COLORADO
WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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May 1, 2019

The Surface Water Supply Index (SWSI) is used as an indicator of water supply conditions in the seven major river basins of the state and in each of the 41 smaller watersheds, or HUCs. The Colorado Water Conservation Board (CWCB) completed a major revision to the Colorado Drought Plan in 2010. At that time, Colorado adopted a revised SWSI analysis based on the components shown below, which vary depending on the time of year. The revised SWSI is based on a ranking of total volume in a HUC or major river basin ranked against similar volumes in historical years. For instance, in January, the total volume in a HUC is based on the forecasted runoff at specific locations plus the volume in storage in specific reservoirs, all within the HUC. That total volume is ranked against similar total volumes that occurred each January between 1970 and 2010.

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

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

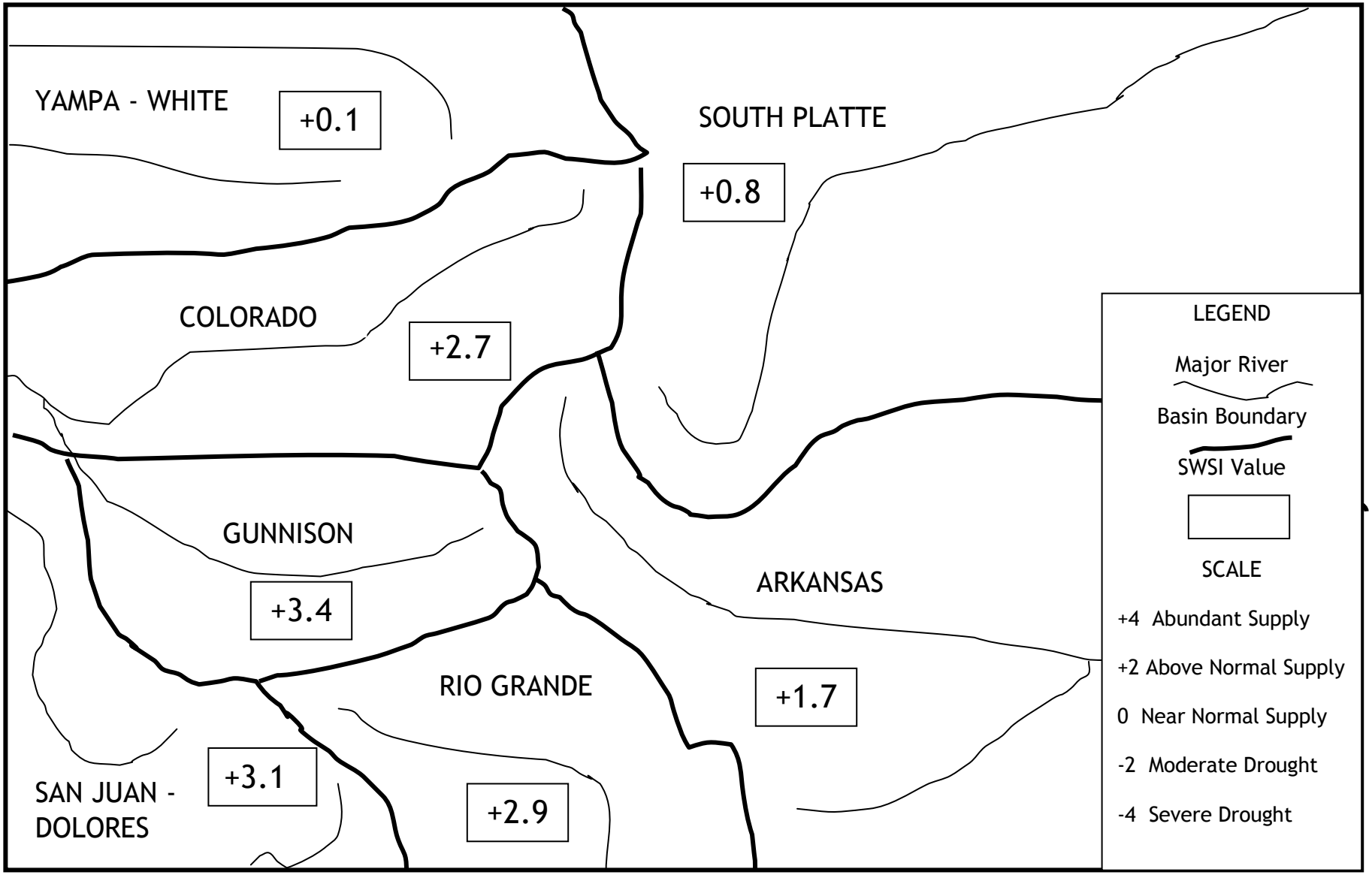
The SWSI calculation for the winter season (February 1 to June 1) is based on forecasted runoff (total volume for runoff season) combined with reservoir storage at the end of last month, in this case April 30. The statewide SWSI values for May 1 are close to average to above average. The SWSI values range from a low of +0.1 in the Yampa Basin and a high of +3.4 in the Gunnison Basin, forecasted runoff is predicated to be above average, however many reservoir levels are below normal.

Basin	May 1 SWSI	Change from Previous Month	Change from Previous Year
Arkansas	1.7	0.0	0.1
Colorado	2.7	0.1	4.5
Gunnison	3.4	0.8	6.9
Rio Grande	2.9	0.1	6.7
San Juan-Dolores	3.1	1.2	6.4
South Platte	0.8	-0.4	0.6
Yampa-White	0.1	-0.3	2.1

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

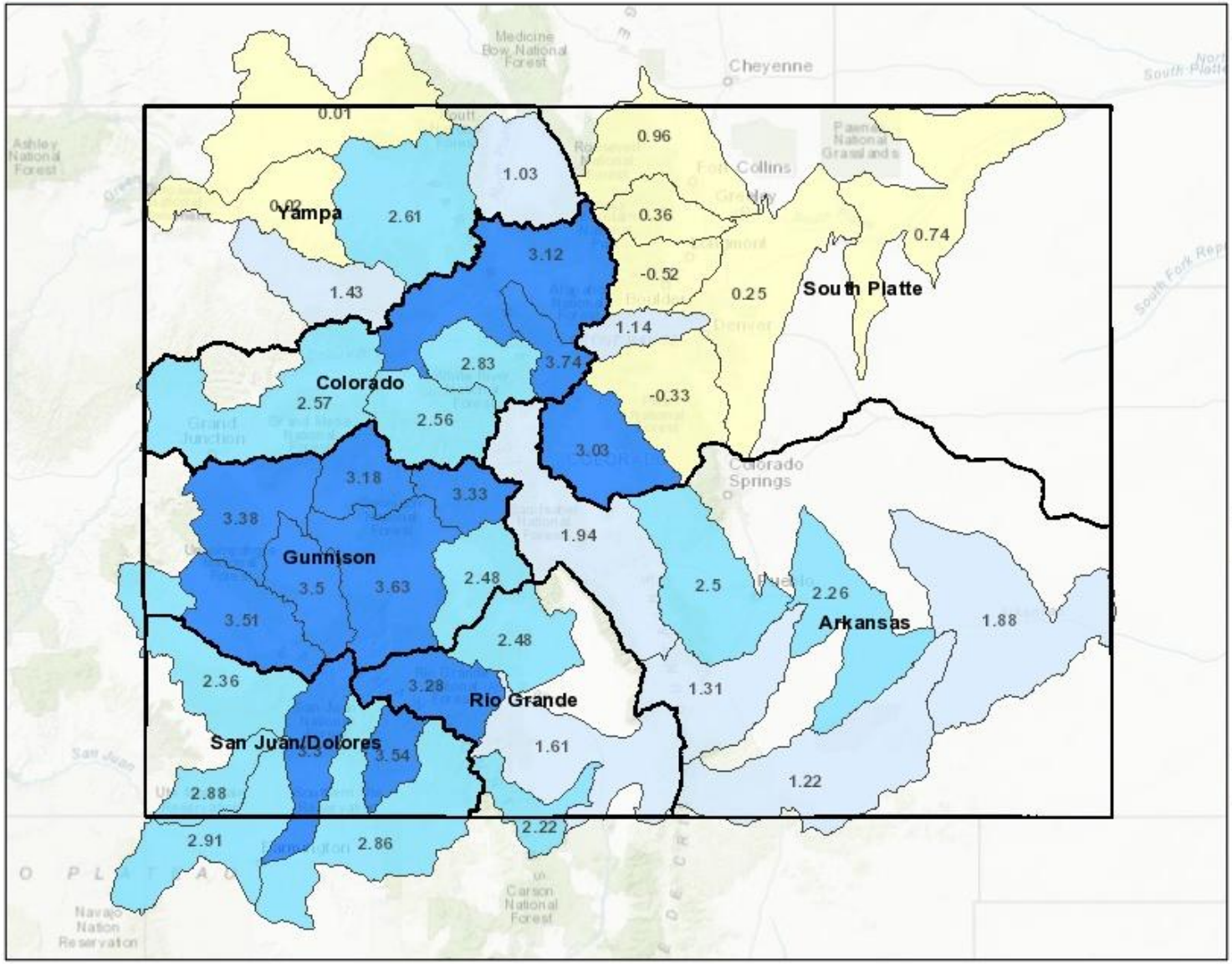


May 1, 2019

SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC

CDSS
Colorado's Decision Support Systems

SWSI May 1, 2019



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: 5/10/2019 10:59:08 AM

May 1, 2019 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	1.32	14	80	29,700
	11020010	Purgatoire	1.23	78	75	77,170
	11020001	Arkansas Headwaters	1.94	58	94	411,883
	11020005	Upper Arkansas-Lake Meredith	2.27	13	77	491,143
	11020002	Upper Arkansas	2.51	72	77	662,500
	11020009	Upper Arkansas-John Martin Reservoir	1.89	50	78	683,375
Colorado	14010003	Eagle	2.83	77	84	430,000
	14010002	Blue	3.74	23	96	449,012
	14010004	Roaring Fork	2.57	N/A	80	914,780
	14010001	Colorado Headwaters	3.13	42	89	1,896,260
	14010005	Colorado Headwaters-Plateau	2.57	19	81	2,981,637
Gunnison	14020003	Tomichi	2.49	51	80	95,710
	14030003	San Miguel	3.51	25	92	179,000
	14020006	Uncompahgre	3.50	66	85	233,967
	14020004	North Fork Gunnison	3.18	64	88	401,108
	14020001	East-Taylor	3.34	N/A	87	444,932
	14020002	Upper Gunnison	3.63	53	94	1,611,280
	14020005	Lower Gunnison	3.39	N/A	91	2,120,000
Rio Grande	13010004	Saguache	2.49	84	80	41,000
	13010002	Alamosa-Trinchera	1.61	19	73	160,422
	13010005	Conejos	2.23	N/A	77	264,268
	13010001	Rio Grande Headwaters	3.29	53	90	799,769
San Juan-Dolores	14080105	Middle San Juan	2.91	47	81	33,752
	14080107	Mancos	2.89	21	86	49,972
	14080102	Piedra	3.54	N/A	93	310,000
	14030002	Upper Dolores	2.37	13	79	593,743
	14080104	Animas	3.30	50	91	661,541
	14080101	Upper San Juan	2.86	12	86	792,135
South Platte	10190004	Clear	1.14	87	64	109,000
	10190005	St. Vrain	-0.52	21	43	202,012
	10190001	South Platte Headwater	3.04	8	80	223,100
	10190007	Cache La Poudre	0.97	N/A	55	390,498
	10190002	Upper South Platte	-0.33	36	67	416,184
	10190006	Big Thompson	0.37	51	53	509,920
	10190003	Middle South Platte-Cherry Creek	0.25	49	59	826,700
	10190012	Middle South Platte-Sterling	0.74	82	59	971,600
Yampa-White	10180001	North Platte Headwaters	1.04	N/A	62	230,000
	14050005	Upper White	1.44	75	67	285,000
	14050003	Little Snake	0.02	N/A	50	320,000
	14050001	Upper Yampa	2.62	N/A	79	785,709
	14050002	Lower Yampa	0.03	N/A	50	830,000

NEP is non exceedance percentage for total reservoir storage and streamflow forecast in HUC. Some HUCs do not have any reservoirs considered in the SWSI and are shown as "N/A". Total Vol is the volume of reservoir storage in the HUC plus the streamflow forecast. NEP is calculated compared to the volume historically occurring this month during the period 1970-2010. The following table lists each component considered in each HUC.

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

May 1, 2019 SWSI Component Information – Streamflow Forecast & Reservoir Storage - By HUC

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
11020001	Arkansas Headwaters	CLEAR CREEK RESERVOIR	7,583	61
		HOMESTAKE RESERVOIR	9,659	22
		TWIN LAKES RESERVOIR	22,029	20
		TURQUOISE LAKE	42,612	8
		ARKANSAS RIVER AT SALIDA	330,000	94
11020006	Huerfano	CUCHARAS RESERVOIR	0	13
		HUERFANO RIVER NEAR REDWING	14,400	75
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	15,300	80
11020010	Purgatoire	TRINIDAD LAKE	24,170	50
		PURGATOIRE RIVER AT TRINIDAD	53,000	75
11020002	Upper Arkansas	PUEBLO RESERVOIR	237,500	78
		PUEBLO RESERVOIR INFLOW	425,000	77
11020009	Upper Arkansas-John Martin Reservoir	ADOBE CREEK RESERVOIR	8,274	21
		HUERFANO RIVER NEAR REDWING	14,400	75
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	15,300	80
		PURGATOIRE RIVER AT TRINIDAD	53,000	75
		JOHN MARTIN RESERVOIR	167,401	76
		PUEBLO RESERVOIR INFLOW	425,000	77
11020005	Upper Arkansas-Lake Meredith	LAKE HENRY	6,877	60
		HUERFANO RIVER NEAR REDWING	14,400	75
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	15,300	80
		MEREDITH RESERVOIR	29,566	57
		PUEBLO RESERVOIR INFLOW	425,000	77
14010002	Blue	GREEN MOUNTAIN RESERVOIR	49,012	23
		BLUE RIVER INFLOW TO GREEN MOUNTAIN RES	400,000	96
14010001	Colorado Headwaters	WOLFORD MOUNTAIN RESERVOIR	38,660	71
		WILLIAMS FORK RESERVOIR	67,600	70
		COLORADO RIVER NEAR DOTSERO	1,790,000	89
14010005	Colorado Headwaters-Plateau	VEGA RESERVOIR	11,637	19
		COLORADO RIVER NEAR CAMEO	2,970,000	81
14010003	Eagle	EAGLE RIVER BELOW GYPSUM	430,000	84
14010004	Roaring Fork	RUEDI RESERVOIR	59,780	42
		ROARING FORK AT GLENWOOD SPRINGS	855,000	80
14020001	East-Taylor	TAYLOR PARK RESERVOIR	63,932	51
		TAYLOR R INF TO TAYLOR PARK RESERVOIR	131,000	89
		EAST RIVER AT ALMONT	250,000	89
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	2,120,000	91
14020004	North Fork Gunnison	PAONIA RESERVOIR	6,108	64
		NORTH FORK GUNNISON R NR SOMERSET	395,000	88
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	179,000	92
14020003	Tomichi	VOUGA RESERVOIR NEAR DOYLEVILLE	710	66
		TOMICHI CREEK AT GUNNISON, CO	95,000	80

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
14020006	Uncompahgre	RIDGEWAY RESERVOIR	55,967	53
		UNCOMPAHGRE RIVER AT COLONA	178,000	85
14020002	Upper Gunnison	SILVER JACK RESERVOIR	2,493	3
		FRUITLAND RESERVOIR	5,163	52
		CRAWFORD RESERVOIR	7,680	13
		MORROW POINT RESERVOIR	113,138	47
		LAKE FORK AT GATEVIEW, CO	168,000	91
		BLUE MESA RESERVOIR	334,806	27
		GUNNISON R INF TO BLUE MESA RESERVOIR	980,000	94
13010002	Alamosa-Trinchera	MOUNTAIN HOME	1,170	1
		TERRACE RESERVOIR	6,152	21
		TRINCHERA CK	13,600	66
		UTE CREEK	14,800	74
		SANGRE DE CRISTO	15,700	62
		CULEBRA CREEK AT SAN LUIS	25,000	71
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	84,000	80
13010005	Conejos	PLATORO RESERVOIR	19,268	53
		CONEJOS RIVER NEAR MOGOTE	245,000	77
13010001	Rio Grande Headwaters	RIO GRANDE RESERVOIR	6,784	8
		CONTINENTAL RESERVOIR	18,397	99
		SANTA MARIA RESERVOIR	19,588	90
		RIO GRANDE NEAR DEL NORTE	755,000	90
13010004	Saguache	SAGUACHE CREEK NEAR SAGUACHE, CO	41,000	80
14080104	Animas	LEMON RESERVOIR	12,541	13
		FLORIDA RIVER INFLOW TO LEMON RESERVOIR	69,000	73
		ANIMAS RIVER AT DURANGO	580,000	92
14080107	Mancos	JACKSON GULCH RESERVOIR	4,972	12
		MANCOS RIVER NEAR MANCOS	45,000	86
14080105	Middle San Juan	LONG HOLLOW RESERVOIR	2,752	50
		LA PLATA RIVER AT HESPERUS	31,000	81
14080102	Piedra	PIEDRA RIVER NEAR ARBOLES	310,000	93
14030002	Upper Dolores	GROUNDHOG RESERVOIR	5,300	4
		MCPHEE RESERVOIR	258,443	48
		DOLORES RIVER BELOW MCPHEE RESERVOIR	330,000	79
14080101	Upper San Juan	VALLECITO RESERVOIR	47,135	21
		LOS PINOS RIVER NEAR BAYFIELD	275,000	92
		SAN JUAN RIVER NEAR CARRACAS	470,000	82
10190006	Big Thompson	LAKE LOVELAND RESERVOIR	1,800	4
		MARIANO RESERVOIR	5,200	87
		WILLOW CREEK RESERVOIR	7,018	92
		LONE TREE RESERVOIR	7,500	29
		BOYD LAKE	31,300	42
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	84,000	53
		CARTER LAKE	105,434	60
		LAKE GRANBY	267,668	52

