COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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June 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.

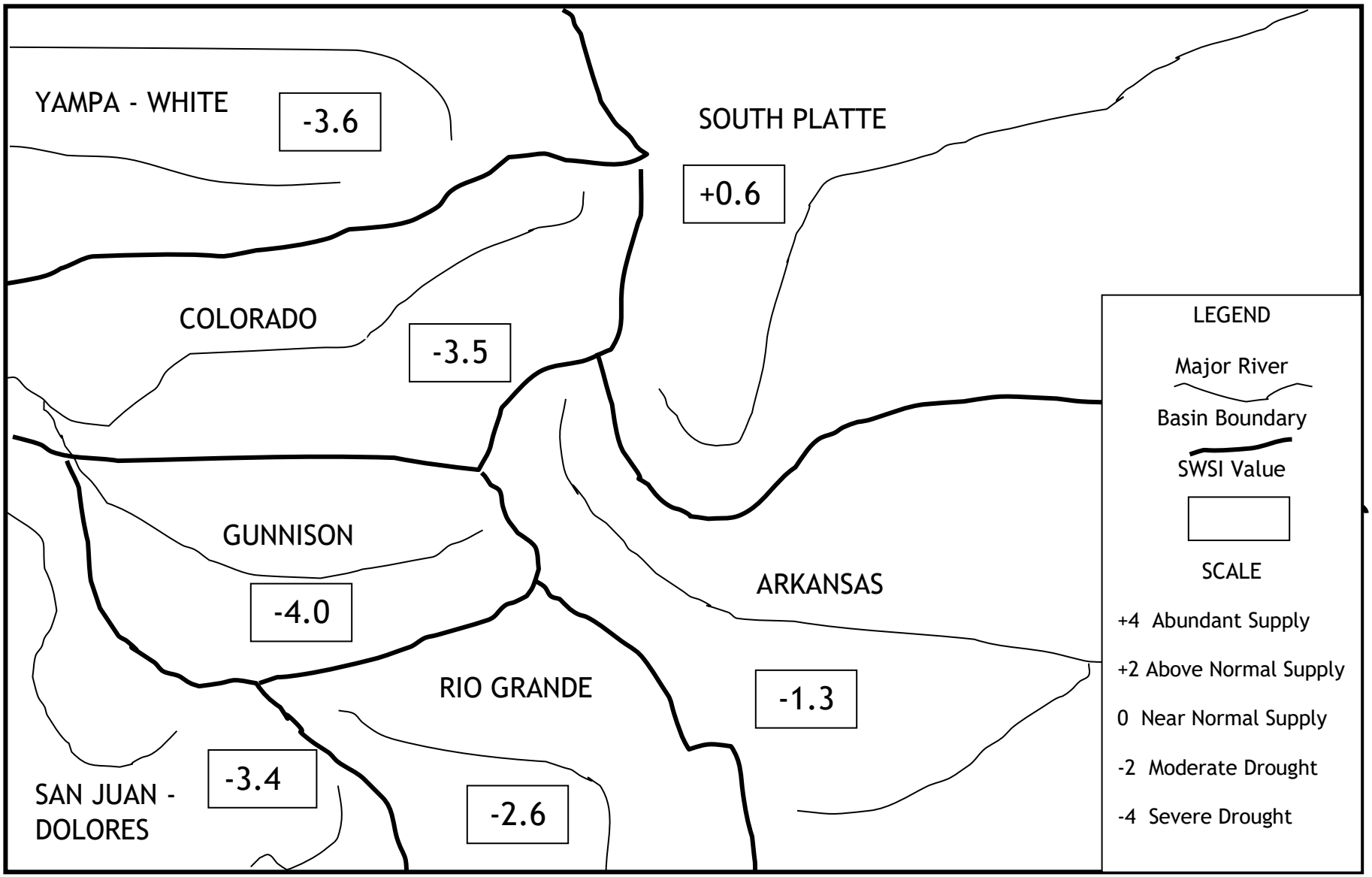
The SWSI calculation for the winter/spring season (January 1 to June 1) is based on reservoir storage at the end of last month, in this case May 31, plus the forecasted streamflow runoff volume for the runoff season (April through September in most basins). The following SWSI values were computed for each of the seven major basins for June 1, 2021. The following SWSI values were computed for each of the seven major basins for June 1, 2021. Water supply conditions, as represented by water in storage and forecasted streamflow runoff, 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	June 1 SWSI	Change from Previous Month	Change from Previous Year
Arkansas	-1.3	0.3	-0.2
Colorado	-3.5	0.1	-1.8
Gunnison	-4.0	-0.6	-1.4
Rio Grande	-2.6	-0.8	0.6
San Juan-Dolores	-3.4	0.0	-0.6
South Platte	0.6	0.8	0.3
Yampa-White	-3.6	-0.4	-2.3

SWSI Scale

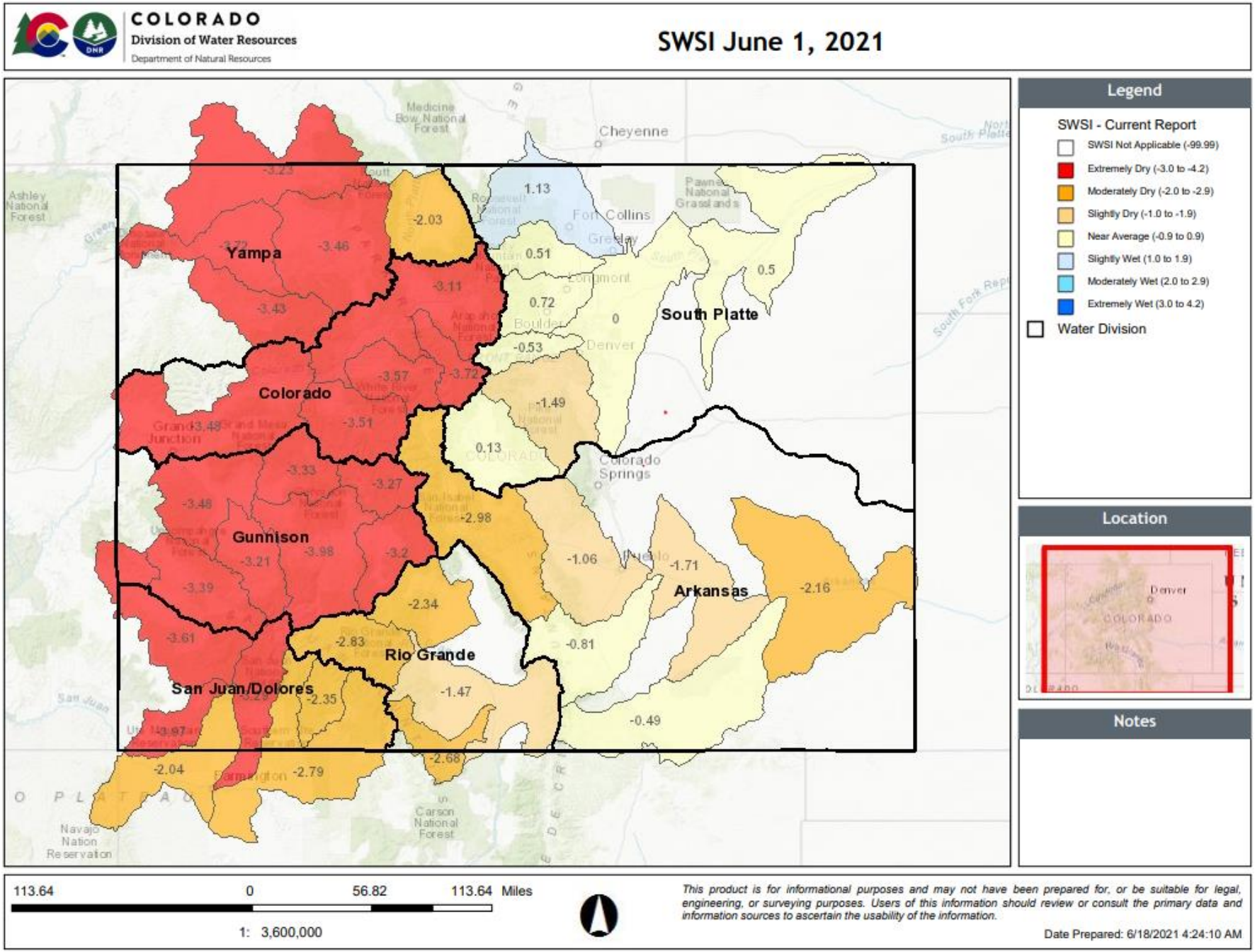
-4	-3	-2	-1	0	1	2	3	4
Severe Drought		Moderate Drought		Near Normal Supply		Above Normal Supply		Abundant Supply

SURFACE WATER SUPPLY INDEX FOR COLORADO BY MAJOR RIVER BASIN



June 1, 2020

SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC



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

Basin	HUC ID	HUC Name	SWSI	Reservoir Storage NEP	Forecast Flow NEP	Total Vol (AF)
Arkansas	11020006	Huerfano	-0.82	16	48	12,100
	11020010	Purgatoire	-0.49	53	47	55,300
	11020005	Upper Arkansas-Lake Meredith	-1.72	32	23	195,668
	11020001	Arkansas Headwaters	-2.98	36	29	260,809
	11020009	Upper Arkansas-John Martin Reservoir	-2.17	36	29	283,263
	11020002	Upper Arkansas	-1.06	44	22	353,581
Colorado	14010003	Eagle	-3.57	N/A	7	88,000
	14010002	Blue	-3.73	7	12	158,861
	14010004	Roaring Fork	-3.51	18	8	283,288
	14010001	Colorado Headwaters	-3.12	56	9	527,580
	14010005	Colorado Headwaters-Plateau	-3.48	12	8	651,727
Gunnison	14020003	Tomichi	-3.21	44	11	11,583
	14030003	San Miguel	-3.40	N/A	9	29,000
	14020004	North Fork Gunnison	-3.34	49	10	53,519
	14020006	Uncompahgre	-3.22	38	11	92,357
	14020001	East-Taylor	-3.27	30	19	160,102
	14020005	Lower Gunnison	-3.49	N/A	8	220,000
	14020002	Upper Gunnison	-3.98	1	11	691,507
Rio Grande	13010004	Saguache	-2.34	N/A	22	11,800
	13010002	Alamosa-Trinchera	-1.47	38	28	57,865
	13010005	Conejos	-2.68	22	22	76,677
	13010001	Rio Grande Headwaters	-2.84	49	16	193,973
San Juan-Dolores	14080105	Middle San Juan	-2.05	86	21	3,403
	14080107	Mancos	-3.98	5	4	6,119
	14080102	Piedra	-2.35	N/A	22	27,000
	14080104	Animas	-3.29	9	11	117,568
	14080101	Upper San Juan	-2.80	9	22	188,551
	14030002	Upper Dolores	-3.62	13	10	220,076
South Platte	10190004	Clear	-0.53	N/A	44	71,000
	10190005	St. Vrain	0.73	48	50	181,962
	10190001	South Platte Headwater	0.14	52	36	184,000
	10190007	Cache La Poudre	1.13	84	53	356,849
	10190002	Upper South Platte	-1.49	32	40	370,937
	10190006	Big Thompson	0.52	59	60	569,409
	10190003	Middle South Platte-Cherry Creek	0.00	57	48	596,600
	10190012	Middle South Platte-Sterling	0.51	78	48	721,800
Yampa-White	14050003	Little Snake	-3.23	N/A	11	25,000
	14050005	Upper White	-3.44	N/A	9	45,000
	10180001	North Platte Headwaters	-2.04	N/A	26	58,000
	14050002	Lower Yampa	-3.73	N/A	5	89,000
	14050001	Upper Yampa	-3.46	58	6	137,585

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)

June 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	6,263	28
		HOMESTAKE RESERVOIR	19,534	37
		TWIN LAKES RESERVOIR	37,930	37
		TURQUOISE LAKE	73,082	40
		ARKANSAS RIVER AT SALIDA	124,000	29
11020006	Huerfano	CUCHARAS RESERVOIR*	0	16
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	5,500	48
		HUERFANO RIVER NEAR REDWING	6,600	44
11020010	Purgatoire	PURGATOIRE RIVER AT TRINIDAD	27,000	47
		TRINIDAD LAKE	28,300	53
11020002	Upper Arkansas	PUEBLO RESERVOIR INFLOW	155,000	22
		PUEBLO RESERVOIR	198,581	44
11020009	Upper Arkansas-John Martin Reservoir	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	5,500	48
		HUERFANO RIVER NEAR REDWING	6,600	44
		ADOBE CREEK RESERVOIR	23,905	30
		PURGATOIRE RIVER AT TRINIDAD	27,000	47
		JOHN MARTIN RESERVOIR	65,258	37
		PUEBLO RESERVOIR INFLOW	155,000	22
11020005	Upper Arkansas-Lake Meredith	CUCHARAS RIVER AT BOYD RANCH NR LA VETA	5,500	48
		HUERFANO RIVER NEAR REDWING	6,600	44
		LAKE HENRY	7,468	63
		MEREDITH RESERVOIR	21,100	31
		PUEBLO RESERVOIR INFLOW	155,000	22
14010002	Blue	GREEN MOUNTAIN RESERVOIR	63,861	7
		BLUE RIVER INFLOW TO GREEN MOUNTAIN RES	95,000	12
14010001	Colorado Headwaters	WOLFORD MOUNTAIN RESERVOIR	64,580	60
		WILLIAMS FORK RESERVOIR	73,000	43
		COLORADO RIVER NEAR DOTSERO	390,000	9
14010005	Colorado Headwaters-Plateau	VEGA RESERVOIR	16,727	12
		COLORADO RIVER NEAR CAMEO	635,000	8
14010003	Eagle	EAGLE RIVER BELOW GYPSUM	88,000	7
14010004	Roaring Fork	RUEDI RESERVOIR	68,288	18
		ROARING FORK AT GLENWOOD SPRINGS	215,000	8
14020001	East-Taylor	TAYLOR R INF TO TAYLOR PARK RESERVOIR	35,000	21
		EAST RIVER AT ALMONT	55,000	20
		TAYLOR PARK RESERVOIR	70,102	30
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	220,000	8
14020004	North Fork Gunnison	PAONIA RESERVOIR	15,519	49
		NORTH FORK GUNNISON R NR SOMERSET	38,000	10
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	29,000	9
14020003	Tomichi	VOUGA RESERVOIR NEAR DOYLEVILLE	583	44
		TOMICHI CREEK AT GUNNISON, CO	11,000	11

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
14020006	Uncompahgre	UNCOMPAHGRE RIVER AT COLONA	31,000	11
		RIDGEWAY RESERVOIR	61,357	38
14020002	Upper Gunnison	FRUITLAND RESERVOIR	0	1
		CRAWFORD RESERVOIR	4,925	11
		SILVER JACK RESERVOIR	7,556	11
		LAKE FORK AT GATEVIEW, CO	41,000	11
		MORROW POINT RESERVOIR	113,074	57
		GUNNISON R INF TO BLUE MESA RESERVOIR	175,000	12
		BLUE MESA RESERVOIR	349,952	1
13010002	Alamosa-Trinchera	SANGRE DE CRISTO	3,000	34
		MOUNTAIN HOME	4,527	31
		TRINCHERA CK	5,800	44
		UTE CREEK	6,300	36
		TERRACE RESERVOIR	8,138	43
		CULEBRA CREEK AT SAN LUIS	11,500	49
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	18,600	21
13010005	Conejos	PLATORO RESERVOIR	16,677	22
		CONEJOS RIVER NEAR MOGOTE	60,000	22
13010001	Rio Grande Headwaters	CONTINENTAL RESERVOIR	11,207	76
		SANTA MARIA RESERVOIR	12,987	61
		RIO GRANDE RESERVOIR	18,779	49
		RIO GRANDE NEAR DEL NORTE	151,000	16
13010004	Saguache	SAGUACHE CREEK NEAR SAGUACHE, CO	11,800	22
14080104	Animas	FLORIDA RIVER INFLOW TO LEMON RESERVOIR	9,000	17
		LEMON RESERVOIR	18,568	9
		ANIMAS RIVER AT DURANGO	90,000	11
14080107	Mancos	MANCOS RIVER NEAR MANCOS	2,000	4
		JACKSON GULCH RESERVOIR	4,119	5
14080105	Middle San Juan	LONG HOLLOW RESERVOIR	403	86
		LA PLATA RIVER AT HESPERUS	3,000	21
14080102	Piedra	PIEDRA RIVER NEAR ARBOLES	27,000	22
14030002	Upper Dolores	GROUNDHOG RESERVOIR	7,100	4
		DOLORES RIVER BELOW MCPHEE RESERVOIR	24,000	10
		MCPHEE RESERVOIR	188,976	14
14080101	Upper San Juan	LOS PINOS RIVER NEAR BAYFIELD	43,000	17
		SAN JUAN RIVER NEAR CARRACAS	69,000	22
		VALLECITO RESERVOIR	76,551	9
10190006	Big Thompson	MARIANO RESERVOIR	5,100	51
		WILLOW CREEK RESERVOIR	5,871	4
		LONE TREE RESERVOIR	8,600	87
		LAKE LOVELAND RESERVOIR	10,100	86
		BOYD LAKE	47,300	84
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	66,000	60
		CARTER LAKE	99,357	45
		LAKE GRANBY	327,081	55

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
10190007	Cache La Poudre	WINDSOR RESERVOIR	500	3
		BLACK HOLLOW RESERVOIR	5,600	98
		HALLIGAN RESERVOIR	6,400	57
		CHAMBERS LAKE	8,000	77
		FOSSIL CREEK RESERVOIR	10,200	73
		CACHE LA POUDRE	10,600	94
		COBB LAKE	21,900	94
		HORSETOOTH RESERVOIR	146,649	89
		CACHE LA POUDRE R AT CANYON MOUTH	147,000	53
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	71,000	44
10190003	Middle South Platte-Cherry Creek	HORSECREEK RESERVOIR	12,300	18
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	22,000	46
		MILTON RESERVOIR	23,600	99
		BARR LAKE	29,900	74
		BOULDER CREEK NEAR ORODELL	35,000	43
		STANDLEY RESERVOIR	39,800	47
		SAINT VRAIN CREEK AT LYONS	63,000	57
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	66,000	60
		CLEAR CREEK AT GOLDEN	71,000	44
		SOUTH PLATTE RIVER AT SOUTH PLATTE	87,000	40
		CACHE LA POUDRE R AT CANYON MOUTH	147,000	53
10190012	Middle South Platte-Sterling	JULESBURG RESERVOIR	20,400	68
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	22,000	46
		PREWITT RESERVOIR	24,900	91
		JACKSON LAKE RESERVOIR	26,100	56
		EMPIRE RESERVOIR	32,600	52
		BOULDER CREEK NEAR ORODELL	35,000	43
		RIVERSIDE RESERVOIR	55,600	82
		SAINT VRAIN CREEK AT LYONS	63,000	57
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	66,000	60
		CLEAR CREEK AT GOLDEN	71,000	44
		POINT OF ROCKS RESERVOIR	71,200	92
		SOUTH PLATTE RIVER AT SOUTH PLATTE	87,000	40
		CACHE LA POUDRE R AT CANYON MOUTH	147,000	53
10190001	South Platte Headwater	ANTERO RESERVOIR	20,100	90
		ELEVENMILE CANYON RESV INFLOW	31,000	36
		SPINNEY MOUNTAIN RESERVOIR	35,900	56
		ELEVENMILE CANYON RESERVOIR	97,000	13
10190005	St. Vrain	TERRY RESERVOIR	8,000	96
		MARSHALL RESERVOIR	9,200	34
		UNION RESERVOIR	11,262	29
		BUTTONROCK (RALPH PRICE) RESERVOIR	16,200	91
		GROSS RESERVOIR	17,300	43
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	22,000	46
		BOULDER CREEK NEAR ORODELL	35,000	43
		SAINT VRAIN CREEK AT LYONS	63,000	57

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
10190002	Upper South Platte	CHEESMAN LAKE	65,937	28
		SOUTH PLATTE RIVER AT SOUTH PLATTE	87,000	40
		DILLON RESERVOIR	218,000	30
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	25,000	11
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	89,000	5
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	58,000	26
14050005	Upper White	WHITE RIVER NEAR MEEKER	45,000	9
14050001	Upper Yampa	ELKHEAD CREEK ABOVE LONG GULCH	500	14
		YAMCOLO RESERVOIR	8,285	40
		YAMPA RIVER AT STEAMBOAT SPRINGS	25,000	5
		STAGECOACH RESERVOIR NR OAK CREEK	33,800	67
		ELK RIVER NEAR MILNER, CO	70,000	10

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

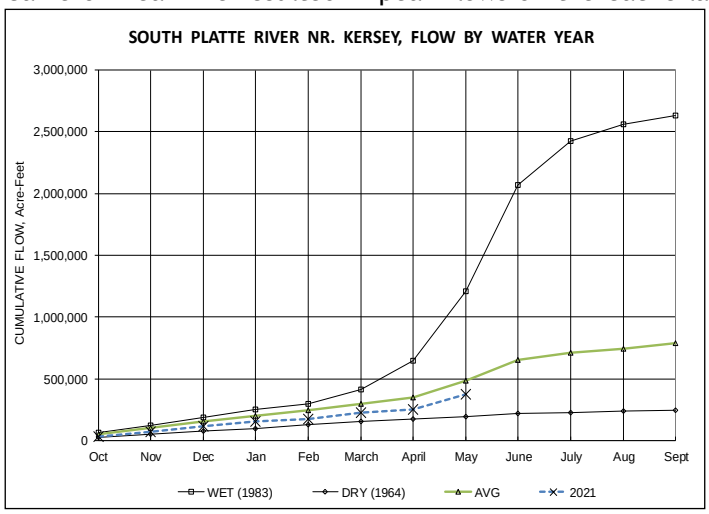
The SWSI value for the month was +0.6.

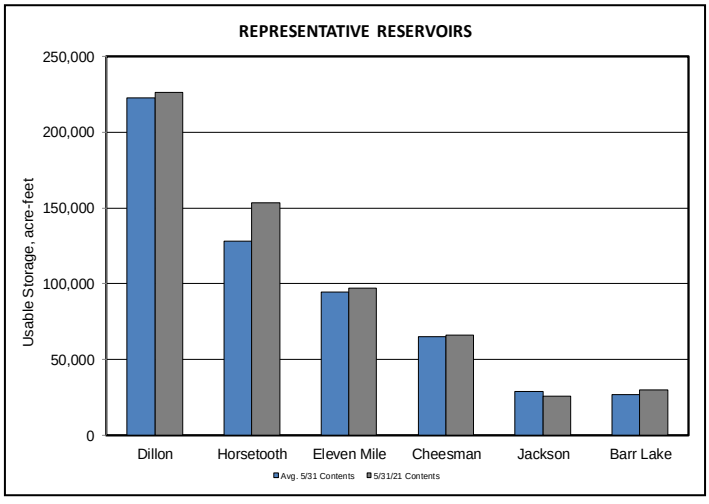
The pattern of above average precipitation and below average temperatures continued from the middle of April through the month of May throughout the entire South Platte and Republican River basins. Precipitation events during the first half of May provided a much needed boost in the high mountain snowpack, as well as much needed precipitation in the form of rain at lower elevations throughout the basin. Precipitation throughout the South Platte Basin for the month of May was 130 percent of the average (compared to the 1981-2010) as reported by NOAA. The South Platte River Basin snowpack was approximately 90 percent of average on May 1, increasing to 125 percent of average by mid-May, and 159 percent by June 1. Peak snowpack in the South Platte River basin occurred on April 29, compared to April 26 as the average day of peak snowpack in the basin. Temperatures were cooler than average for the month of May as reported by NOAA with the entire basin ranging between 3 and 5-degrees Fahrenheit below average.

The cooler temperatures and widespread above average precipitation benefited the water outlook for the basin by slowing the melting of mountain and foothill snowpack and limiting the demand of water primarily for direct flow irrigation during much of May. The USDA NRCS Colorado Water Supply Outlook Report published June 1 projected South Platte Basin stream flows at 95 percent of average (April-July) ranging from 90 to 109 percent of average, compared to the 88 percent of average projected in the May 1 Report.

Above average precipitation throughout the South Platte River and Republican River basins during February through the end of May has resulted in no drought conditions as of June 1, 2021. This is much welcomed after nearly a year of severe and extreme drought throughout the basin.

The above average precipitation and cooler than average temperatures have resulted in most reservoirs throughout the basin being full or near full heading into the irrigation season. This is in part due to lower than normal demand for water by irrigators and other water users. Additionally, the lower temperatures have assisted in slowing the runoff to allow runoff to occur over a longer period rather than a short and intense period common with warmer temperatures during early May into June. This has resulted in slightly above average flows at the Kersey stream gage downstream of the City of Greeley for the month of May with average daily flows of approximately 2,050 cfs, 111% of the historic mean value of 1,840 cfs. The areas located in the burn area of last year's Cameron Peak fire resulted in peak flows on the Cache la Poudre River peaking in early May, prior to the peak snowmelt in that area, contributing to the above average flows at the Kersey streamgage. These conditions in addition to water available to more junior water rights diverting water from the steam into recharge facilities resulted in below average daily flows at the Julesburg gage for the month of May of 702 cfs, below average at 65% of the historic mean value of 1,092 cfs. With the change in trend to warmer than average temperatures and less than average precipitation during the month of June, it is anticipated that conditions on the river will rapidly change as demand for water ramps up and the remaining snowpack is melted out.



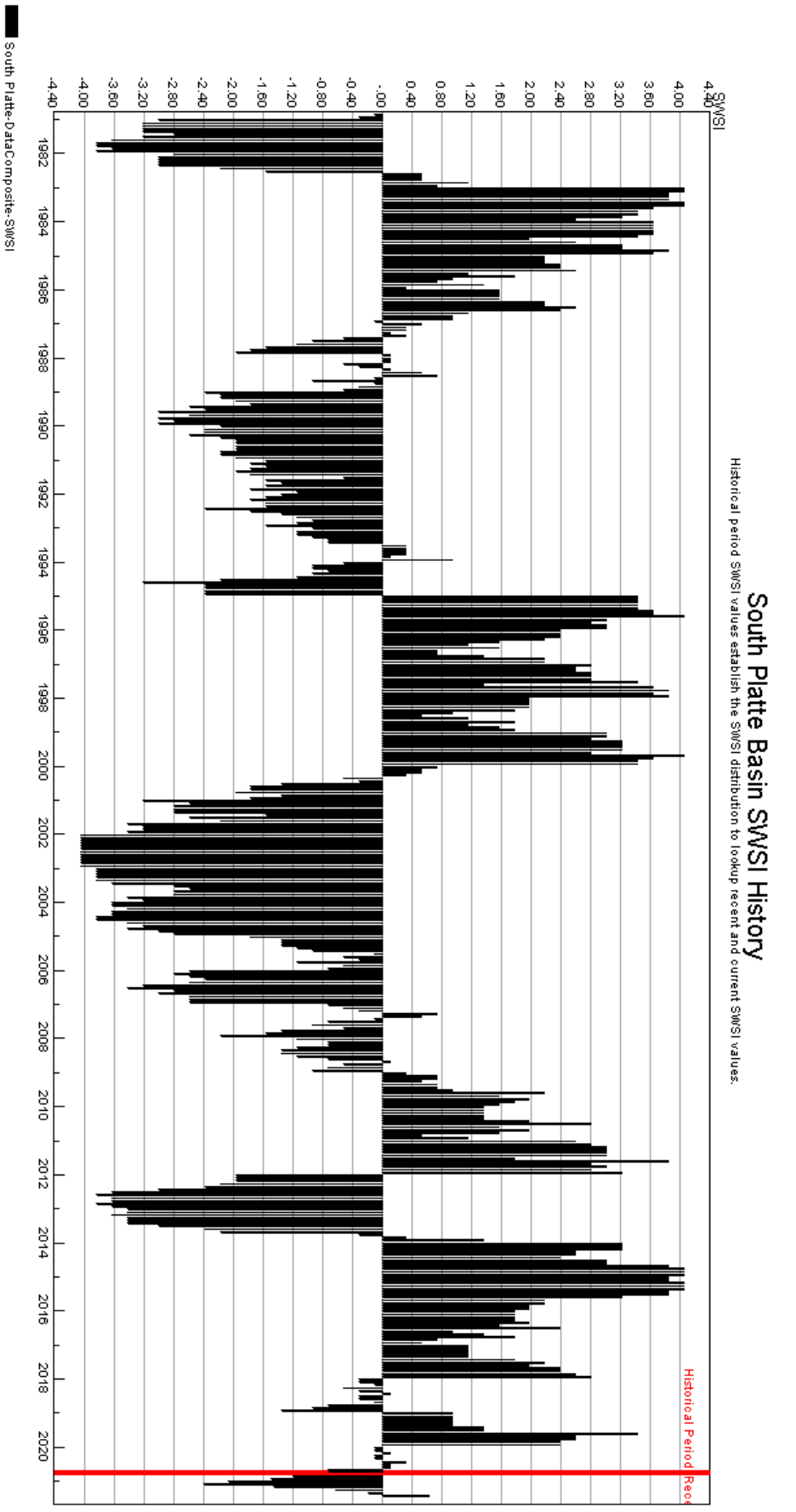


With the trend of above average precipitation, the continued filling of reservoir storage and cooler temperatures resulting in delayed and limited irrigation demand during the month of April through the end of May, and steady increase to river flows from snowmelt (runoff) have resulted in more junior priorities on the South Platte River mainstem and tributaries through the month of May. The upper portion of the South Platte River was controlled by the Cheesman Reservoir 1889 priority call starting May 8 throughout May. Downstream from Cheesman the South Platte River was controlled by the Chatfield Reservoir 1977 storage right at Chatfield Reservoir or a bypass call placed at the Burlington Canal located just below Denver beginning on May 3 through May 14. For the remainder of May, the controlling call on the upper portion of the South Platte River was the 1984 Chatfield Reservoir "reallocation pool" storage right at Chatfield Reservoir or a bypass call at the Burlington Canal. There were no calls for

water below Chatfield Reservoir or the Burlington Canal (Chatfield Reservoir bypass to the Burlington Canal) during the entire month of May, including the South Platte River Compact located at the state line. This allowed users below these locations to divert to decreed beneficial uses, including junior water rights such as recharge, and in some cases new appropriations were made. Many tributaries have internal calls senior to those on the South Platte River controlling diversions within their individual sub-basins. With the change in conditions to warmer than average and the snowmelt runoff ramping down in June, it is anticipated that the calls will go more senior and move downstream toward the stateline during the month of June into July. Peak runoff from snowmelt occurred in late May to early June in most tributaries throughout the South Platte River Basin.

