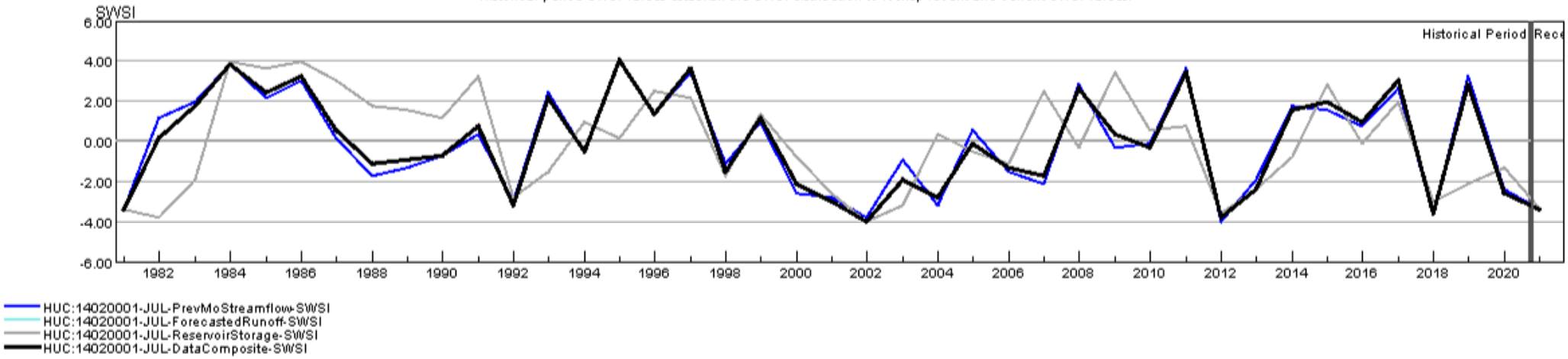
HUC 14020001 (East-Taylor) Surface Water Supply - JUL

Monthly component volumes



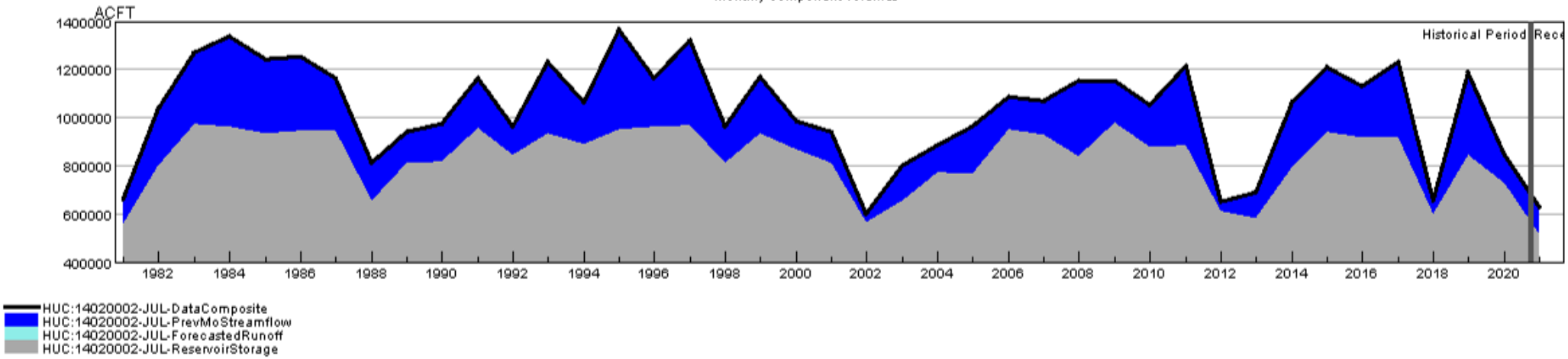
HUC 14020001 (East-Taylor) SWSI Values - JUL

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



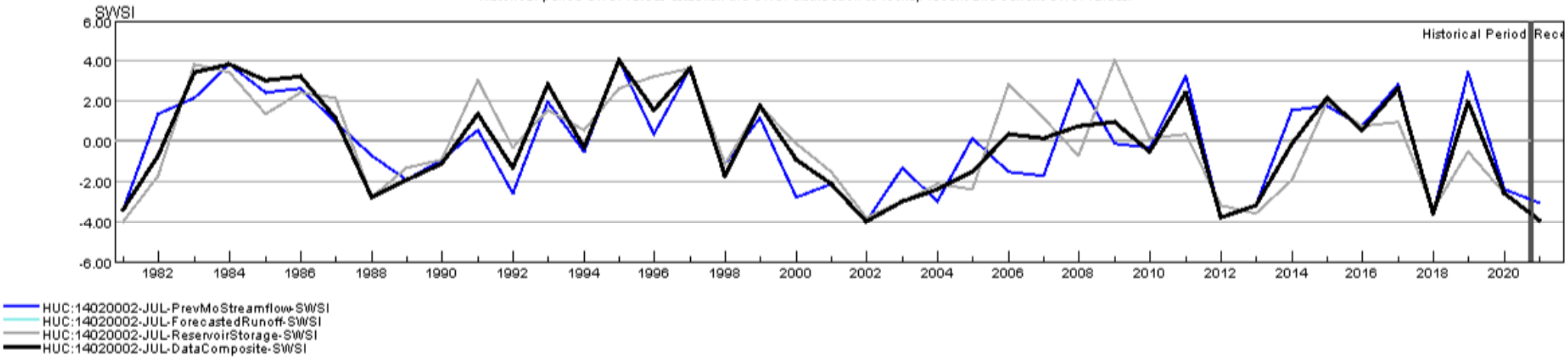
HUC 14020002 (Upper Gunnison) Surface Water Supply - JUL

Monthly component volumes



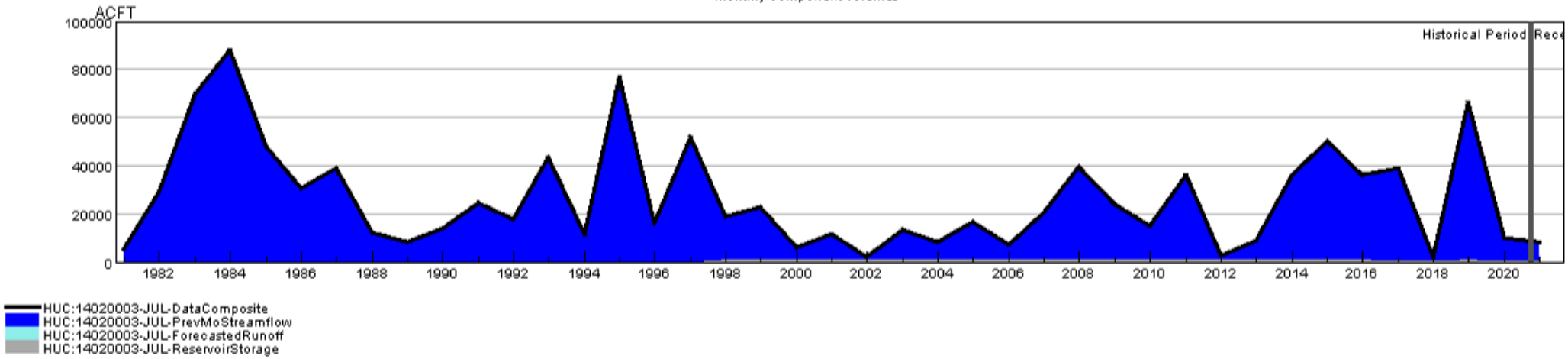
HUC 14020002 (Upper Gunnison) SWSI Values - JUL