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
10190007	Cache La Poudre	CHAMBERS LAKE	2,550	28
		BLACK HOLLOW RESERVOIR	3,930	88
		HALLIGAN RESERVOIR	6,400	81
		FOSSIL CREEK RESERVOIR	10,100	81
		WINDSOR RESERVOIR	10,300	11
		CACHE LA POUDRE	10,550	99
		COBB LAKE	15,200	56
		HORSETOOTH RESERVOIR	116,468	33
		CACHE LA POUDRE R AT CANYON MOUTH	215,000	55
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	109,000	64
10190003	Middle South Platte-Cherry Creek	HORSECREEK RESERVOIR	11,600	5
		MILTON RESERVOIR	21,500	81
		BARR LAKE	25,600	10
		STANDLEY RESERVOIR	29,000	11
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	32,000	40
		BOULDER CREEK NEAR ORODELL	48,000	41
		SAINT VRAIN CREEK AT LYONS	80,000	46
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	84,000	53
		CLEAR CREEK AT GOLDEN	109,000	64
		SOUTH PLATTE RIVER AT SOUTH PLATTE	171,000	67
		CACHE LA POUDRE R AT CANYON MOUTH	215,000	55
10190012	Middle South Platte-Sterling	JULESBURG RESERVOIR	20,500	55
		PREWITT RESERVOIR	24,100	71
		JACKSON LAKE RESERVOIR	26,100	49
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	32,000	40
		EMPIRE RESERVOIR	36,400	98
		BOULDER CREEK NEAR ORODELL	48,000	41
		RIVERSIDE RESERVOIR	55,200	74
		POINT OF ROCKS RESERVOIR	70,300	87
		SAINT VRAIN CREEK AT LYONS	80,000	46
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	84,000	53
		CLEAR CREEK AT GOLDEN	109,000	64
		SOUTH PLATTE RIVER AT SOUTH PLATTE	171,000	67
		CACHE LA POUDRE R AT CANYON MOUTH	215,000	55
10190001	South Platte Headwater	ANTERO RESERVOIR	19,800	64
		SPINNEY MOUNTAIN RESERVOIR	38,500	89
		ELEVENMILE CANYON RESV INFLOW	65,000	80
		ELEVENMILE CANYON RESERVOIR	99,800	73
10190005	St. Vrain	GROSS RESERVOIR	5,097	41
		TERRY RESERVOIR	6,700	87
		MARSHALL RESERVOIR	8,700	51
		UNION RESERVOIR	10,415	26
		BUTTONROCK (RALPH PRICE) RESERVOIR	11,100	13
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	32,000	40
		BOULDER CREEK NEAR ORODELL	48,000	41
		SAINT VRAIN CREEK AT LYONS	80,000	46

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP for Month
10190002	Upper South Platte	CHEESMAN LAKE	64,984	42
		SOUTH PLATTE RIVER AT SOUTH PLATTE	171,000	67
		DILLON RESERVOIR	180,200	15
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	320,000	50
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	830,000	50
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	230,000	62
14050005	Upper White	WHITE RIVER NEAR MEEKER	285,000	67
14050001	Upper Yampa	YAMCOLO RESERVOIR	5,409	28
		STAGECOACH RESERVOIR NR OAK CREEK	33,300	96
		ELKHEAD CREEK ABOVE LONG GULCH	82,000	91
		YAMPA RIVER AT STEAMBOAT SPRINGS	280,000	71
		ELK RIVER NEAR MILNER, CO	385,000	71

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

*No longer exists
**Empty for repairs

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

Basinwide Conditions Assessment

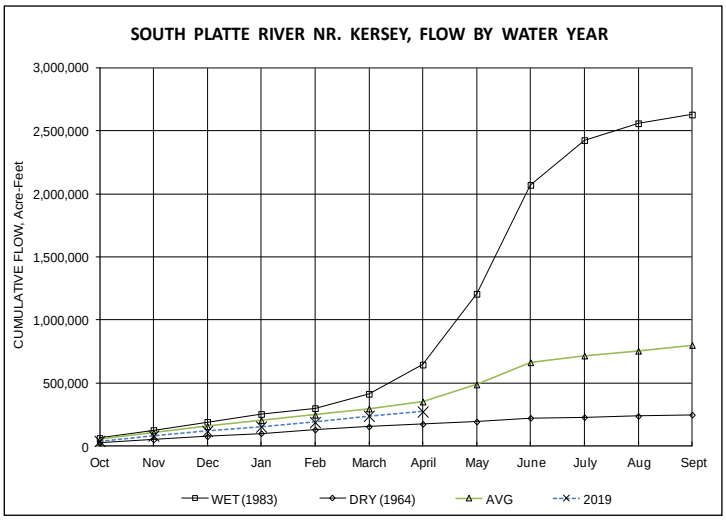
The SWSI value for the month was +0.8.

The weather pattern, like most of the state, changed from above average precipitation and below average temperatures to mostly below average precipitation and above average temperatures in the South Platte Basin in northeastern Colorado. Temperatures were below the long term mean for much of the basin overall for the month, however mountainous areas were slightly below average. As a result, April basin wide precipitation was 93% of average, down from the 155% of average during the month of March, ending the month of April at 114% water year to date. Basin-wide snowpack at the end of April is 108% of average Snow Water Equivalent (SWE), varying from a low of 94% to a high of 137%, with the lowest being in Boulder Creek and Bear Creek drainage basins. Several intermittent storms in April helped maintain above average snowpack in the higher elevations, with the late April storms and colder temperatures delaying the seasonal snowmelt and spring runoff.

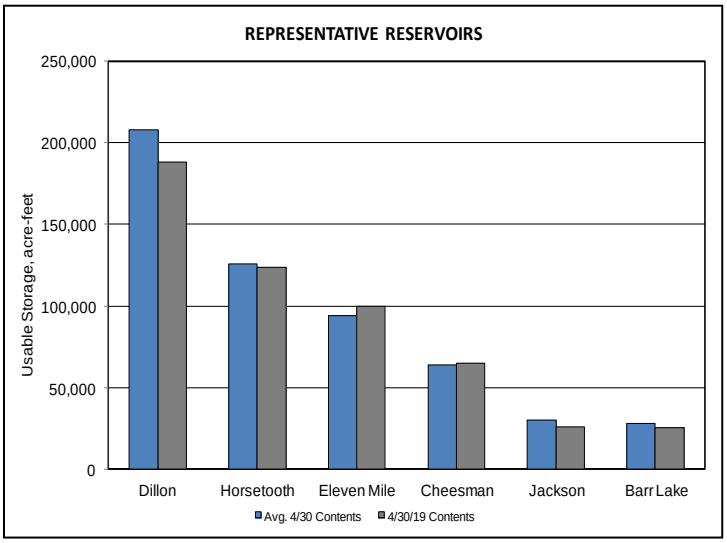
Widespread above average precipitation throughout the basin in March and continued near average precipitation in April helped maintain almost no drought conditions throughout the South Platte River basin during all of April. The exception is a portion of Park and Teller Counties, with a USDA Drought Monitor rating of Abnormally Dry (D0 rating).

The overall basin slightly above average temperatures and slightly below average precipitation during the month of April resulted in below average flows at the Kersey gage downstream of the City of Greeley, with the average daily flows for the month of April approximately 570 cfs, 66% of the historic mean value of 861 cfs. The average daily flows at the Julesburg gage for the month of April was 177 cfs, 34% of the historic mean value of 518 cfs, due primarily to junior diversions to recharge and storage during the month.

The Calls on the South Platte River were indicative of the weather pattern, with the beginning of April through April 10th controlled by a 1911 Burlington Canal Barr Lake call on the mainstem of the South Platte River and no call on the lower river. There was no call on the upper portion of the South Platte Mainstem during the middle portion of April, with junior circa early 2000 recharge rights controlling the lower portion of the South Platte at the North Sterling Ditch. The later part of April experienced more senior calls with the upper portion controlled by the Burlington Canal 1908, and the lower portion of the mainstem going more senior to a 1922 call at the North Sterling Ditch.



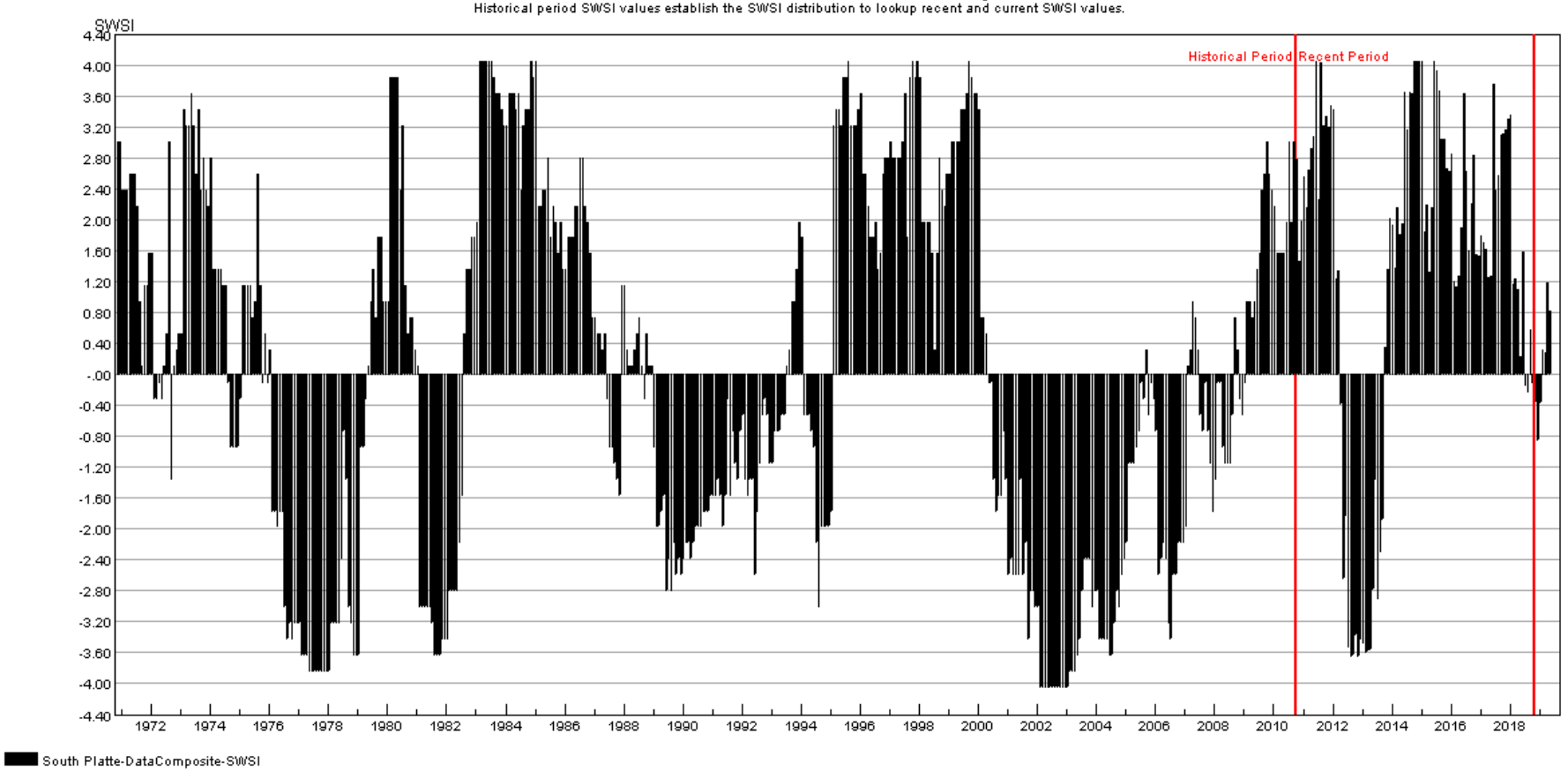
Typically the reservoir fill season is between November 1 and April 1 of each year, with irrigation season direct flows starting around April 1. Reservoirs storage levels throughout the South Platte River mainstem ended the month of April near average at the 6 SWSI Representative Reservoirs at 528,786 acre-feet volume, which is 96% of the long term average. Additionally, 32 indexed reservoirs throughout Division 1 basin at 103% of the long term average with a storage volume of 907,900 acre-feet at the end of April, representing approximately 84% of full capacity. This is ahead of the long term average of 82% for the end of April storage in the 32 indexed reservoirs throughout Division 1.



The temperature and precipitation outlook into May, June, and July 2019, prepared by the National Weather Service, in northeastern Colorado indicates a trend toward slightly below average temperatures and above average precipitation in the South Platte River Basin. Streamflow forecasts for the South Platte basin range from 131% on the upper portion of the basin to below average of 69% of average for Bear Creek, with basin wide forecast of near average streamflows.

South Platte 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 +1.7.

Outlook

Water District 67 ditches did not call for water from John Martin Reservoir until April 15, 2019; consequently, the distribution of conservation storage into accounts per the 1980 Operating Agreement for John Martin Reservoir began on April 15, 2019. Total conservation storage from November 1, 2018 through April 30, 2019 transferred into accounts in John Martin Reservoir, was approximately a net of 38,720 acre-feet. This was down from the 63,382 acre-ft stored during the same period in the winter of 2017-18.

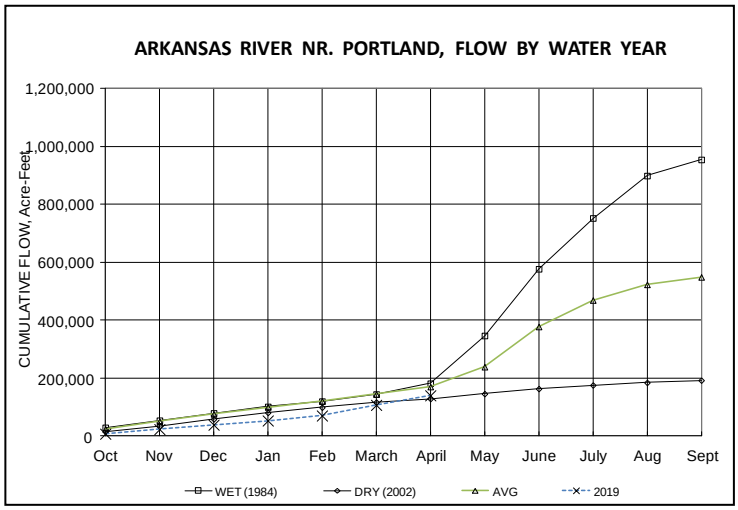
The mainstem river call at the beginning of the month was the Fort Lyon Canal 3-1-1887 water right above John Martin Reservoir. The call went slightly more senior (4/15/1884 Catlin) with a pass thru to Ft Lyon Canal.

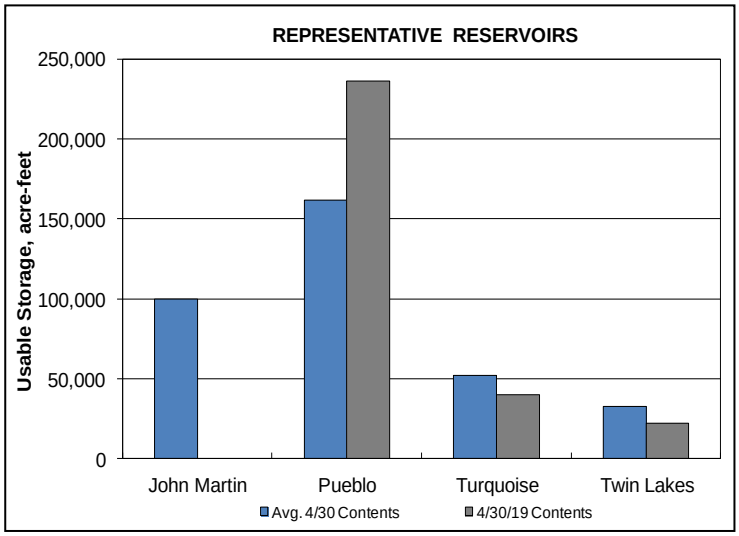
Administrative/Management Concerns

Well Association replacement plans were approved for the April 1, 2019 through March 31, 2020 period at fairly good levels of pumping corresponding with average anticipated replacement supplies.

John Martin Reservoir came out of conservation storage on April 25, 2019 and the winter water program accounts were fully distributed by April 22, 2019.

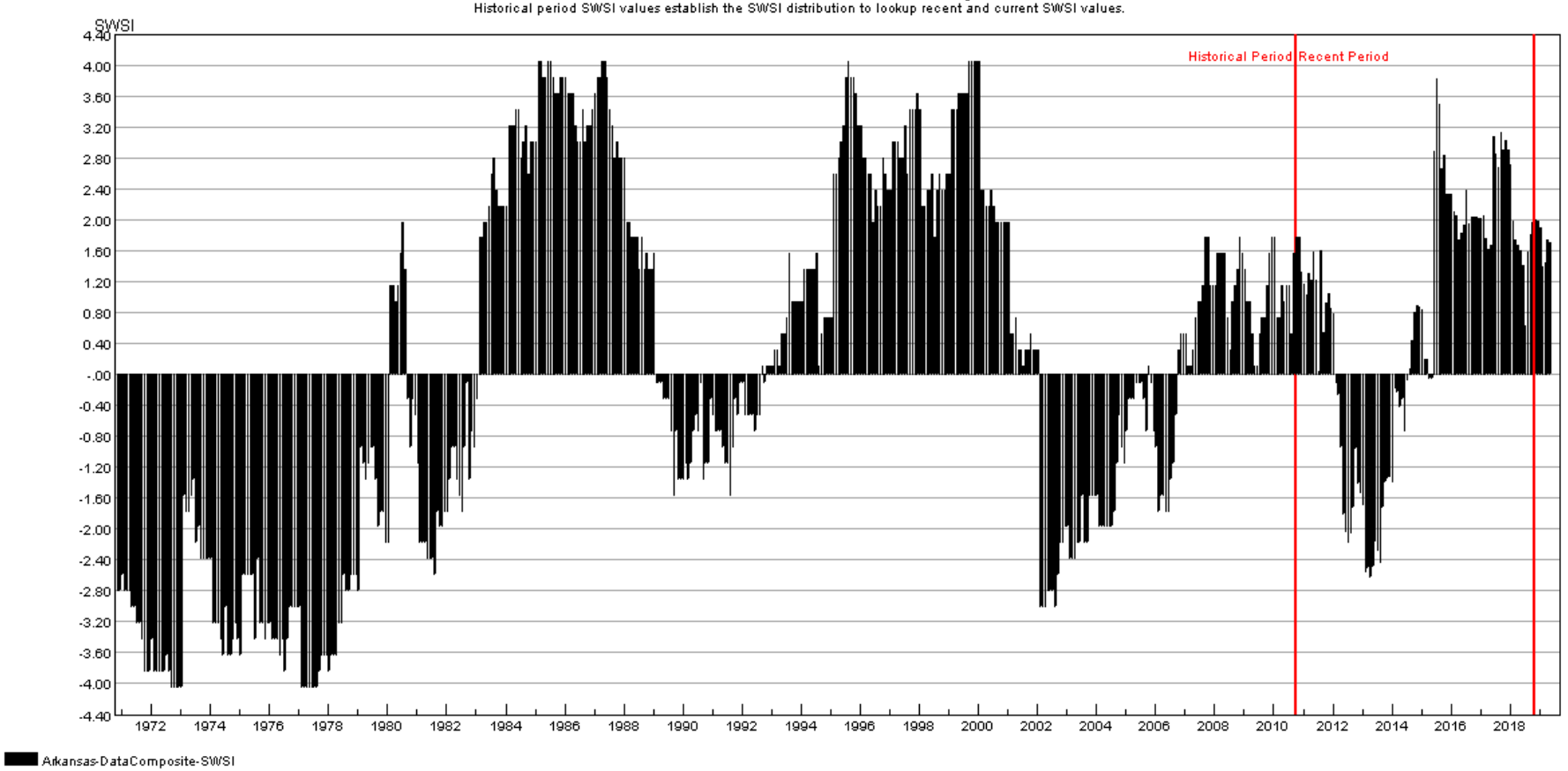
Run off has begun in several parts of the Arkansas River Basin. Mainstem flows are still being controlled by the USBOR for run-off and flood control, and as yet have not really begun in earnest. Even though the snowpack has declined due to warmer weather, conditions are still above average. The Cucharas Basin is seeing significant run-off, likely added by spring storm run-off from the Spring fire burn scar, but hydrographs show a persistent diurnal effect that indicates a strong snow melt run-off for the area.