Reservoir storage levels throughout the South Platte River mainstem ended the month of May above the historical average at the 6 SWSI Representative Reservoirs (Dillon, Horsetooth, Eleven Mile, Cheeseman, Jackson, and Barr Lake) at 599,083 acre-feet volume, which is 106% of the long term average (1961-current). Additionally, 32 indexed reservoirs throughout Division 1 basin ended the month of May at 113% of the long term average with a storage volume of 1,051,572 acre-feet representing 92% of total full capacity for the reservoirs. This is above the long term average of 82% of total full capacity for the end of May storage in the 32 indexed reservoirs throughout Division 1. Fortunately above average precipitation during the months of February through May with below average temperatures delaying a ramping up of direct flow irrigation demand, has allowed reservoirs on a basin wide basis to reach full to near full storage levels throughout the basin.

The temperature and precipitation outlook into July, August, and September prepared by the National Weather Service, in northeastern Colorado indicates an 60-70% 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

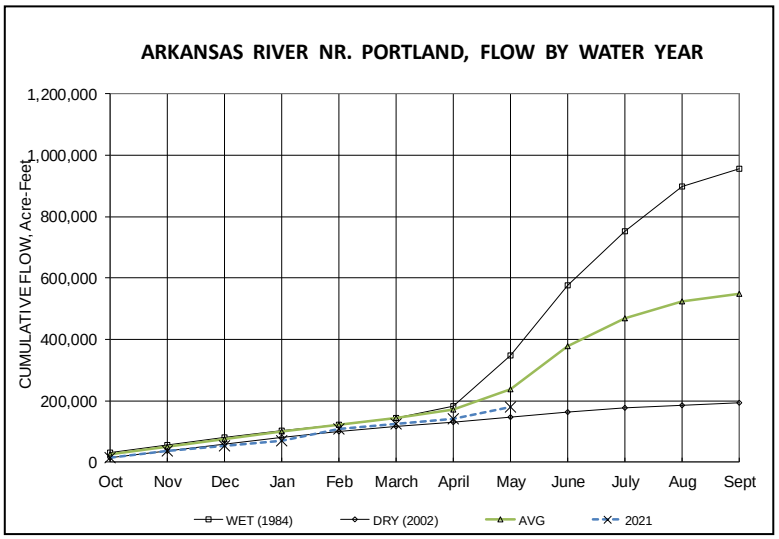
The SWSI value for the month was -1.3.

Outlook

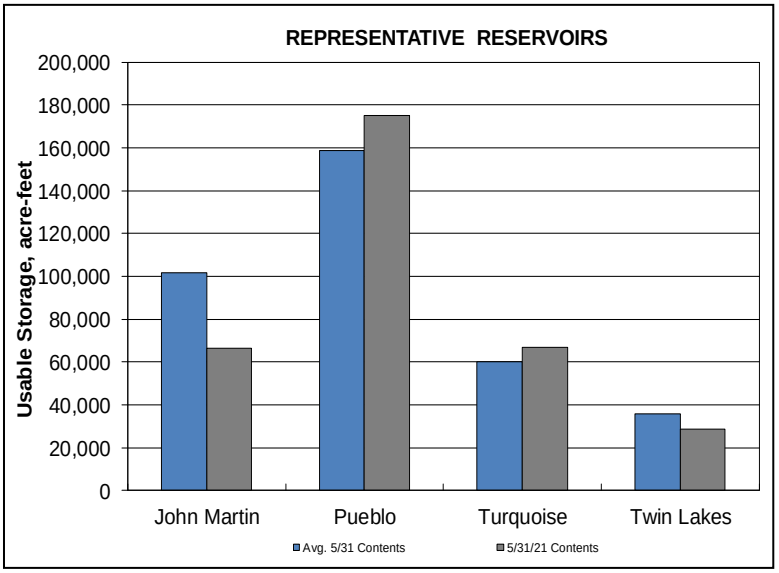
The senior call to start the month of May was the Fort Lyon Canal 4/15/1884 call. A large number of precipitation events kept setting the call a moving target, but the month ended with the 1/6/1890 Rocky Ford Highline call.

Administrative Concerns

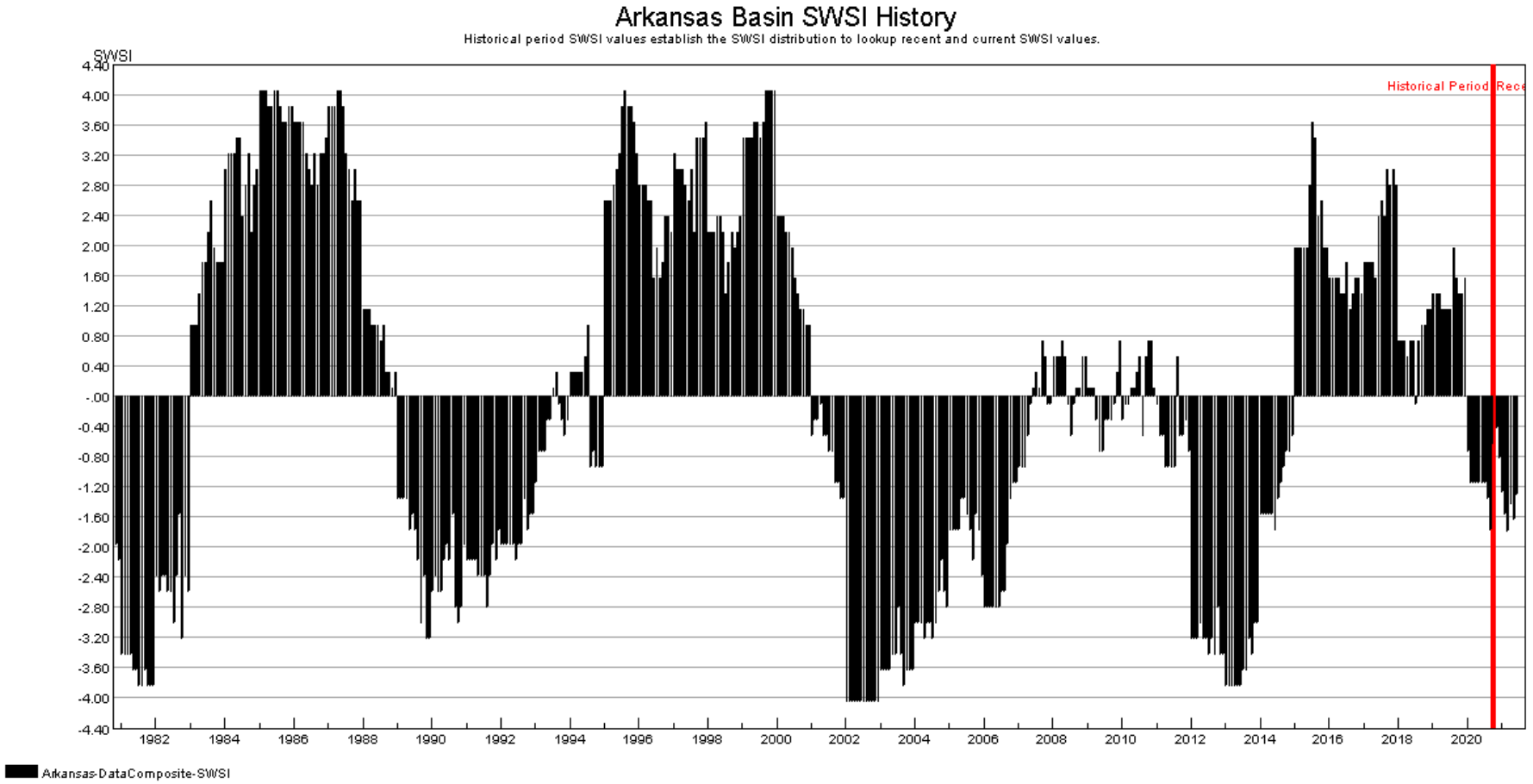
In May, Division 2 moved into the irrigation season in full swing as irrigation operations got fully underway throughout the basin. Early in the month, it appeared as though the drought conditions would drive the conditions for the 2021 season and the call reflected the lack of rainfall. Exchanges that are not typically out of priority in May were called out. Then, especially in the Southern mountains, May rains significantly changed the direction of the season. Walsenburg received approximately 12 inches of rain in May, close to its typical annual average. The precipitation events allowed both the Great Plains Storage and the John Martin Reservoir Conservation Storage to be in priority briefly.



Also, in May Brown and Caldwell, who won the contract for the next phase of Ark DSS, started work to create a new "Colors of Water" tool that will utilize diversion data through the State's HydroBase system and provide real time information in graphical form to display the content of the colors of water. This will include each gage location on the Arkansas River and will be expanded to include tributaries and other diversions currently on telemetry such as ditches, canals and augmentation stations. The tool will incorporate transit loss models and timing to facilitate water planning around reservoir deliveries.



Finally, in May the Division 2 Pond Management Initiative began the early phases of contacting pond owners and providing information on bringing ponds that are not currently operating within permitted and decreed limits into compliance with Colorado water law.


Arkansas 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 - Rece
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Arkansas-DataComposite-SWSI

Basinwide Conditions Assessment

The SWSI value for the month was -2.6.

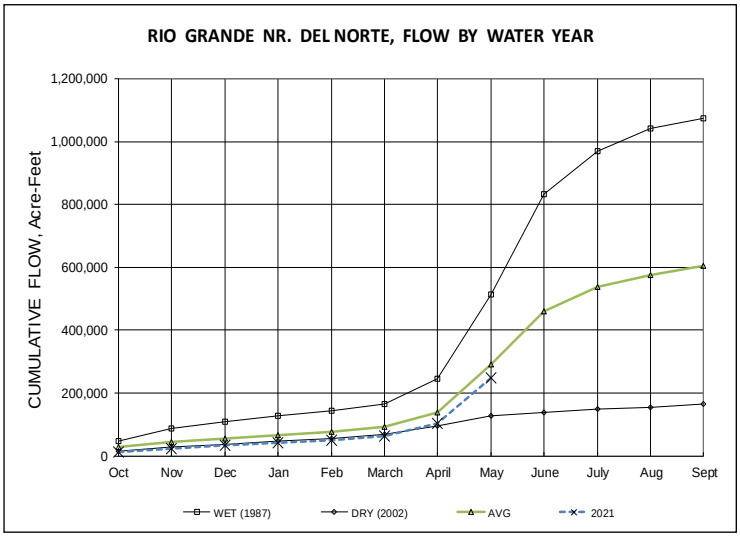
Flow at the gaging station Rio Grande near Del Norte averaged 2350 cfs (94% of average). The Conejos River near Mogote had a mean flow of 1010 cfs (107% of average) as warm temperatures forced out the marginal snowpack. Flow to the state line was only 39% of normal as upstream diversions for irrigation needs continued and the low need for delivery to the downstream states.

Alamosa received precipitation totaling 1.79 inches during May, 1.19 inches above normal. This total included a snow event during the middle of the month and a significant rainstorm at the end of the month.

A much-needed snowstorm on May 17 and 18 in the mountains slowed the decline of the basin's snowpack. Alamosa even received an inch of snow during that event. It was glorious to see all the mountains surrounding the San Luis Valley cloaked in fresh marshmallow-white snow in mid-May! But the snow on most of the snotels was essentially gone by the end of of the month. Fortunately, the snowstorm and the rainstorm postponed the peak flow in most area drainages to late May or early June.

Outlook

NRCS forecasts are still predicting April through September runoff to be generally only 50% to 70% of average in the upper Rio Grande basin of Colorado. The best forecasts are for those rivers with long drainages and high elevations: the Rio Grande and the Conejos. Low elevation and short drainages should have extremely low streamflow the remainder of this irrigation season. Based on these forecasts, water users in the basin who are reliant on stream flow for irrigation and stock watering needs should expect extremely limited availability.

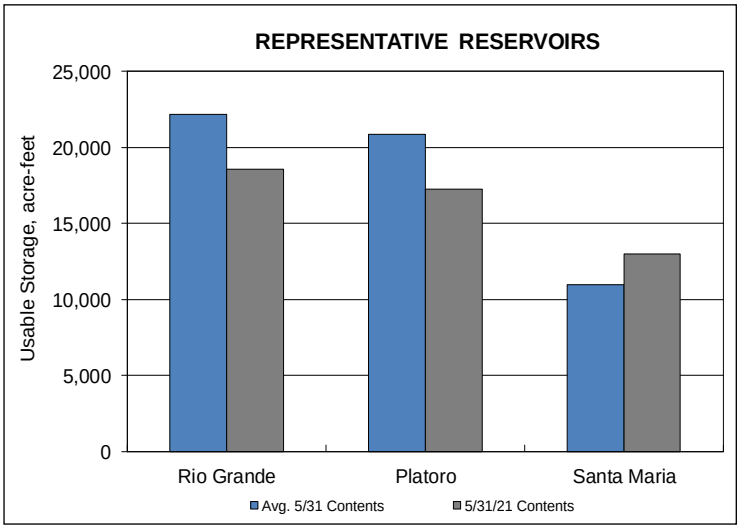


The National Weather Service is predicting a less than average precipitation and warmer than normal temperatures for summer and fall, 2021.

Administrative/Management Concerns

Water rights were able divert most of the available flow during May from the Rio Grande and the Conejos as only small curtailment is necessary on these drainages to make water available for required Rio Grande Compact deliveries in 2012. This is a common practice for poor runoff years.

The continuing overall drought from 2020 will hit hardest on streams on the east side of the San Luis Valley. Dry years are not easy for water administrators. The priority system requires regular inspection of headgates. Massive pumping from the valley's aquifers will be necessary to meet irrigated crop demand for those farmers lucky enough to have an irrigation well.

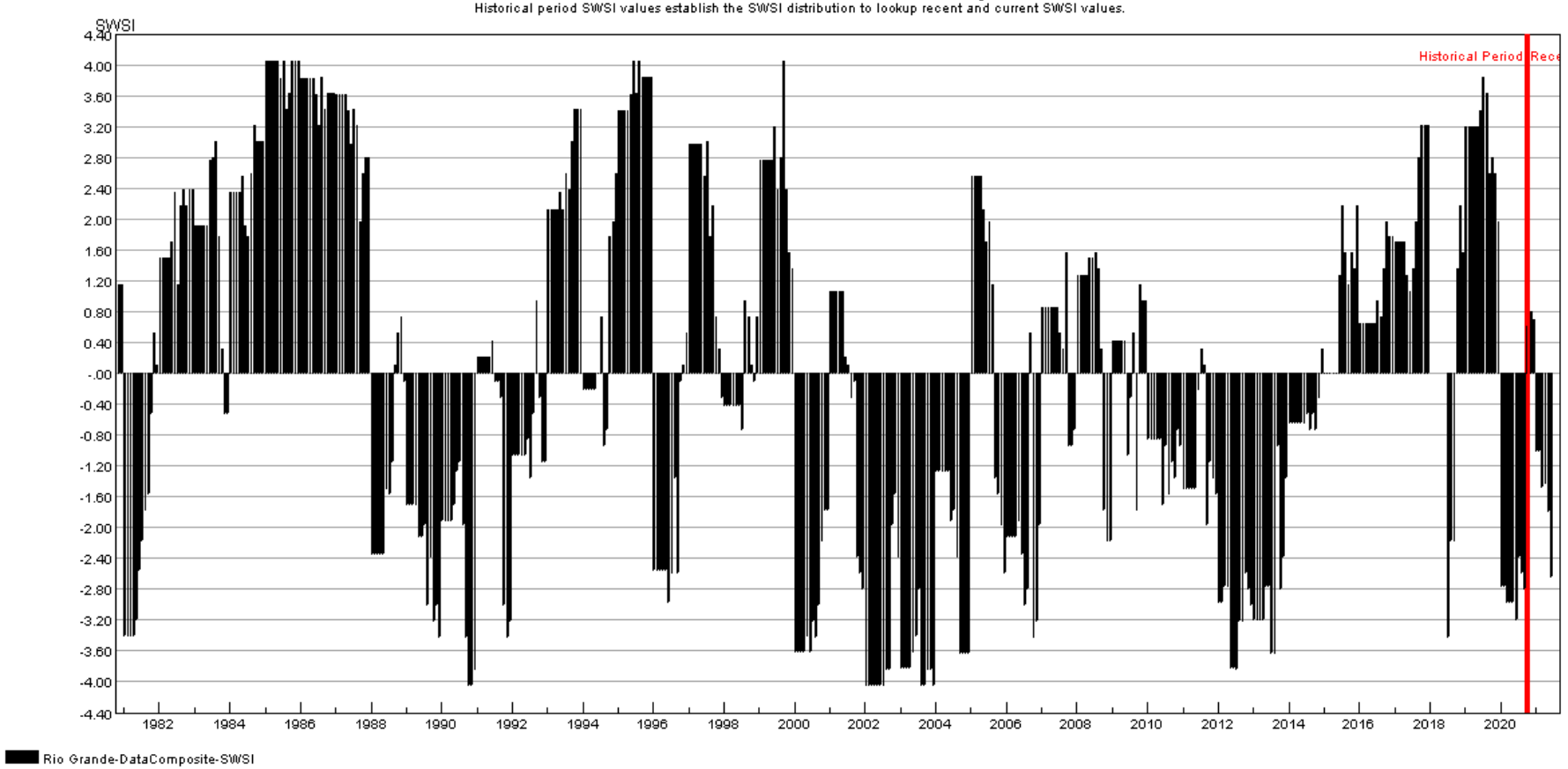


Public Use Impacts

The anticipated poor stream flow will adversely affect the farming, ranching, and recreational industries in the basin.

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 -4.0.

Basin Wide Conditions Outlook

Conditions remained extremely dry throughout the Gunnison basin in May. In fact, much of the basin only received between 50 and 70 percent of average precipitation in May, with the wettest areas of the Upper Gunnison Basin receiving about 70 percent of average. Snowmelt runoff peaked on the smaller tributaries of the Grand Mesa and Uncompahgre Plateau at the end of April and first week of May. Main stem tributaries, such as the North Fork Gunnison, Lake Fork Gunnison, East River, and Uncompahgre River peaked much later, on June 5th, as temperatures soared to near triple digits in the valleys. Runoff volumes have been lower than expected based on snowpack across the Gunnison and San Miguel River basins.

Outlook

Unfortunately, the National Climate Prediction Center forecasts have declined and predict lower than average precipitation combined with much above average temperatures for the July to September period. Hopefully these forecasts prove to be incorrect as this would indicate another dry monsoon season.

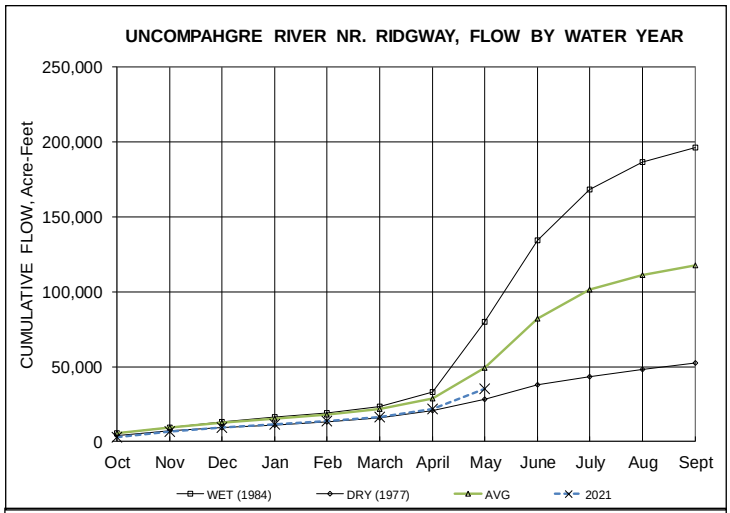
April to July streamflow forecasts prepared by the CBRFC continued to fall as actual streamflow through June 1st hasn't matched expectations. The June 1st forecast for runoff into Blue Mesa Reservoir declined another 30,000 acre-feet, from 340,000 acre-feet to 310,000 acre-feet, or 46 percent of average. This categorizes the runoff type of year into Blue Mesa Reservoir as a "Dry" type of year. Forecasts for Uncompahgre River runoff into Ridgway Reservoir and the North Fork Gunnison into Paonia Reservoir declined significantly to 48 and 37 percent of the median, respectively.

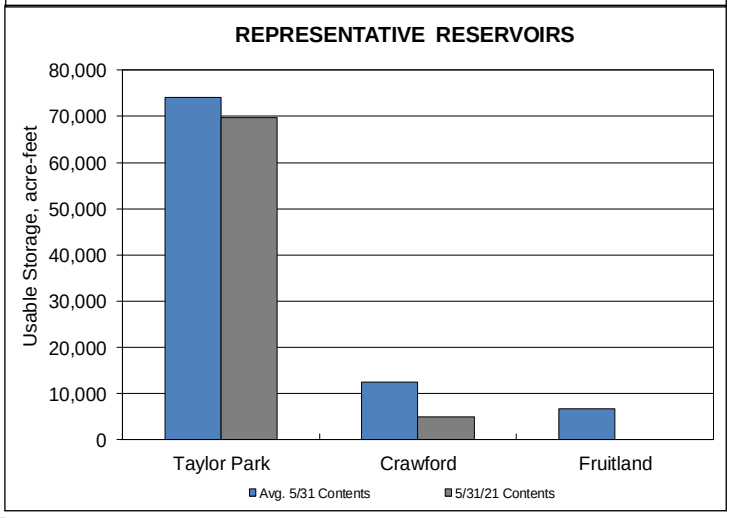
Administrative/Management Concerns

The Uncompahgre Valley Water Users Association (UVWUA) continued to divert approximately 1,050 cfs through the Gunnison Tunnel through May. Natural inflow was high enough to supply these diversions for the entire month, which resulted in no use of storage during May. The inflow into Blue Mesa Reservoir peaked on June 6th and it will likely hold up through June, which is fortunate because the very hot conditions in the valleys have increased demand. May inflows to Ridgway Reservoir increased but were not high enough to satisfy all demand at the M&D Canal. As a result, UVWUA placed a river call on May 14th with the M&D Canal, down to the administration level of the Reservoir, such that the water rights junior to Ridgway Reservoir were curtailed. This remained in effect until June 1st when runoff on the mainstem of the Uncompahgre River began to increase dramatically.

Drought rules are in effect for the Aspinall Record of Decision (ROD) and base flow target flows in the Gunnison River at Whitewater are to remain 900 cfs through July. Also, based upon the inflow forecast falling within the "Dry" year category, there will be no peak flow release to be generated this spring.

By the middle of June the call on Surface Creek had already reached the number one water right, Alfalfa Ditch and Kiser Creek administered to an 1886 priority. This curtailed further storage in most of the Grand Mesa reservoirs early in May and resulted in water commissioners administering flow and evaporation through those reservoirs. As a result of the dry conditions and lack of natural streamflow in the tributaries of Surface and Tongue Creek, the Grand Mesa Water Users Association began taking orders for reservoir water the last week of May, which is much earlier than average. Reservoir storage amounts varied from 34 percent of full storage on the very western end of the Grand Mesa to 68 percent of full storage to the eastern most side of the Grand Mesa (Surface Creek drainage). Other reservoir systems, including Overland Reservoir, also began delivering storage water before June 1st and anticipate running out of water in July, which is more than a month earlier than normal.



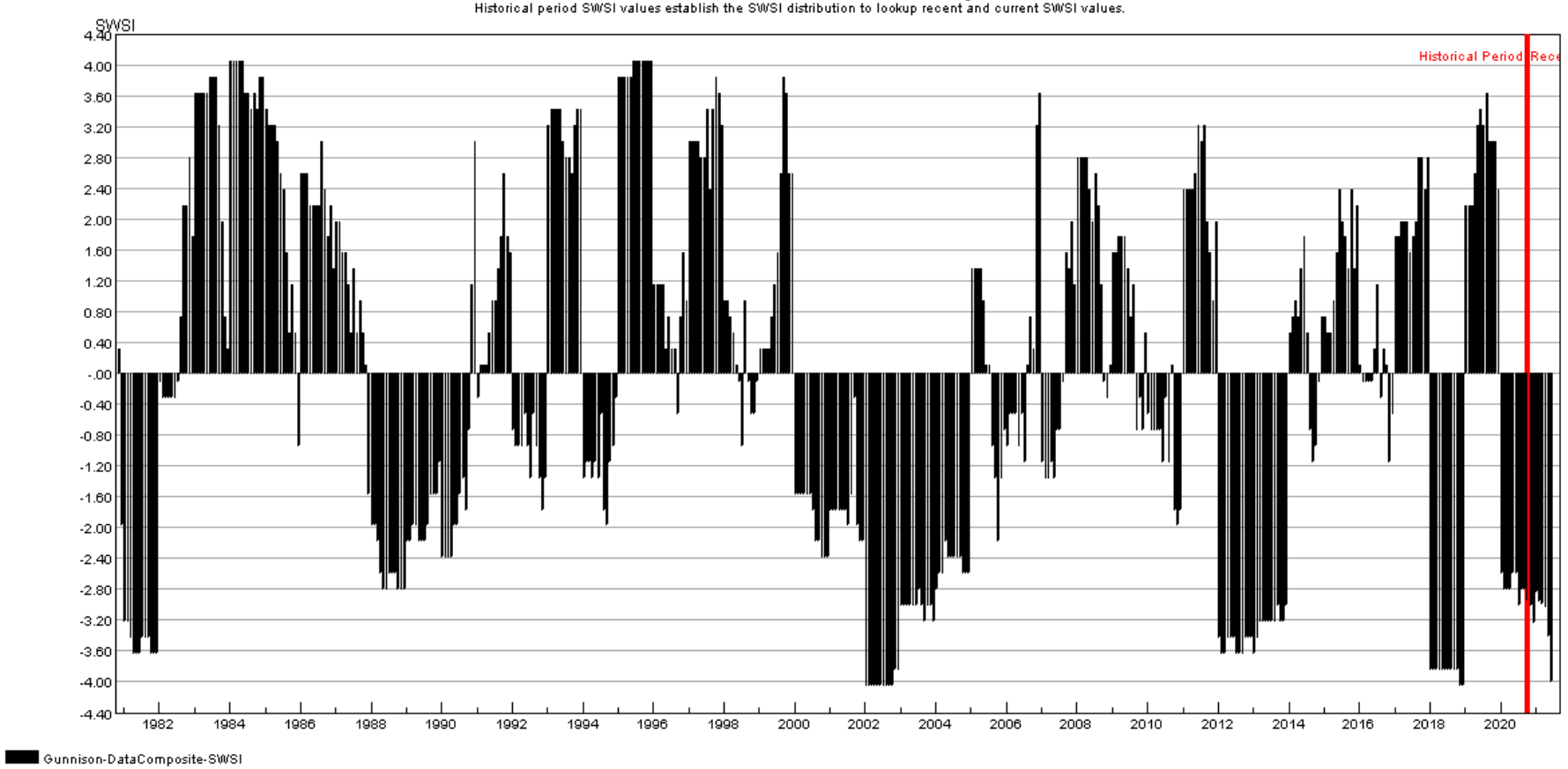


Public Use Impacts

The salmon fly hatch occurred in the Gunnison Gorge National Recreation Area in the first week of June when reductions in releases from Crystal Dam reduced flows to an ideal 450 cfs below the Gunnison Tunnel. Reports are that fishermen were very successful during this period. Flows in the Black Canyon and Gunnison Gorge will likely be increasing later in June to maintain base flows at the Whitewater gauge above the target of 900 cfs.