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



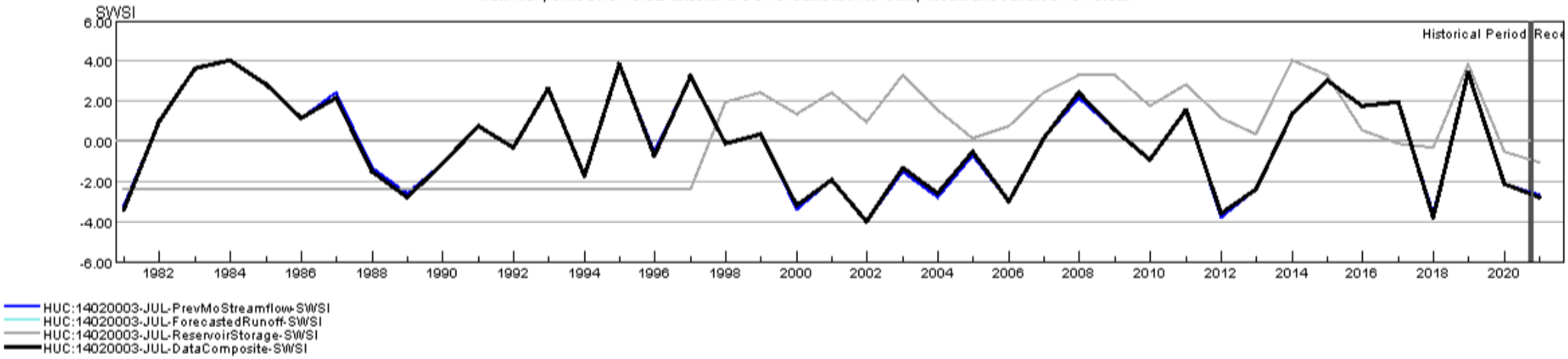
HUC 14020003 (Tomichi) Surface Water Supply - JUL

Monthly component volumes



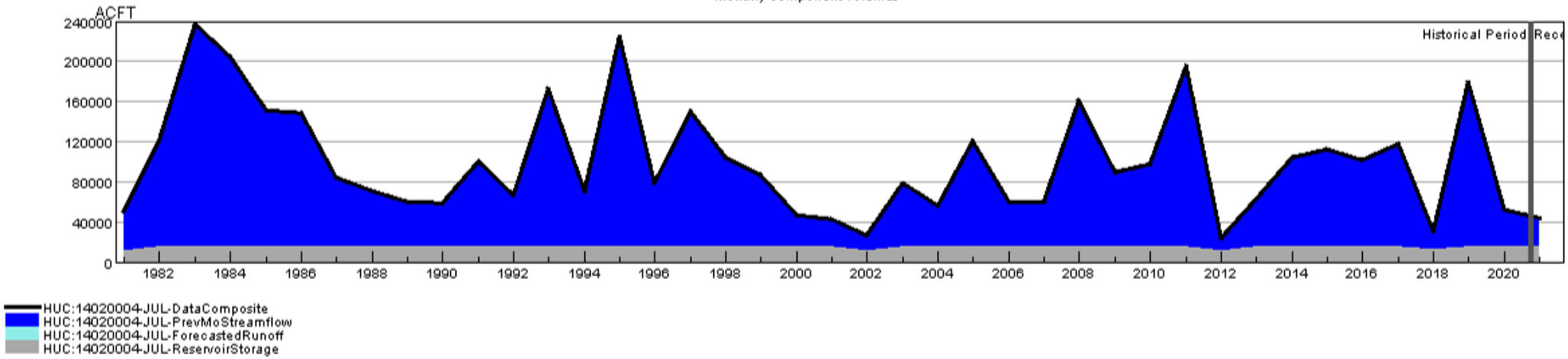
HUC 14020003 (Tomichi) SWSI Values - JUL

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



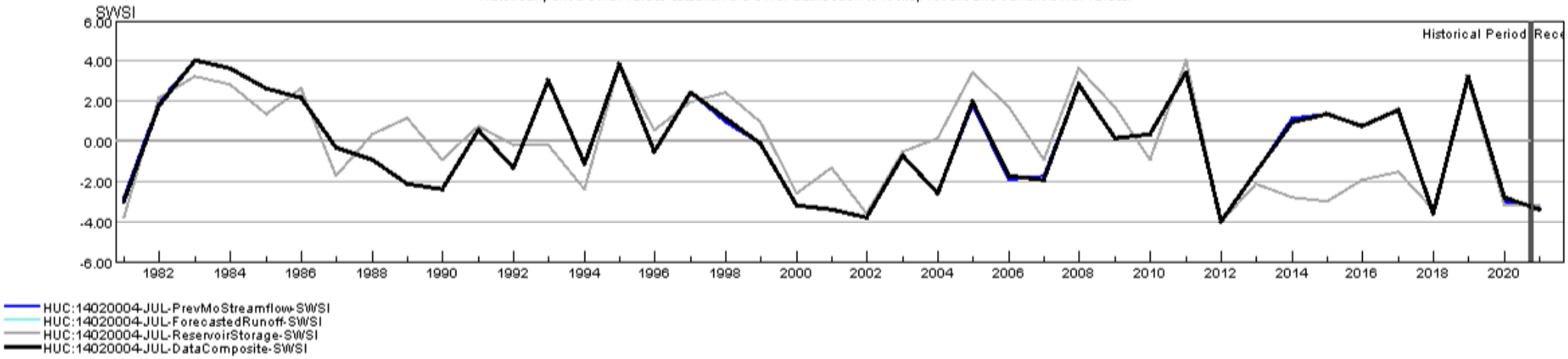
HUC 14020004 (North Fork Gunnison) Surface Water Supply - JUL

Monthly component volumes



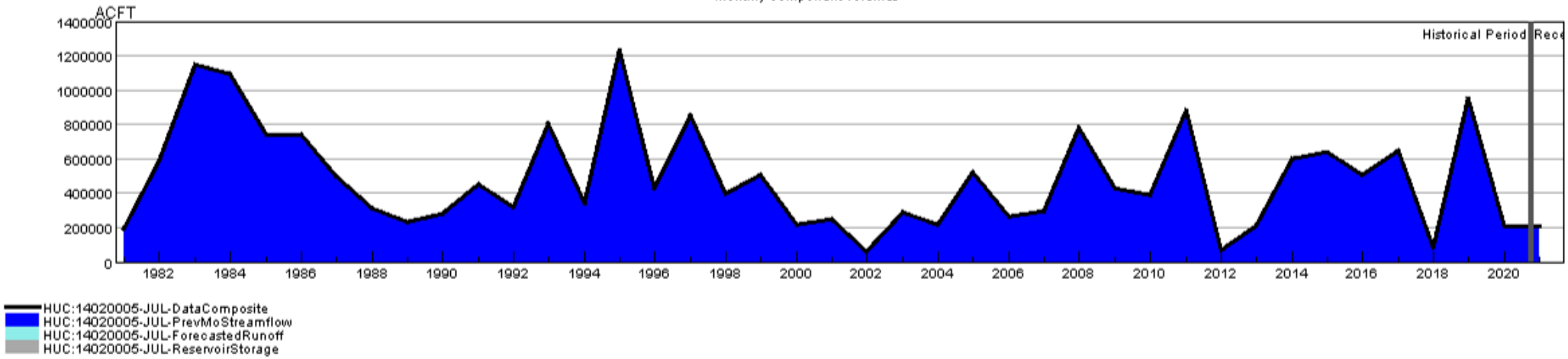
HUC 14020004 (North Fork Gunnison) SWSI Values - JUL