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 +2.9.

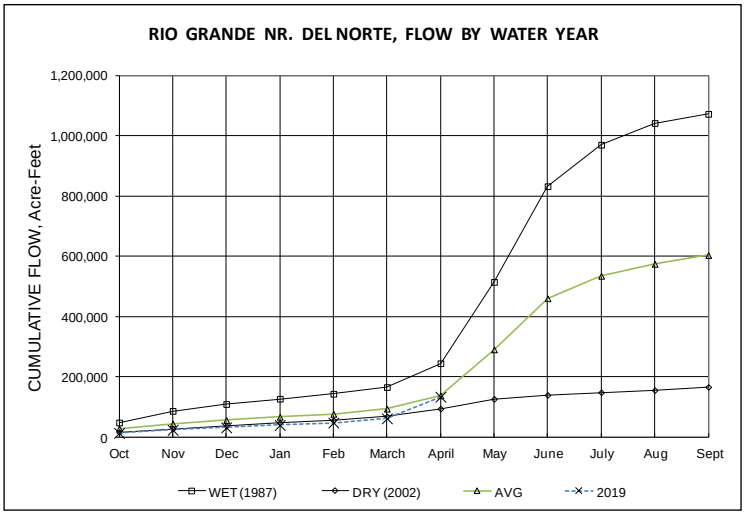
Flow at the gaging station Rio Grande near Del Norte averaged 1208 cfs (169% of normal). The Conejos River near Mogote had a mean flow of 358 cfs (127% of normal). Streamflow throughout the upper Rio Grande basin jumped to well above average levels at mid-month due to sunny skies and warm weather. The early run is not as beneficial to this high-elevation valley because the pastureland is just waking up and most cropland is not yet prepared. As temperatures cooled near the end of the month, streamflow dropped significantly.

The higher elevations received a few minor snowstorms during April. This was a much different pattern than February and March when abundant snowfall increased snowpack in the basin to about 150% of the long-term average. A good snowstorm hit the local mountains during the last couple days of April. Any late snow is a huge benefit to the Rio Grande basin.

Outlook

The snowpack reduction and runoff resulted in streamflow forecasts that stayed fairly consistent with the previous month estimates for the upper Rio Grande Basin. As of May 1st, 2019, the Natural Resources Conservation Service predicts most streams in the area to be in the 110 to 150% of average range. The Rio Grande near Del Norte is the basin high at 147% of normal and Culebra Creek is the low at 109% of the long-term average.

Recent National Weather Service forecasts are predicting above normal precipitation and near-average temperatures for the central Rockies this spring and summer, a welcome turnaround from the 2018 drought.

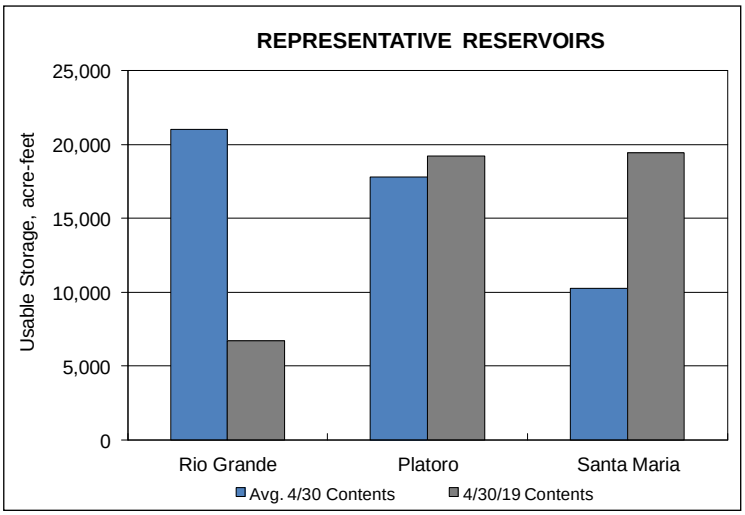


Administrative/Management Concerns

Localized flooding in the southern part of the San Luis Valley during this runoff season will be a concern. Other streams in the basin may experience flooding if high runoff is combined with rainfall and choking debris in the channel. Emergency management coordinators are conducting weekly meetings in an effort to stay current with changing conditions.

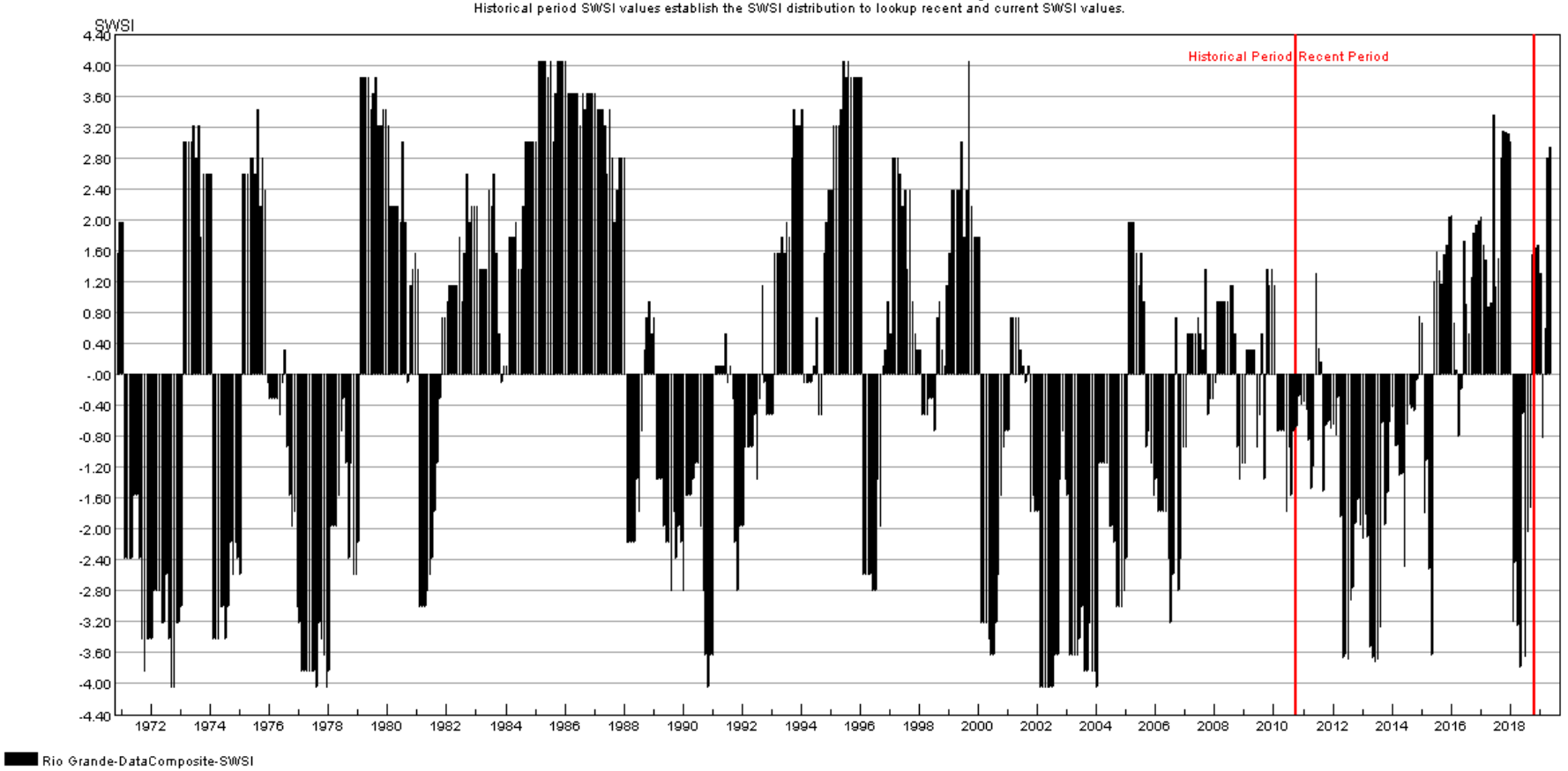
Public Use Impact

The weather pattern for April was favorable to farmers and ranchers to get fields plowed and planted. Currently, reservoir storage in the basin is below normal, but that may be handy for the potential flood protection water storage could provide.



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 +3.4.

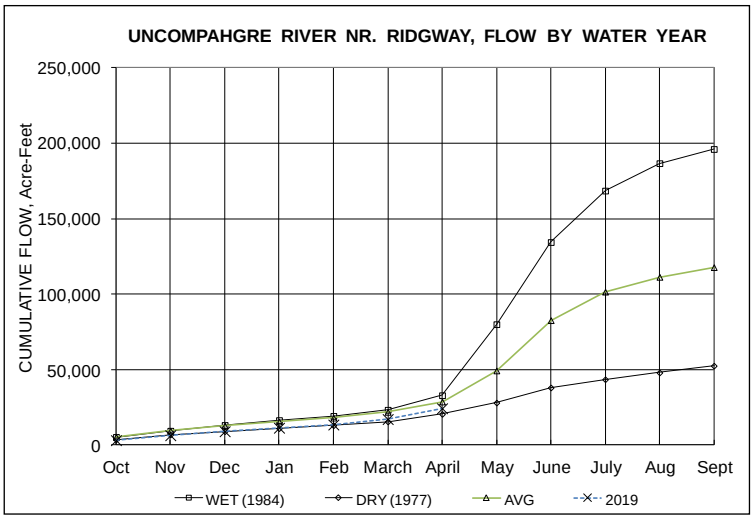
April was drier than the past two months with northern areas receiving around 110% of average while southern areas received around 90% of average. An average of all Gunnison basin Snotel sites peaked at 143% of average on April 14th, approximately one week later than normal. April was the first month of the water year where most of the Gunnison basin experienced temperatures slightly above average (1-3 degrees). Temperatures were not warm enough, however, to melt significant snowpack at high elevations and many sites have increased back to near the peak with late April snowfall. Much greater than average lower elevation snow has resulted in high flows on tributaries throughout the basin.

Outlook

April to July runoff forecasts prepared by the CBRFC on April 1st increased again. After dropping on April 15th to 860,000 acre-feet, the April to July inflow forecast for Blue Mesa Reservoir rose to 970,000 acre-feet due to the significant precipitation at the end of the month. Climate forecasts for the next 30 and 90 day period still place the Gunnison in an area expected to receive greater than average precipitation.

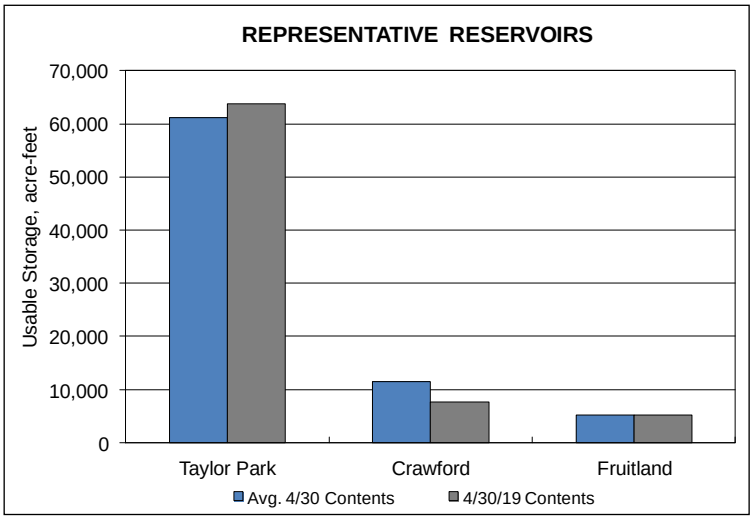
Administrative/Management Concerns

Snowmelt of ample low elevation snow caused Blue Mesa Reservoir levels to rise at up to 1.5 feet per day during April. In fact, Blue Mesa gained almost 80,000 acre-feet in April and runoff hasn't begun in earnest yet. The above mentioned CBRFC inflow forecast for Blue Mesa falls in the moderately wet year category, which results in a 24 hour peak flow target in the Black Canyon of 7,158 cfs. Target flows specified in the Record of Decision (ROD) for reoperations of the Aspinall Unit, including provisions that cut the duration in half for years following an extreme drought, include 20 days at 8,070 cfs or greater. Within that 20 days there is a 10 day target peak of 14,350 cfs . As a result of late April storms and the resulting increase in forecasted inflows, Blue Mesa is expected to rise to within four feet of full at 7515.5 feet, which corresponds to a peak content of 795,000 acre-feet (144% of average). As mentioned previously, reaching these targets for the intended durations will present an operating challenge for the Bureau of Reclamation because the water level is currently well below the spillway at Blue Mesa. In order to maintain large flows to meet those targets the spillways at all three Aspinall Unit reservoirs must be used. Reclamation will attempt to reduce the need for Aspinall storage to meet these targets by timing the releases with peak flows on the North Fork, but this is difficult due to the unpredictably of forecasts on the North Fork.



Operations at Taylor Park, Ridgway and Paonia Reservoirs are now focused on preventing, or limiting the amount of spill that will occur. Given forecast inflows at the three reservoirs of 130,000, 118,000 and 147,000 acre-feet, however, it may be difficult to keep the reservoirs from spilling due to limited amounts that can be released through their outlets.

Snowpack at the Park Reservoir Snotel continues to climb and on May 10th is at a new peak of 36.6 inches of SWE. Surface Creek continues to contain enough water to supply all the irrigators due to the continued melting of low elevation snow and rainfall.



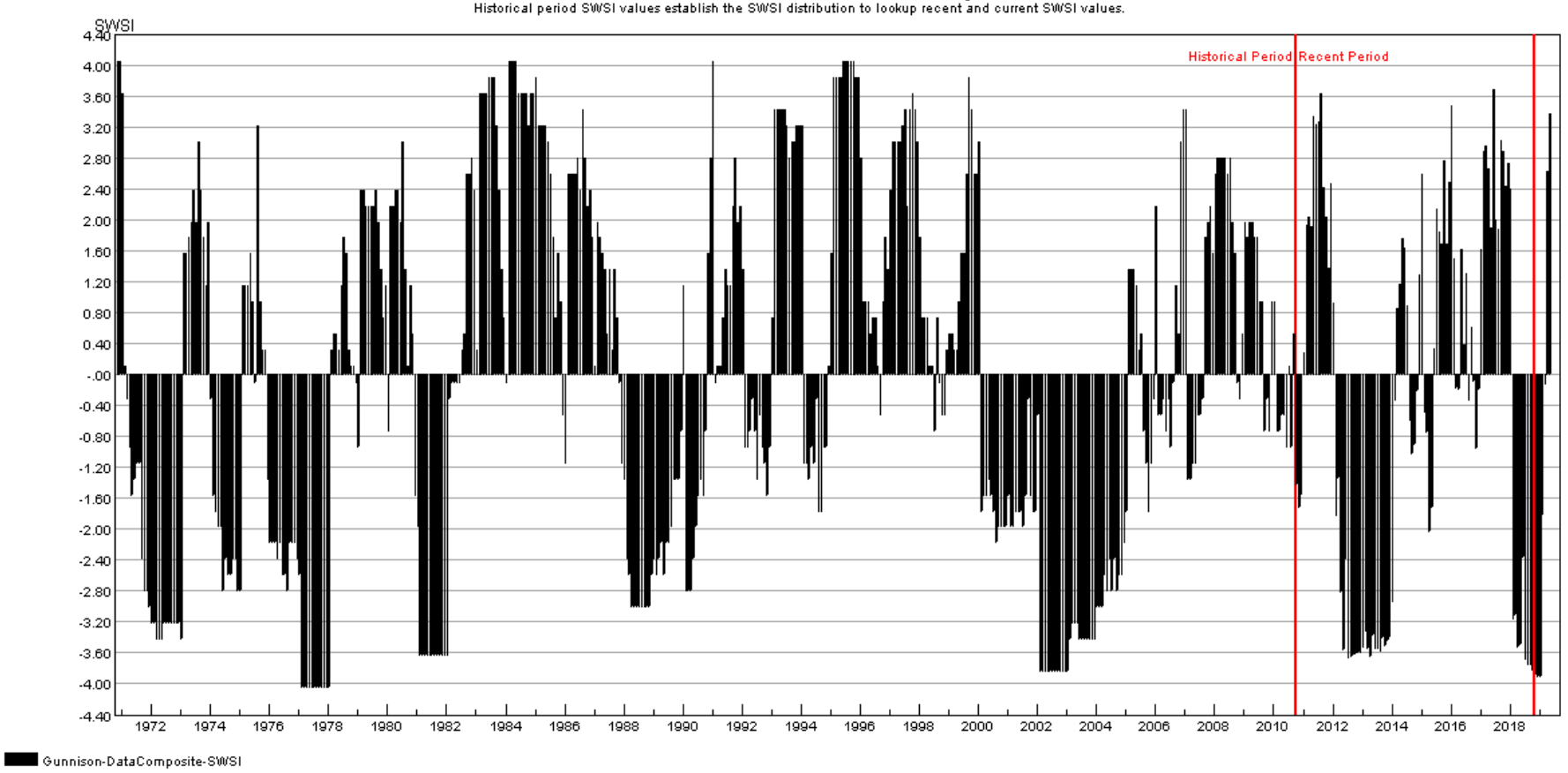
Public Use Impacts

Some areas on tributaries fed by low elevation snow saw flows in late April greater than in the last 10 years as a result of melting and rain on snow. These flows caused flooding of low lying areas and washed out culverts across local roadways over Horsefly Creek, Happy Canyon Creek and Spring Creek.

Although Reclamation attempts to time the large Aspinall ROD releases to be as low impact as possible, they may have an impact on the peak boating season in the Gunnison Gorge depending on when the North Fork peak occurs. Final timing and amounts for peak releases should be in late May and early June, but won't be determined until within a week of the peak.

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 +2.7.

Outlook

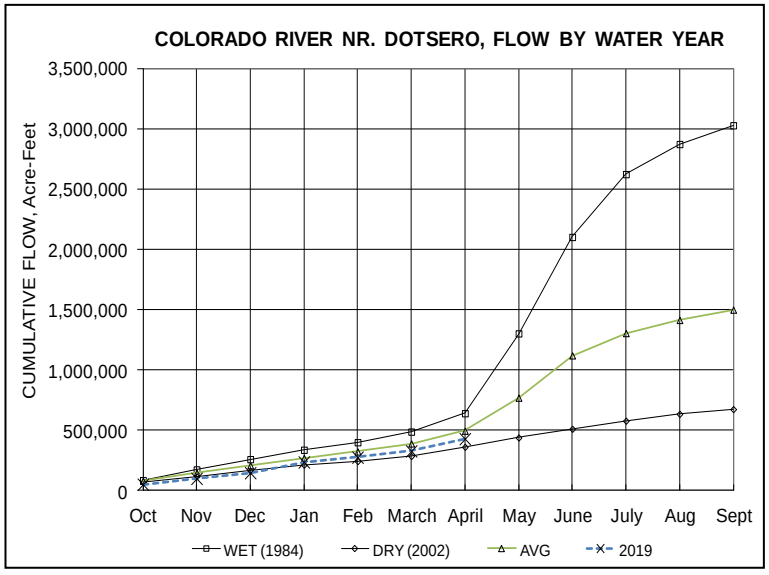
Colorado River flows are running above average and are forecasted to run at or above average with tributary flows running at or above average through May. As of May 9th, the Upper Colorado River Basin snowpack was 144 percent of median snow water equivalent and 119 percent of average precipitation. Average temperatures and above average precipitation are forecast for May.