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 -3.5.

Outlook

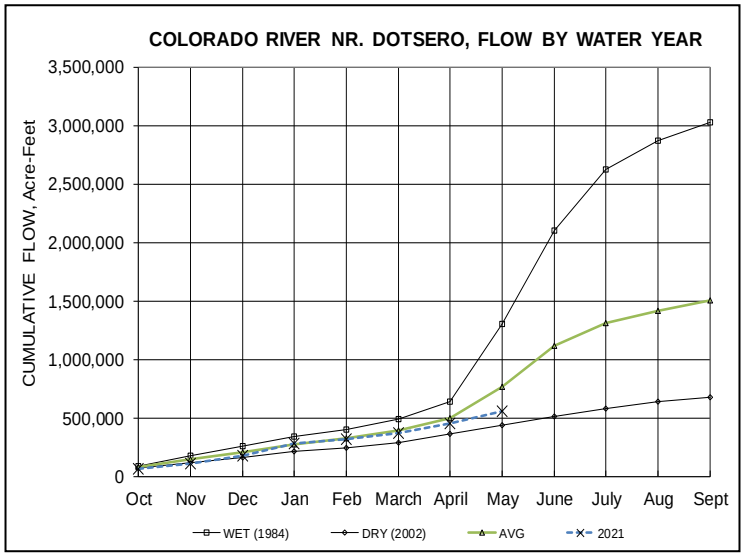
Colorado River flows and tributary flows are running below average and are forecasted to continue below average through June. Above average temperatures and below average precipitation are forecast for June.

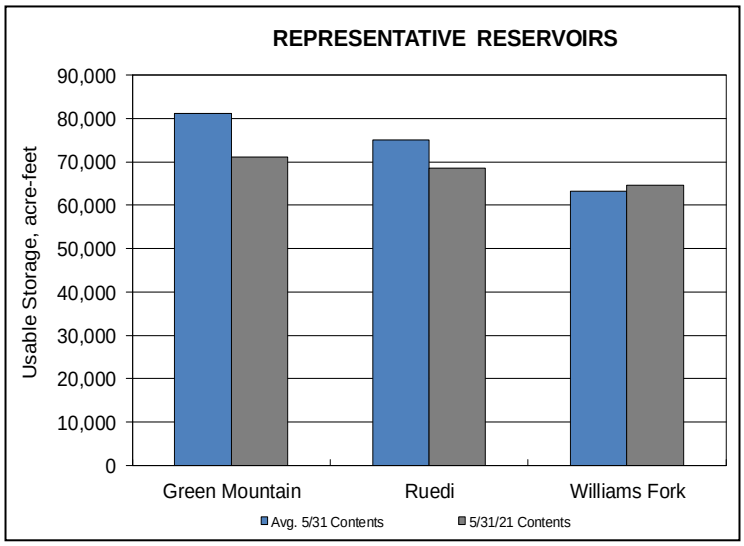
Administrative/Management Concerns

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. Green Mountain Reservoir is filling under their 1935 water right and Wolford Reservoir is releasing some water to help mitigate high temperatures in the Colorado River.

Public Use Impacts

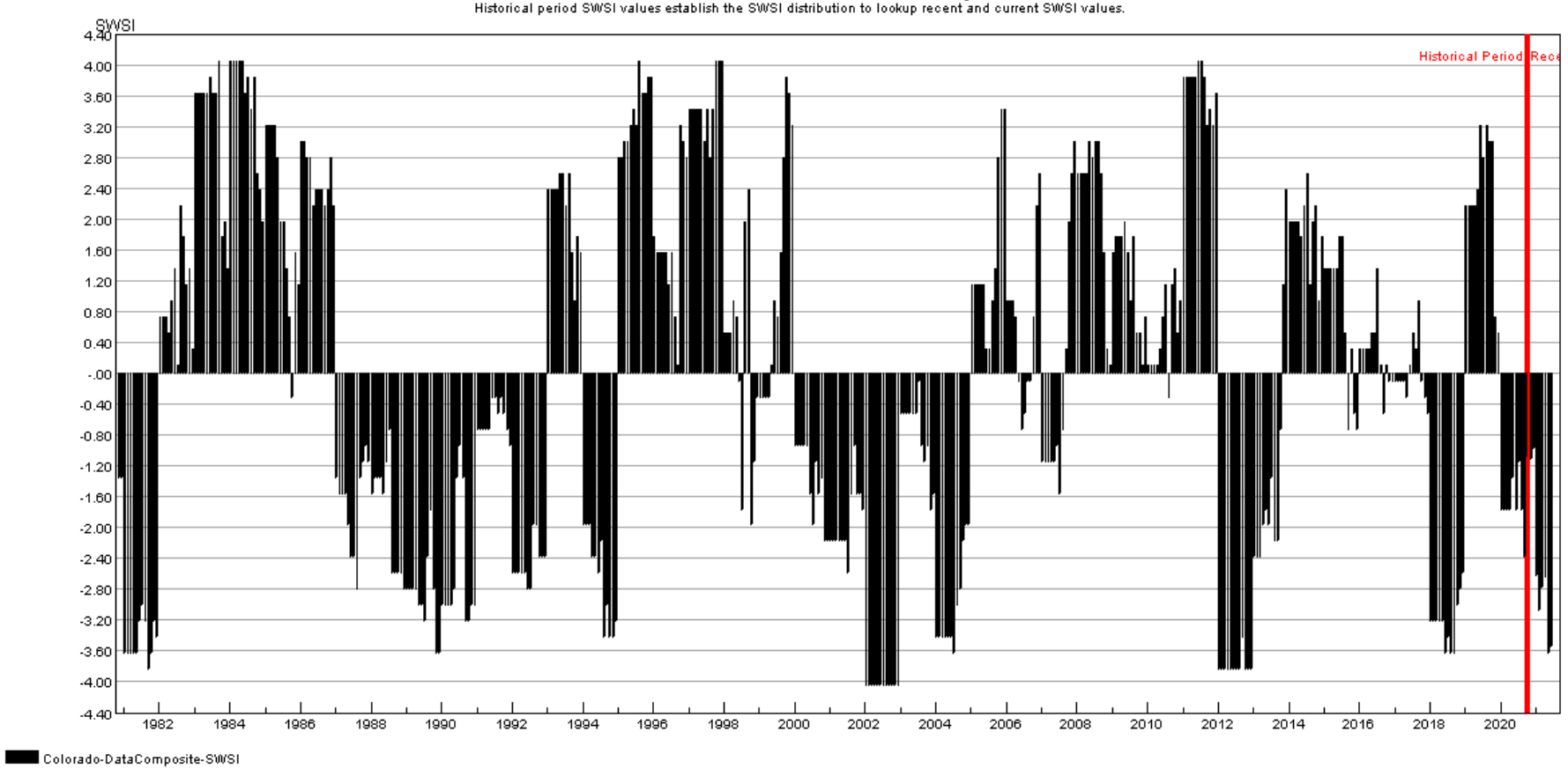
The Goose Pasture Tarn Dam rehabilitation in Breckenridge is currently on schedule to be finished in 2023 as planned. Construction updates will be posted every two weeks on the website, TownOfBreckenridgeGPTD.com. The rehabilitation project primarily includes the replacement of two existing spillways with a single larger spillway to improve the safety and long term operation of the dam.





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 -3.6.

Snowpack *(25 sites)* – Yampa and White River basins were 41% of the monthly median for SWE. This is down from last year's SWE median of 74%. The North Platte River basin was 49% of the monthly median for SWE and is down from last year's SWE median of 76%. For the entire Yampa, White and North Platte River basins the highest percent of median was at the Deadman Hill and Arapaho Ridge stations at 88%.
**Averages are from 1981-2010 records*

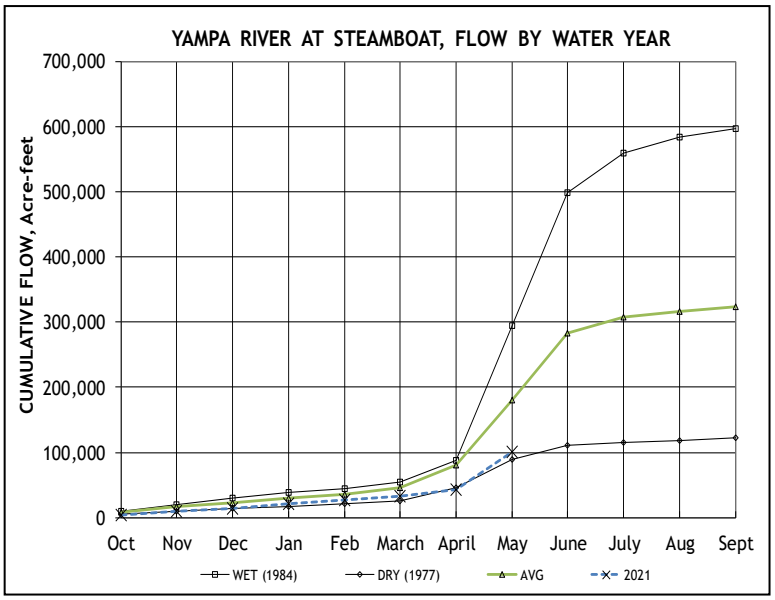
Precipitation (24 sites) – Yampa and White River basins were 53% of the monthly average, putting the basin at 71% of average for the water year to date. This is down from last year's monthly average of 53%, and down from last year's water year to date of 93%. North Platte River basin was 72% of the monthly average, putting the basin at 83% for the water year to date. This is up from last year's monthly average of 67%, and down from last year's water year to date of 103%. For the entire Yampa, White and North Platte River basins the lowest percent of average, at 10%, was the Battle Mountain SNOTEL station. The highest, at 123%, was the Roach SNOTEL station, with 4.3 inches.

**Averages are from 1981-2010 records*

Temperatures – The average monthly temperature for NOAA Colorado Climate Division 2: Colorado River Drainage was 50.7° F. This is +2.2°F from the average of 48.5°F. This temperature ranks 99 for the lowest of the previous 127 years of data. For the NOAA Colorado Climate Division 4: Platte Drainage, the average temperature was 51.3°F, -0.1°F from the average of 51.4°F, ranking 55.
**Averages are from 1901-2000 records*

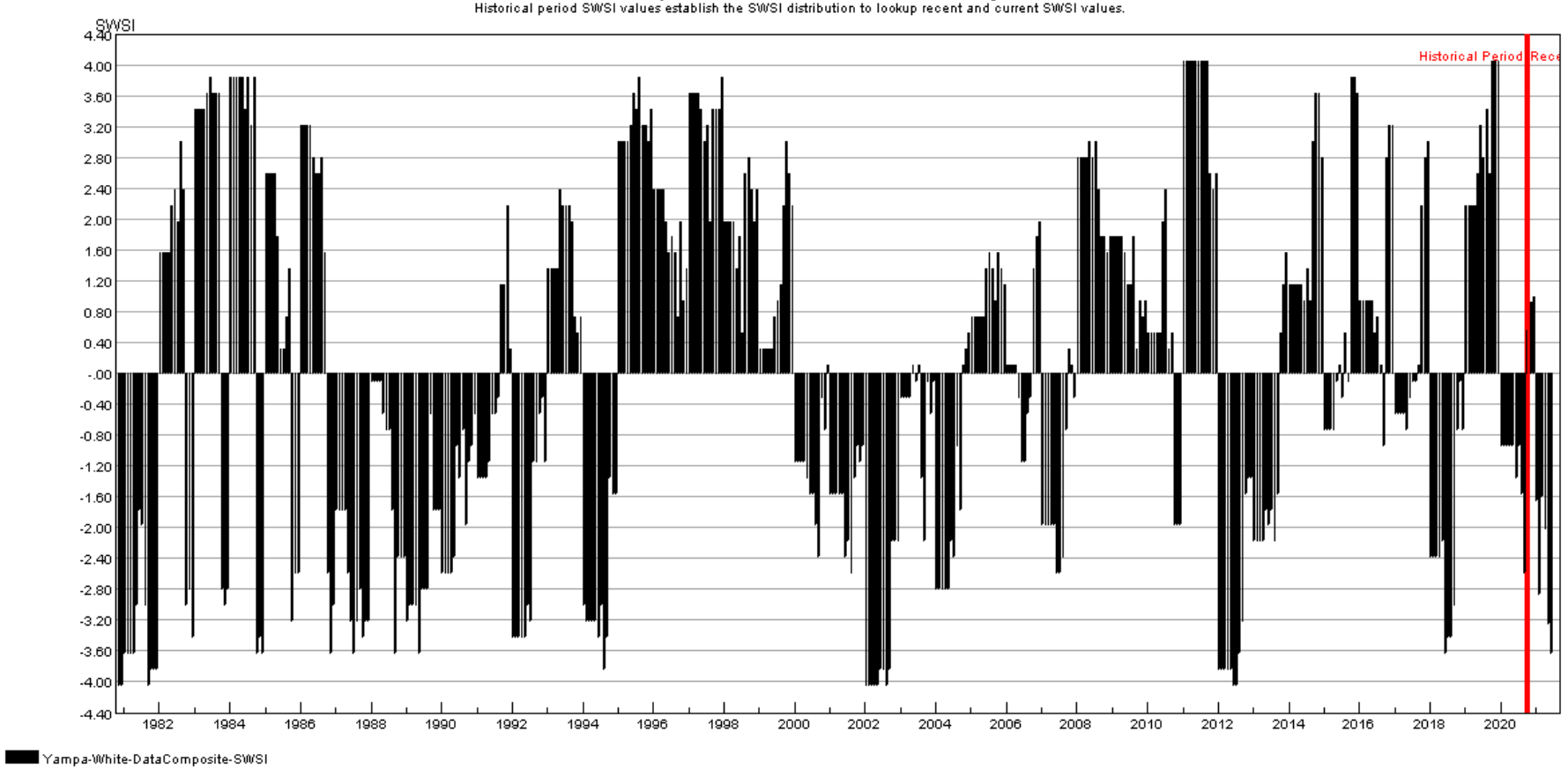
Reservoir Outlook

Elkhead Reservoir – May 31, 2021 capacity level was 24,700 AF of 25,550 AF –
96.8% capacity.
Fish Creek Reservoir – May 31, 2021 elevation was 9886' at 4,145 AF of 4,160 AF –
99.5% capacity.
Stagecoach Reservoir –May 31, 2021 capacity level was 33,800 AF of 36,500 AF –
93% of capacity, 107% of average,
94% of last year.
Yamcolo Reservoir – May 31, 2021 capacity level was at 6,300 AF of 8,700 AF –
72% of capacity, 85% of average.
**Averages are from 1901-2000 records*



Yampa-White Basin SWSI History

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



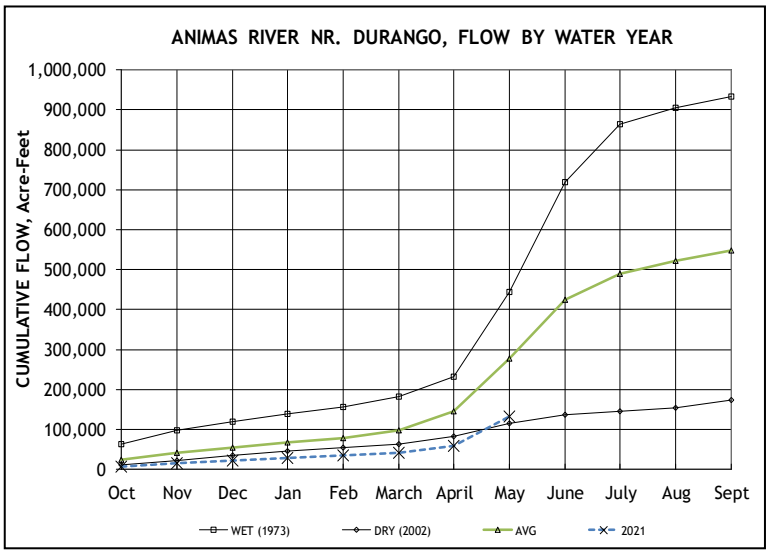
Basinwide Conditions Assessment

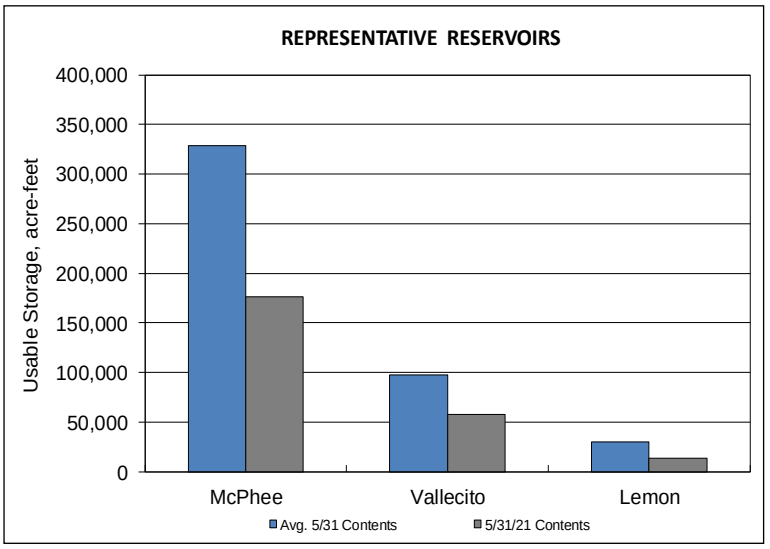
The SWSI value for the month was -3.4.

Flows at the Animas River at Durango averaged 1,221 cfs (54% of average). The flow at the Dolores River at Dolores averaged 636 cfs (38% of average). The La Plata River at Hesperus averaged 63.1 cfs (39% of average). Precipitation in Durango was 1.80 inches for the month, 147% of the 30-year average of 1.23 inches. Precipitation to date in Durango, for the water year is 7.36 inches, 59% of the 30-year average of 12.38 inches. The average high and low temperatures for the month of May in Durango were 74º and 38º. In comparison, the 30-year average high and low for the month is 72º and 39º. At the end of the month Vallecito Reservoir contained 77,450 acre-feet compared to its average content of 91,521 acre-feet (85% of average). McPhee Reservoir was up to 188,956 acre-feet compared to its average content of 333,448 (57% of average), while Lemon Reservoir was up to 18,910 acre-feet as compared to its average content of 30,174 acre-feet (63% of average).

Outlook

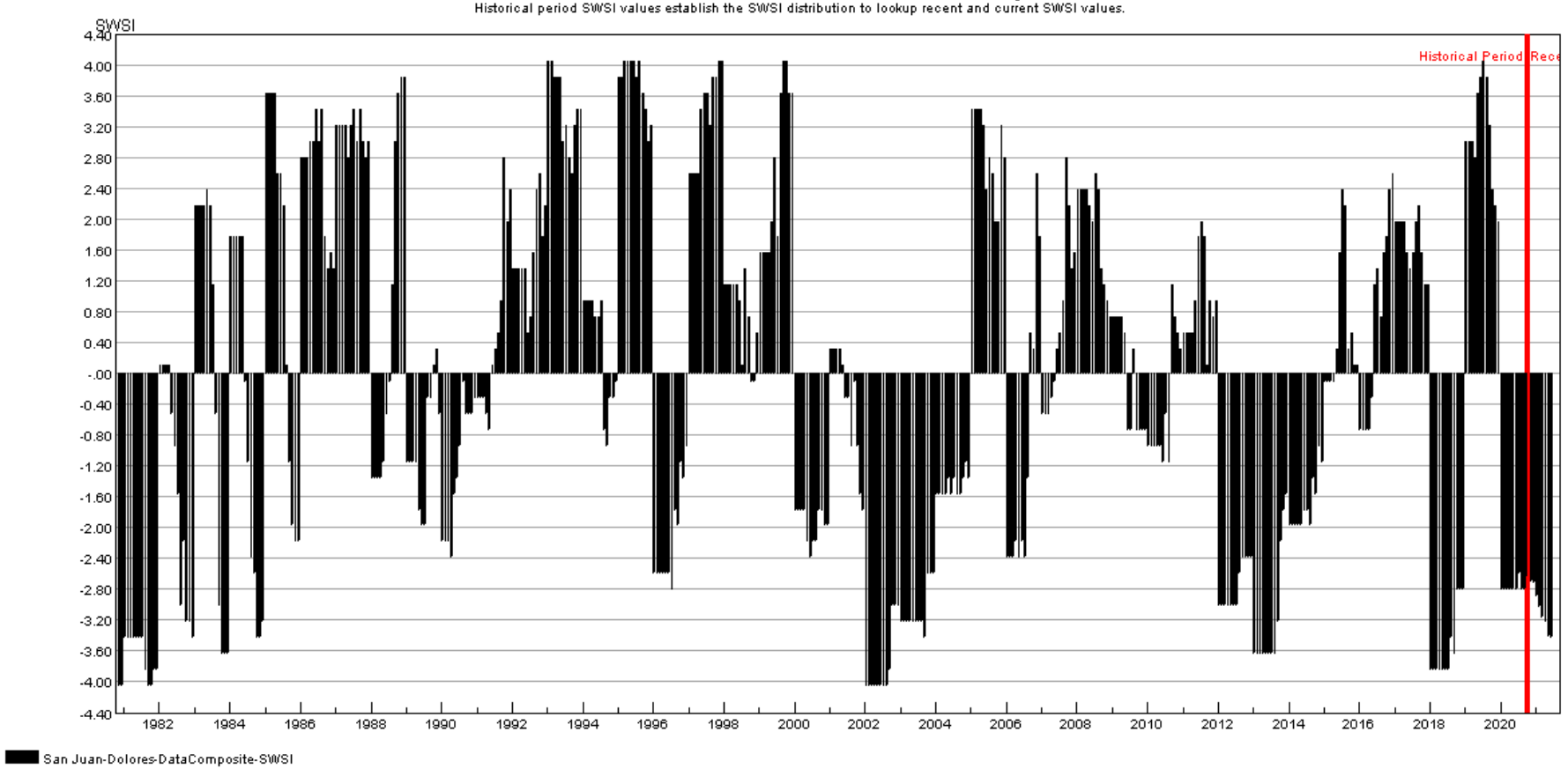
Precipitation (1.80 inches) was above average for May in Durango. There were 27 years out of 126 years of record where there was more precipitation than this year. With the lack of moisture in the area, the flows in the rivers remain well below average for the month. There were 103 out of 111 years of record where there was more flow at the Animas River at Durango gage than this year. There were 106 out of 110 years of record where the total flow past the Dolores stream gauge was more than this year. There were 97 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.





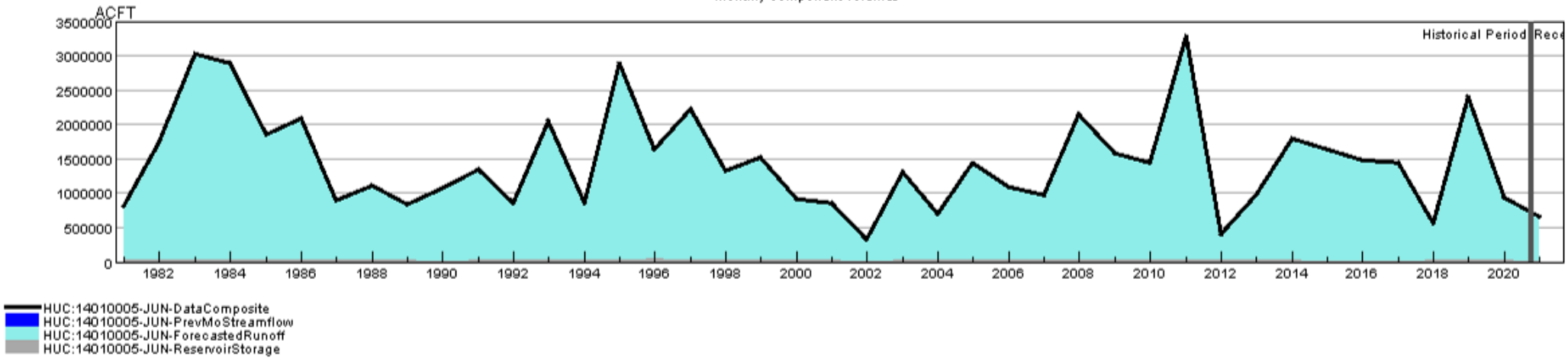
San Juan-Dolores Basin SWSI History

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



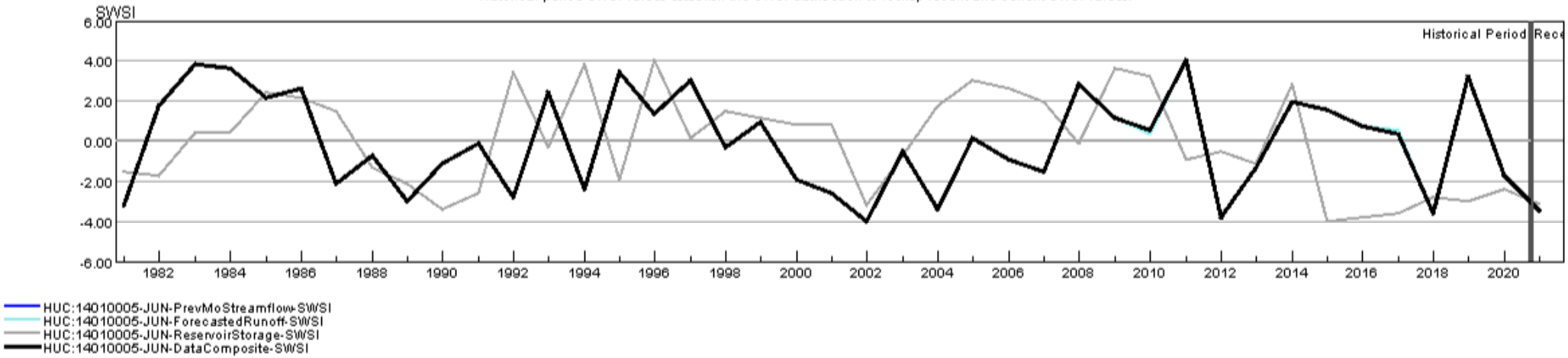
HUC 14010005 (Colorado Headwaters-Plateau) Surface Water Supply - JUN

Monthly component volumes



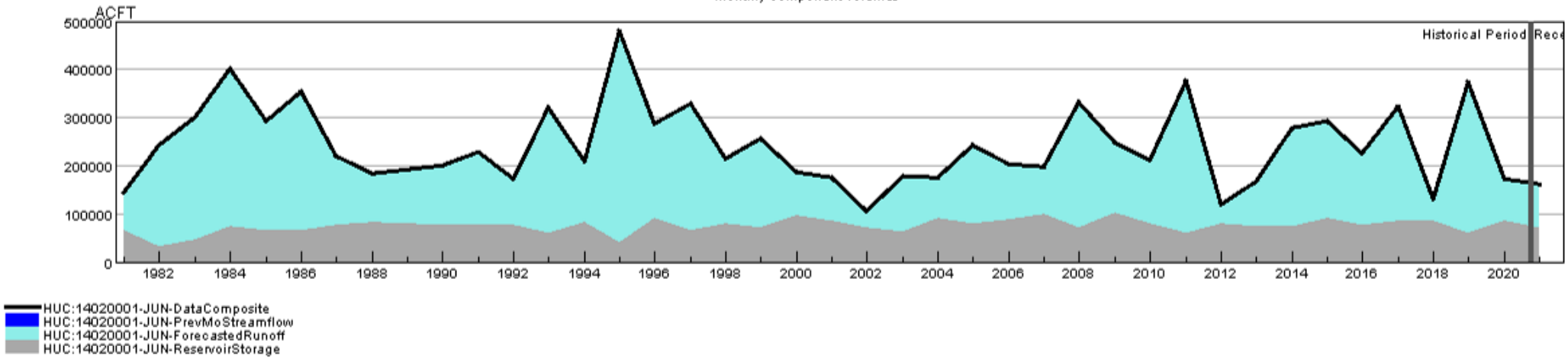
HUC 14010005 (Colorado Headwaters-Plateau) SWSI Values - JUN