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



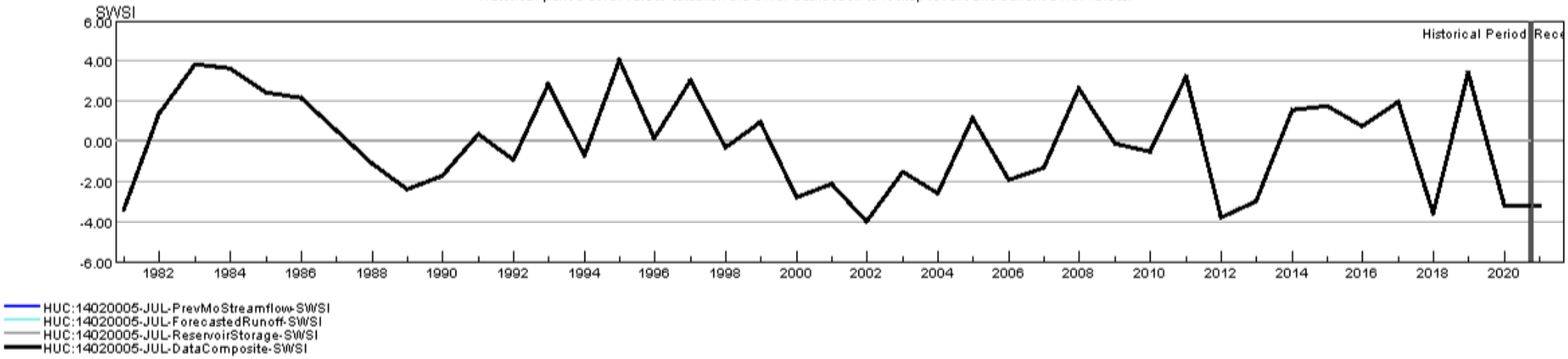
HUC 14020005 (Lower Gunnison) Surface Water Supply - JUL

Monthly component volumes



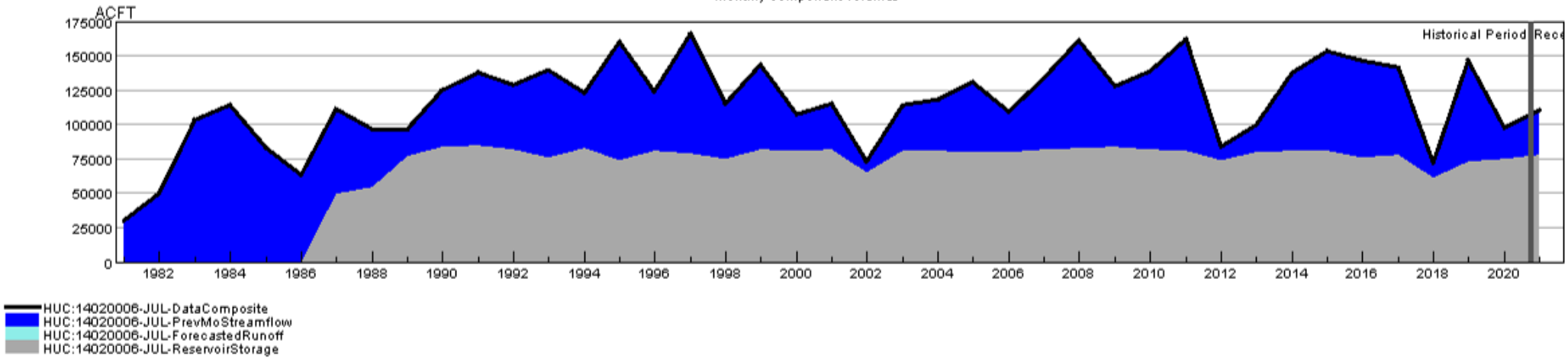
HUC 14020005 (Lower Gunnison) SWSI Values - JUL

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



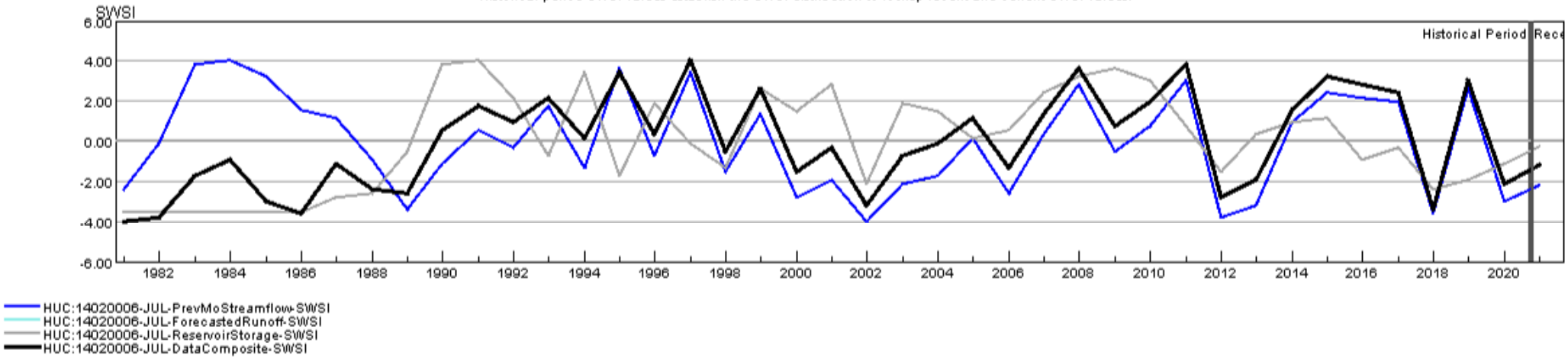
HUC 14020006 (Uncompahgre) Surface Water Supply - JUL