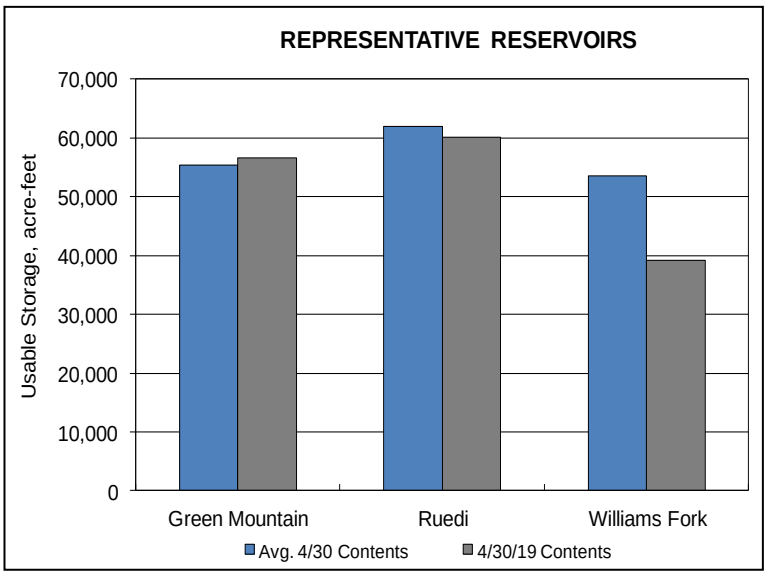
Administrative/Management Concerns

There is currently no call on the Colorado River. There is a call on the Blue River and the calling right is the 1946 Green Mountain Reservoir Power plant and Green Mountain has started to fill. Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) are running and are at or near full capacity. All reservoirs are expected to fill this year.

Public Use Impacts

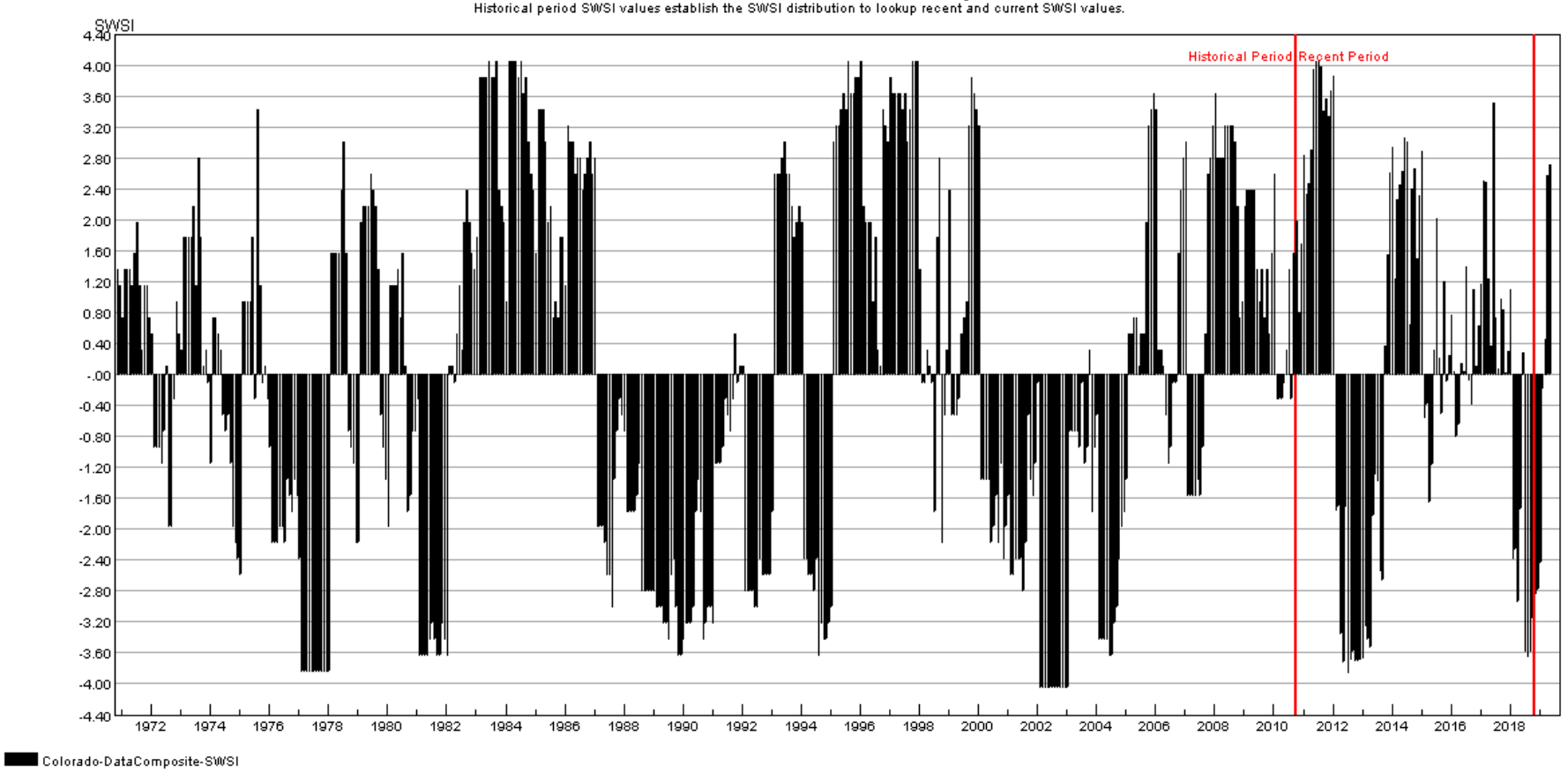
High snowpack in the Colorado River basin is expected to result in above average runoff this spring and summer with forecasts from 110-148 percent of average for May through July.





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 +0.1.

Total April precipitation in the combined; Yampa, White, and North Platte River basins, as measured at the SNOTEL sites operated by NRCS, was reported at 102% of average, Year to Date 114% average. Reservoir storage for the combined basins at the end of April was 104% of average compared to 121% last year.

Snowpack for the combined basins as of May 1, 2019 was at 105% of the median and 133% of last year. The snow water equivalent (SWE) as of April 30, 2019 was 103% of median for the Yampa River basin, 122% of median in the White River basin, 103% of median in the Little Snake River basin, and 109% of median in the North Platte River basin.

NRCS predicted average spring and summer streamflow's in the Yampa, White, and North Platte River basins. NRCS runoff forecasts predict a range from 123% of average for the North Platte River at Northgate and 106% of average for the Little Snake River near Dixon.

Division 6 stream gages are currently being set up to operate for the season, there a few still to be set up. Div 6 staff wishes to acknowledge the Hydro's from Div 1 and Div 7 for assisting us in setting up our sites…as we are attempting to hire our own Hydro…**Thank You!**

Reservoir Outlook

As of April 30, 2019:

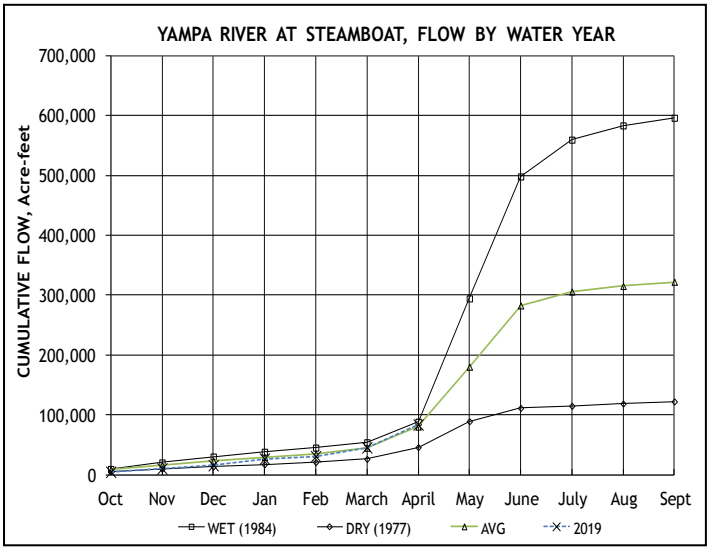
- Fish Creek Reservoir was storing approximately 2,005 AF, 46.3% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF.
- Yamcolo Reservoir was storing 5,435 AF, 565 of capacity. The capacity of Yamcolo Reservoir is 9,621 AF.
- Elkhead Creek Reservoir was storing 25,290 AF. The capacity of Elkhead Creek Reservoir is 24,778 AF.
- Stagecoach Reservoir was storing 34,175 AF, 93% of capacity. The capacity of Stagecoach Reservoir is 36,439 AF

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

Public Use Impacts

Steamboat Ski Resort closed for the season April 14, 2019… the mountain summit received over 400 inches snow for the season and the "total base amount" for the ski area set a seasonal record as well…

River and stream channels have begun to melt out and open up for angles at lower elevations above Stagecoach Reservoir and the lake surface is ice-free. Check the CPW website for updated local fishing conditions. In addition, local rafting companies are preparing for an exciting season of white water experiences…

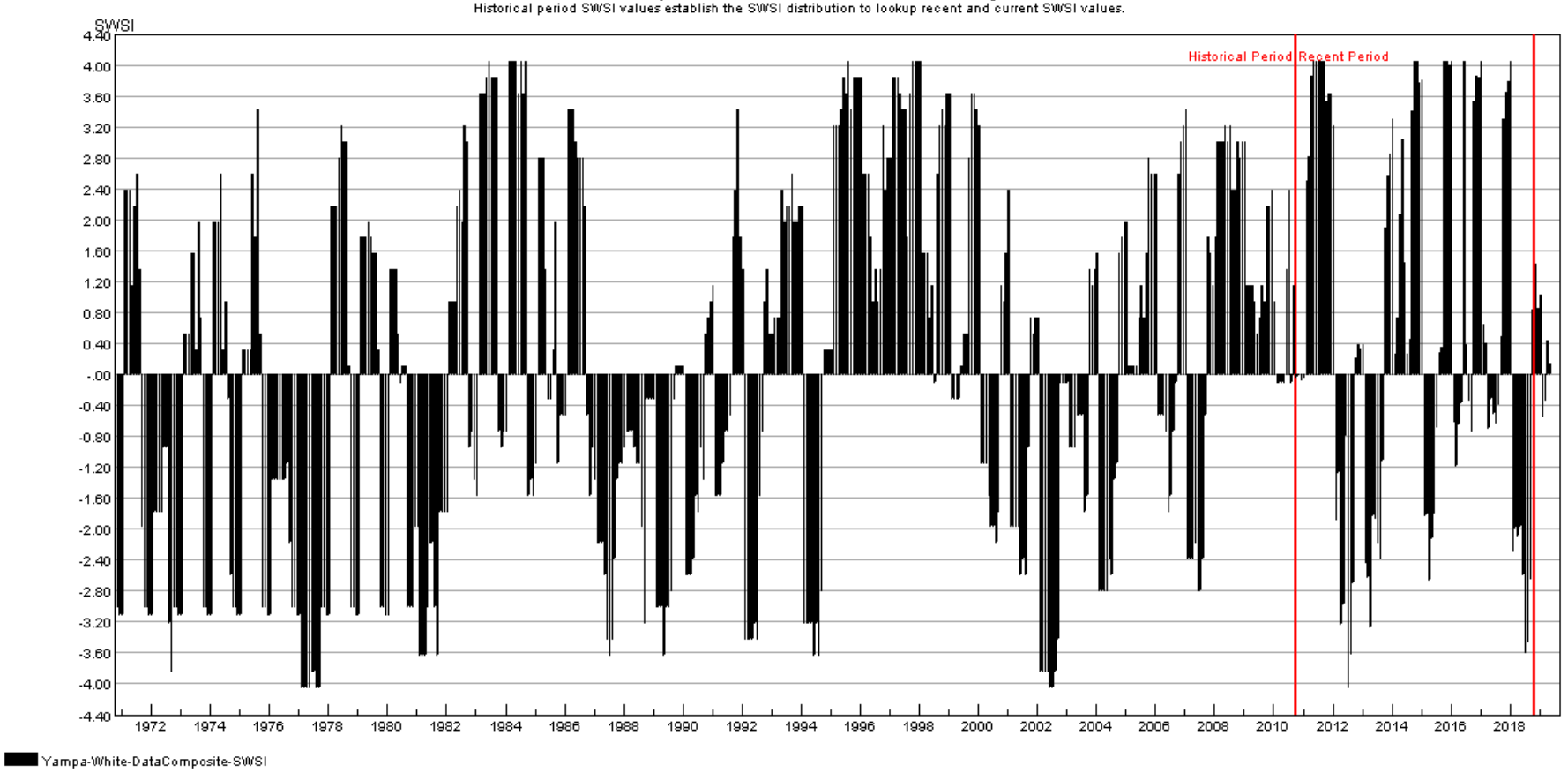


In addition, local Emergency Managers are taking steps to prepare for the possibility of localized flooding due to the potential for higher runoff as conditions fluctuate.

Soil Moisture Profile Concerns: Early season stream flows are beginning to increase, however, we are seeing little to no surface flow on many small tributary drainages, as water users have reported that "melt" from snow covered meadows "went straight in the ground"…

Yampa-White Basin SWSI History

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



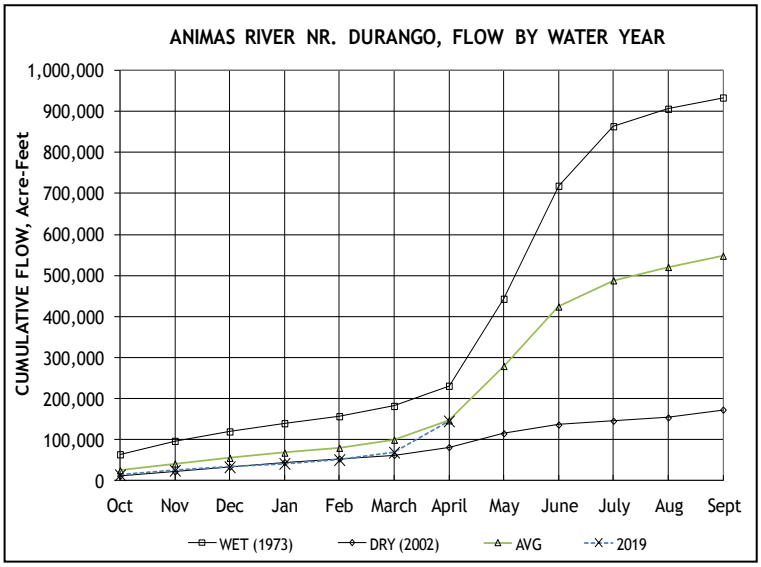
Basinwide Conditions Assessment

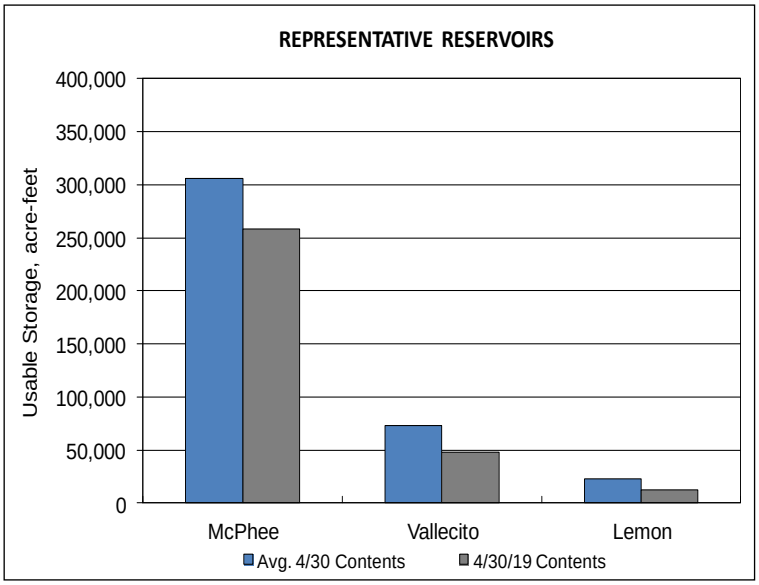
The SWSI value for the month was +3.1.

Flow at the Animas River at Durango averaged 1,360 cfs (162% of average). The flow at the Dolores River at Dolores averaged 898 cfs (122% of average). The La Plata River at Hesperus averaged 91.8 cfs (116% of average). Precipitation in Durango was 0.95 inches for the month, 73% of the 30-year average of 1.30 inches. Precipitation to date in Durango, for the water year is 16.42 inches, 146% of the 30-year average of 11.22 inches. End of last month precipitation to date, for the water year was 157% of average. The average high and low temperatures for the month of April in Durango were 65° and 34°. In comparison, the 30-year average high and low for the month is 63° and 31°. At the end of the month Vallecito Reservoir contained 47,900 acre-feet compared to its average content of 67,378 acre-feet (71% of average). McPhee Reservoir was up to 258,226 acre-feet compared to its average content of 307,097 (84% of average), while Lemon Reservoir was up to 12,860 acre-feet as compared to its average content of 23,182 acre-feet (55% of average).