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



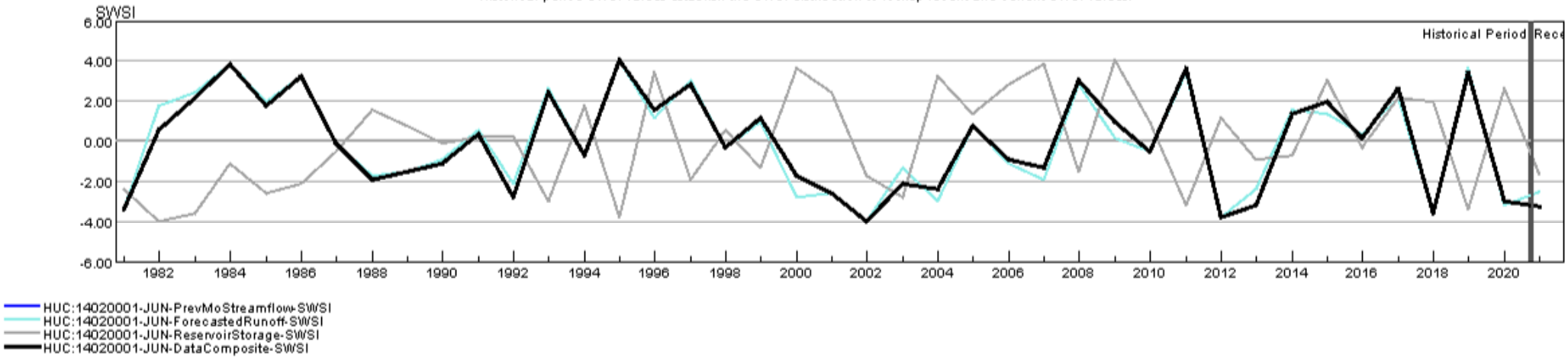
HUC 14020001 (East-Taylor) Surface Water Supply - JUN

Monthly component volumes



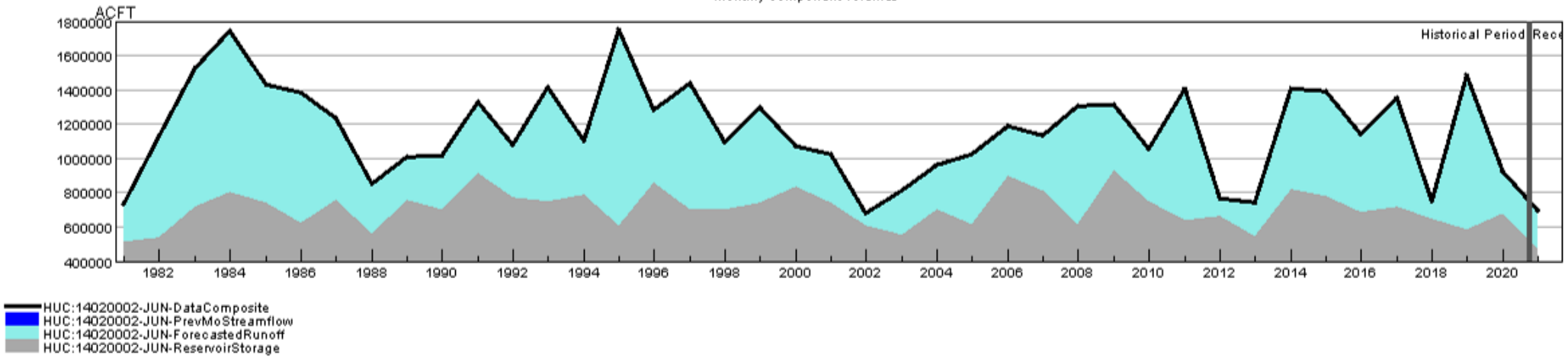
HUC 14020001 (East-Taylor) SWSI Values - JUN

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



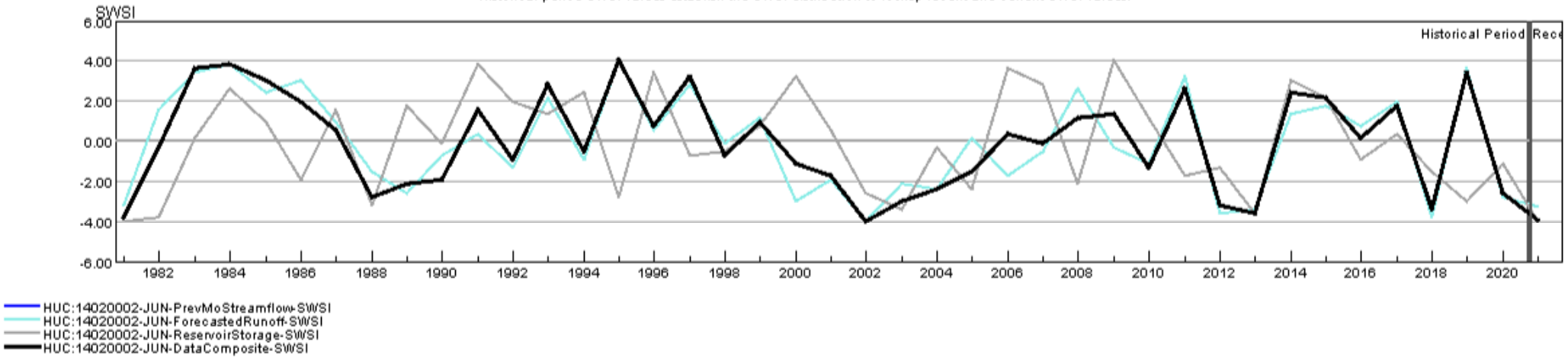
HUC 14020002 (Upper Gunnison) Surface Water Supply - JUN

Monthly component volumes



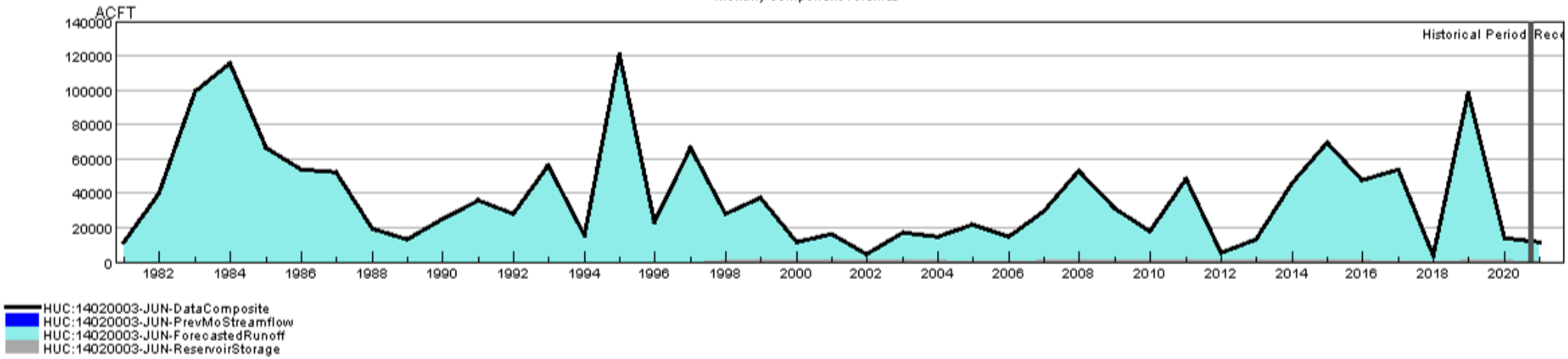
HUC 14020002 (Upper Gunnison) SWSI Values - JUN

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



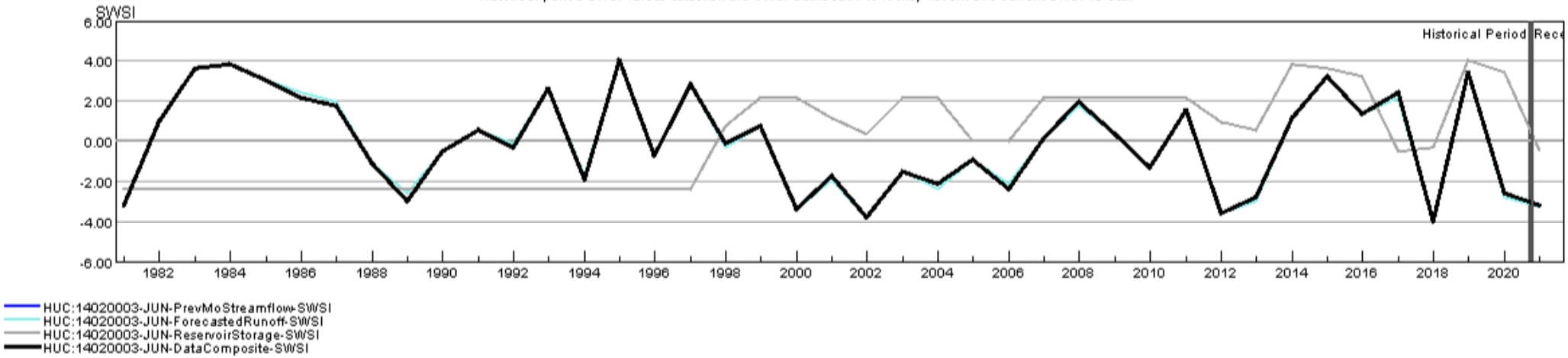
HUC 14020003 (Tomichi) Surface Water Supply - JUN

Monthly component volumes



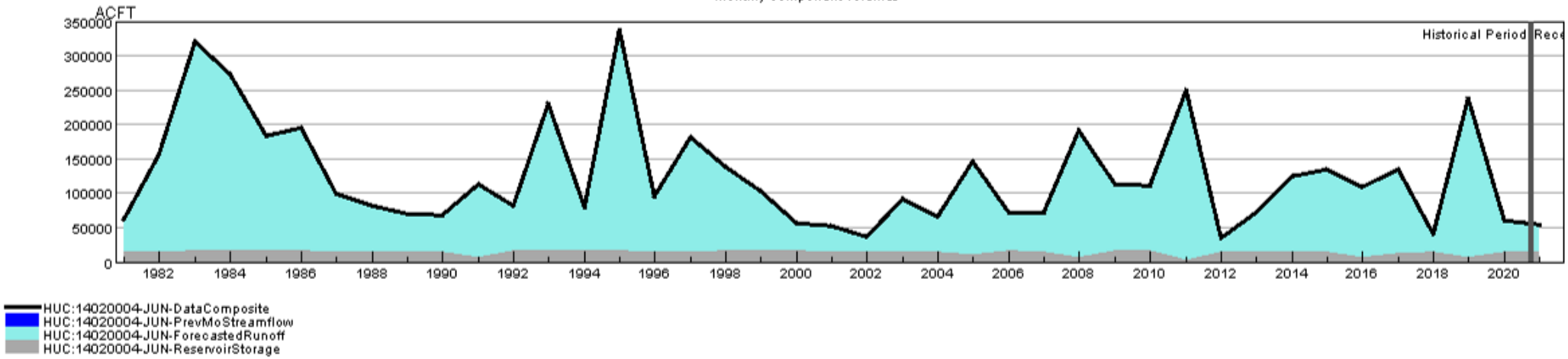
HUC 14020003 (Tomichi) SWSI Values - JUN

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



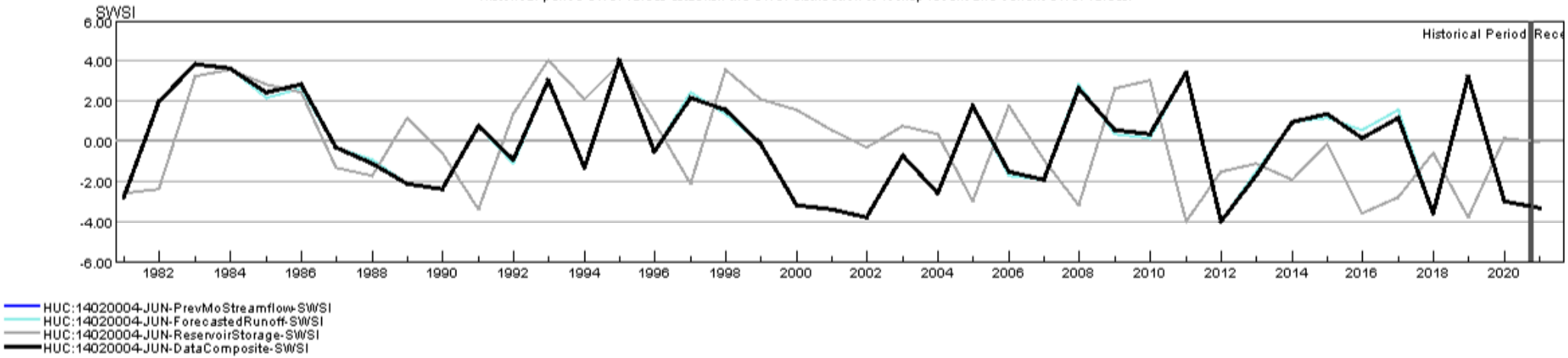
HUC 14020004 (North Fork Gunnison) Surface Water Supply - JUN

Monthly component volumes



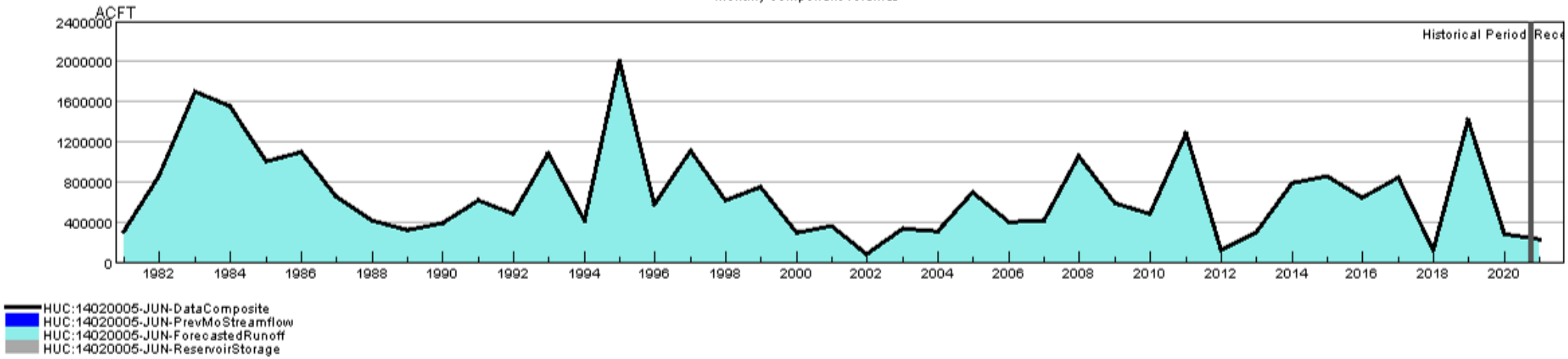
HUC 14020004 (North Fork Gunnison) SWSI Values - JUN

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



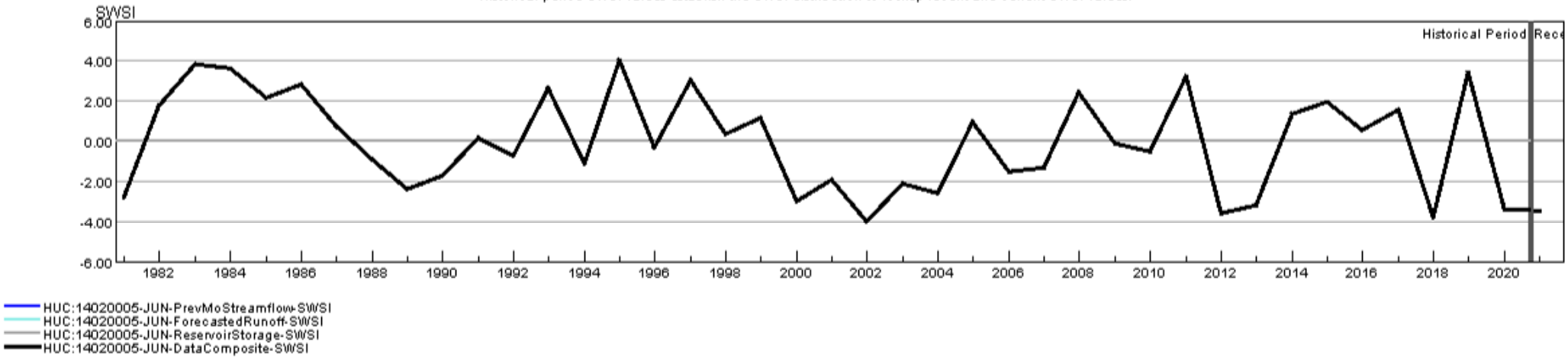
HUC 14020005 (Lower Gunnison) Surface Water Supply - JUN

Monthly component volumes



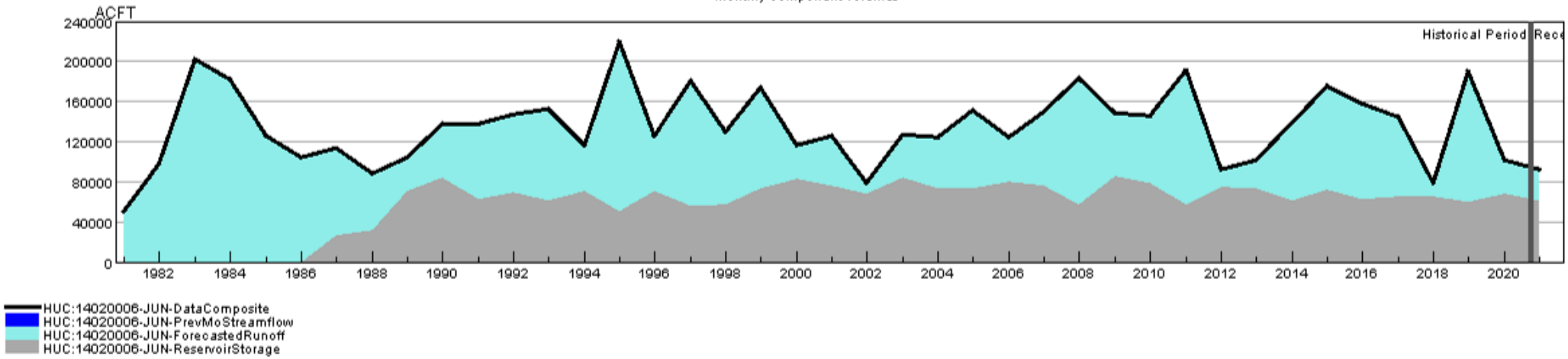
HUC 14020005 (Lower Gunnison) SWSI Values - JUN

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



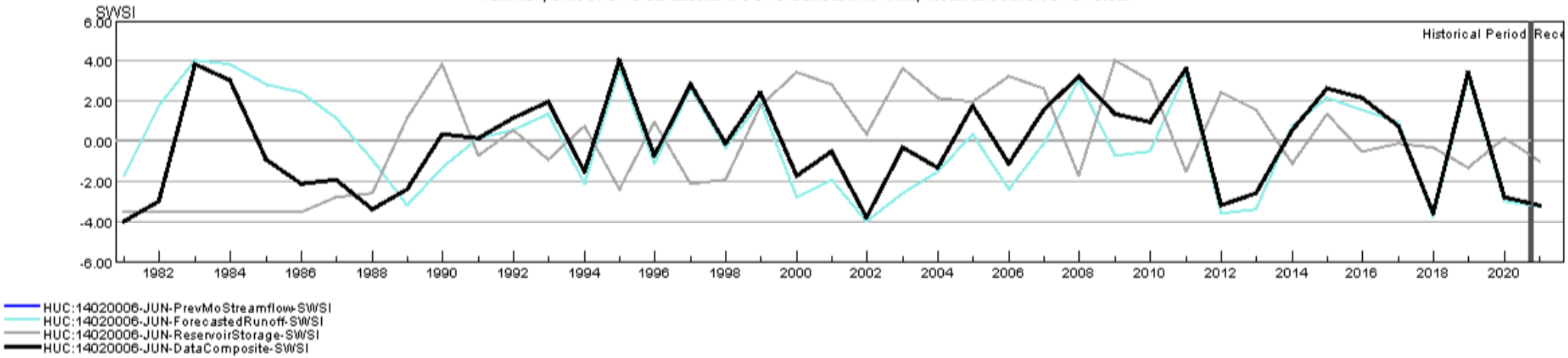
HUC 14020006 (Uncompahgre) Surface Water Supply - JUN

Monthly component volumes



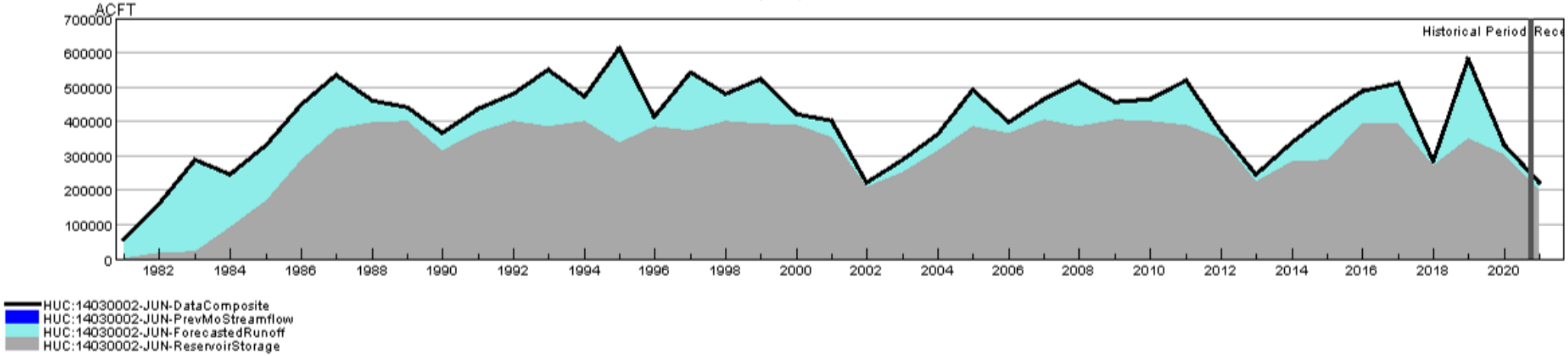
HUC 14020006 (Uncompahgre) SWSI Values - JUN

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



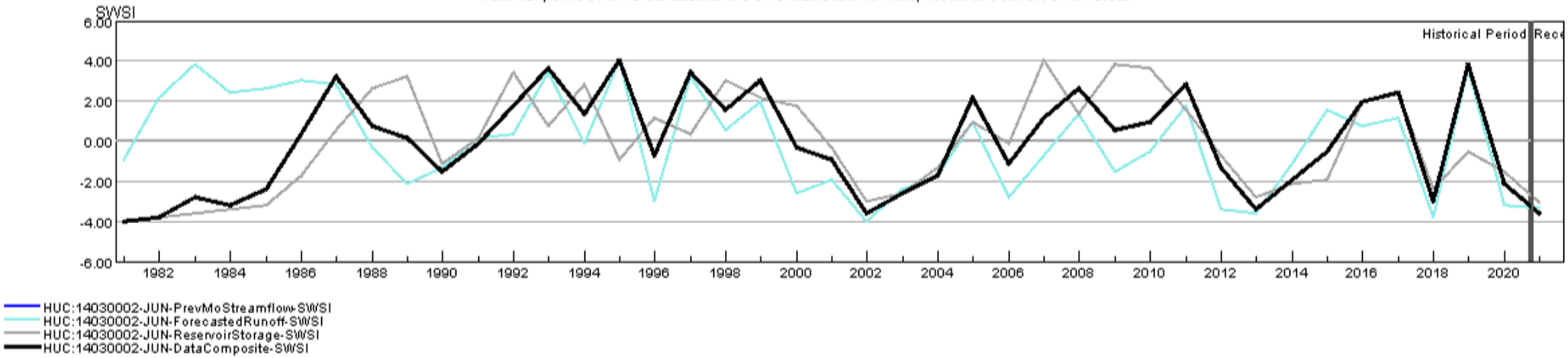
HUC 14030002 (Upper Dolores) Surface Water Supply - JUN

Monthly component volumes



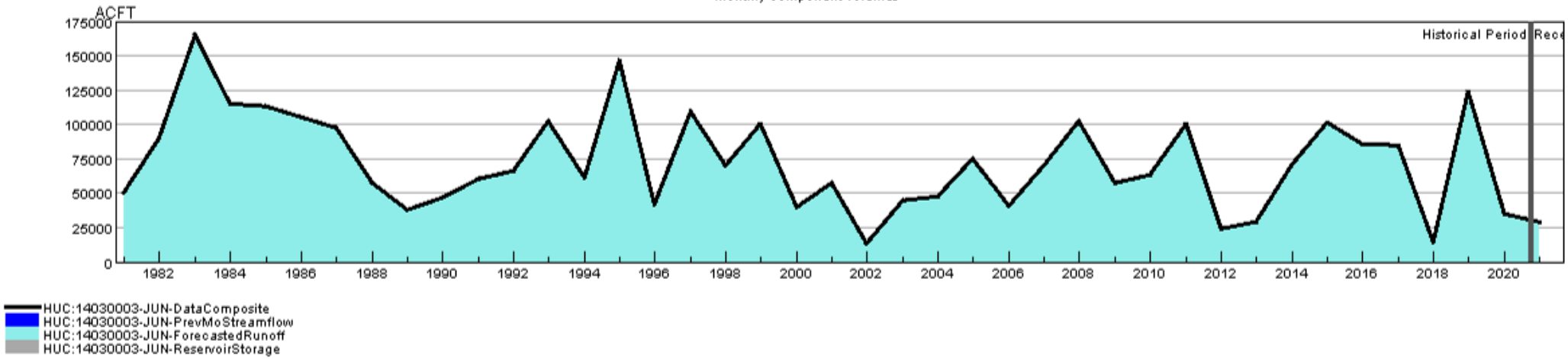
HUC 14030002 (Upper Dolores) SWSI Values - JUN

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



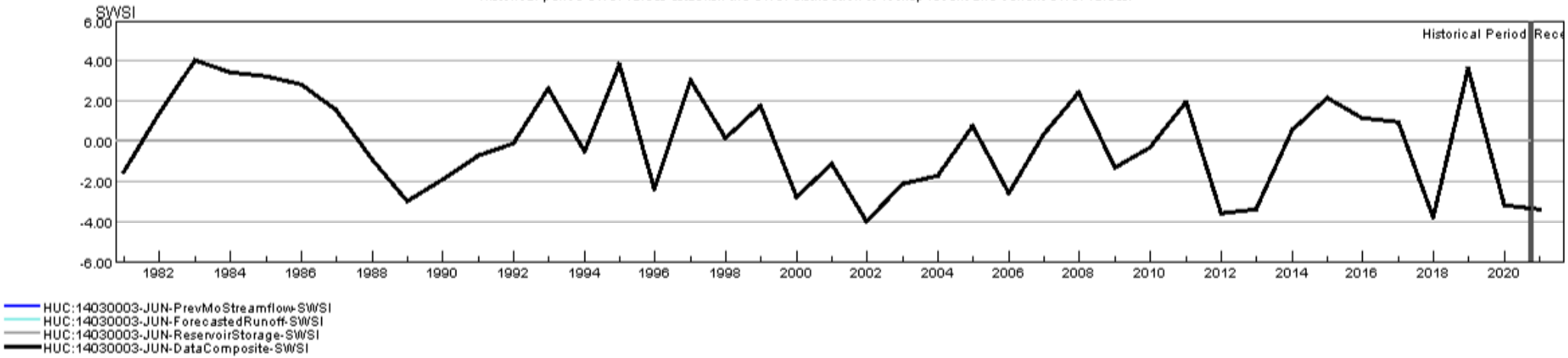
HUC 14030003 (San Miguel) Surface Water Supply - JUN