Monthly component volumes



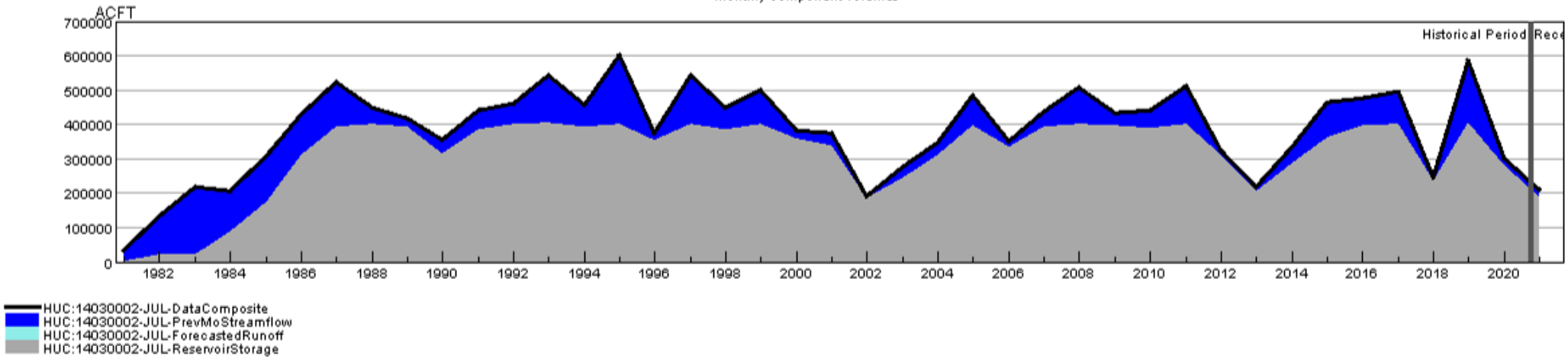
HUC 14020006 (Uncompahgre) SWSI Values - JUL

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



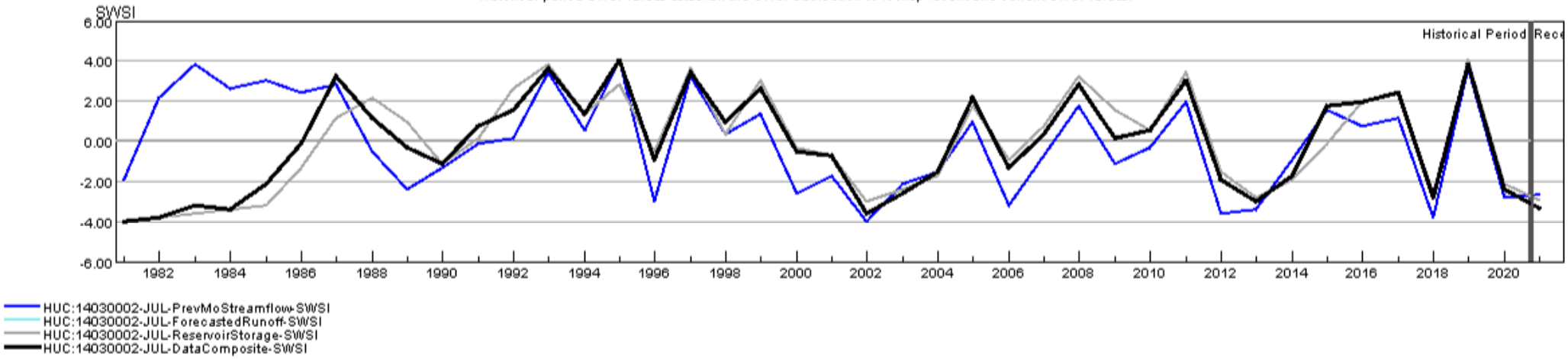
HUC 14030002 (Upper Dolores) Surface Water Supply - JUL

Monthly component volumes



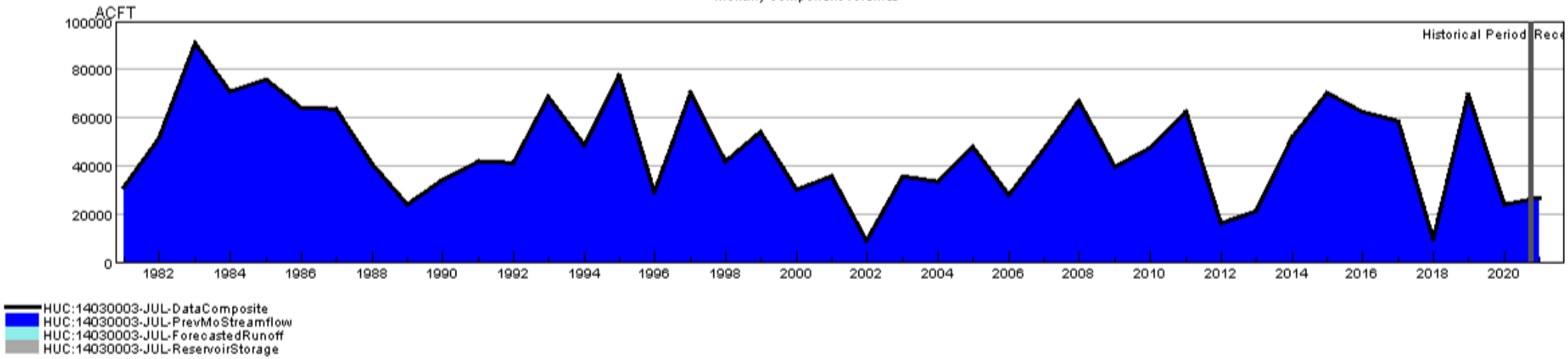
HUC 14030002 (Upper Dolores) SWSI Values - JUL

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



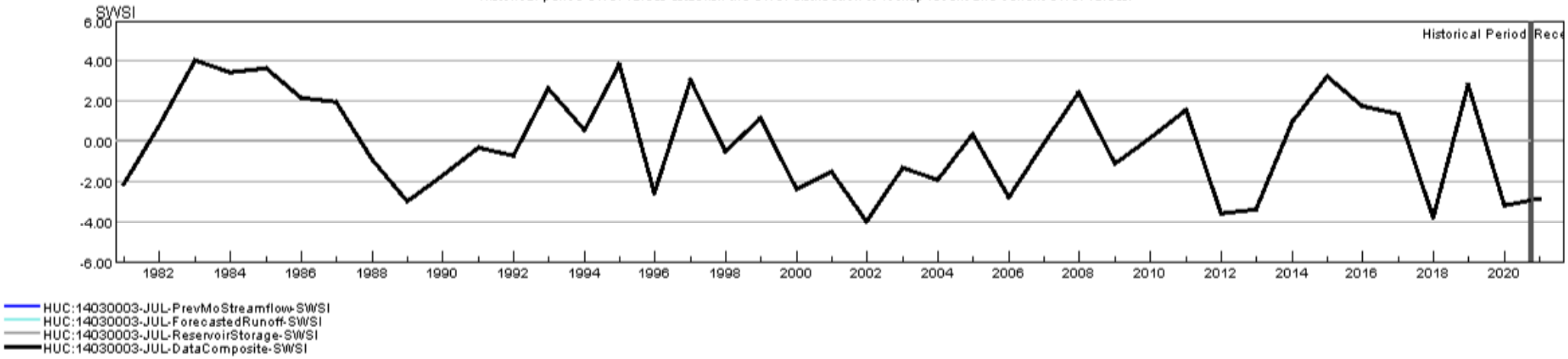
HUC 14030003 (San Miguel) Surface Water Supply - JUL