Outlook

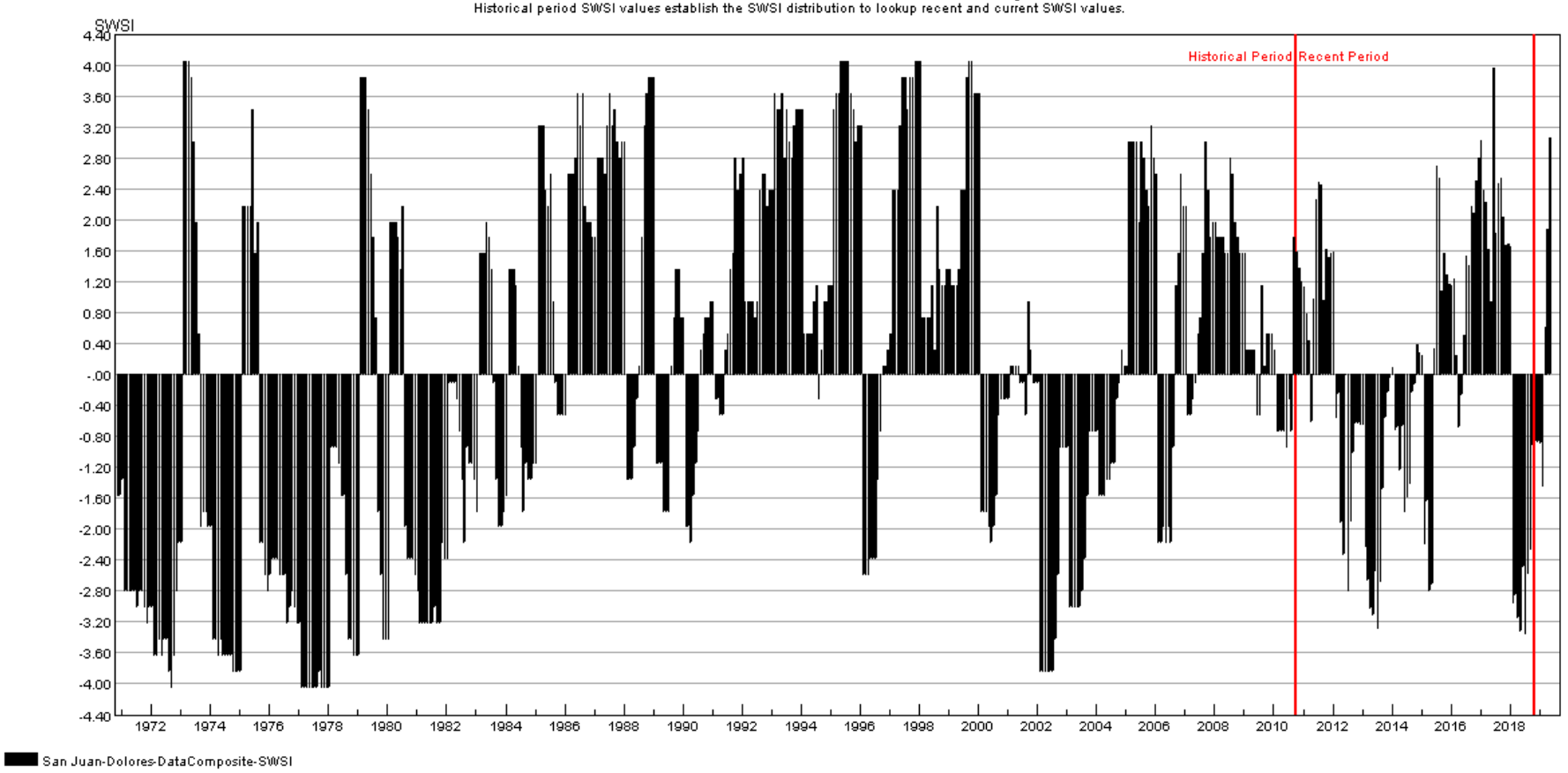
Precipitation (0.95 inches) was below average for April in Durango. There were 74 years out of 124 years of record where there was more precipitation than this year. The flows in the rivers within the basin were above average for this time of the year. There are 10 out of 108 years of record where the total flow past the Animas River at Durango stream gauge was more than this year. There were 35 out of 108 years of record where the total flow past the Dolores stream gauge was more than this year and 33 out of 102 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. Most of the reservoirs within the basin are expected to fill. Vallecito began releasing excess water on March 21 to prepare for the expected spring runoff with in that basin. On April 30, the NRCS SNOTEL sites reported an average snow-water-equivalent within the basin at 159%. Last month the average snow-water-equivalent at the end of the month was 155%.





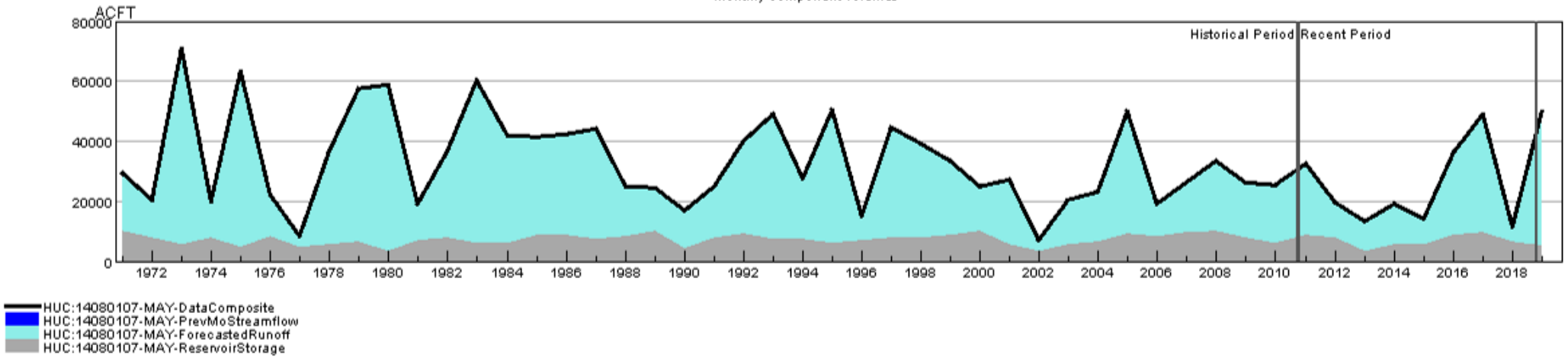
San Juan-Dolores Basin SWSI History

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



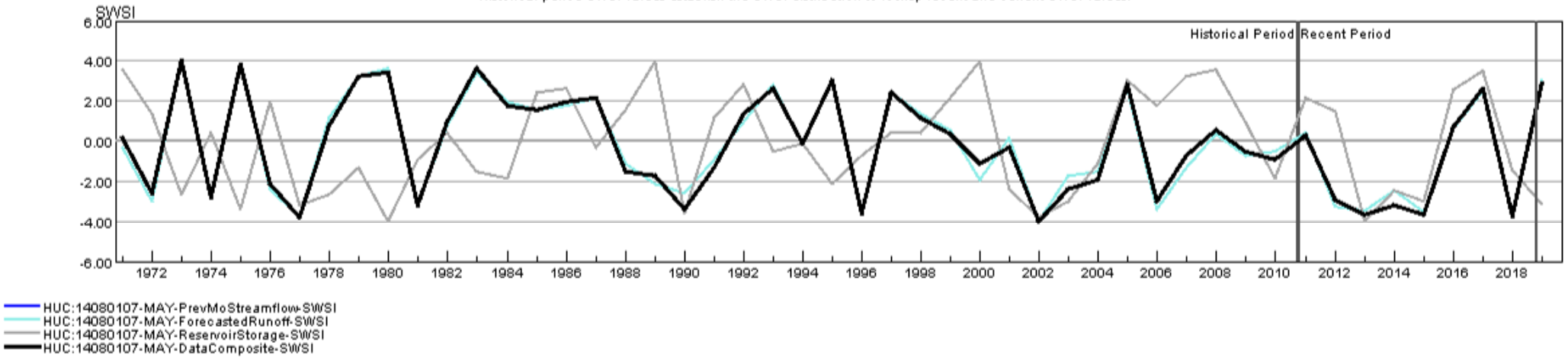
HUC 14080107 (Mancos) Surface Water Supply - MAY

Monthly component volumes



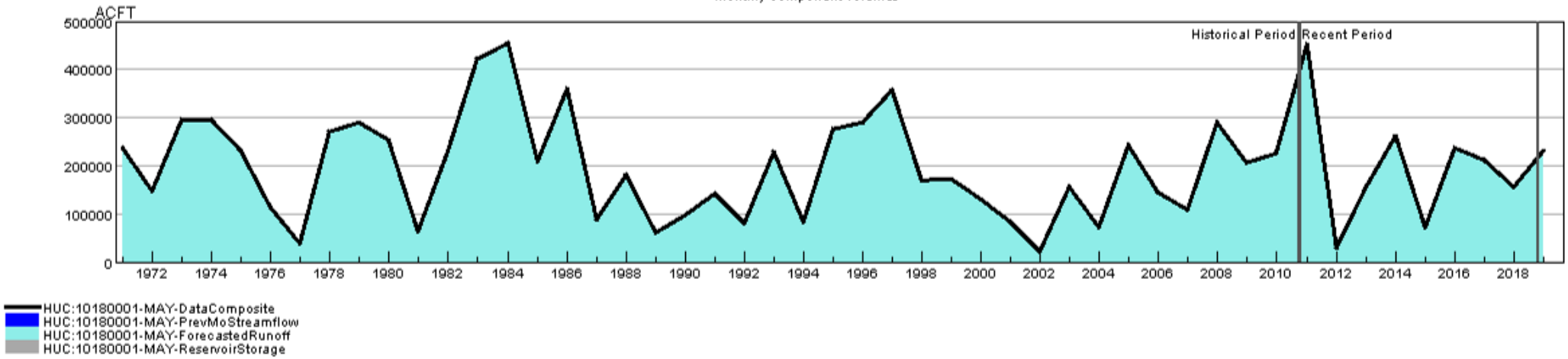
HUC 14080107 (Mancos) SWSI Values - MAY

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



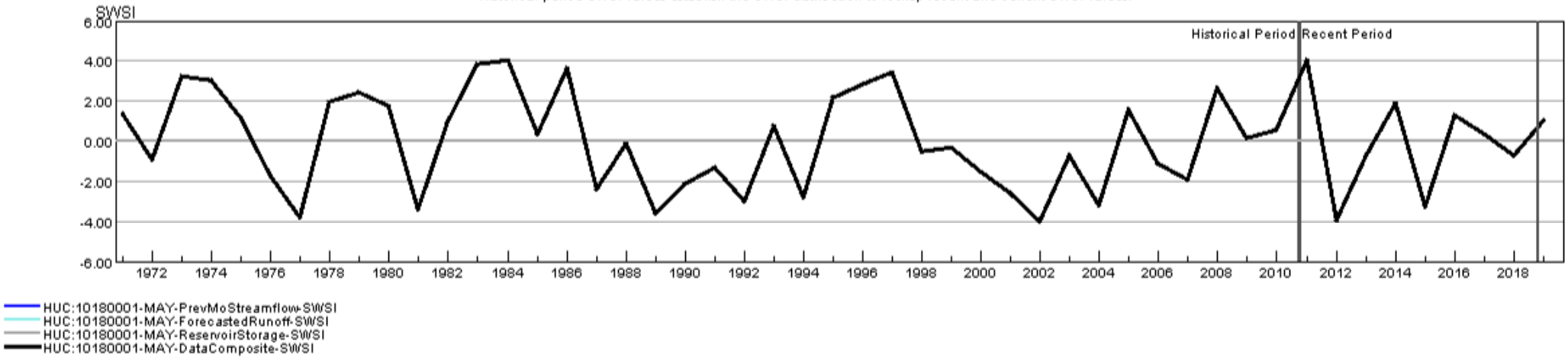
HUC 10180001 (North Platte Headwaters) Surface Water Supply - MAY

Monthly component volumes



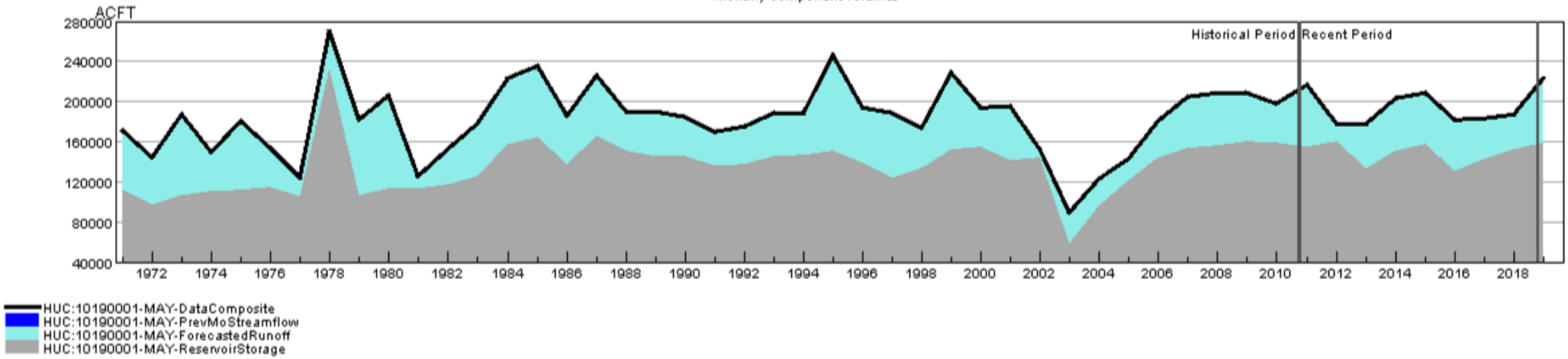
HUC 10180001 (North Platte Headwaters) SWSI Values - MAY

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



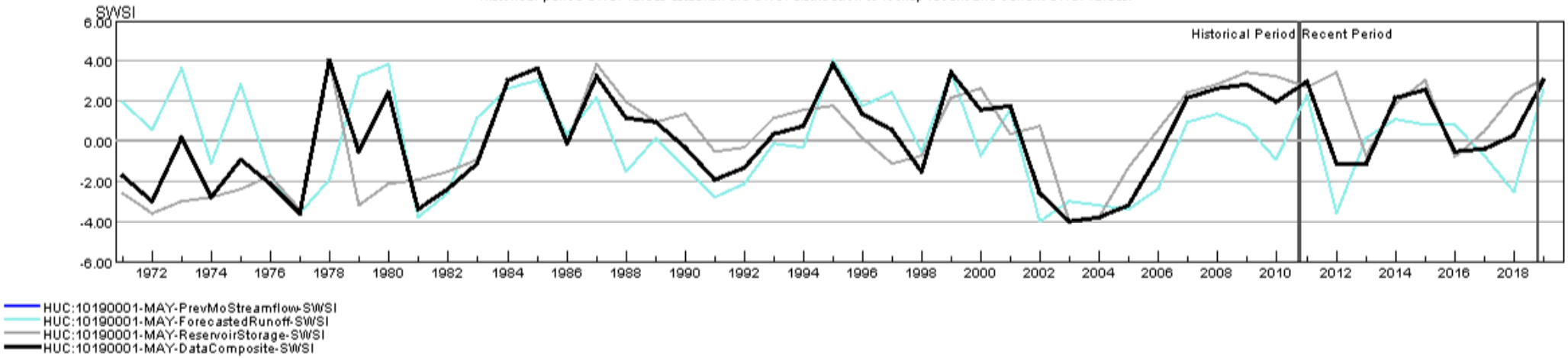
HUC 10190001 (South Platte Headwater) Surface Water Supply - MAY

Monthly component volumes



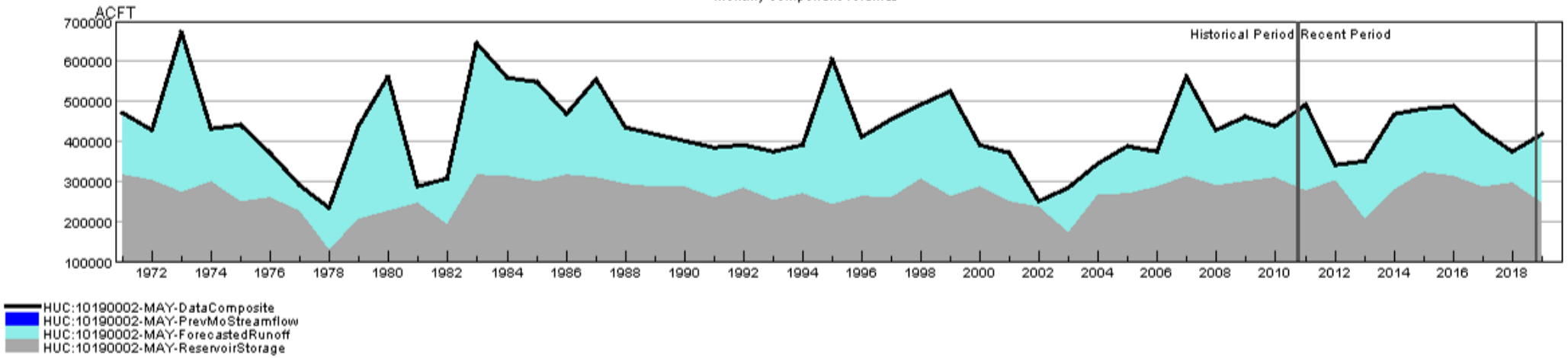
HUC 10190001 (South Platte Headwater) SWSI Values - MAY

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



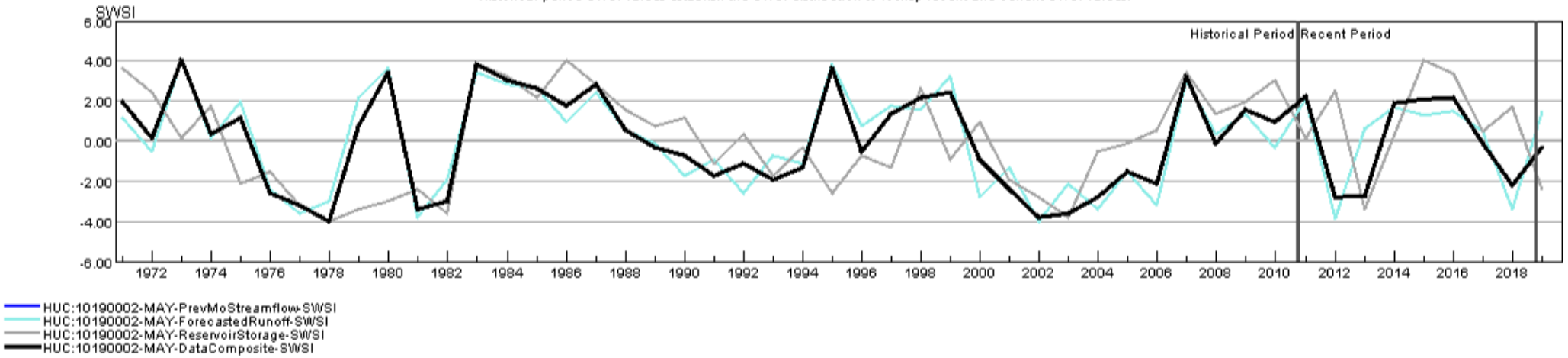
HUC 10190002 (Upper South Platte) Surface Water Supply - MAY