Monthly component volumes



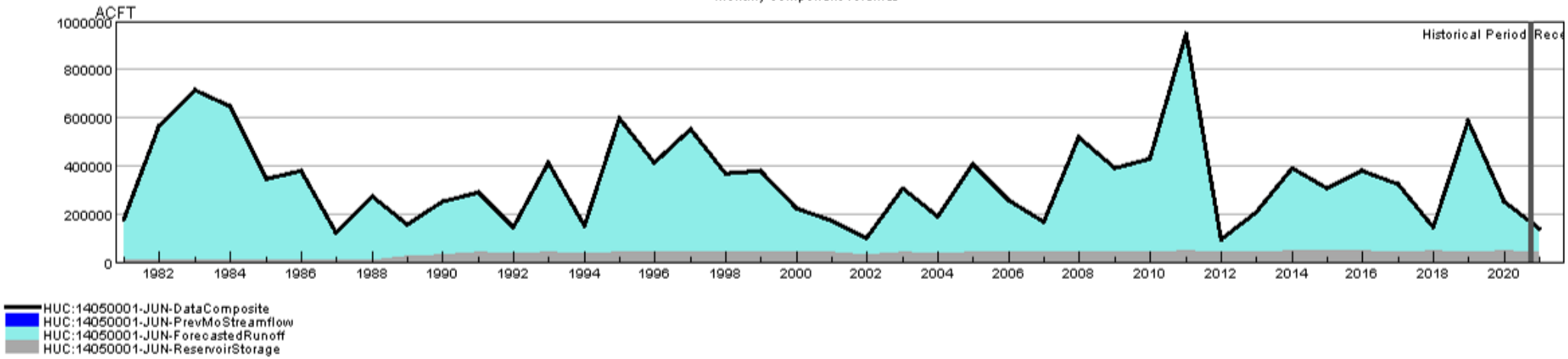
HUC 14030003 (San Miguel) SWSI Values - JUN

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



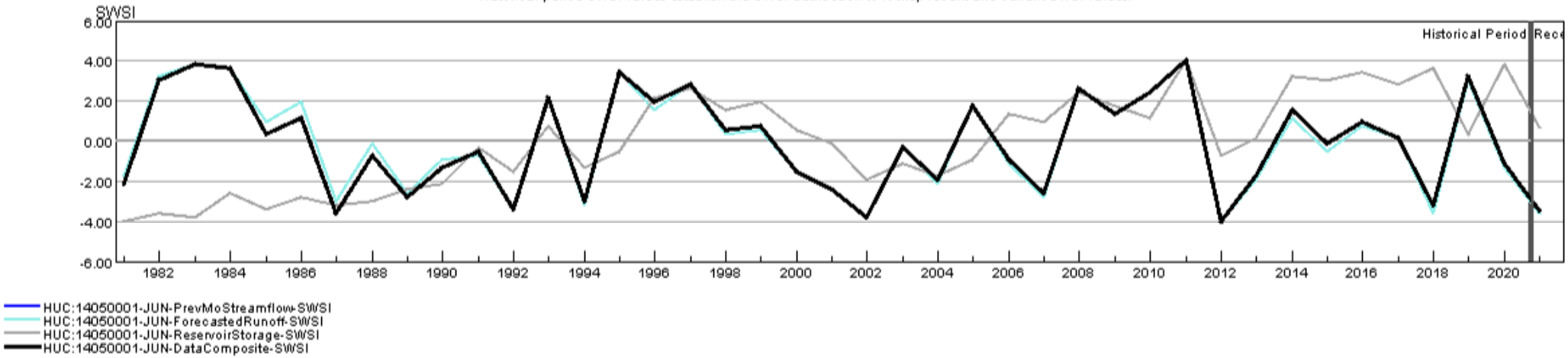
HUC 14050001 (Upper Yampa) Surface Water Supply - JUN

Monthly component volumes



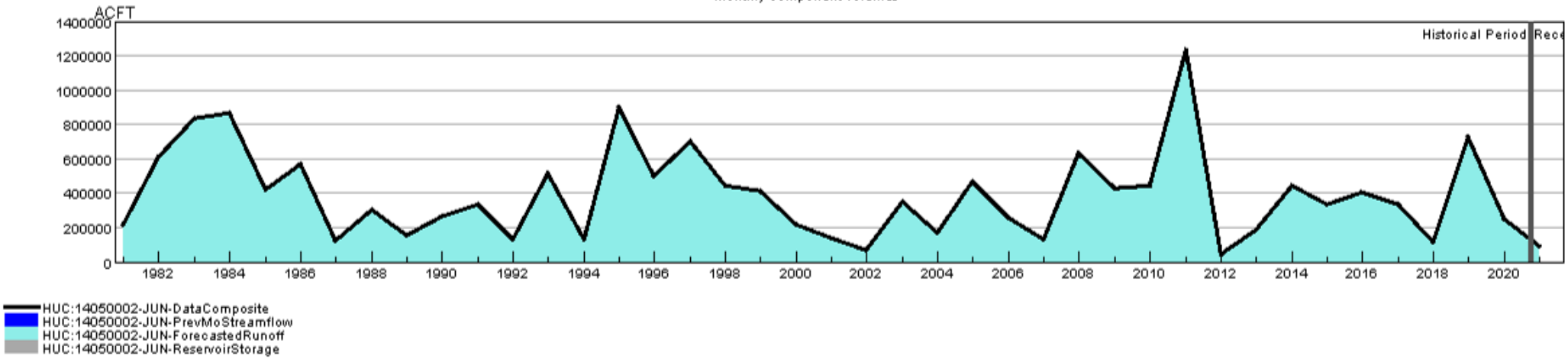
HUC 14050001 (Upper Yampa) SWSI Values - JUN

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



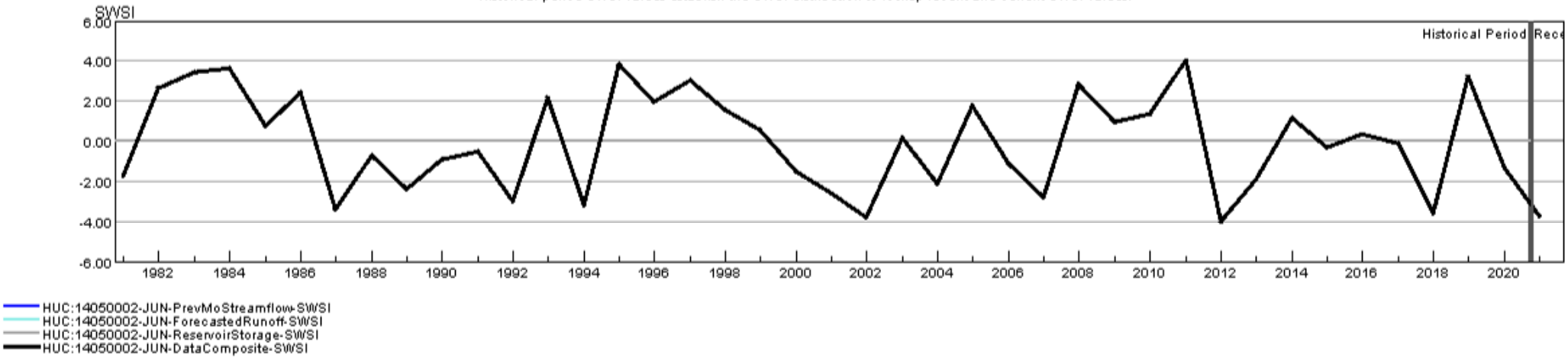
HUC 14050002 (Lower Yampa) Surface Water Supply - JUN

Monthly component volumes



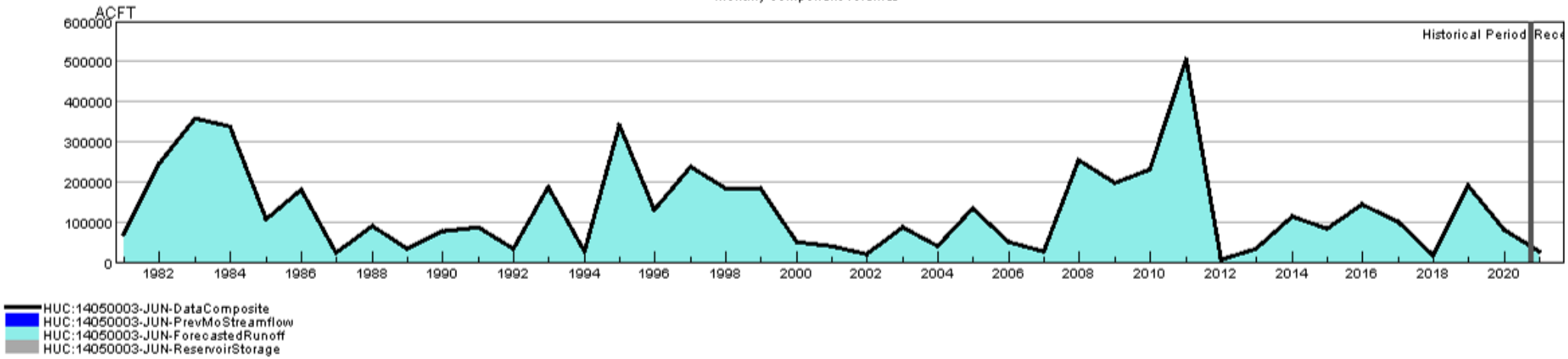
HUC 14050002 (Lower Yampa) SWSI Values - JUN

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



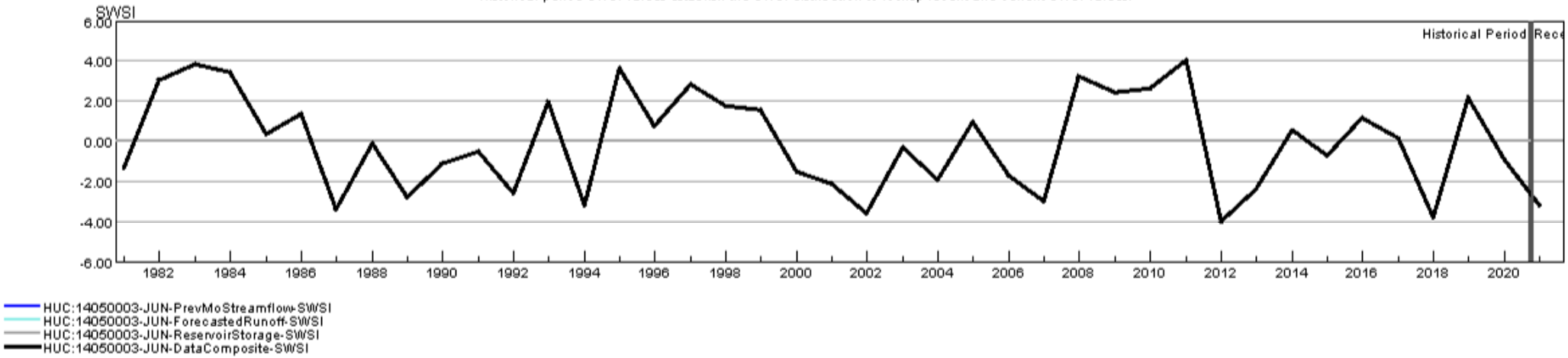
HUC 14050003 (Little Snake) Surface Water Supply - JUN

Monthly component volumes



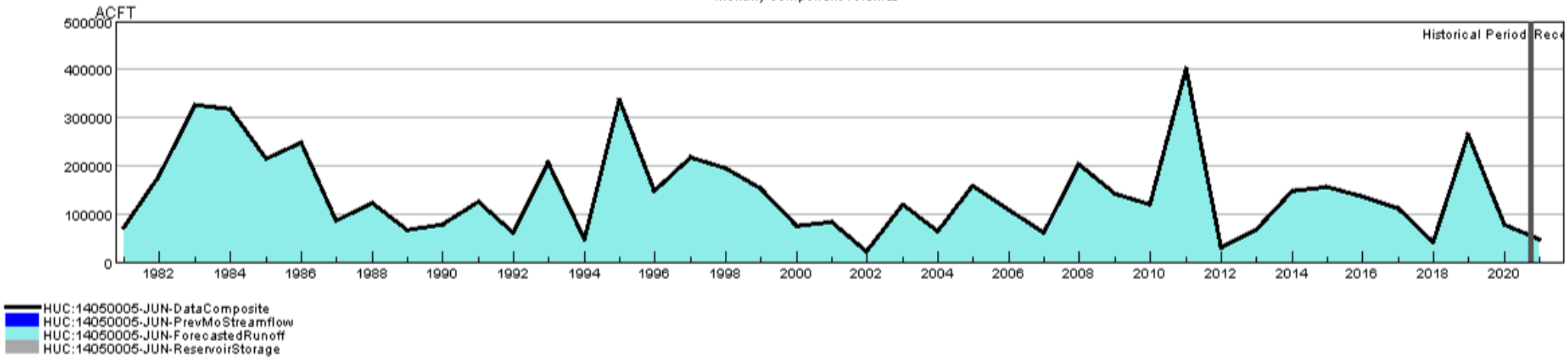
HUC 14050003 (Little Snake) SWSI Values - JUN

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



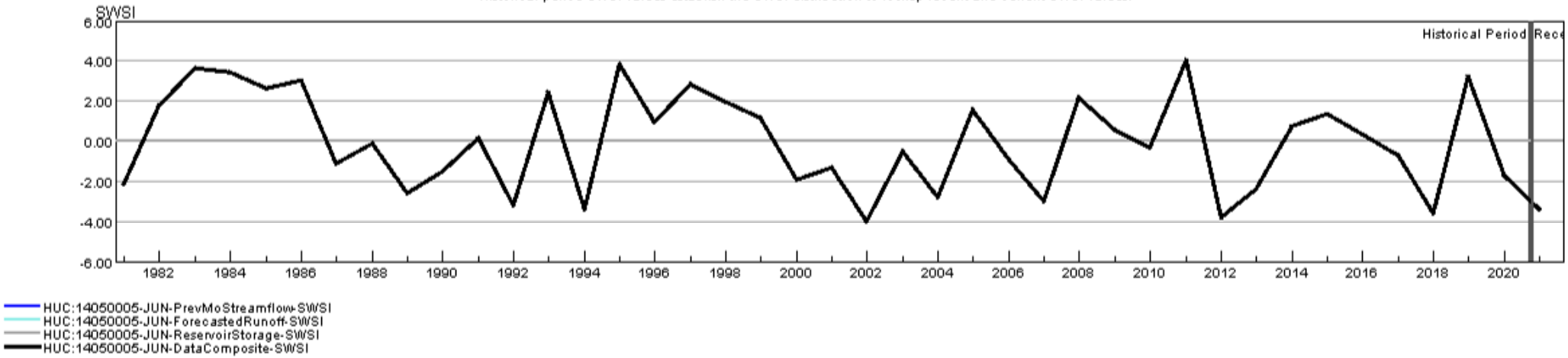
HUC 14050005 (Upper White) Surface Water Supply - JUN

Monthly component volumes



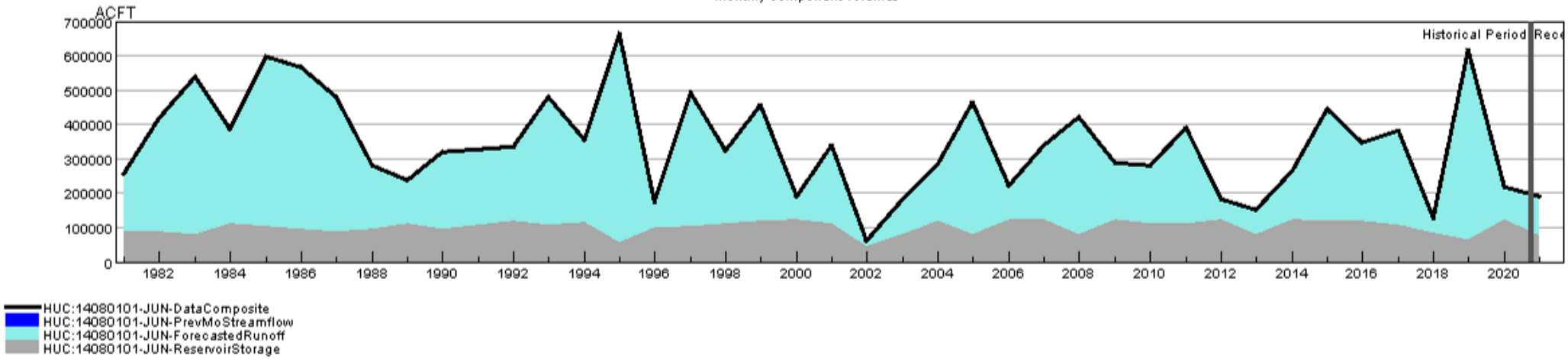
HUC 14050005 (Upper White) SWSI Values - JUN

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



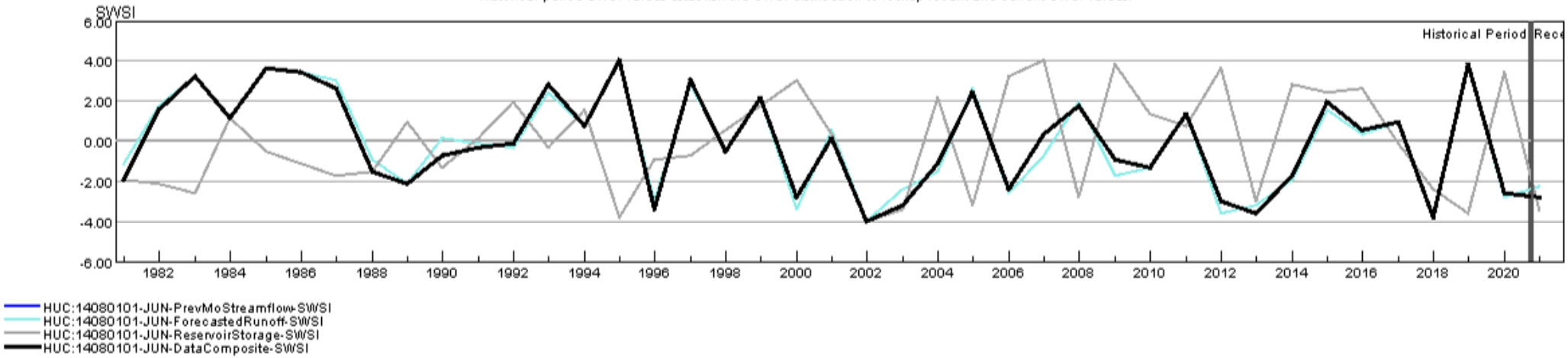
HUC 14080101 (Upper San Juan) Surface Water Supply - JUN

Monthly component volumes



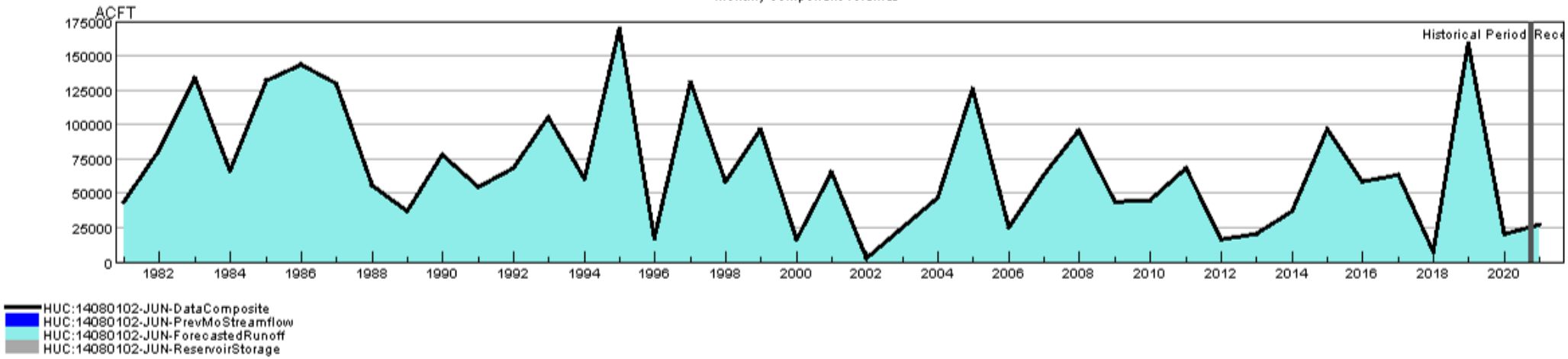
HUC 14080101 (Upper San Juan) SWSI Values - JUN

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



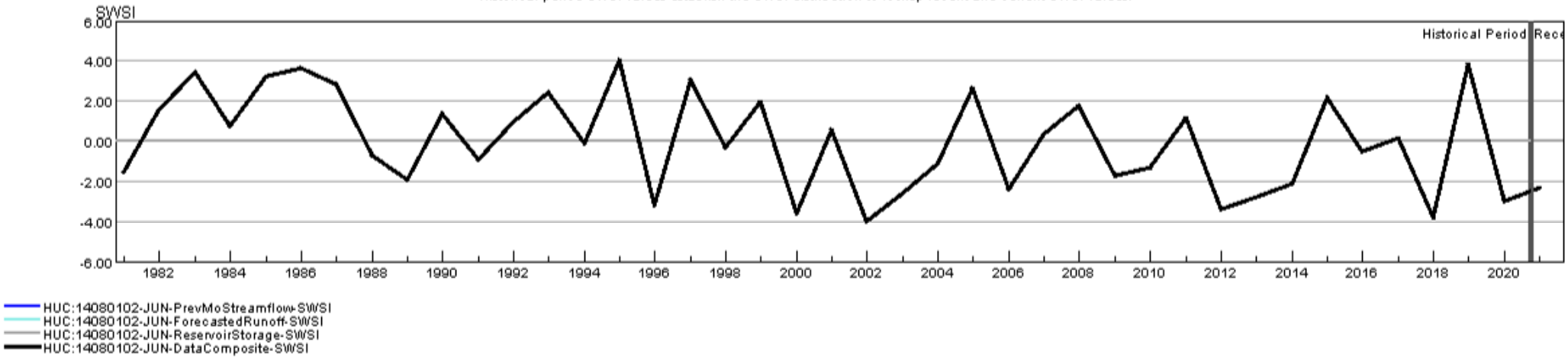
HUC 14080102 (Piedra) Surface Water Supply - JUN

Monthly component volumes



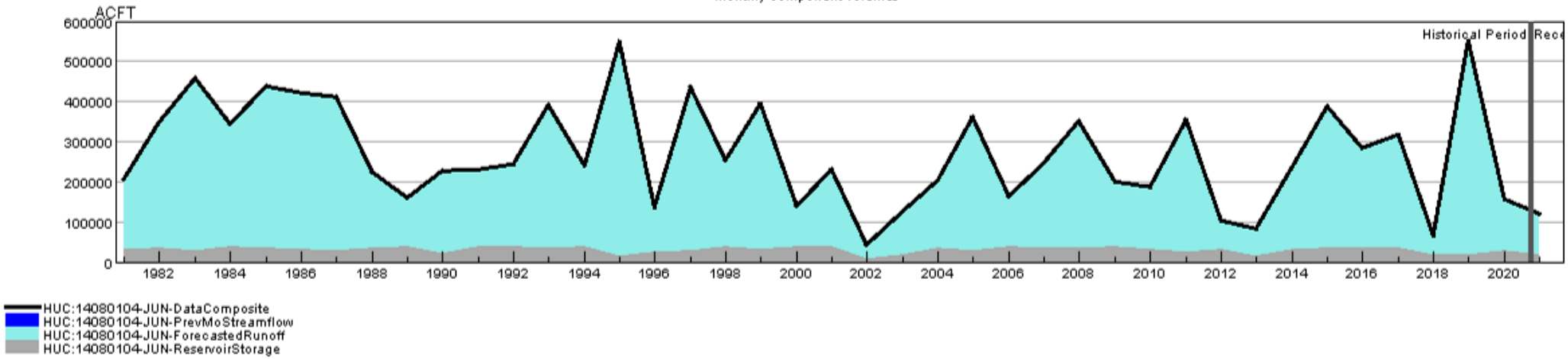
HUC 14080102 (Piedra) SWSI Values - JUN

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



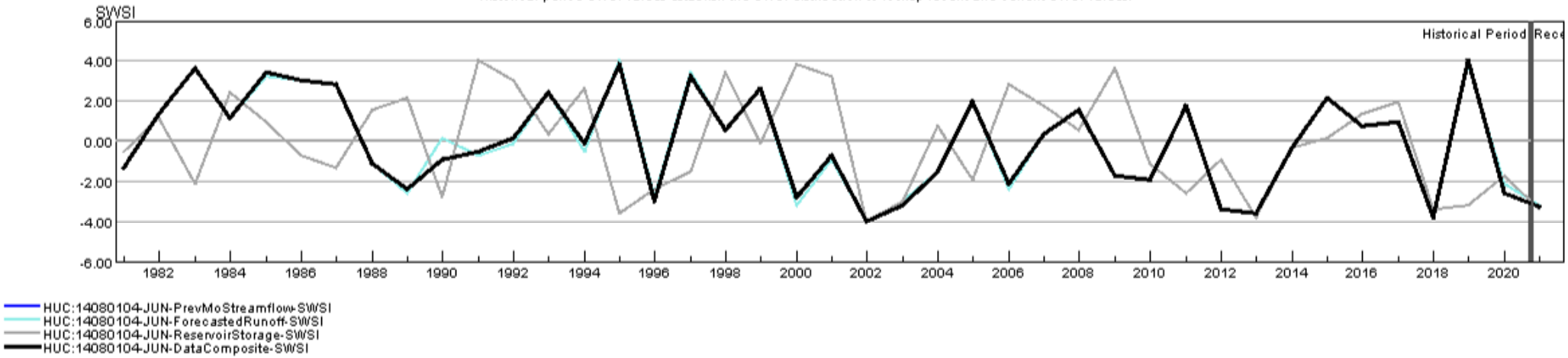
HUC 14080104 (Animas) Surface Water Supply - JUN

Monthly component volumes



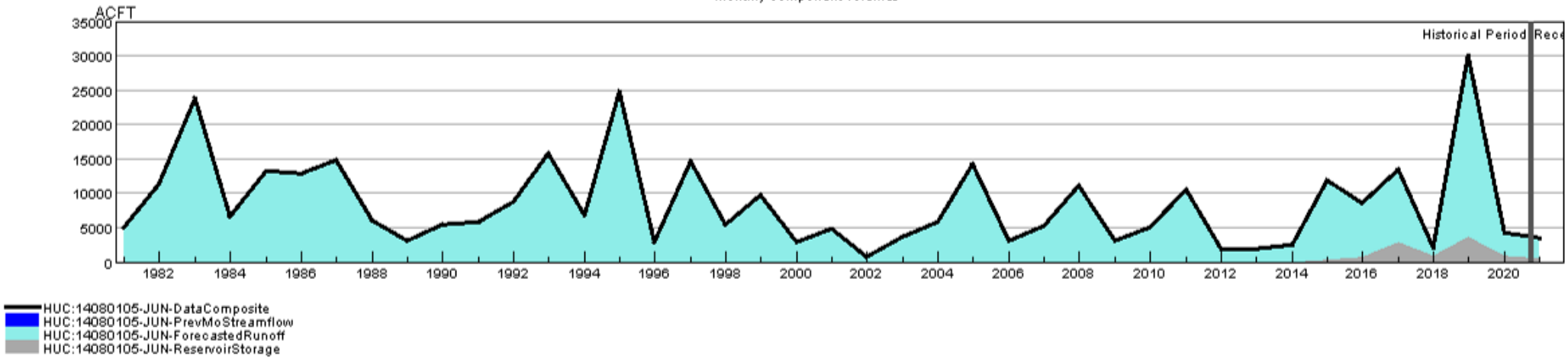
HUC 14080104 (Animas) SWSI Values - JUN

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



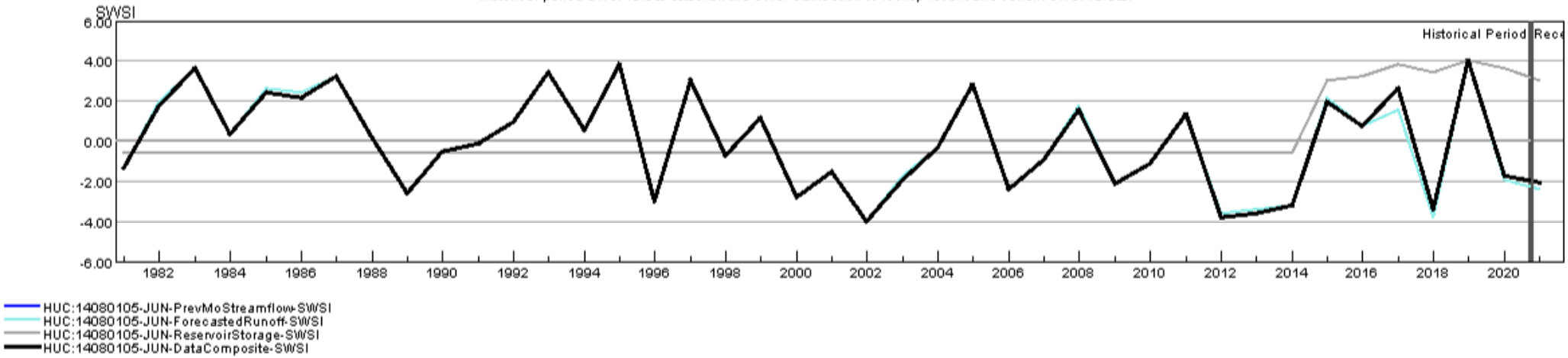
HUC 14080105 (Middle San Juan) Surface Water Supply - JUN