Monthly component volumes



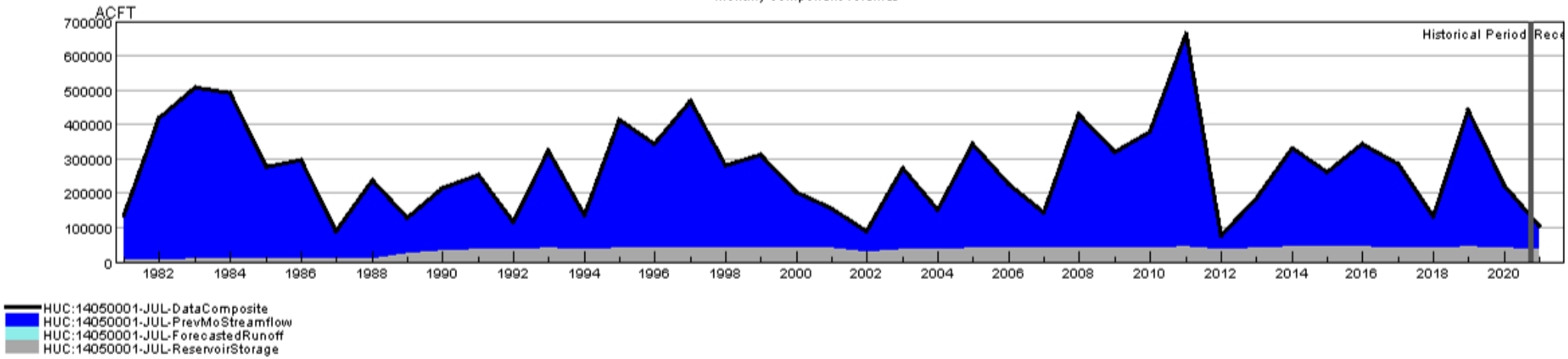
HUC 14030003 (San Miguel) SWSI Values - JUL

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



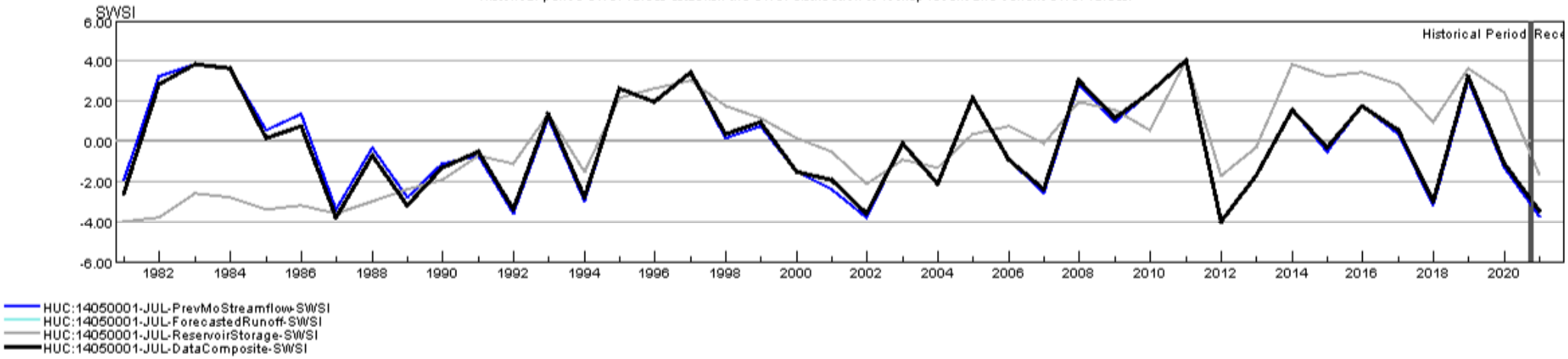
HUC 14050001 (Upper Yampa) Surface Water Supply - JUL

Monthly component volumes



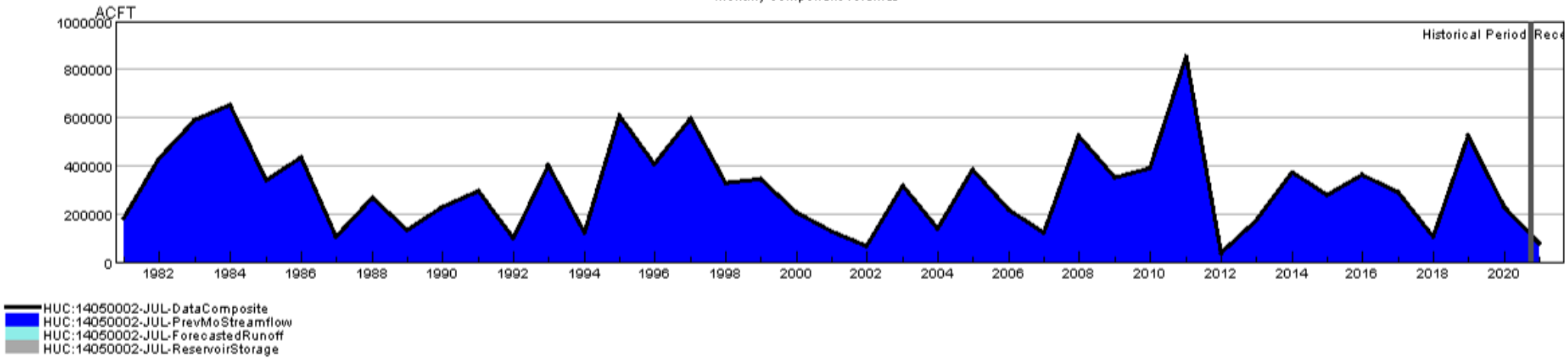
HUC 14050001 (Upper Yampa) SWSI Values - JUL

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



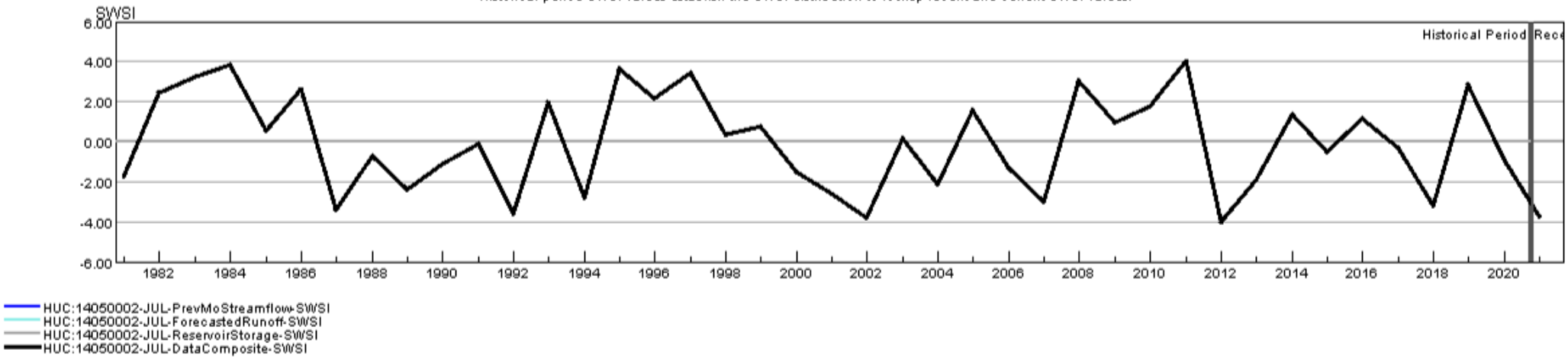
HUC 14050002 (Lower Yampa) Surface Water Supply - JUL