Monthly component volumes



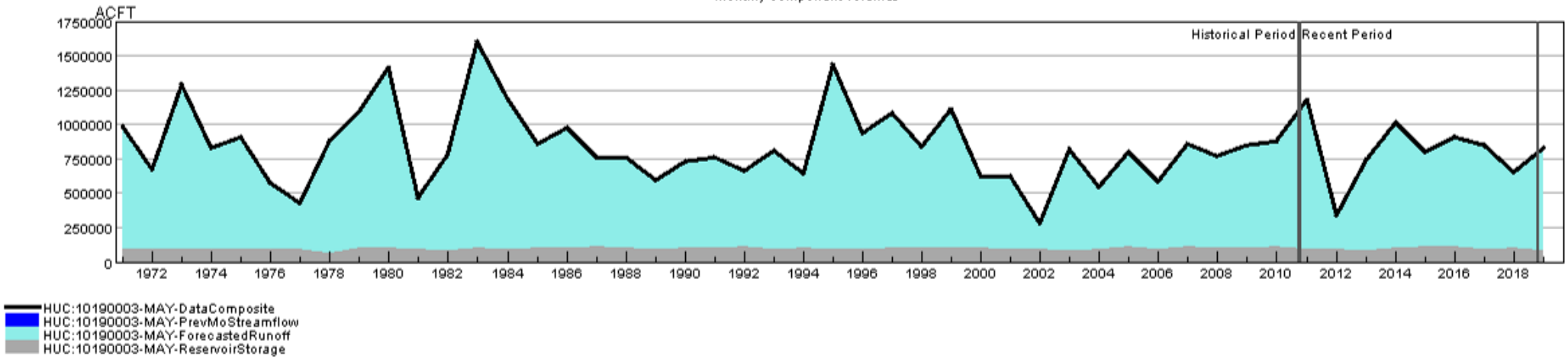
HUC 10190002 (Upper South Platte) SWSI Values - MAY

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



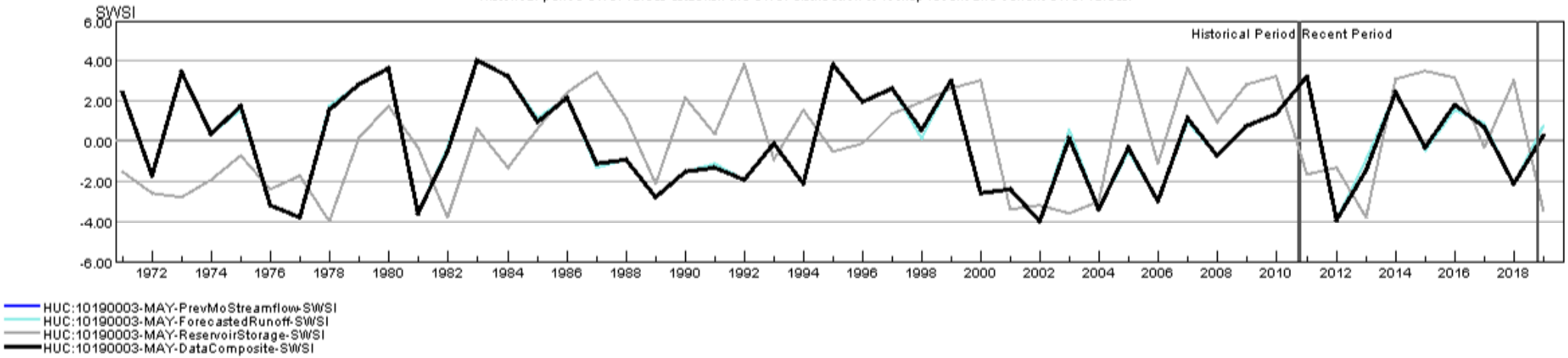
HUC 10190003 (Middle South Platte-Cherry Creek) Surface Water Supply - MAY

Monthly component volumes



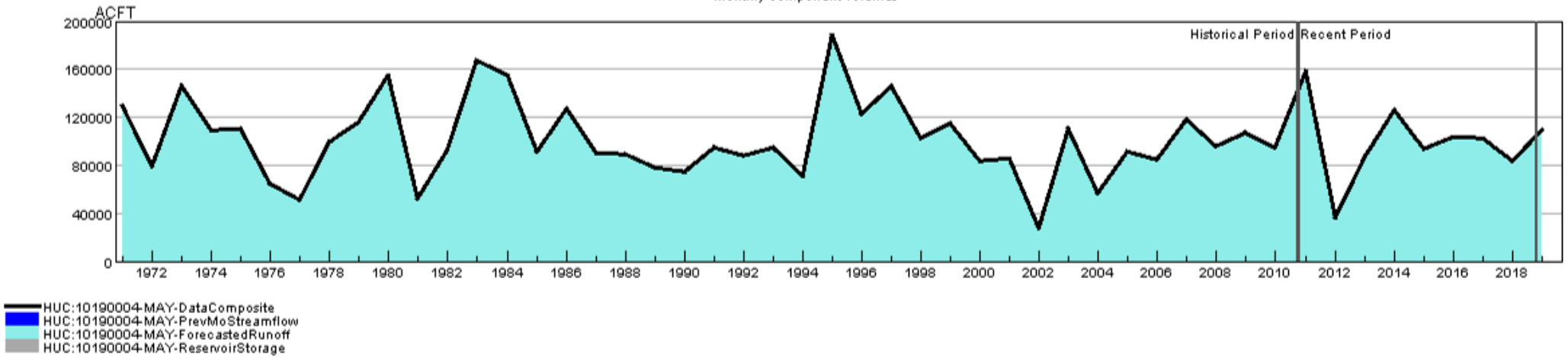
HUC 10190003 (Middle South Platte-Cherry Creek) SWSI Values - MAY

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



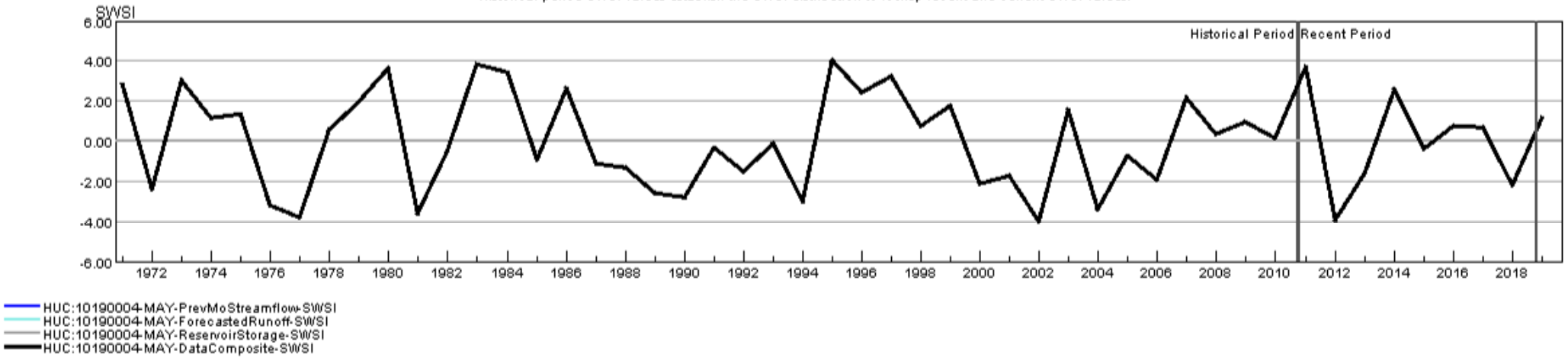
HUC 10190004 (Clear) Surface Water Supply - MAY

Monthly component volumes



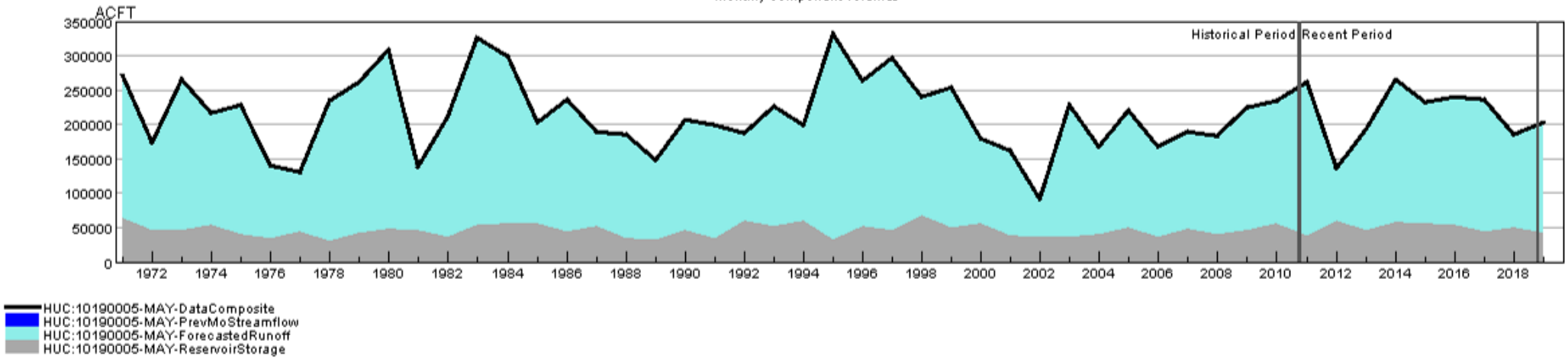
HUC 10190004 (Clear) SWSI Values - MAY

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



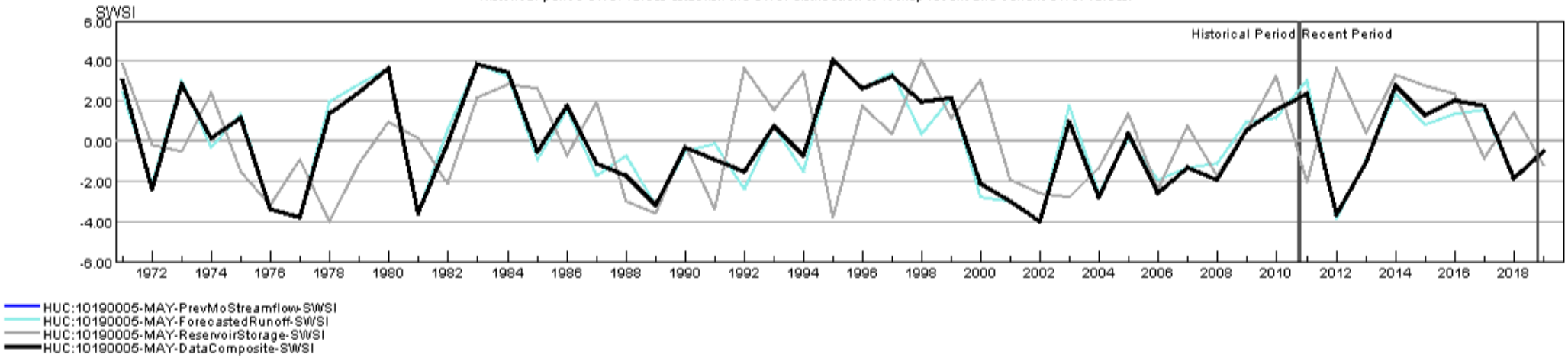
HUC 10190005 (St. Vrain) Surface Water Supply - MAY

Monthly component volumes



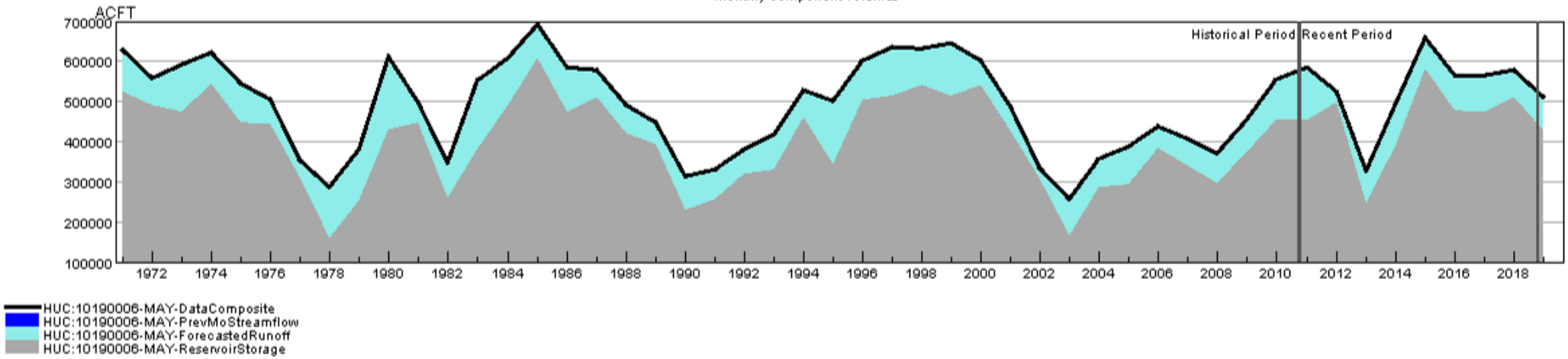
HUC 10190005 (St. Vrain) SWSI Values - MAY

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



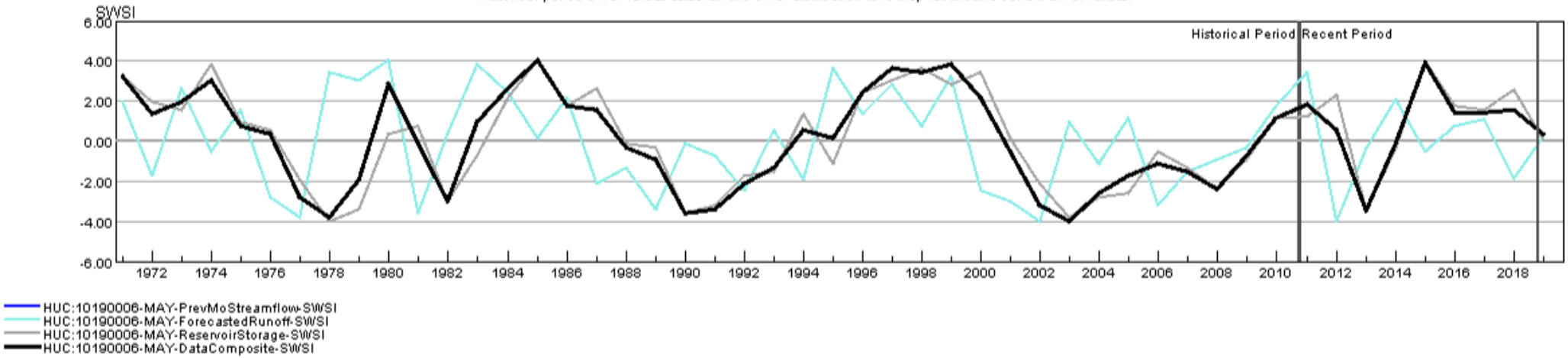
HUC 10190006 (Big Thompson) Surface Water Supply - MAY

Monthly component volumes



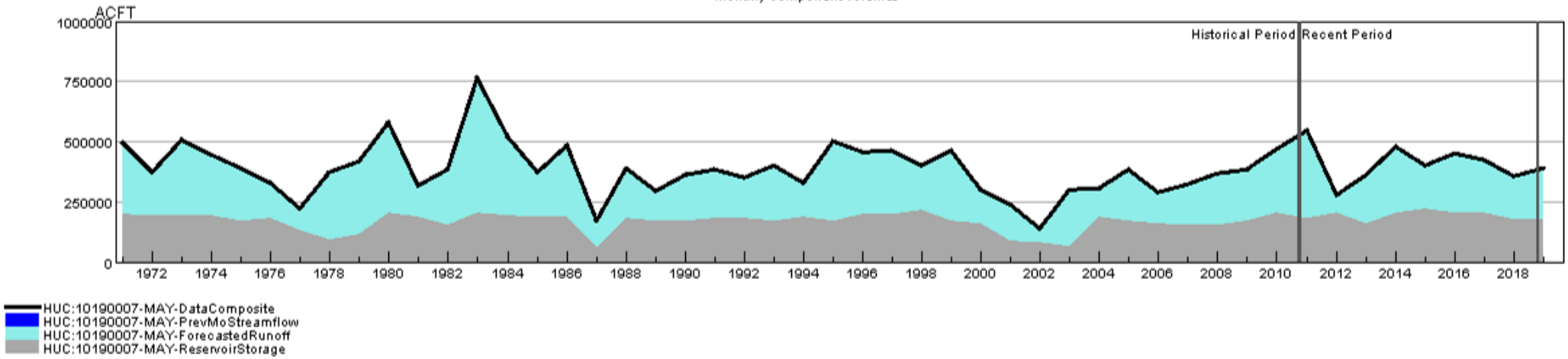
HUC 10190006 (Big Thompson) SWSI Values - MAY

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



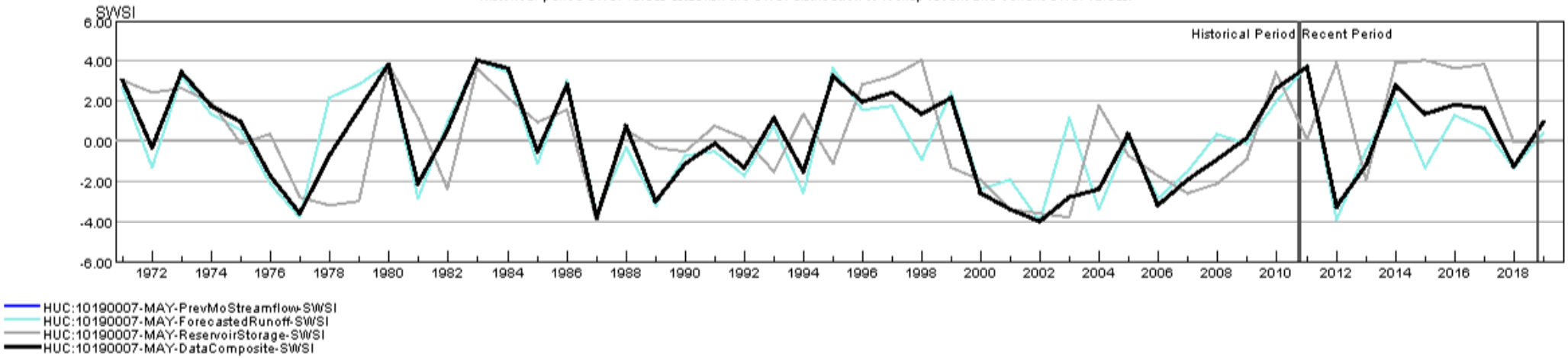
HUC 10190007 (Cache La Poudre) Surface Water Supply - MAY

Monthly component volumes



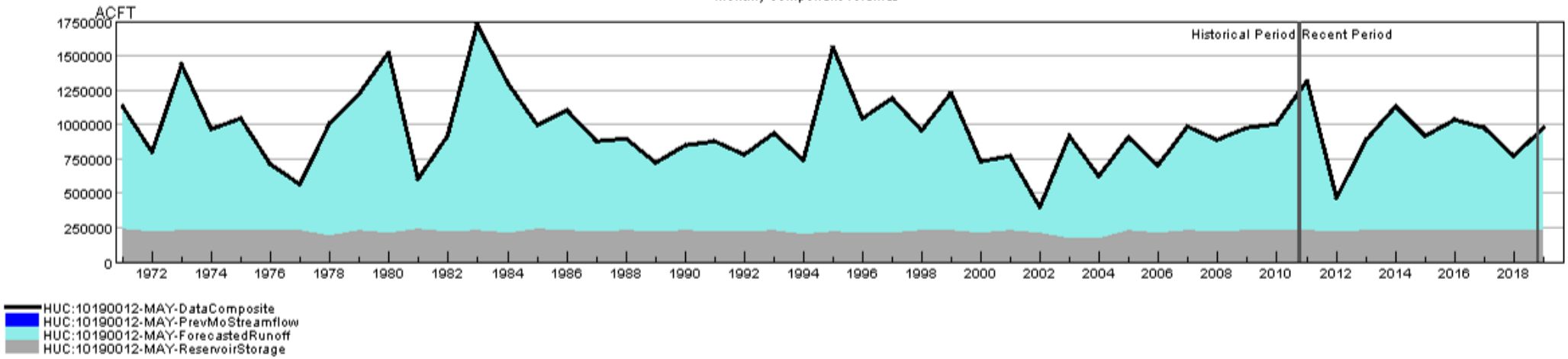
HUC 10190007 (Cache La Poudre) SWSI Values - MAY