Monthly component volumes



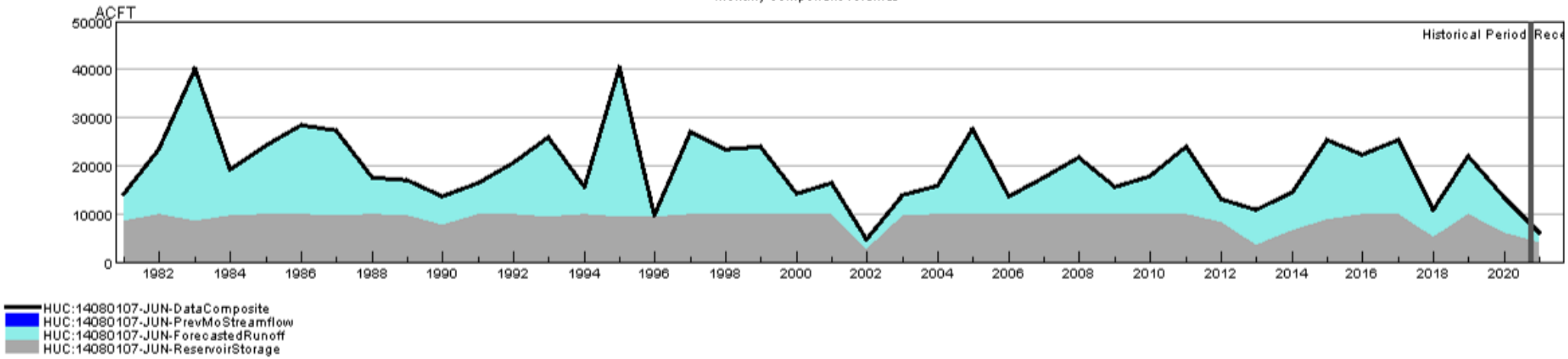
HUC 14080105 (Middle San Juan) SWSI Values - JUN

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



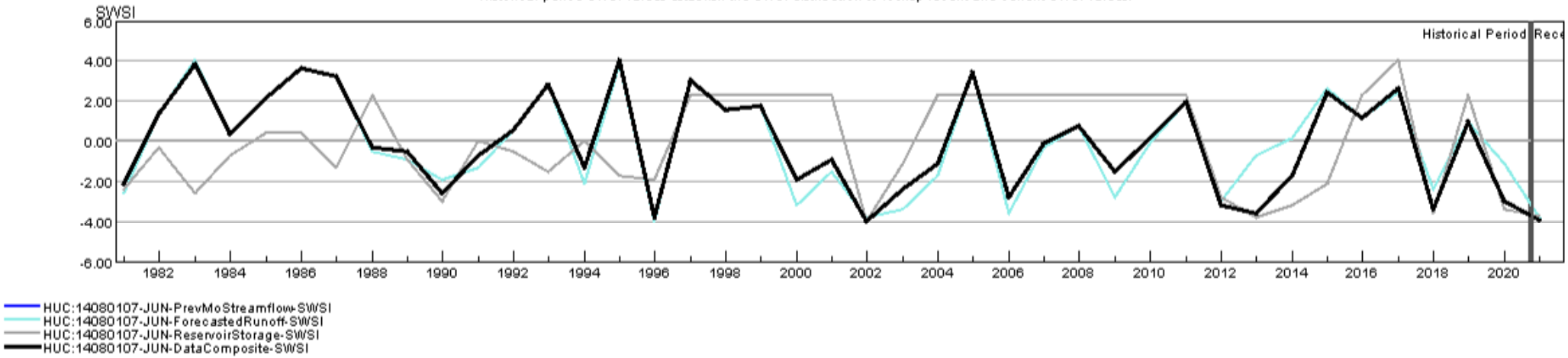
HUC 14080107 (Mancos) Surface Water Supply - JUN

Monthly component volumes



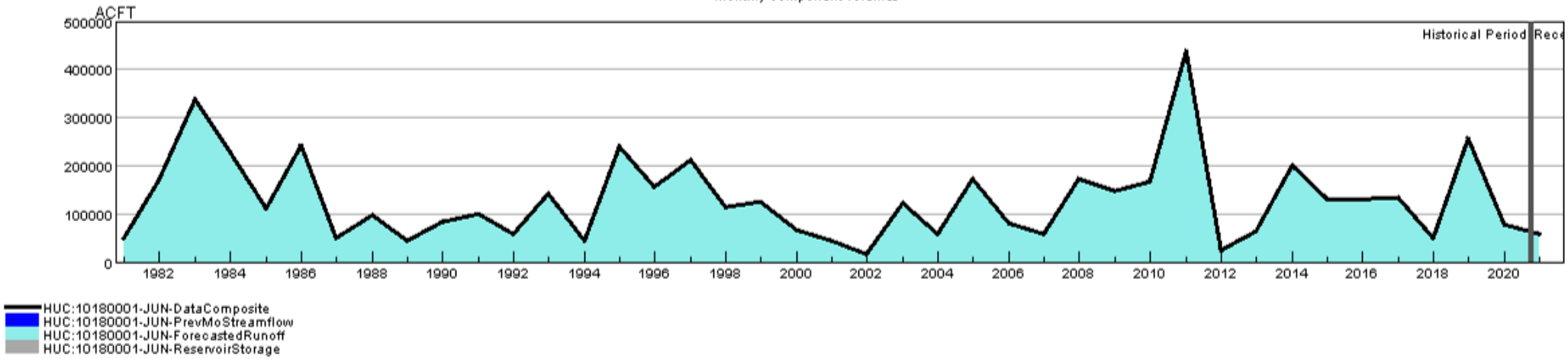
HUC 14080107 (Mancos) SWSI Values - JUN

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



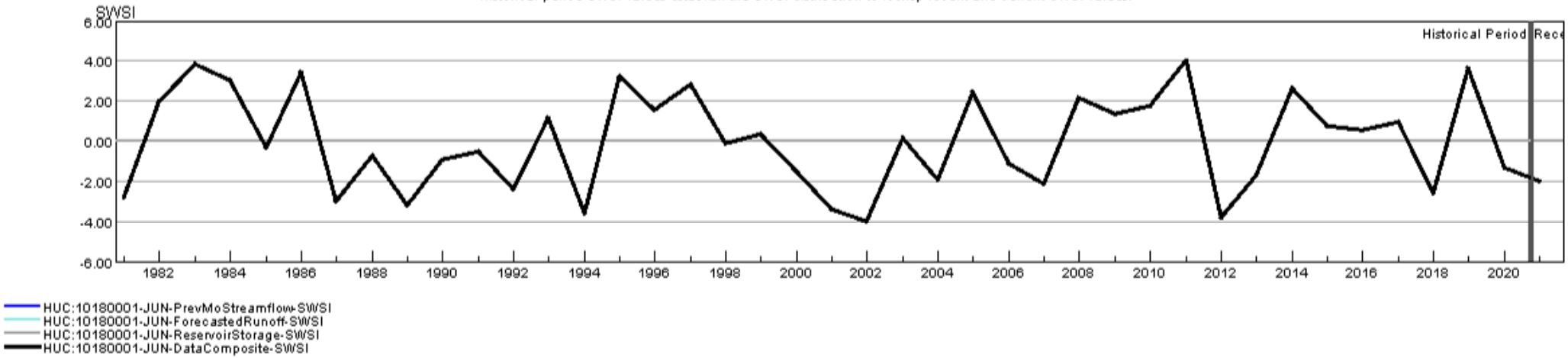
HUC 10180001 (North Platte Headwaters) Surface Water Supply - JUN

Monthly component volumes



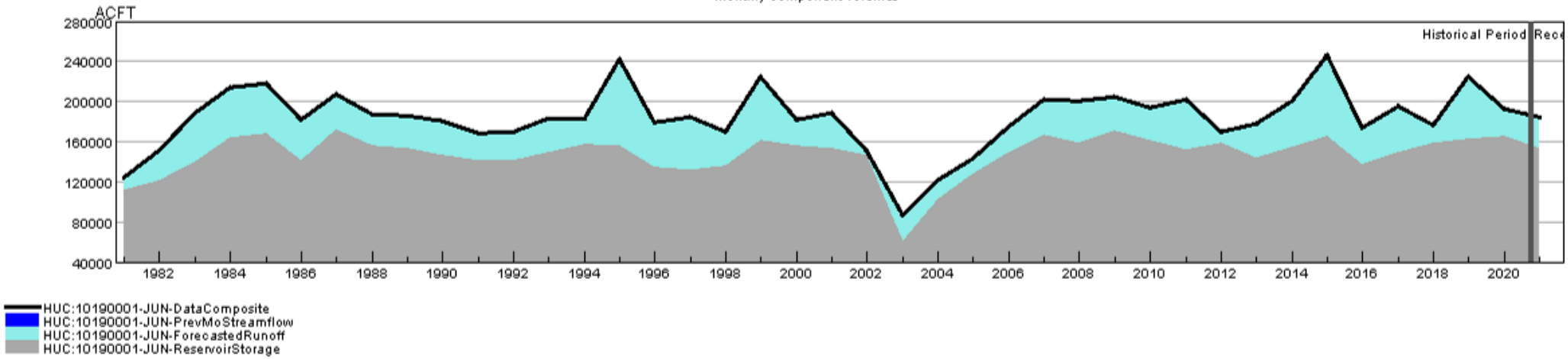
HUC 10180001 (North Platte Headwaters) SWSI Values - JUN

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



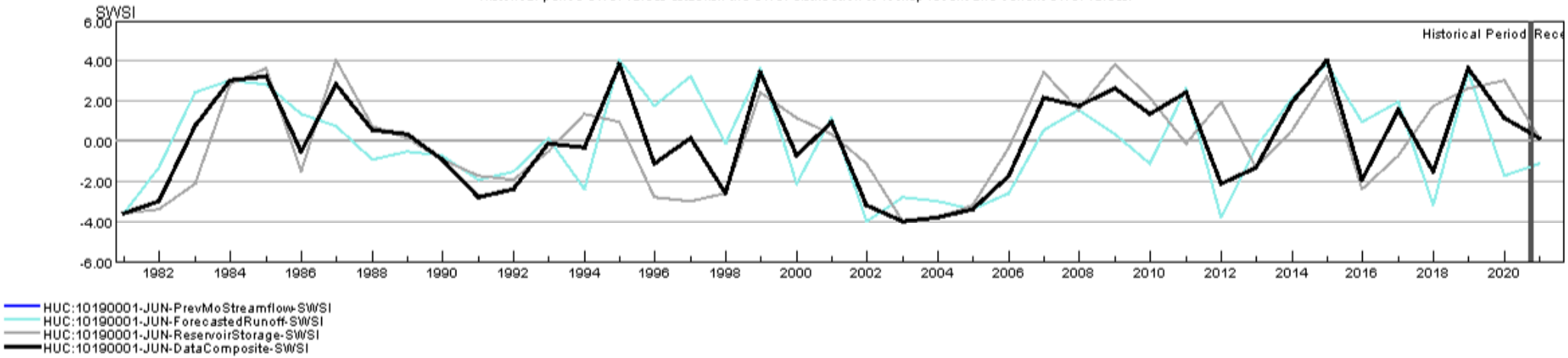
HUC 10190001 (South Platte Headwater) Surface Water Supply - JUN

Monthly component volumes



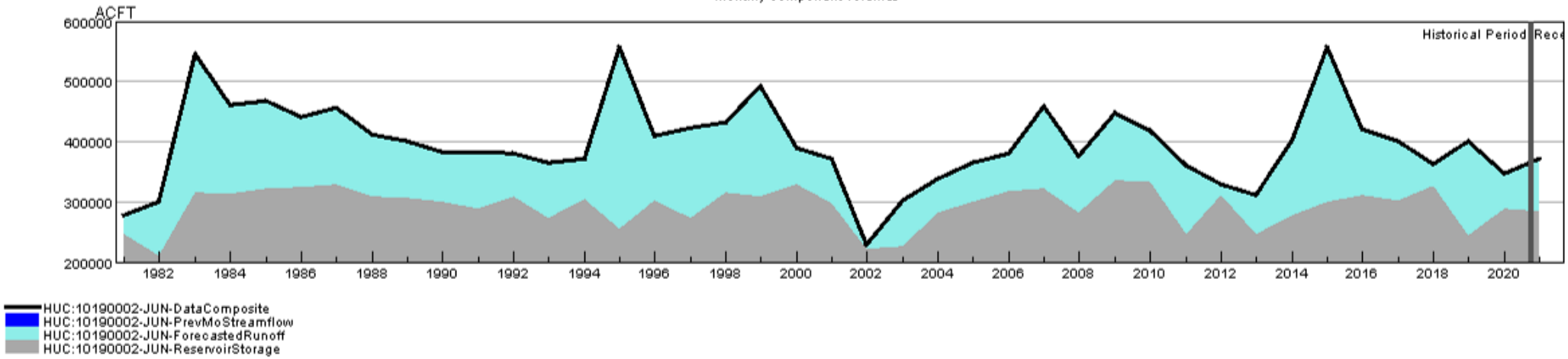
HUC 10190001 (South Platte Headwater) SWSI Values - JUN

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



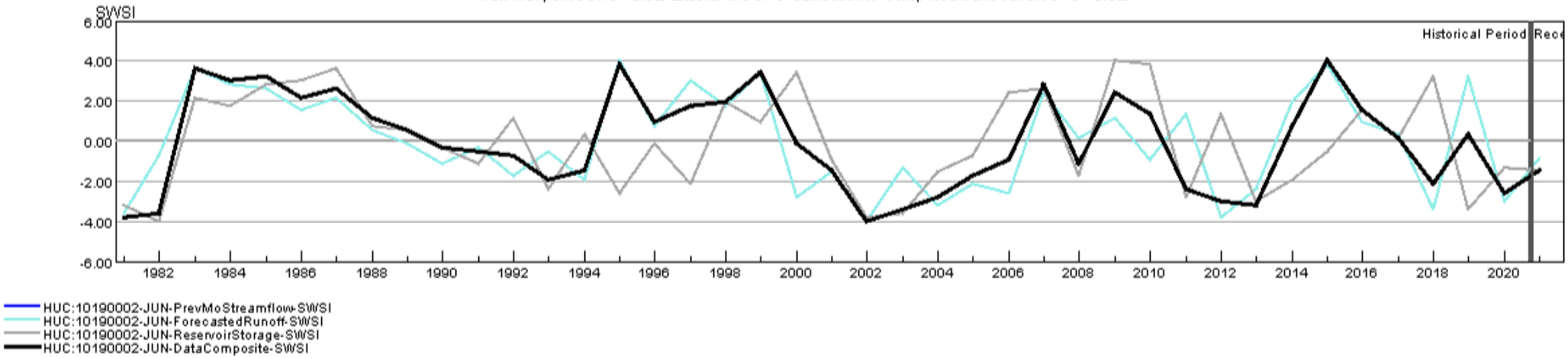
HUC 10190002 (Upper South Platte) Surface Water Supply - JUN

Monthly component volumes



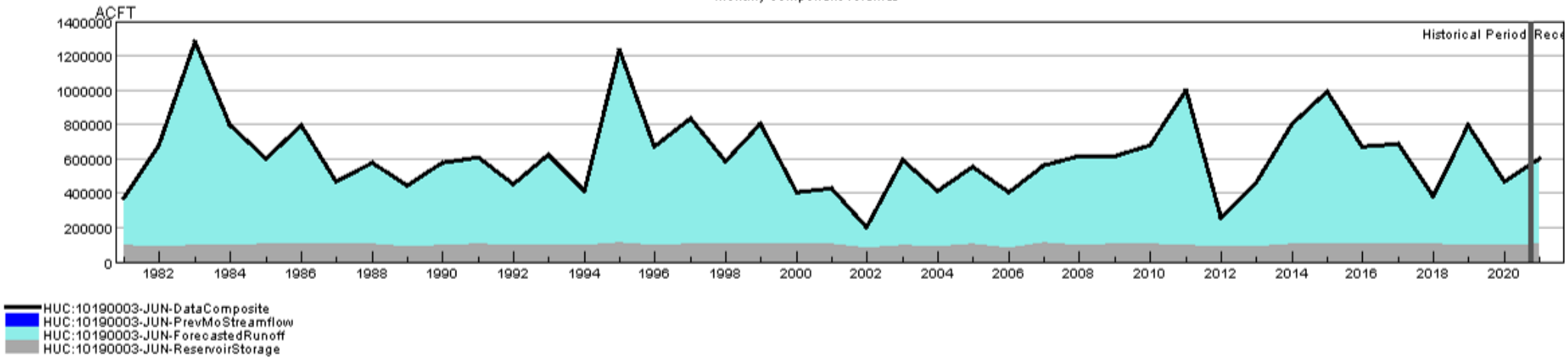
HUC 10190002 (Upper South Platte) SWSI Values - JUN

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



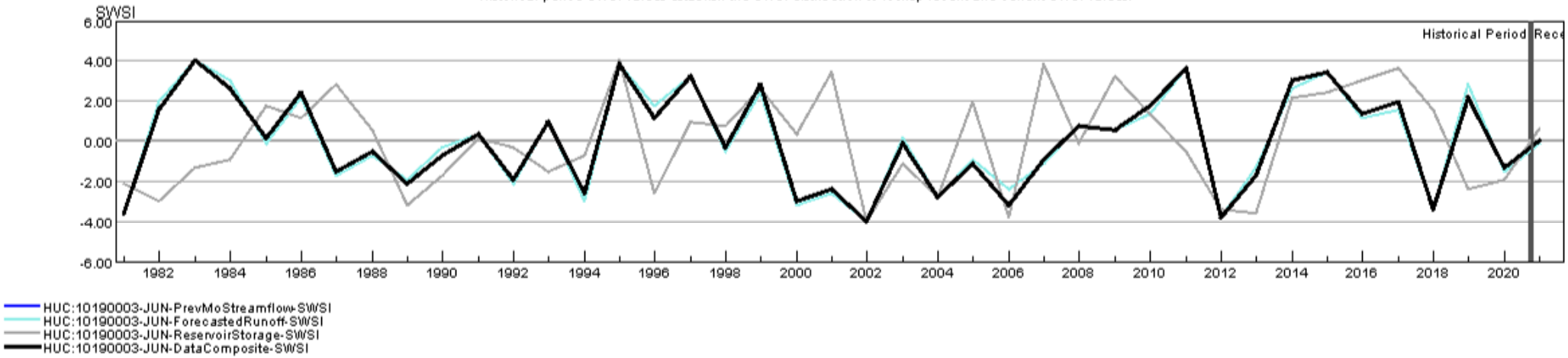
HUC 10190003 (Middle South Platte-Cherry Creek) Surface Water Supply - JUN

Monthly component volumes



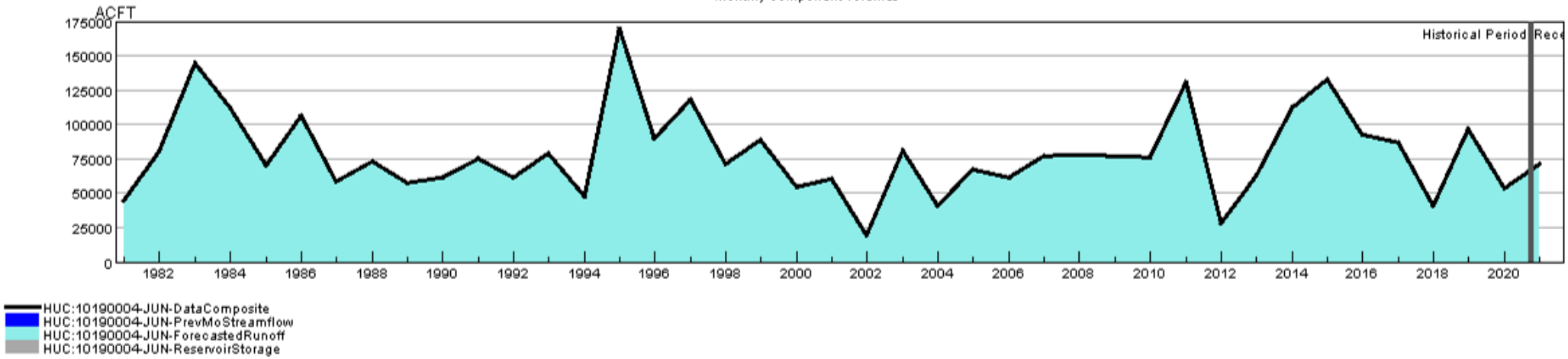
HUC 10190003 (Middle South Platte-Cherry Creek) SWSI Values - JUN

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



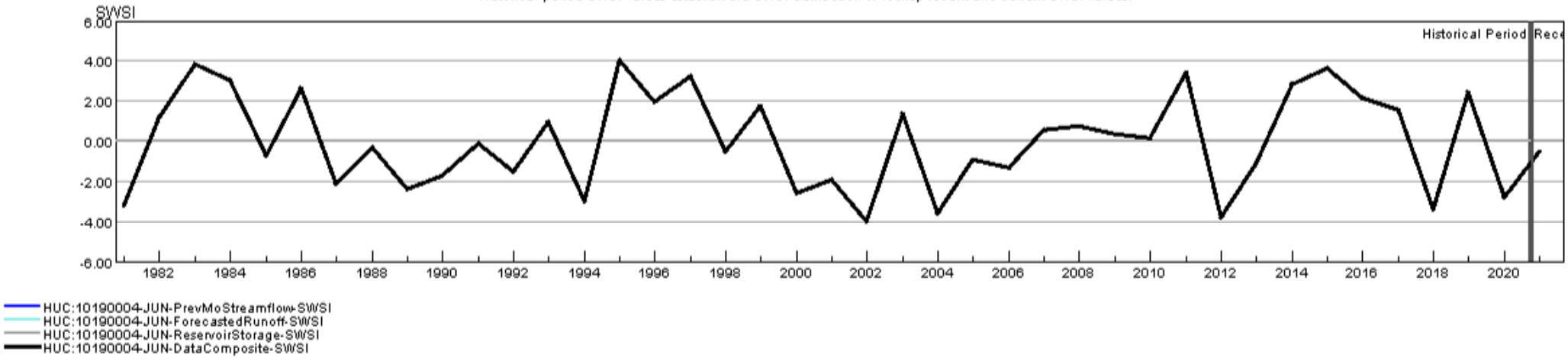
HUC 10190004 (Clear) Surface Water Supply - JUN

Monthly component volumes



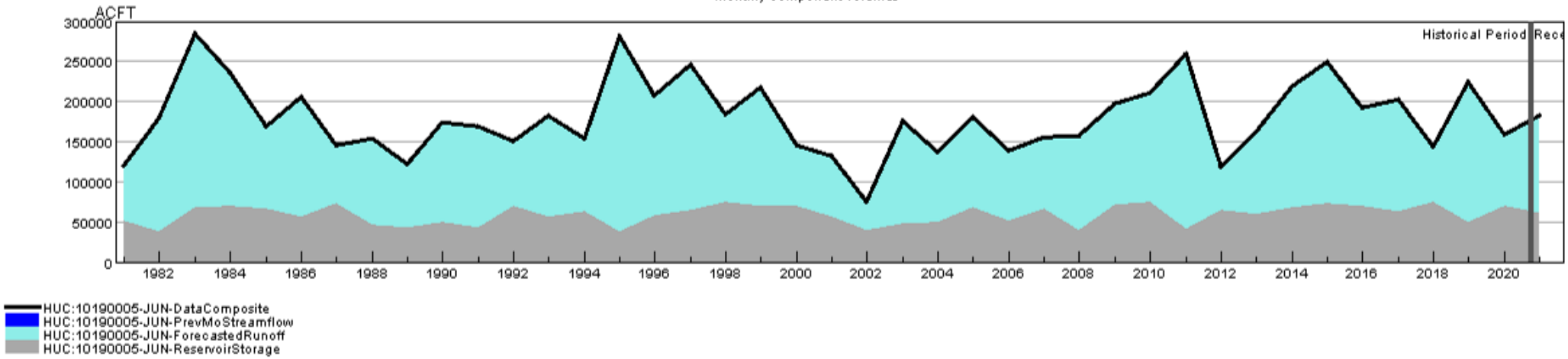
HUC 10190004 (Clear) SWSI Values - JUN

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



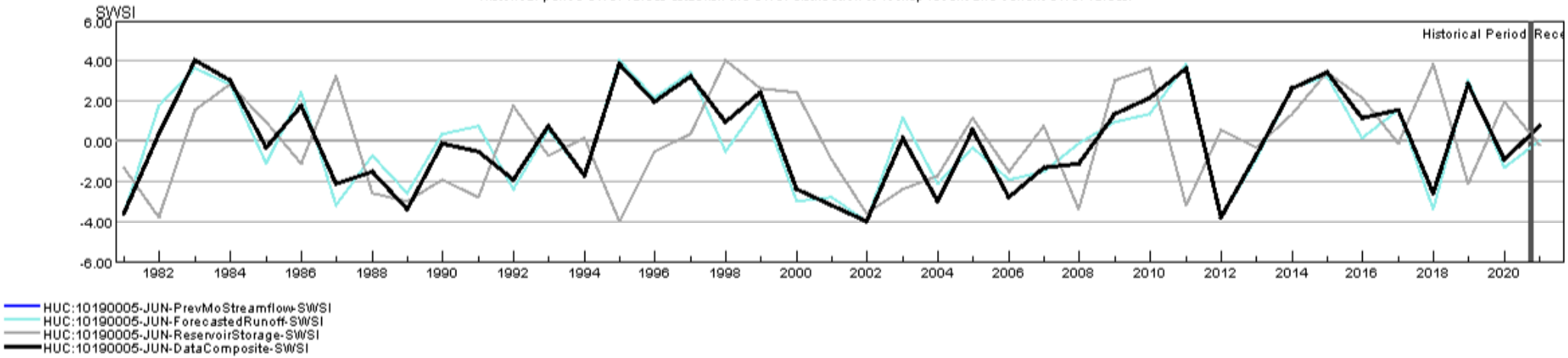
HUC 10190005 (St. Vrain) Surface Water Supply - JUN

Monthly component volumes



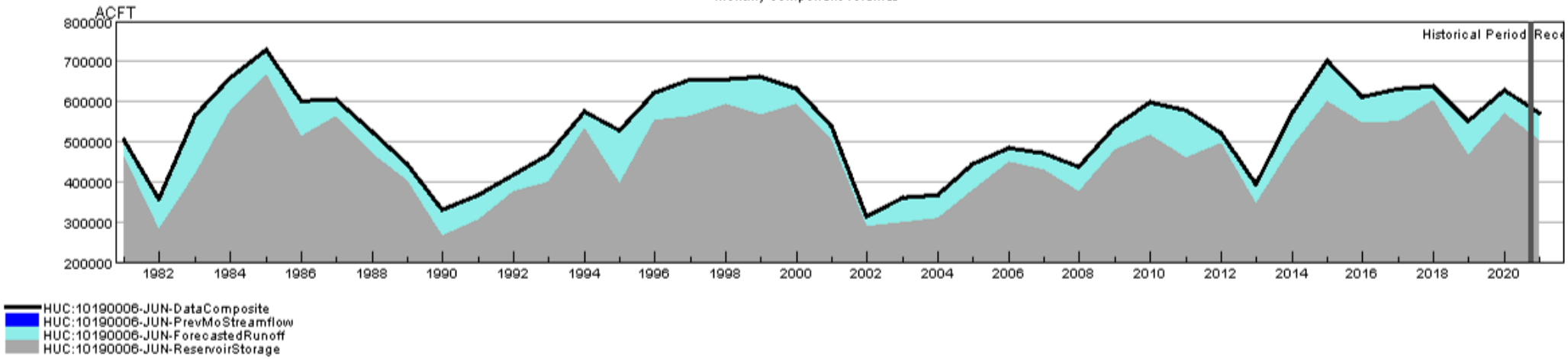
HUC 10190005 (St. Vrain) SWSI Values - JUN