Monthly component volumes



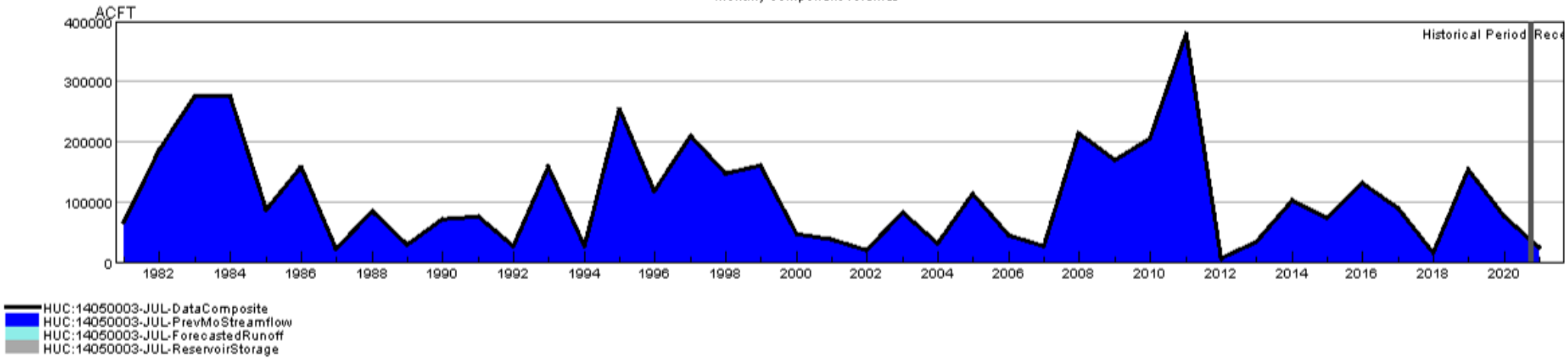
HUC 14050002 (Lower Yampa) SWSI Values - JUL

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



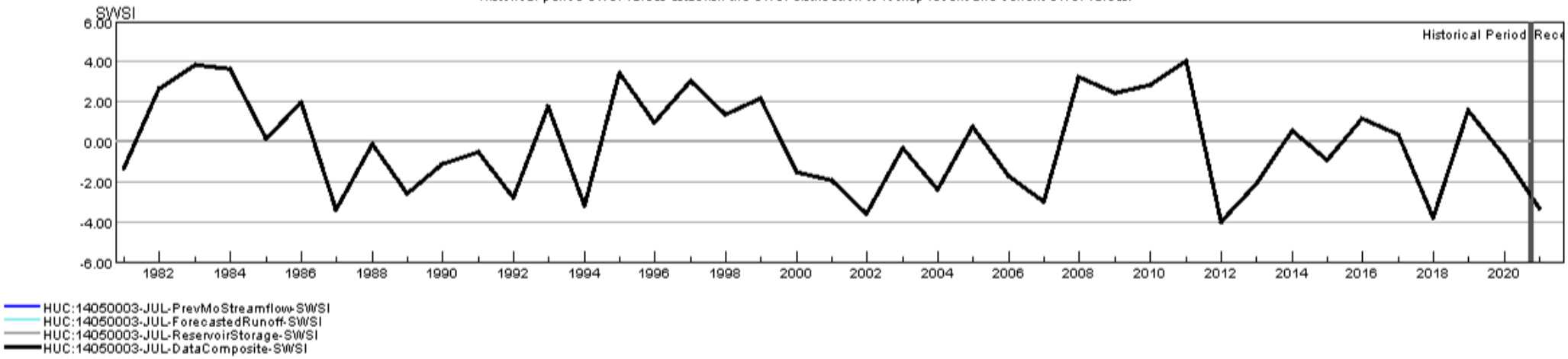
HUC 14050003 (Little Snake) Surface Water Supply - JUL

Monthly component volumes



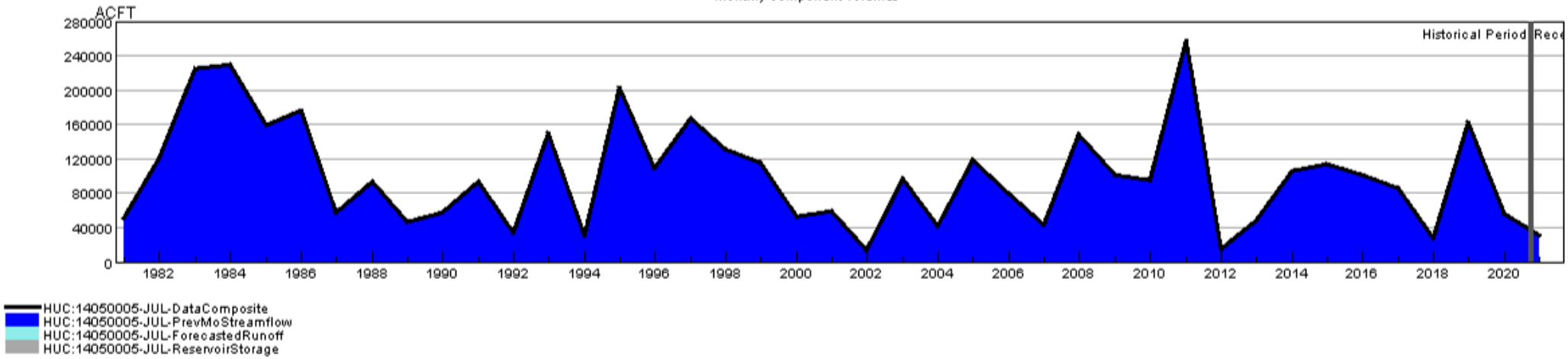
HUC 14050003 (Little Snake) SWSI Values - JUL

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



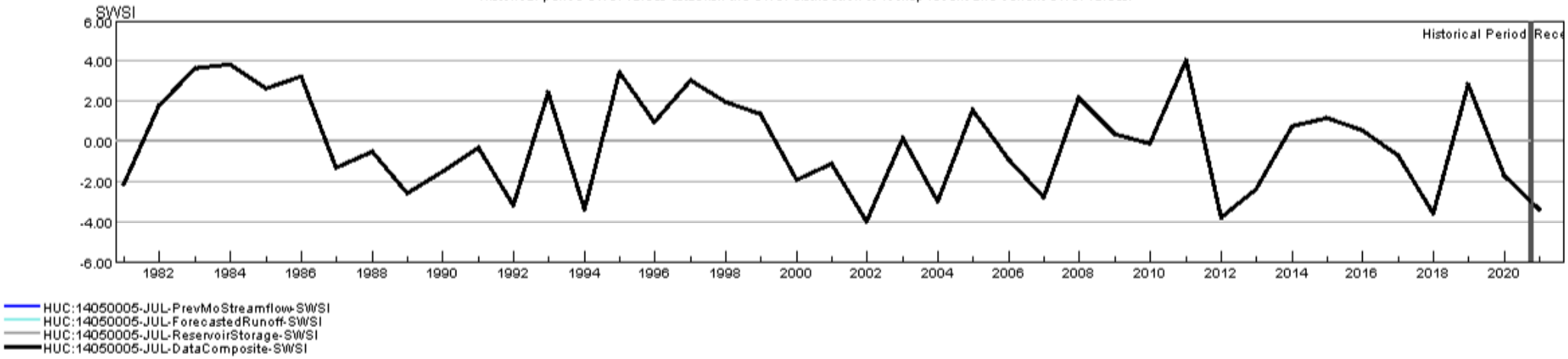
HUC 14050005 (Upper White) Surface Water Supply - JUL