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



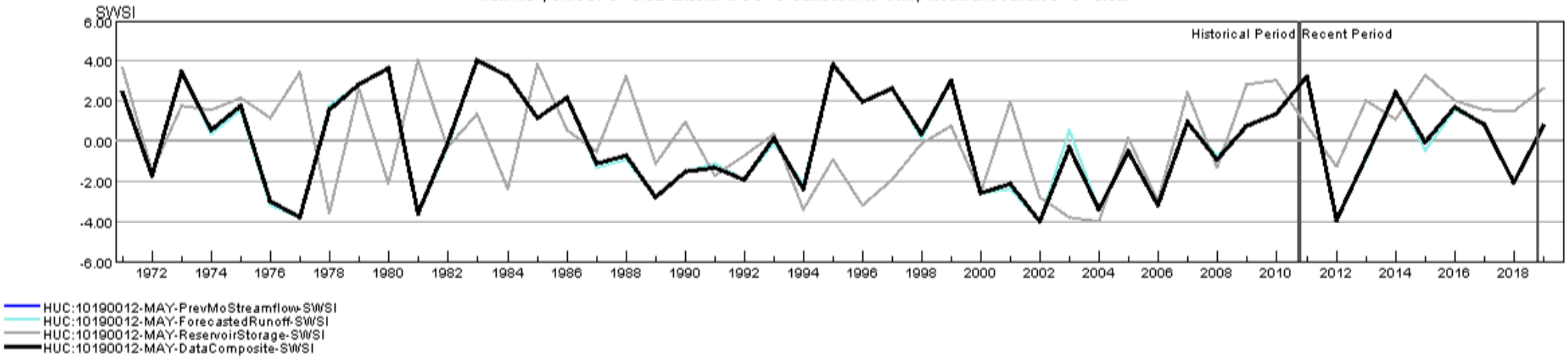
HUC 10190012 (Middle South Platte-Sterling) Surface Water Supply - MAY

Monthly component volumes



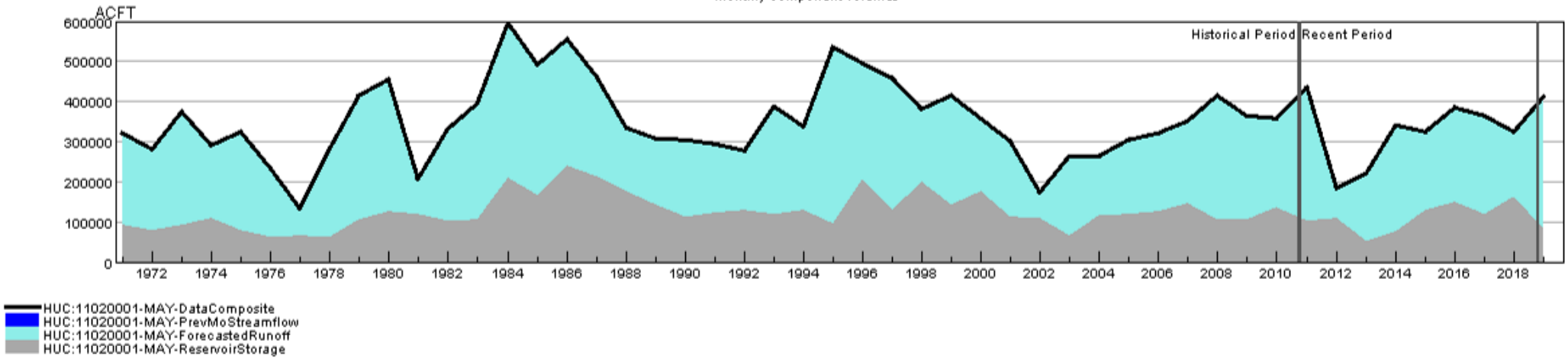
HUC 10190012 (Middle South Platte-Sterling) SWSI Values - MAY

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



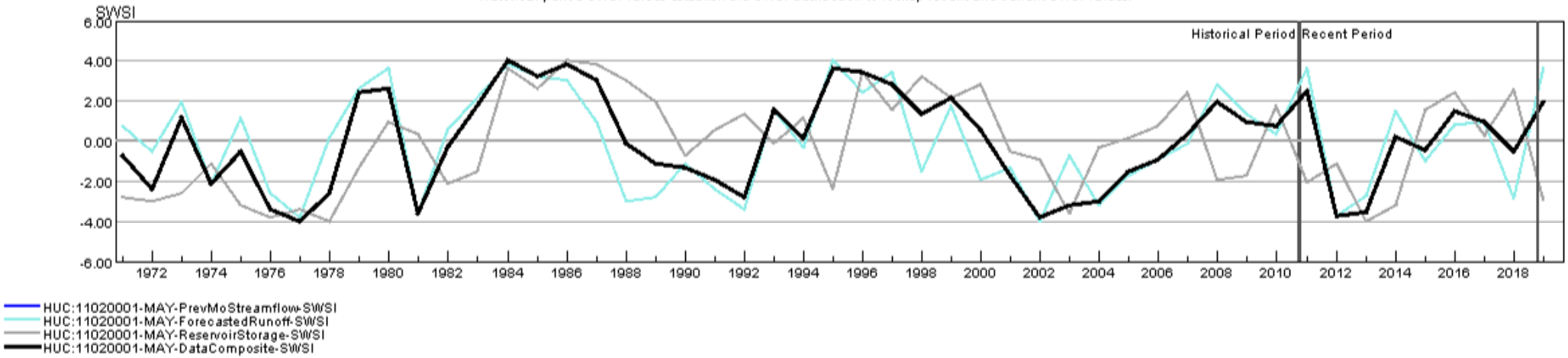
HUC 11020001 (Arkansas Headwaters) Surface Water Supply - MAY

Monthly component volumes



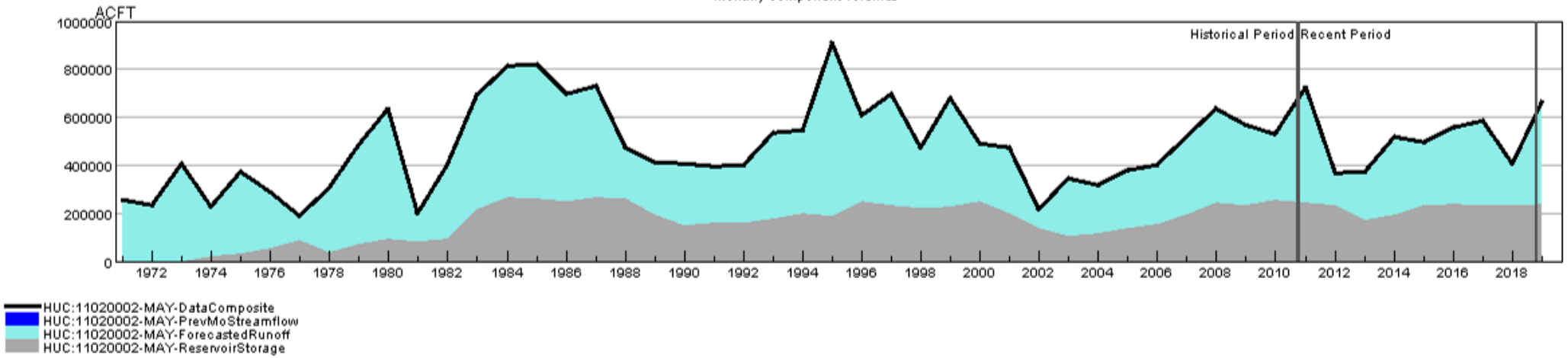
HUC 11020001 (Arkansas Headwaters) SWSI Values - MAY

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



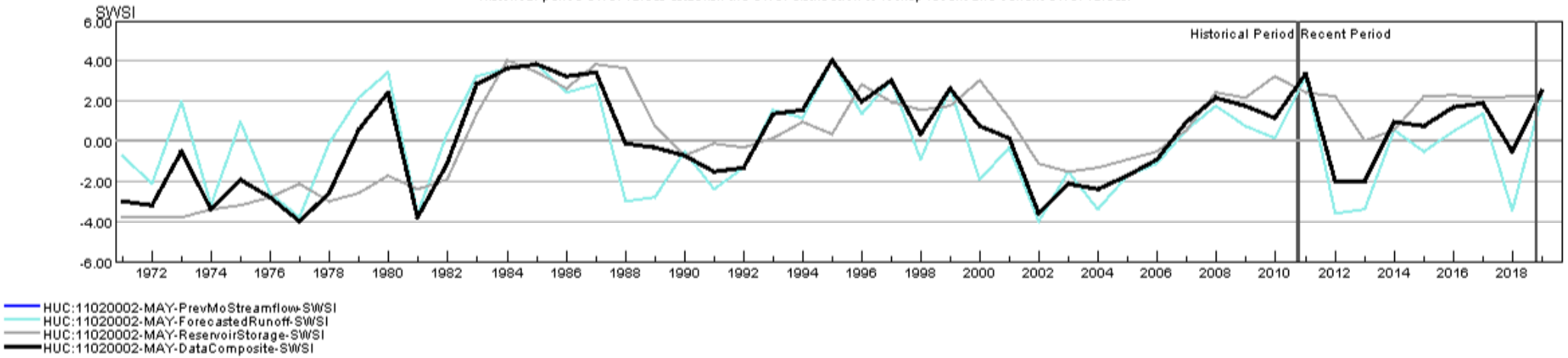
HUC 11020002 (Upper Arkansas) Surface Water Supply - MAY

Monthly component volumes



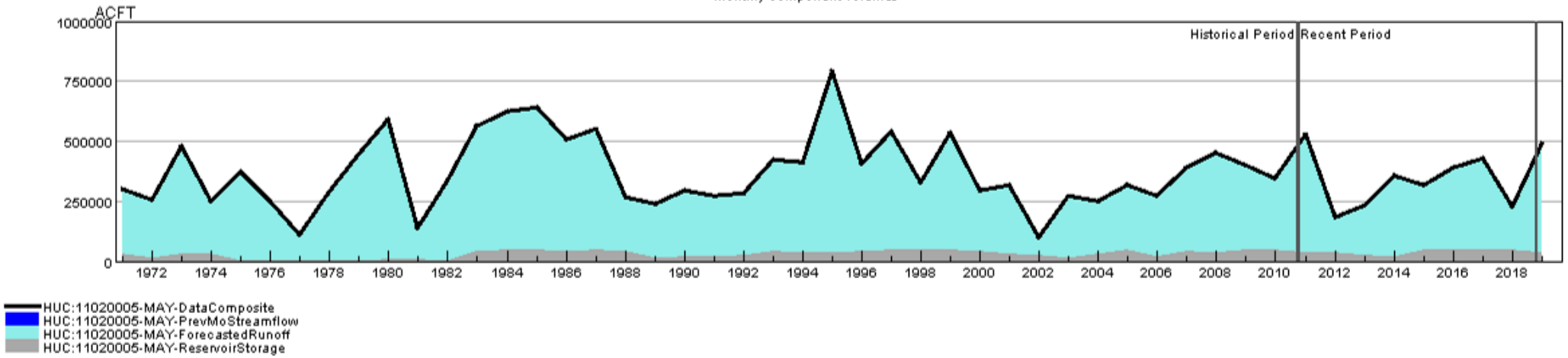
HUC 11020002 (Upper Arkansas) SWSI Values - MAY

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



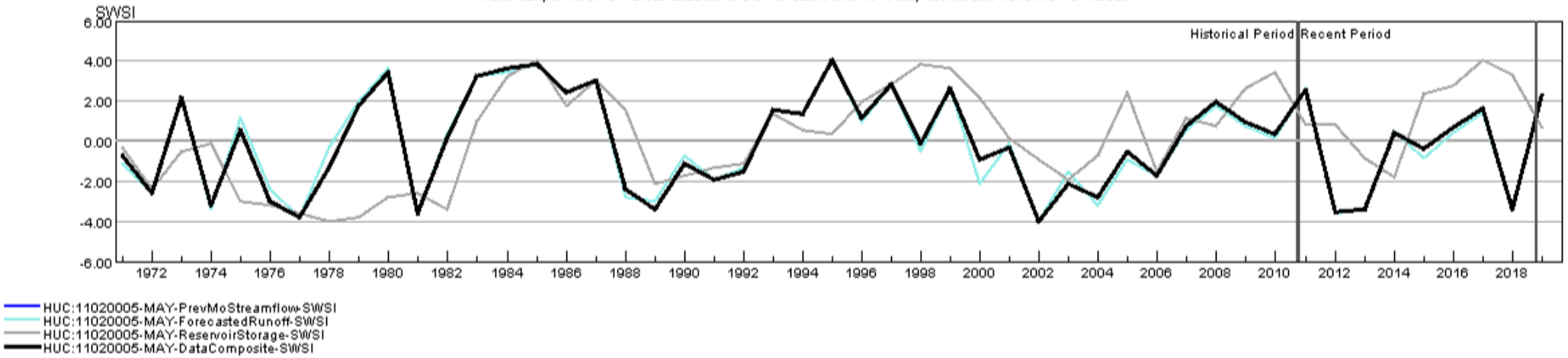
HUC 11020005 (Upper Arkansas-Lake Meredith) Surface Water Supply - MAY

Monthly component volumes



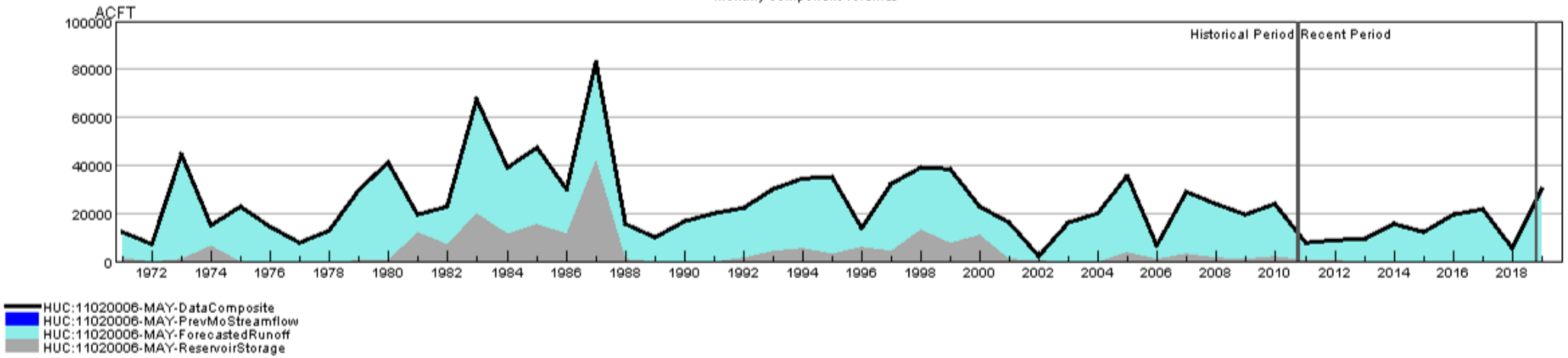
HUC 11020005 (Upper Arkansas-Lake Meredith) SWSI Values - MAY

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



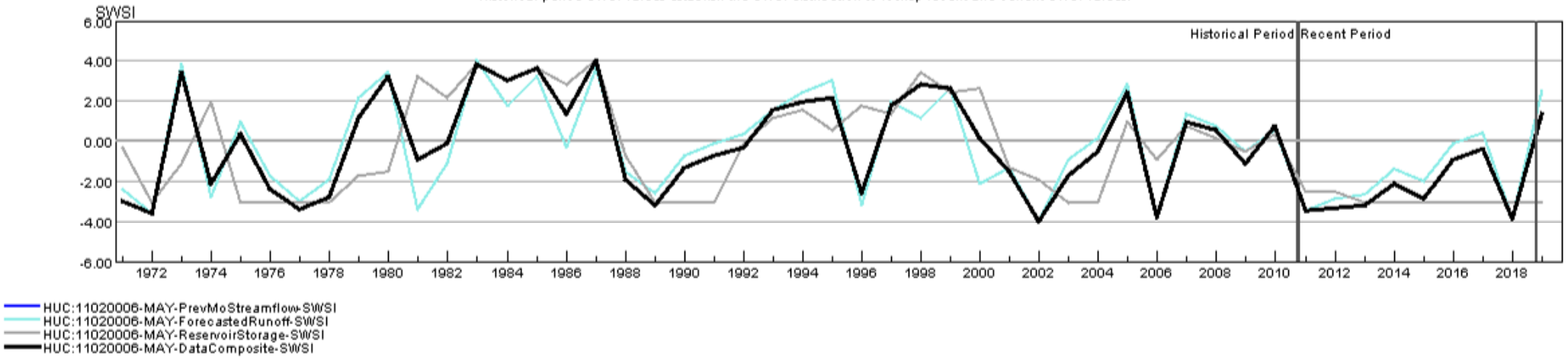
HUC 11020006 (Huerfano) Surface Water Supply - MAY

Monthly component volumes



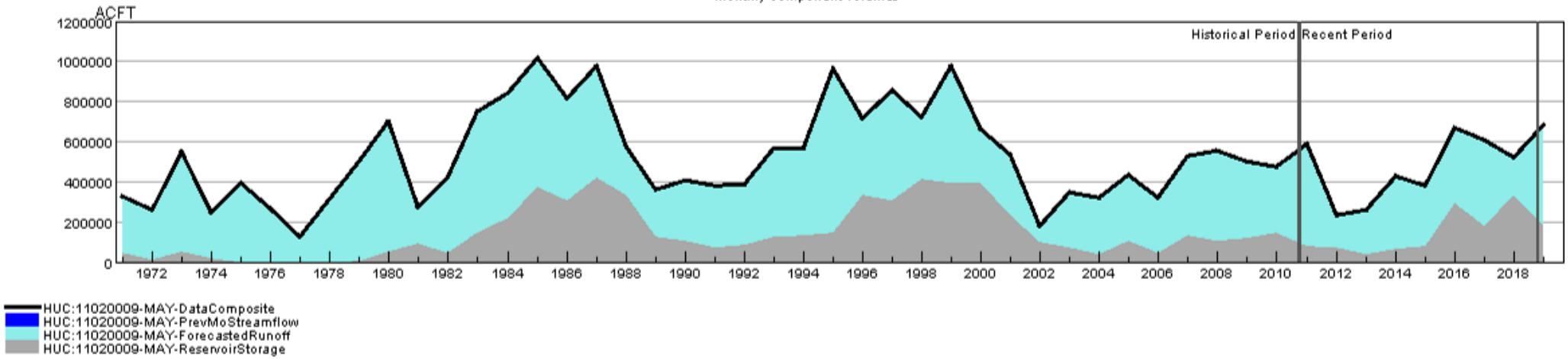
HUC 11020006 (Huerfano) SWSI Values - MAY