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



HUC 10190006 (Big Thompson) Surface Water Supply - JUN

Monthly component volumes

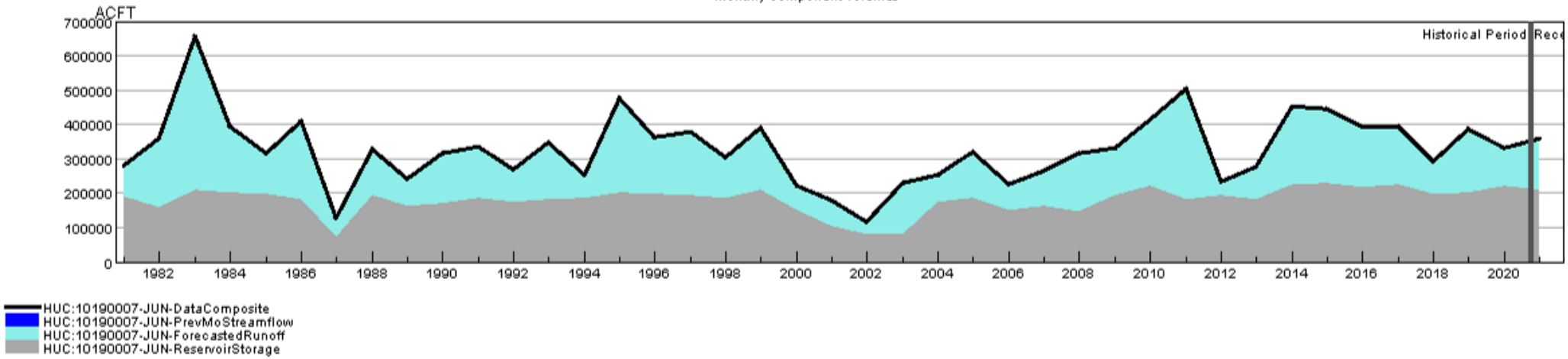


HUC 10190006 (Big Thompson) SWSI Values - JUN

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

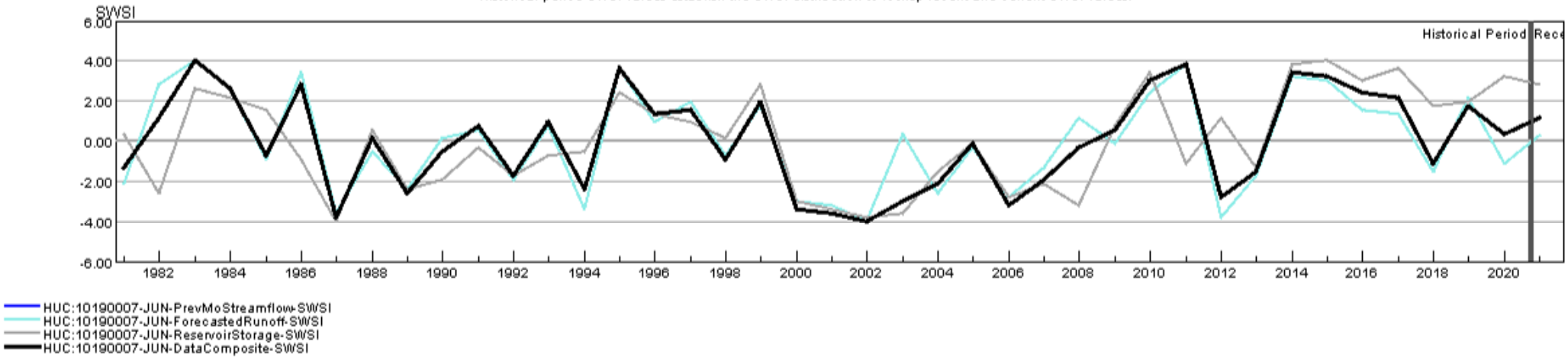
HUC 10190007 (Cache La Poudre) Surface Water Supply - JUN

Monthly component volumes



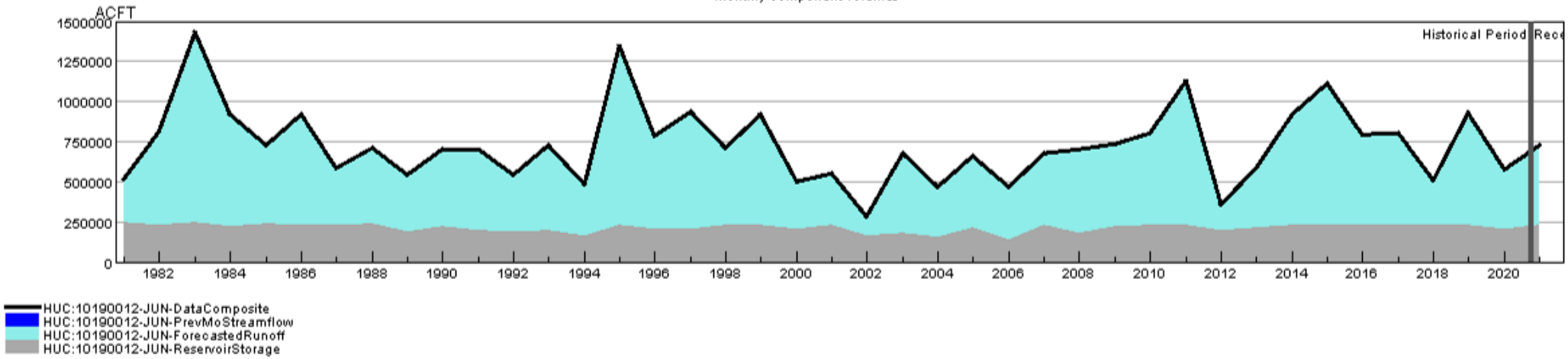
HUC 10190007 (Cache La Poudre) SWSI Values - JUN

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



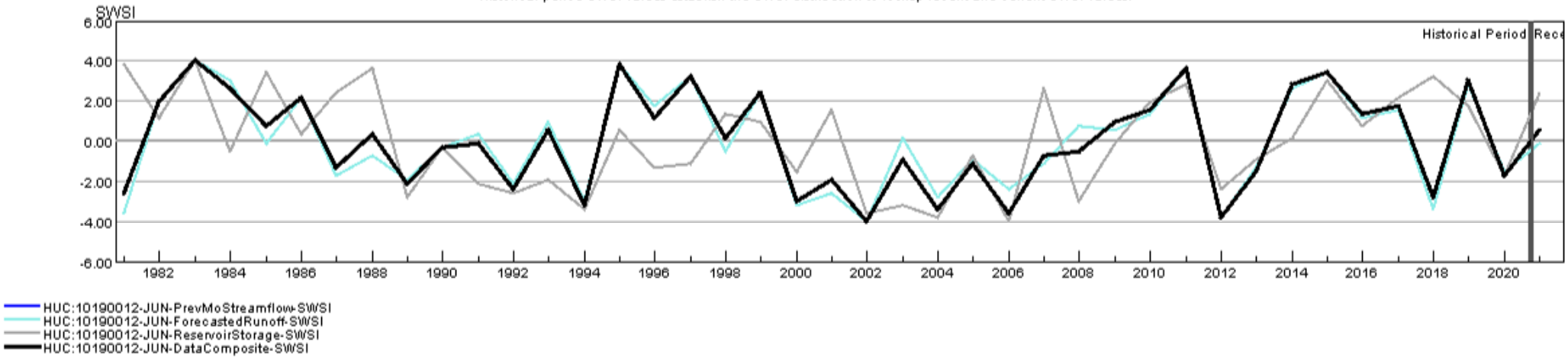
HUC 10190012 (Middle South Platte-Sterling) Surface Water Supply - JUN

Monthly component volumes



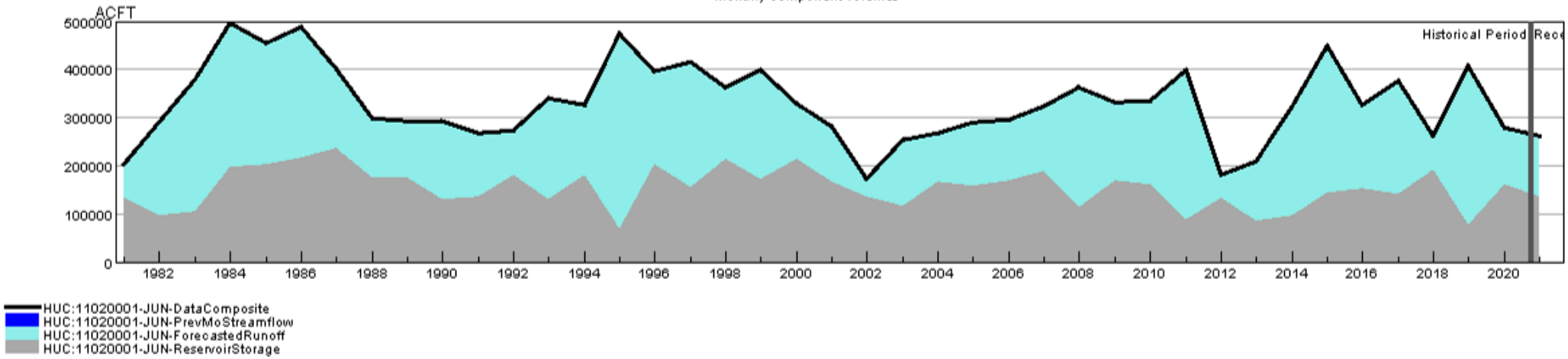
HUC 10190012 (Middle South Platte-Sterling) SWSI Values - JUN

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



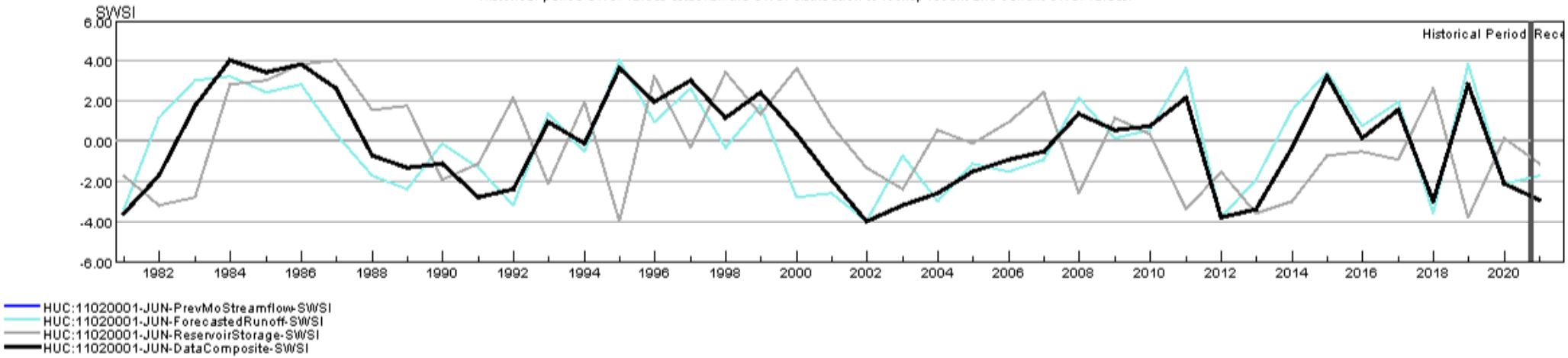
HUC 11020001 (Arkansas Headwaters) Surface Water Supply - JUN

Monthly component volumes



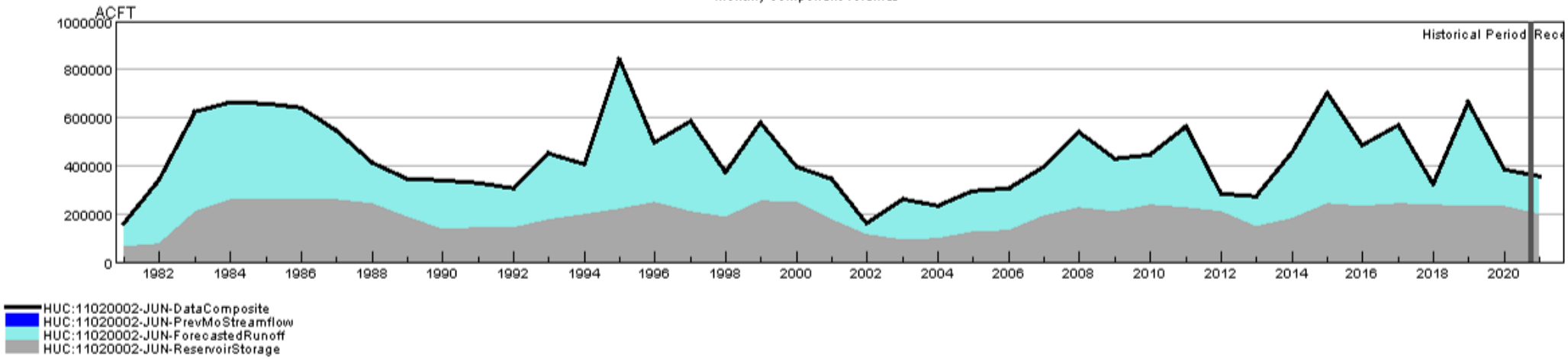
HUC 11020001 (Arkansas Headwaters) SWSI Values - JUN

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



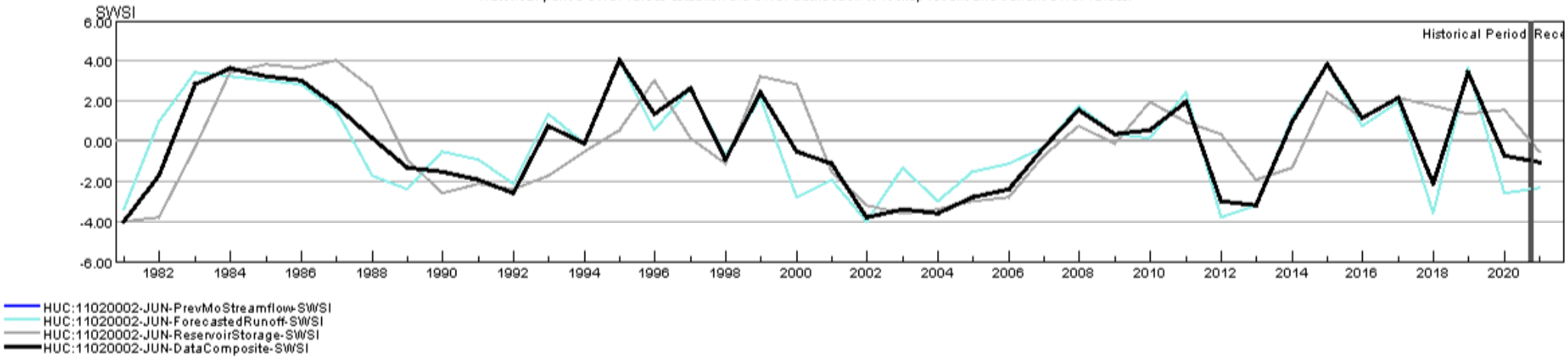
HUC 11020002 (Upper Arkansas) Surface Water Supply - JUN

Monthly component volumes



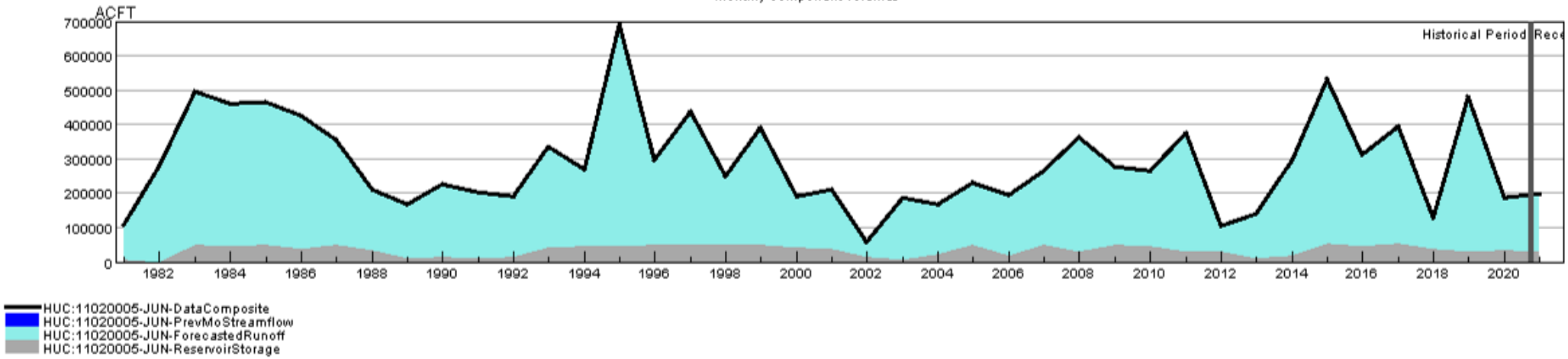
HUC 11020002 (Upper Arkansas) SWSI Values - JUN

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



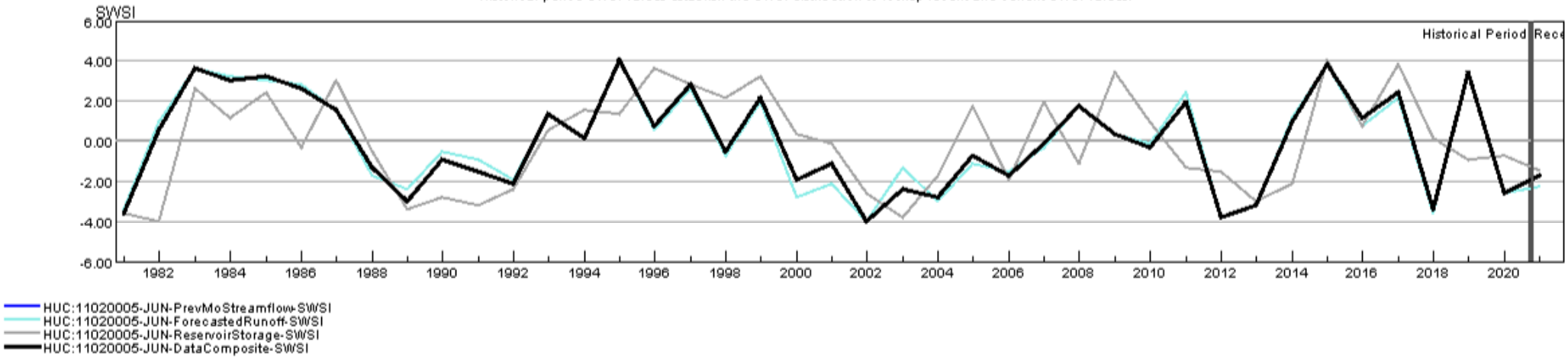
HUC 11020005 (Upper Arkansas-Lake Meredith) Surface Water Supply - JUN

Monthly component volumes



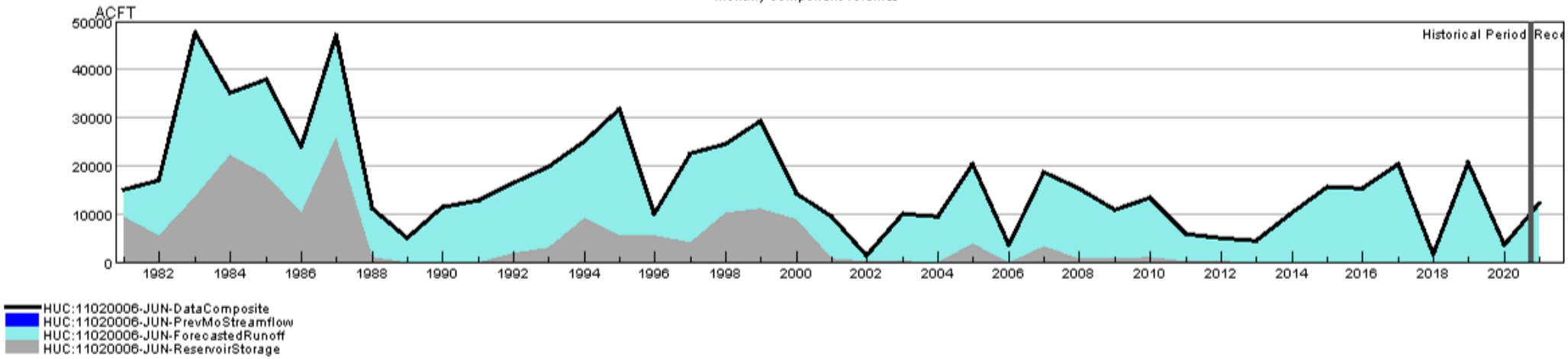
HUC 11020005 (Upper Arkansas-Lake Meredith) SWSI Values - JUN

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



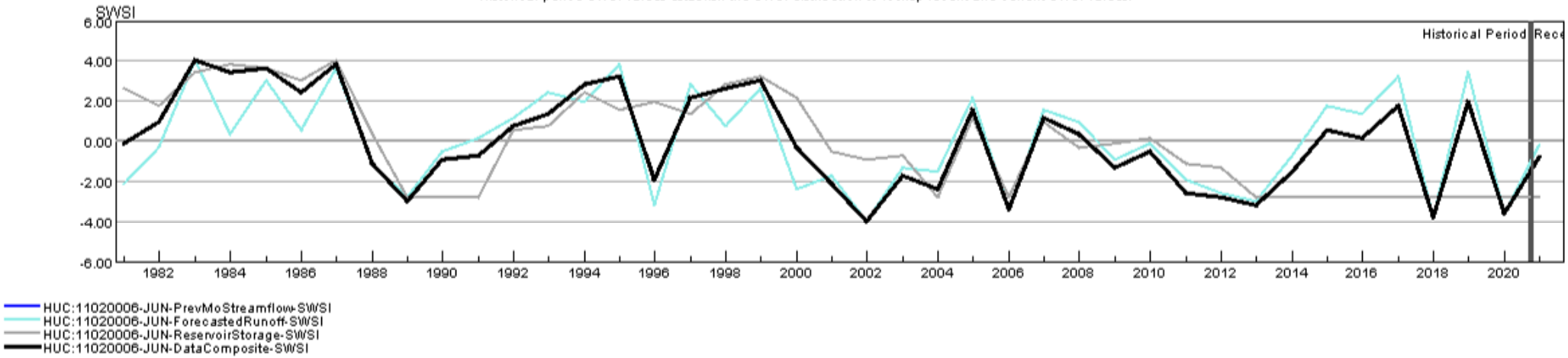
HUC 11020006 (Huerfano) Surface Water Supply - JUN

Monthly component volumes



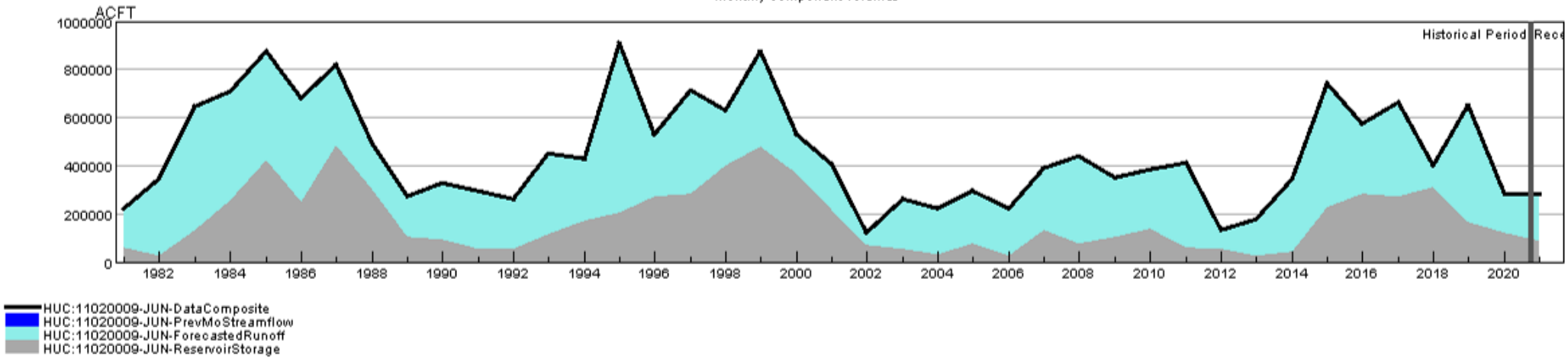
HUC 11020006 (Huerfano) SWSI Values - JUN

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



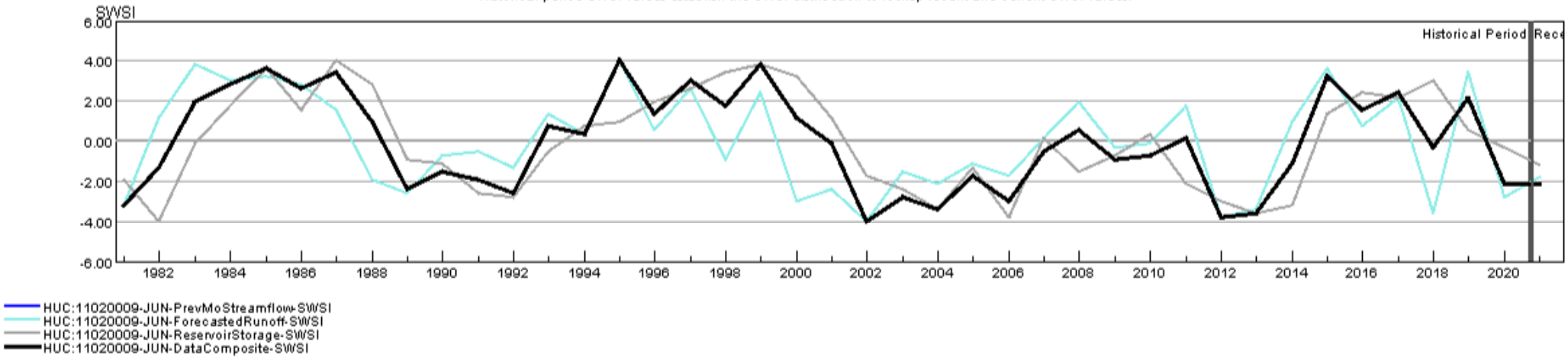
HUC 11020009 (Upper Arkansas-John Martin Reservoir) Surface Water Supply - JUN

Monthly component volumes



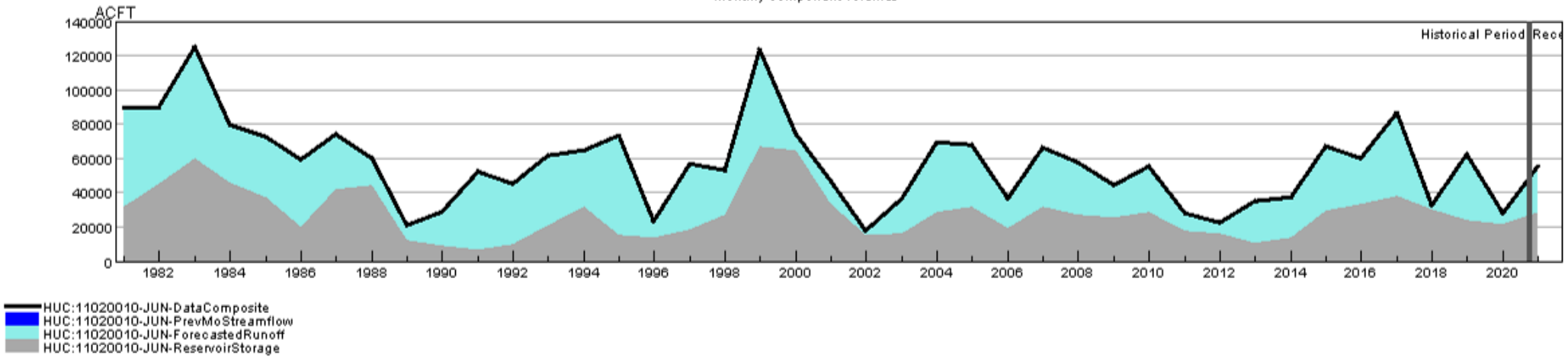
HUC 11020009 (Upper Arkansas-John Martin Reservoir) SWSI Values - JUN

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



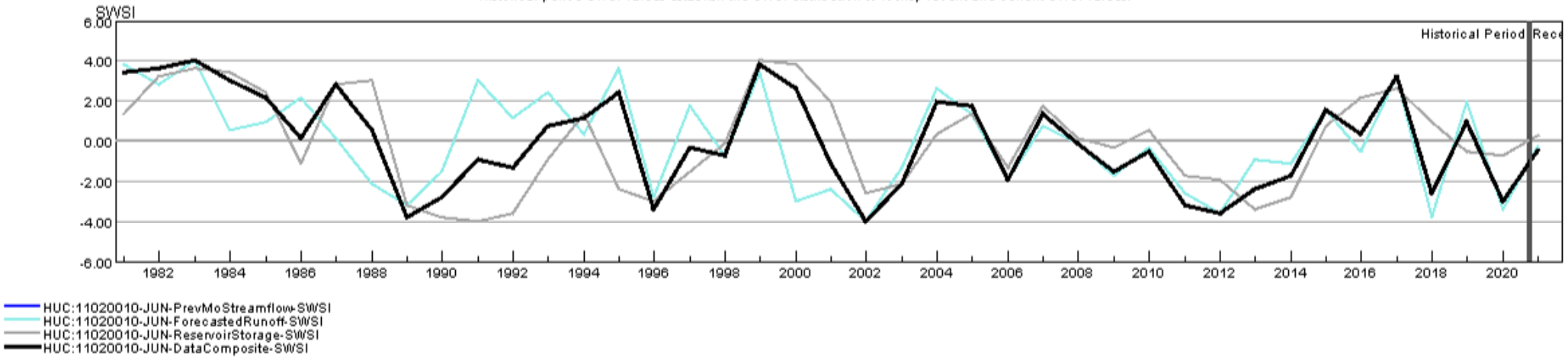
HUC 11020010 (Purgatoire) Surface Water Supply - JUN