Monthly component volumes



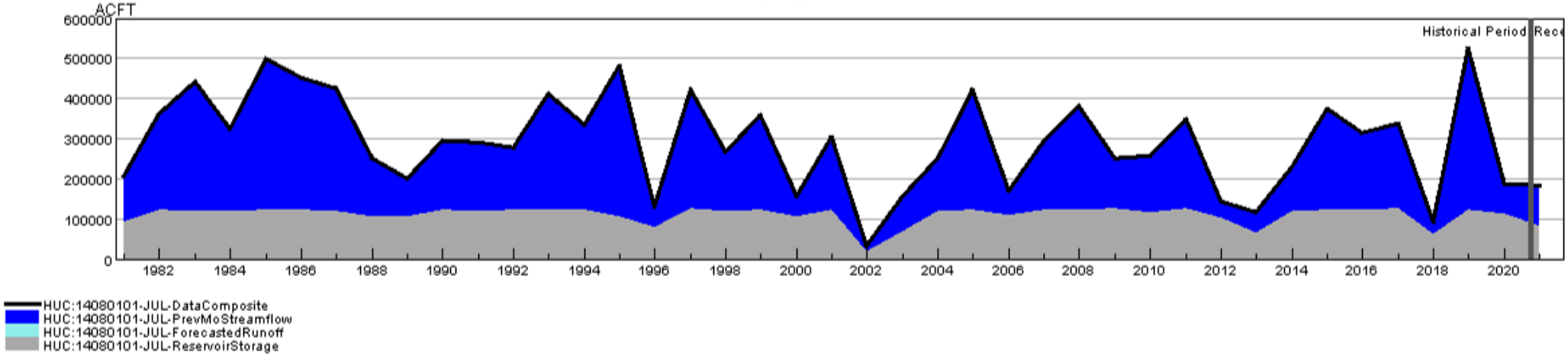
HUC 14050005 (Upper White) SWSI Values - JUL

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



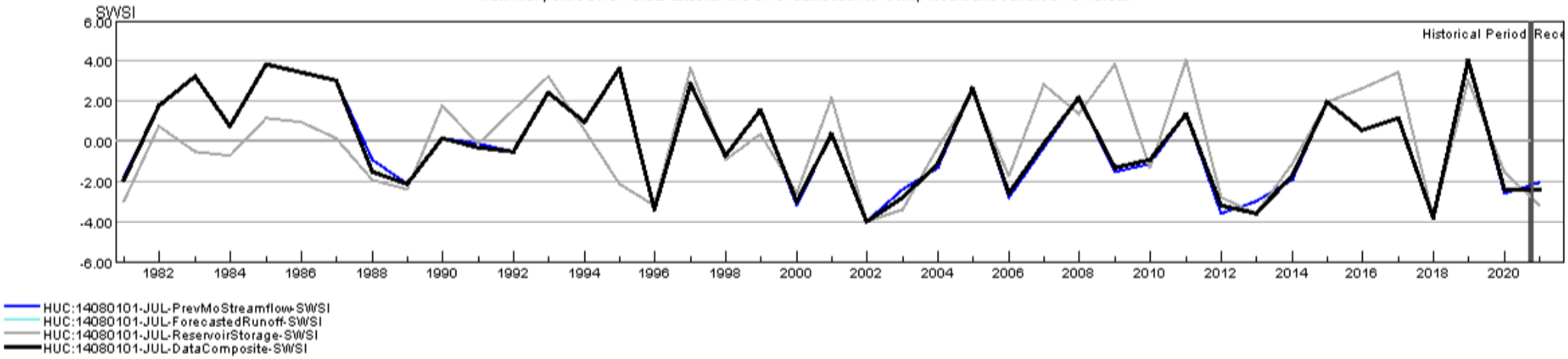
HUC 14080101 (Upper San Juan) Surface Water Supply - JUL

Monthly component volumes



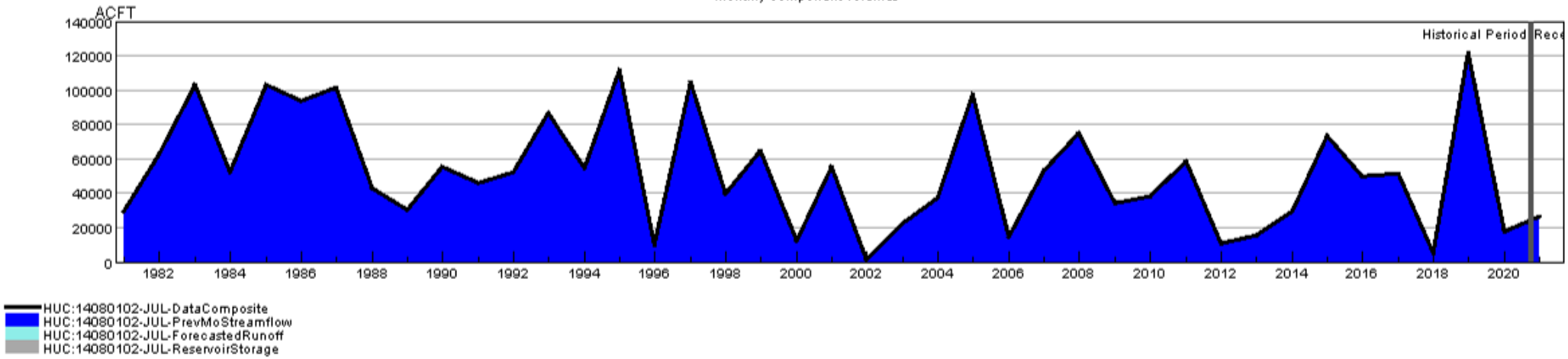
HUC 14080101 (Upper San Juan) SWSI Values - JUL

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



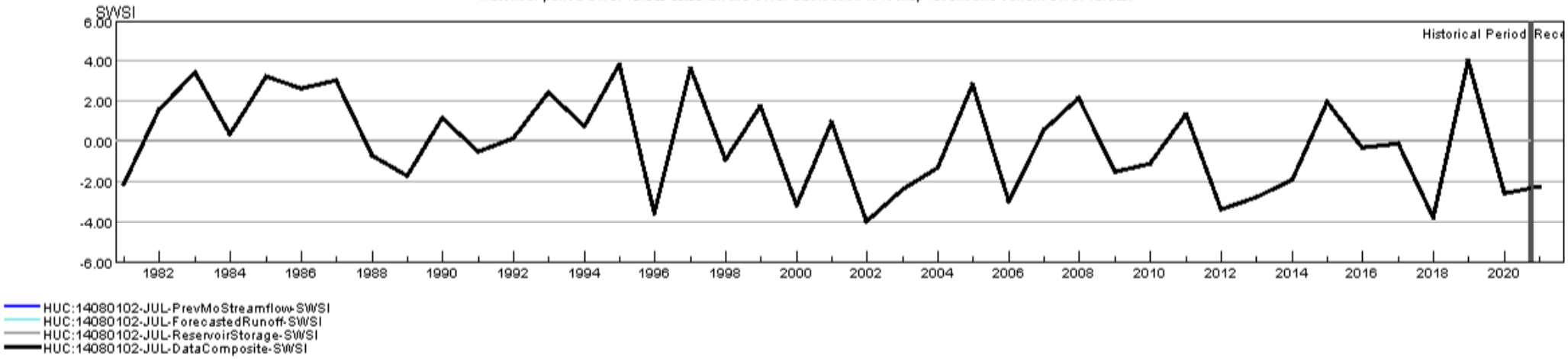
HUC 14080102 (Piedra) Surface Water Supply - JUL

Monthly component volumes



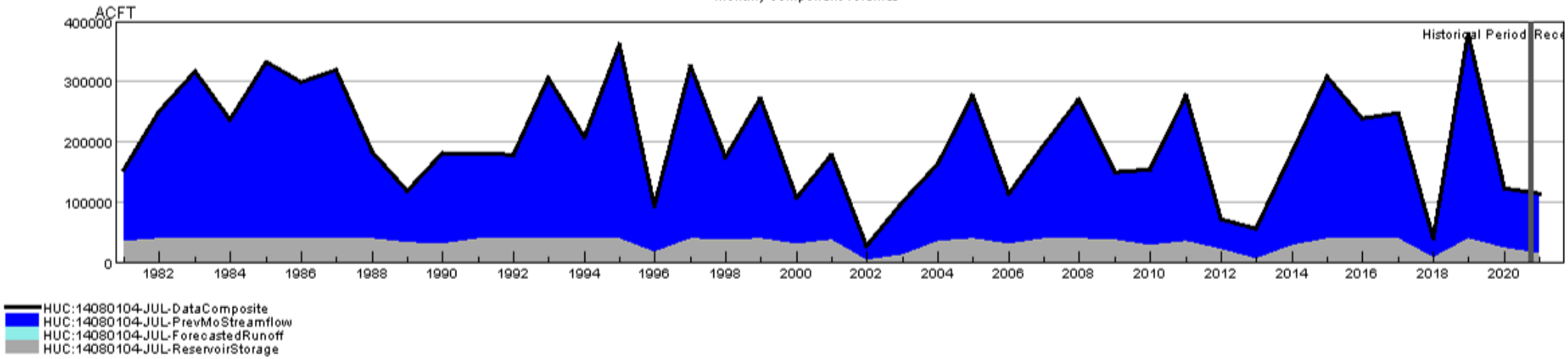
HUC 14080102 (Piedra) SWSI Values - JUL

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



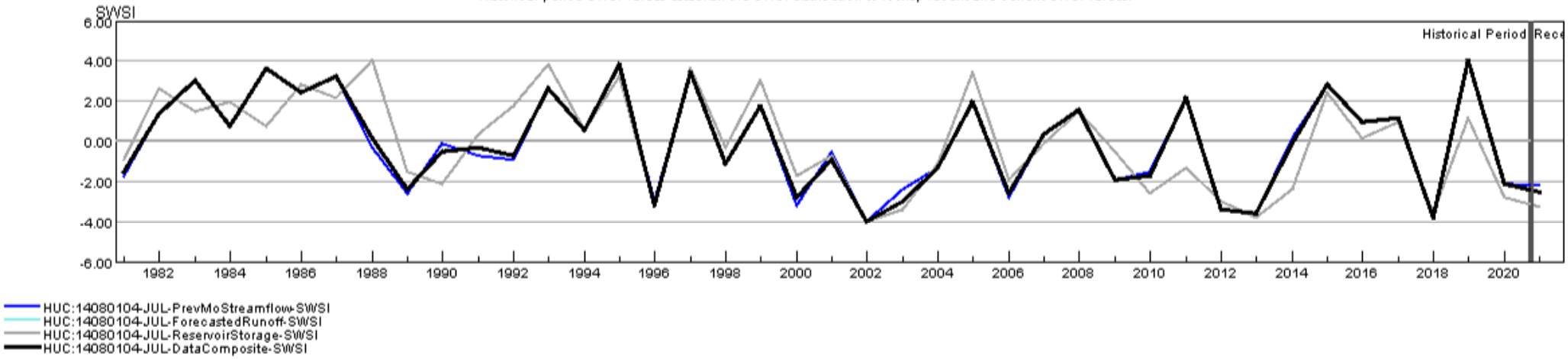
HUC 14080104 (Animas) Surface Water Supply - JUL

Monthly component volumes



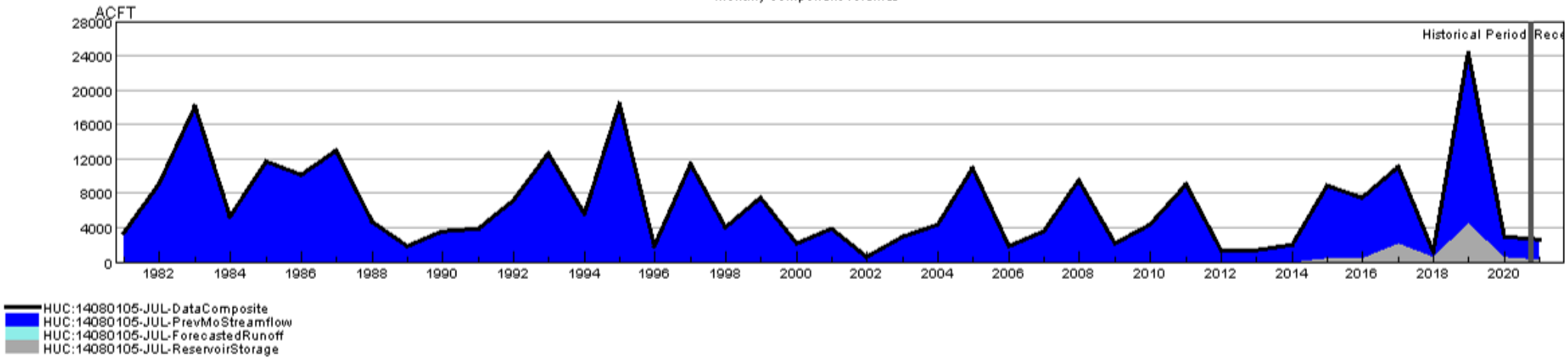
HUC 14080104 (Animas) SWSI Values - JUL

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



HUC 14080105 (Middle San Juan) Surface Water Supply - JUL

Monthly component volumes



HUC 14080105 (Middle San Juan) SWSI Values - JUL

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