Monthly component volumes



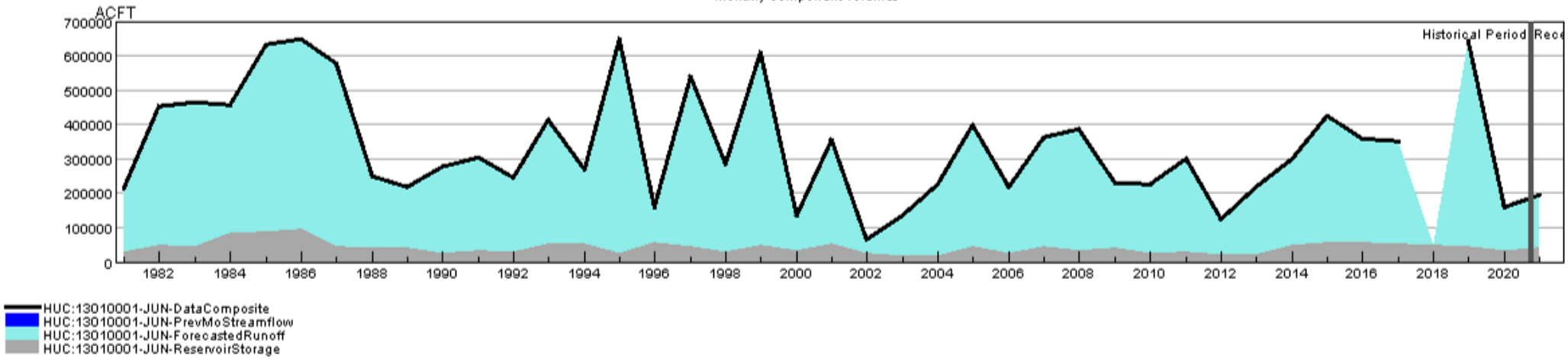
HUC 11020010 (Purgatoire) SWSI Values - JUN

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



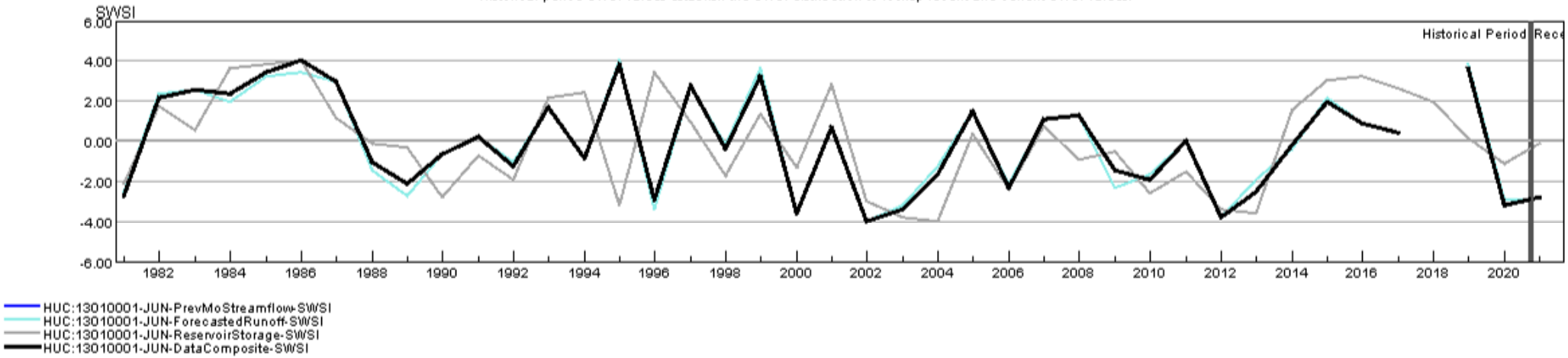
HUC 13010001 (Rio Grande Headwaters) Surface Water Supply - JUN

Monthly component volumes



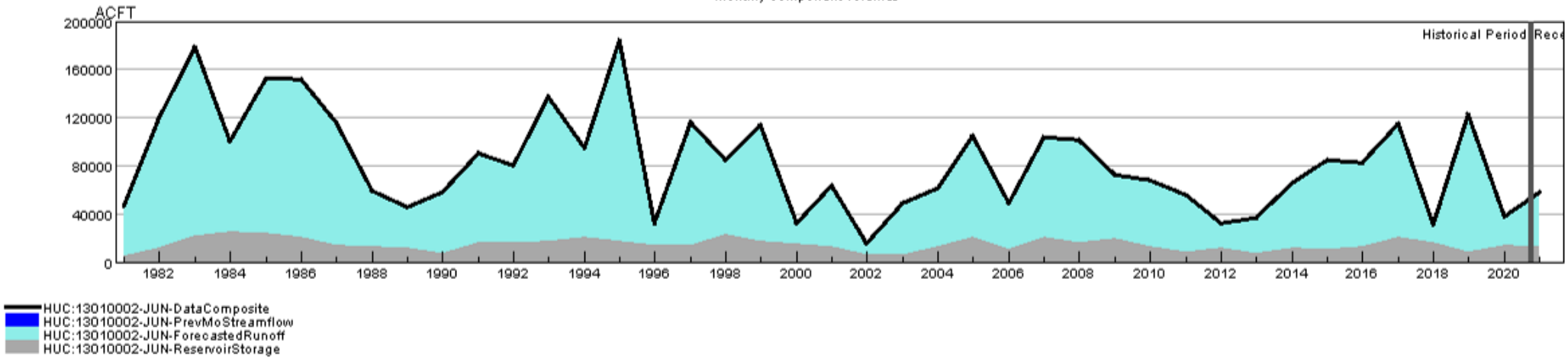
HUC 13010001 (Rio Grande Headwaters) SWSI Values - JUN

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



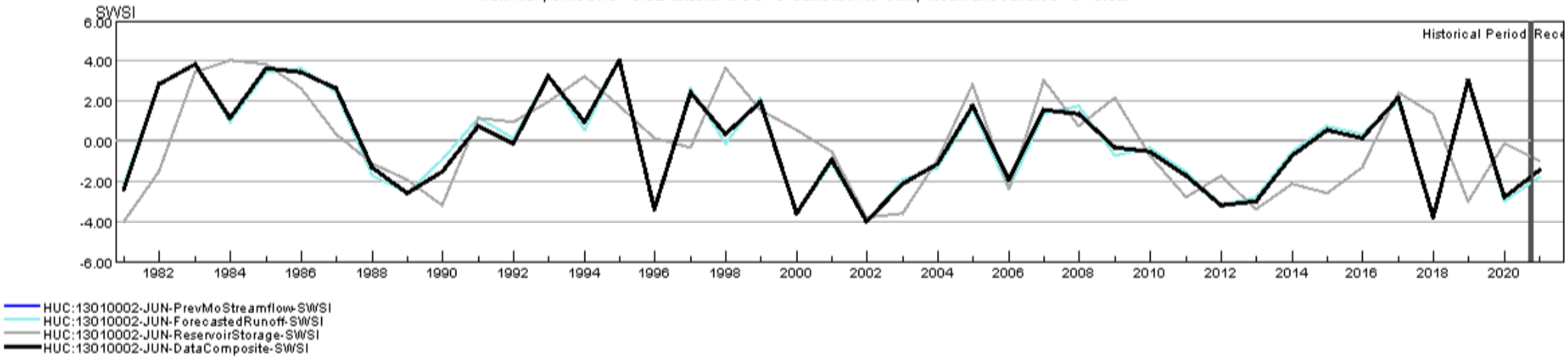
HUC 13010002 (Alamosa-Trinchera) Surface Water Supply - JUN

Monthly component volumes



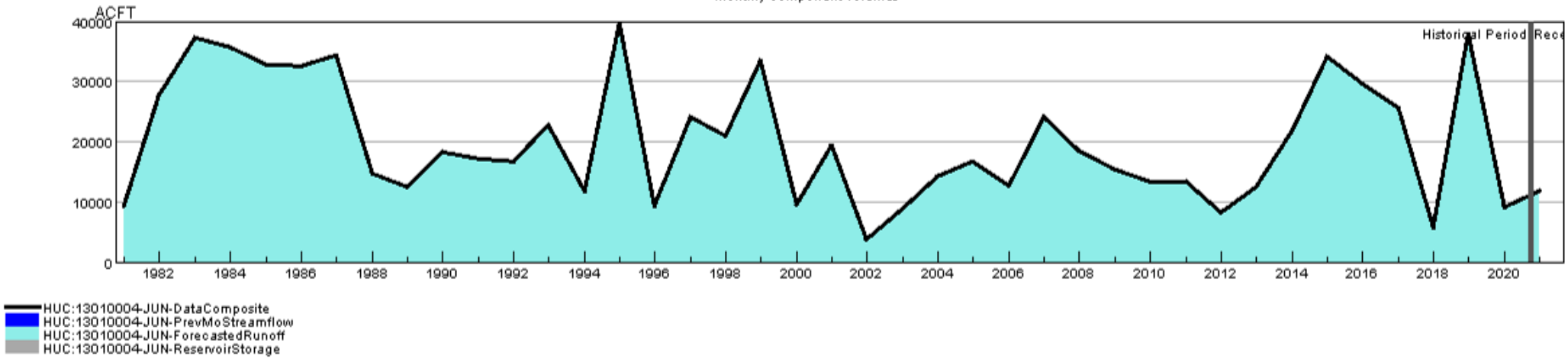
HUC 13010002 (Alamosa-Trinchera) SWSI Values - JUN

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



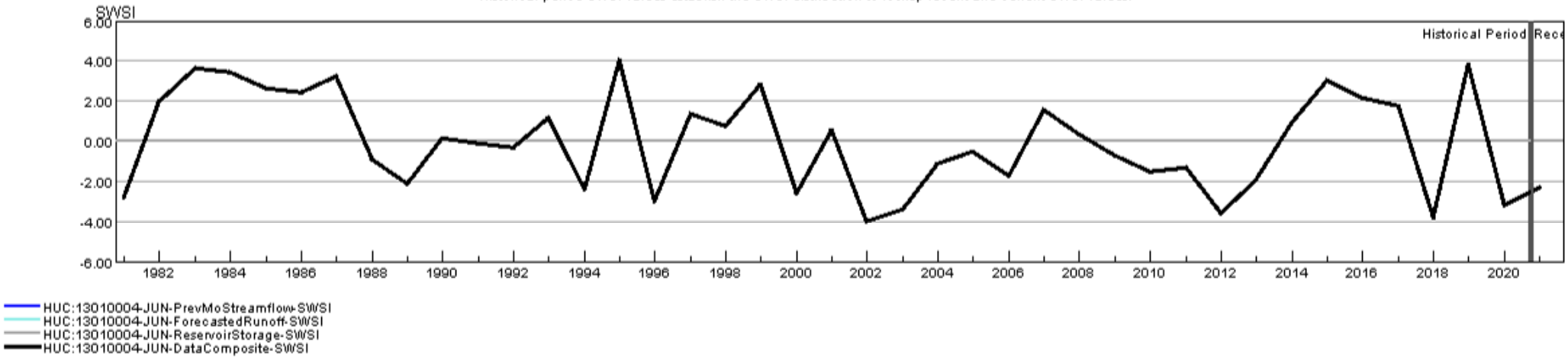
HUC 13010004 (Saguache) Surface Water Supply - JUN

Monthly component volumes



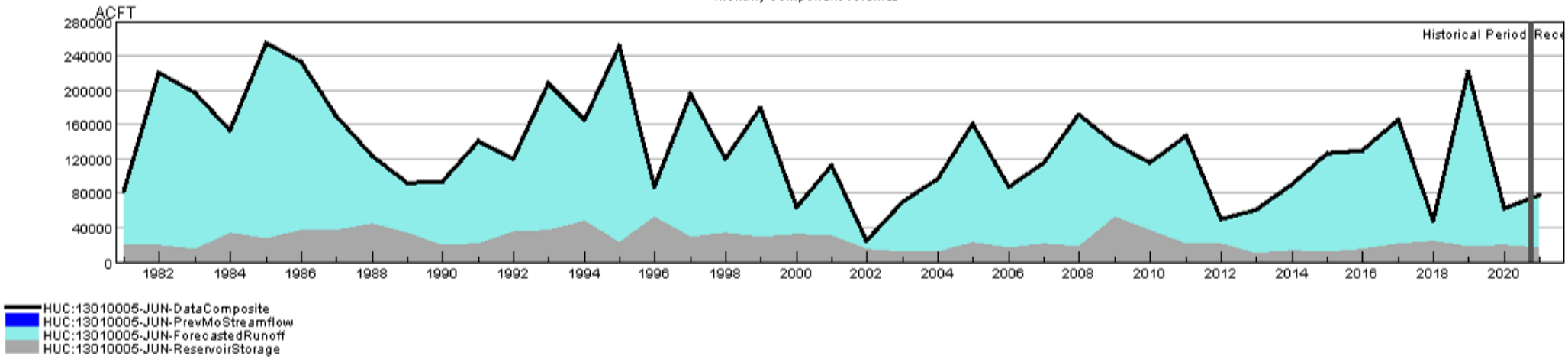
HUC 13010004 (Saguache) SWSI Values - JUN

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



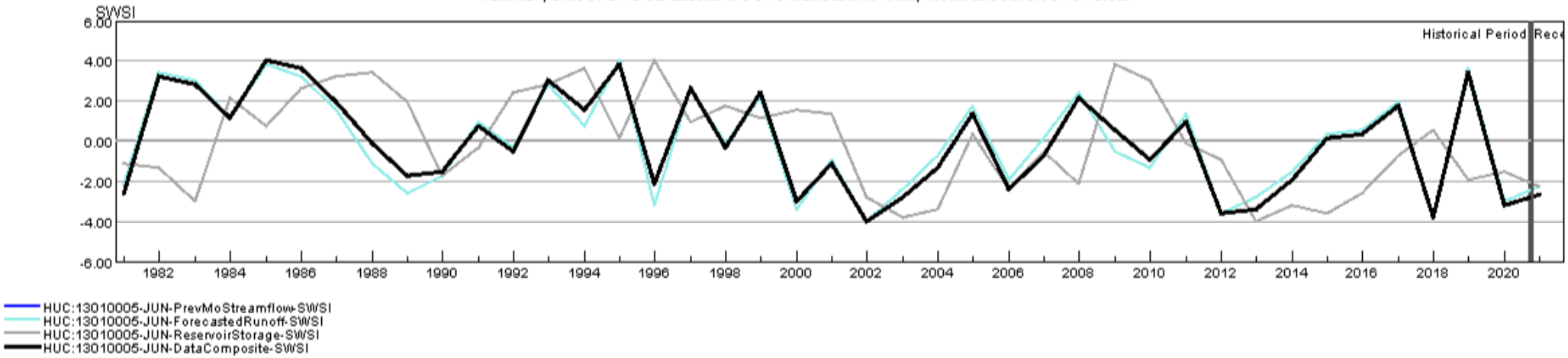
HUC 13010005 (Conejos) Surface Water Supply - JUN

Monthly component volumes



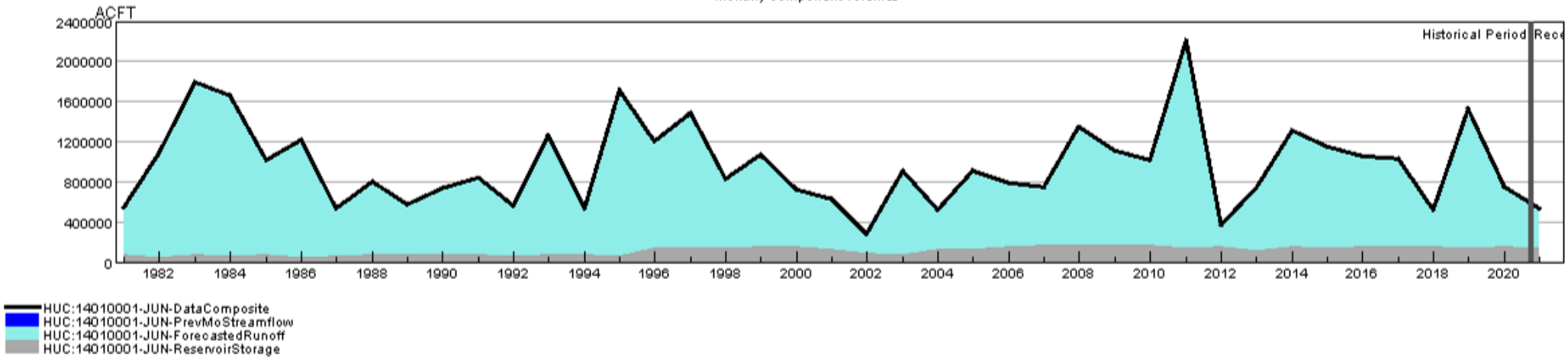
HUC 13010005 (Conejos) SWSI Values - JUN

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



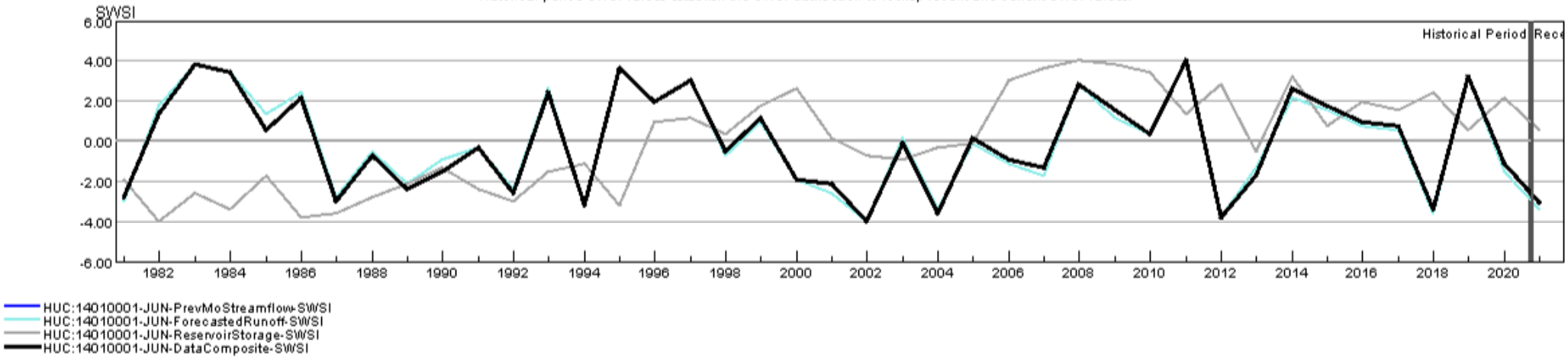
HUC 14010001 (Colorado Headwaters) Surface Water Supply - JUN

Monthly component volumes



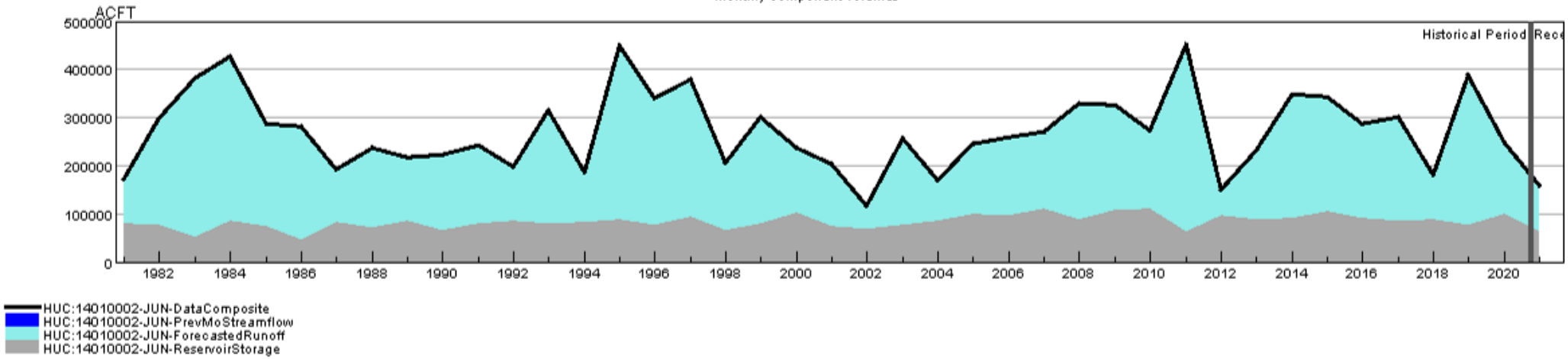
HUC 14010001 (Colorado Headwaters) SWSI Values - JUN

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



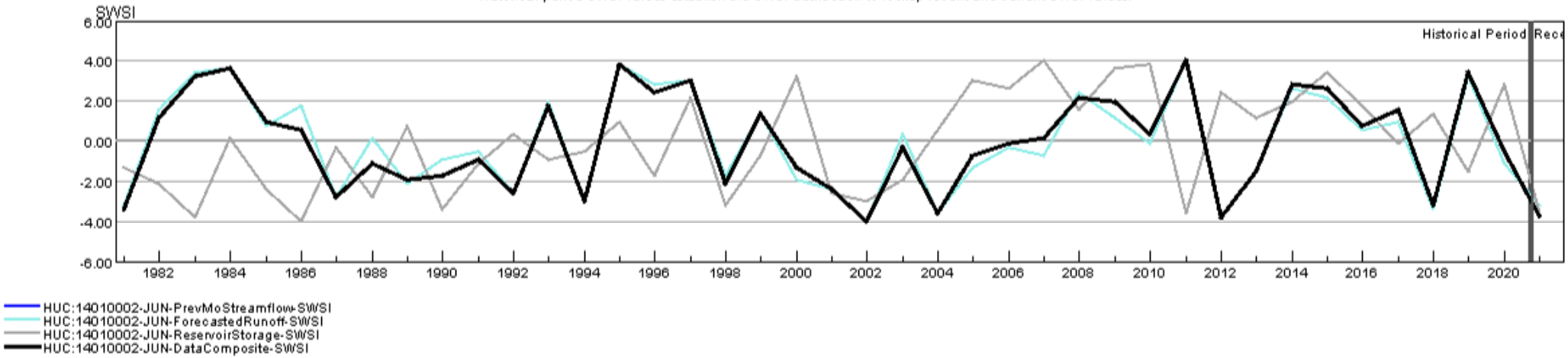
HUC 14010002 (Blue) Surface Water Supply - JUN

Monthly component volumes



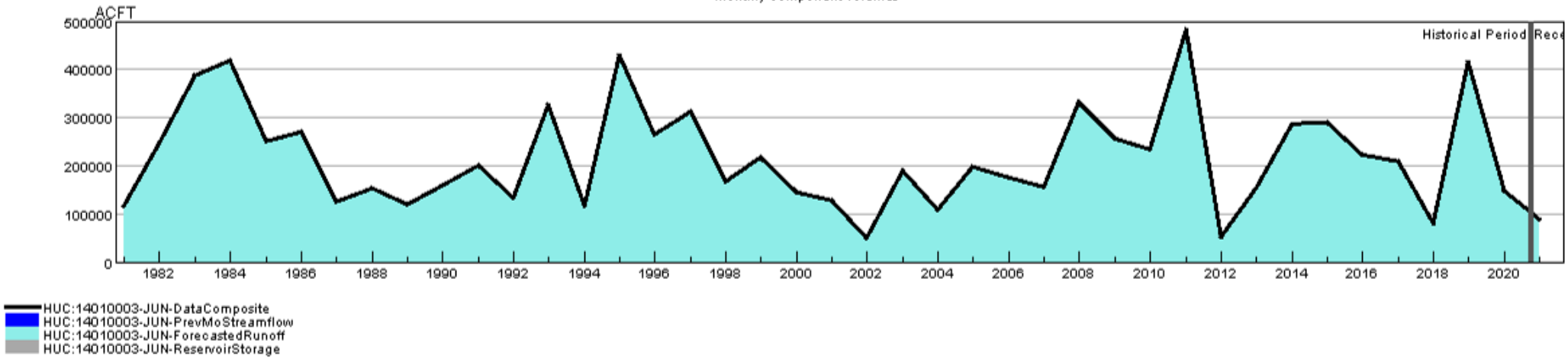
HUC 14010002 (Blue) SWSI Values - JUN

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



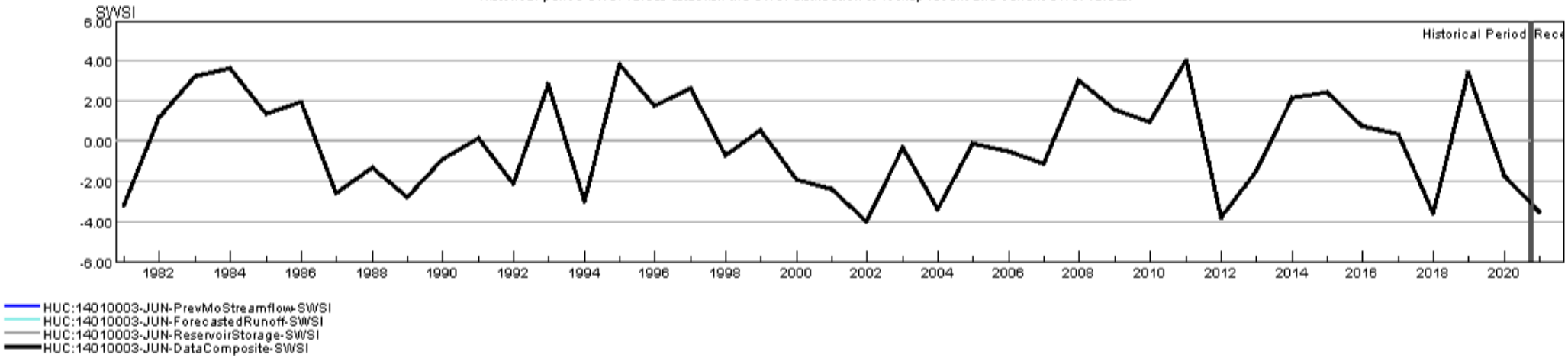
HUC 14010003 (Eagle) Surface Water Supply - JUN

Monthly component volumes



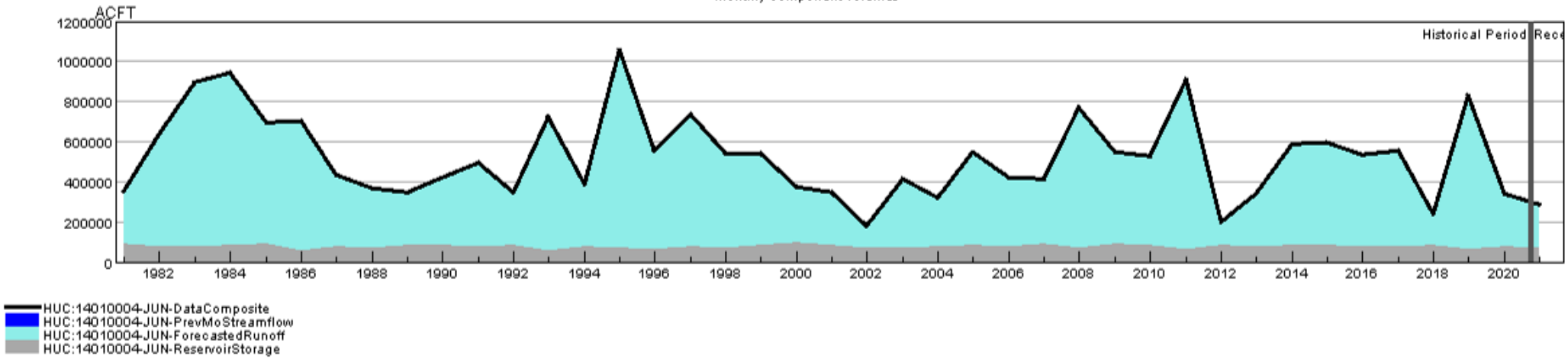
HUC 14010003 (Eagle) SWSI Values - JUN

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



HUC 14010004 (Roaring Fork) Surface Water Supply - JUN

Monthly component volumes



HUC 14010004 (Roaring Fork) SWSI Values - JUN

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