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



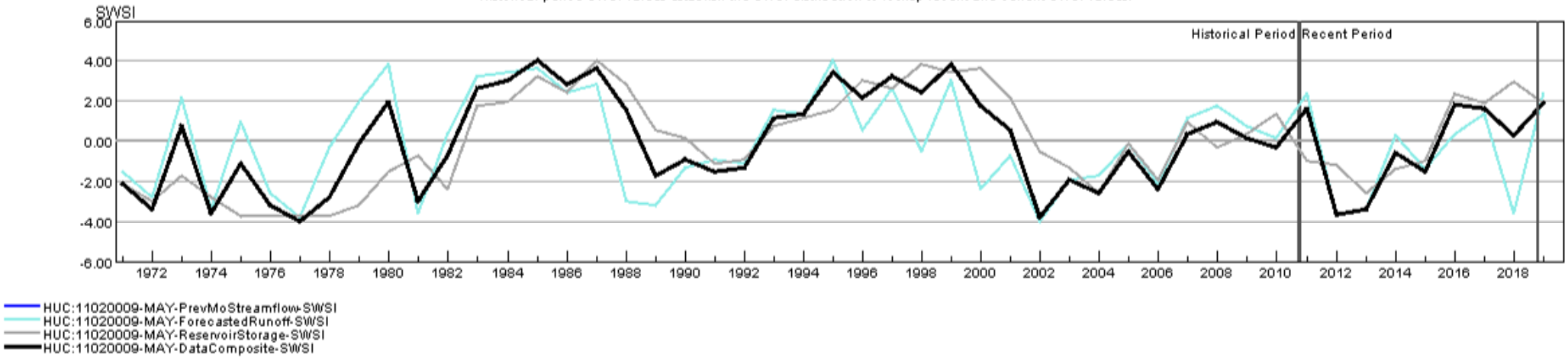
HUC 11020009 (Upper Arkansas-John Martin Reservoir) Surface Water Supply - MAY

Monthly component volumes



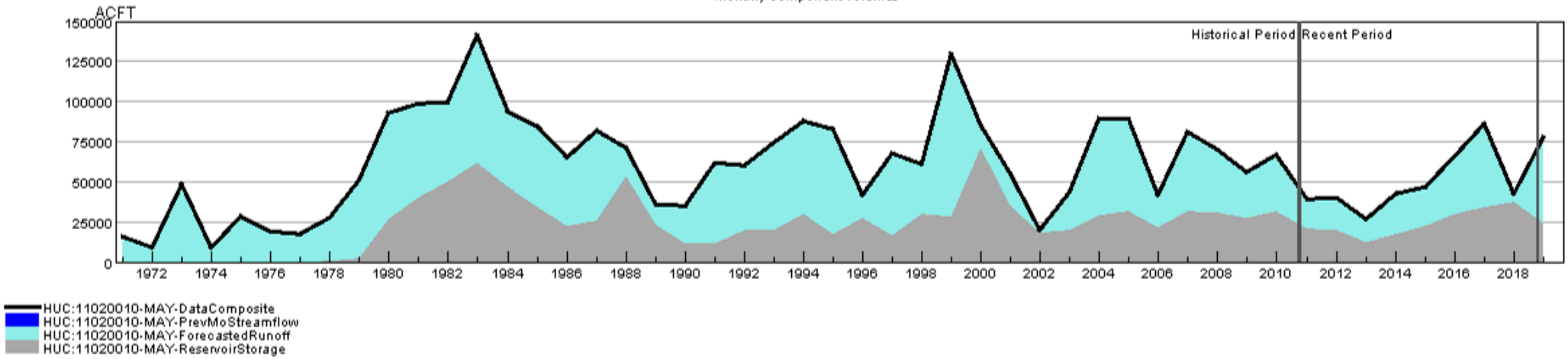
HUC 11020009 (Upper Arkansas-John Martin Reservoir) SWSI Values - MAY

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



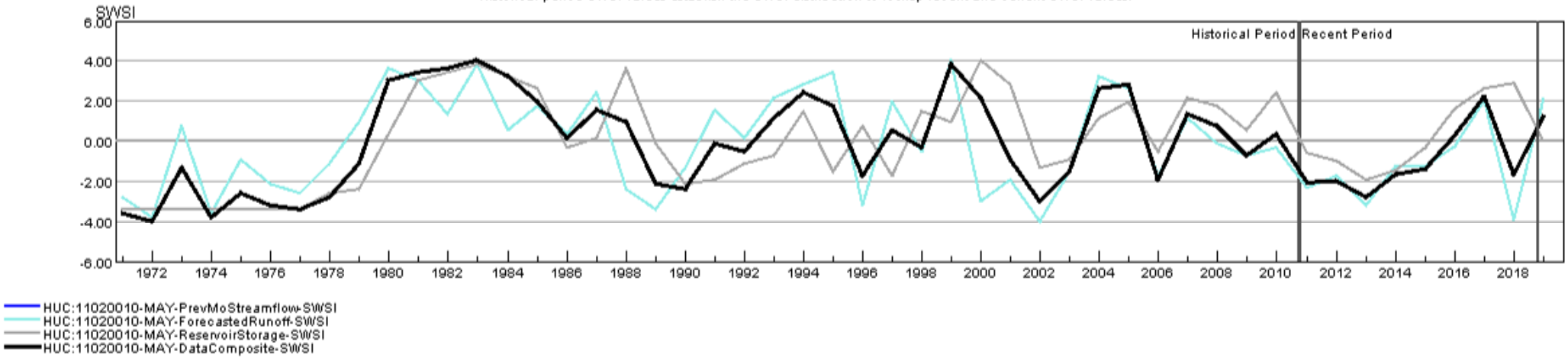
HUC 11020010 (Purgatoire) Surface Water Supply - MAY

Monthly component volumes



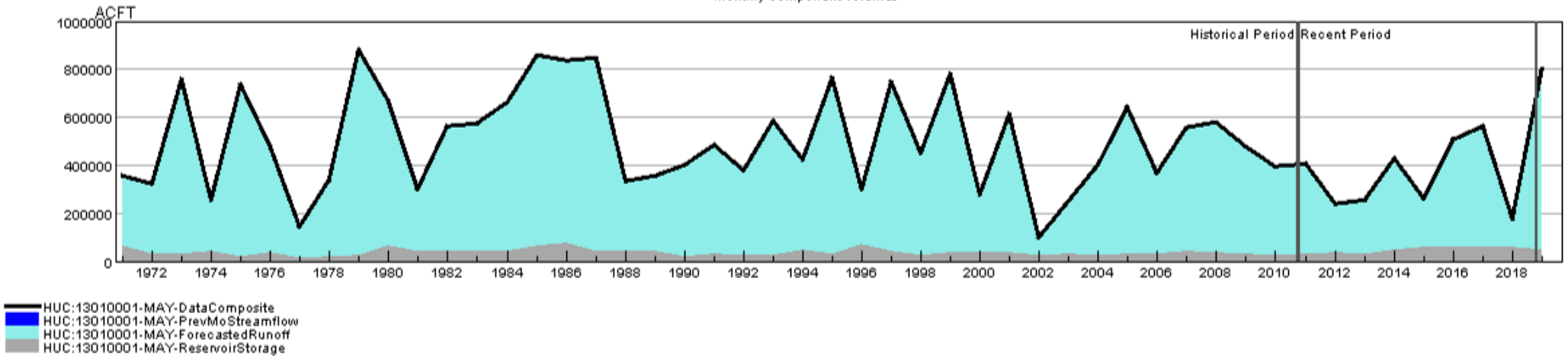
HUC 11020010 (Purgatoire) SWSI Values - MAY

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



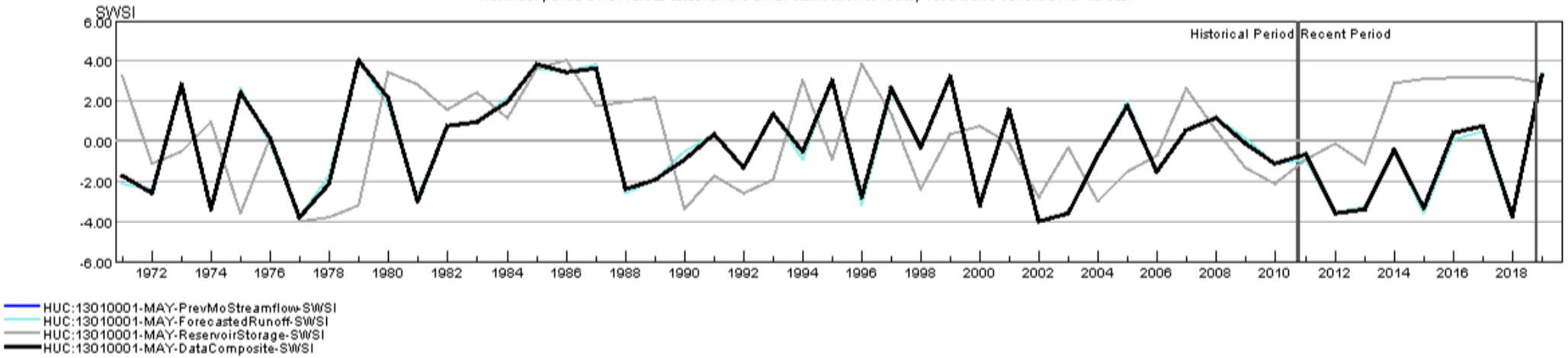
HUC 13010001 (Rio Grande Headwaters) Surface Water Supply - MAY

Monthly component volumes



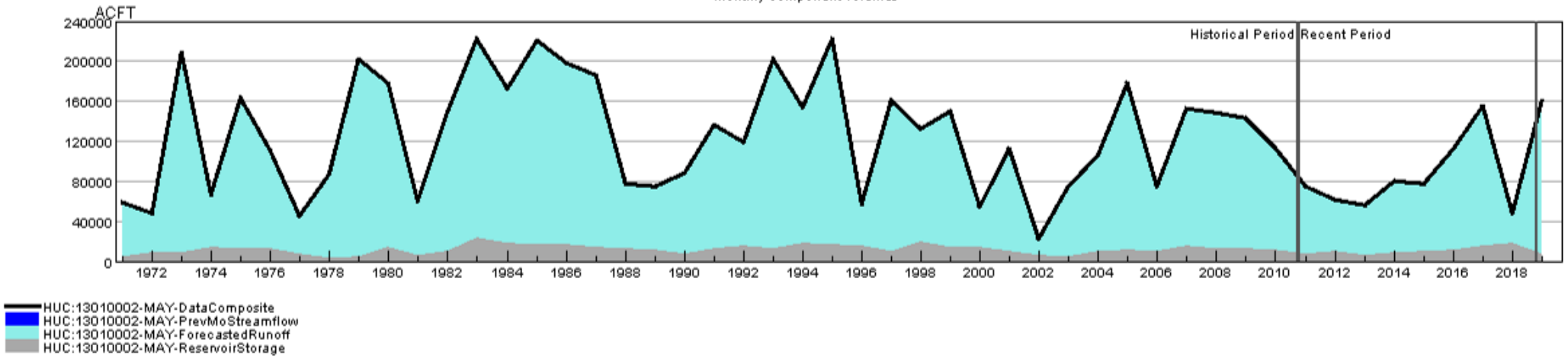
HUC 13010001 (Rio Grande Headwaters) SWSI Values - MAY

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



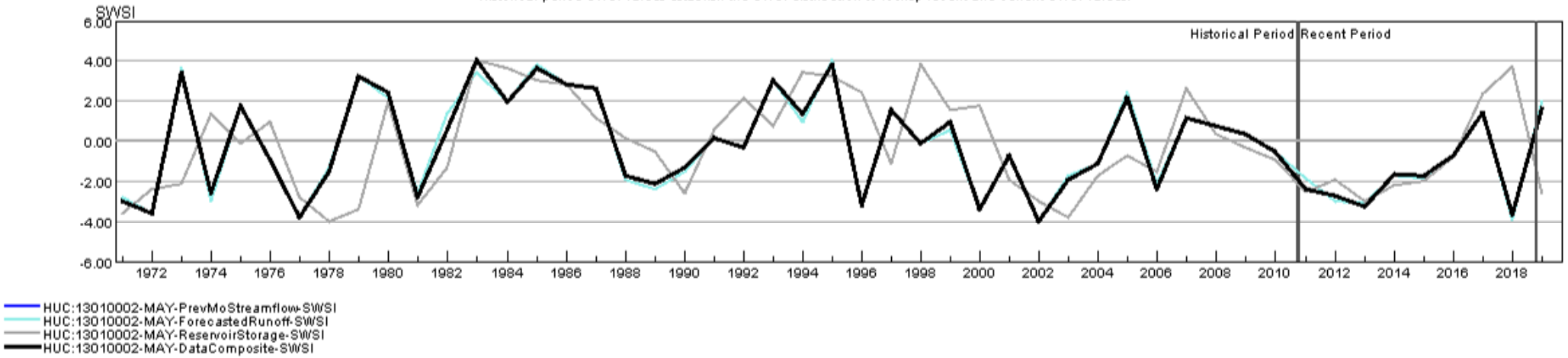
HUC 13010002 (Alamosa-Trinchera) Surface Water Supply - MAY

Monthly component volumes



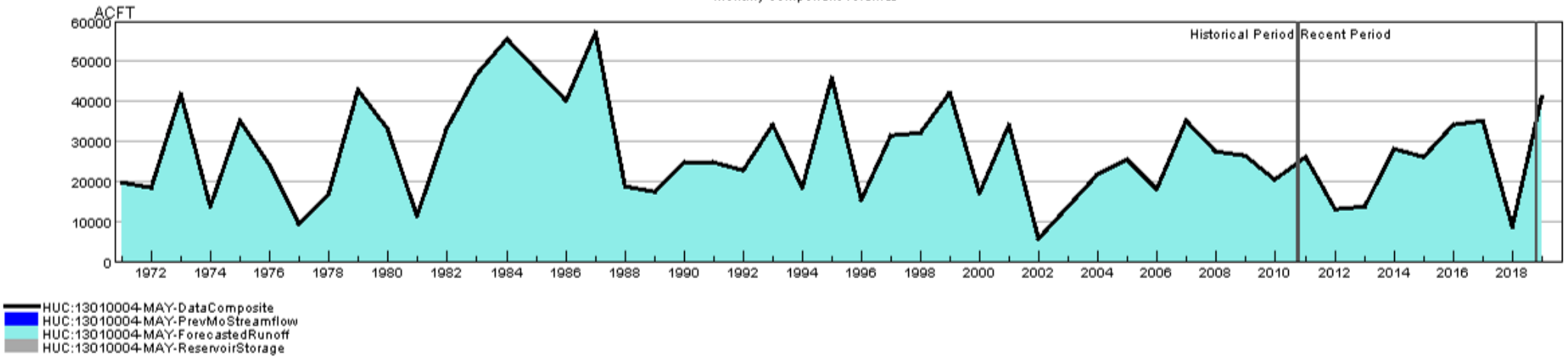
HUC 13010002 (Alamosa-Trinchera) SWSI Values - MAY

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



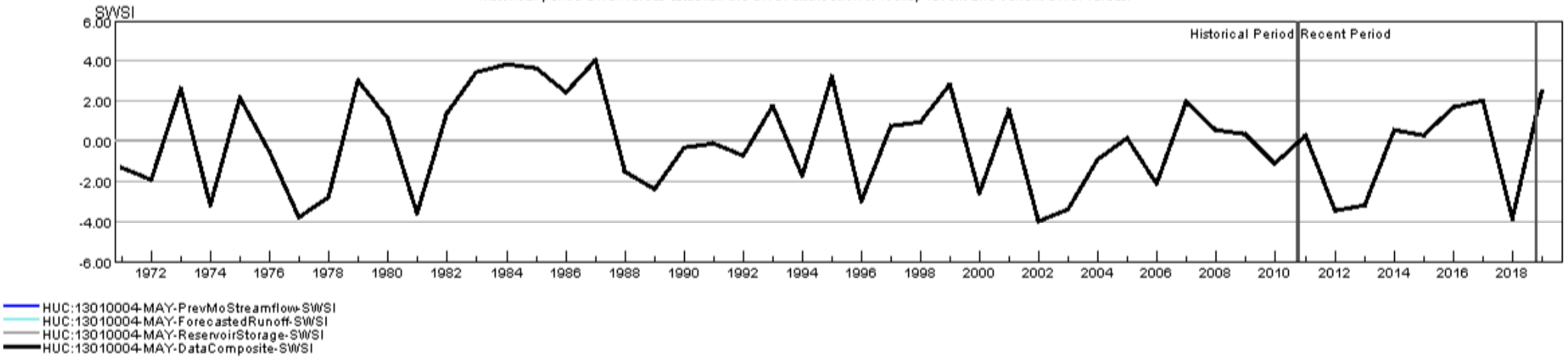
HUC 13010004 (Saguache) Surface Water Supply - MAY

Monthly component volumes



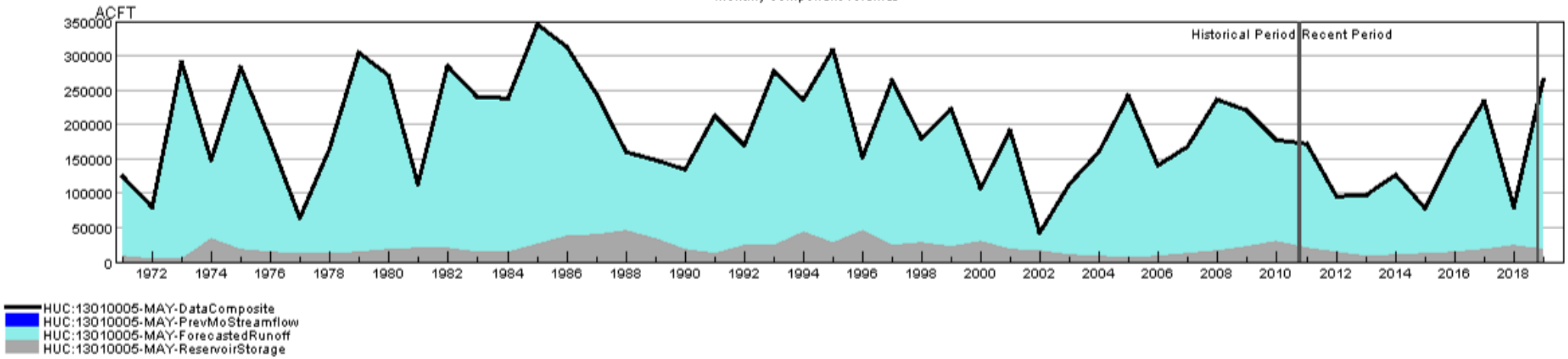
HUC 13010004 (Saguache) SWSI Values - MAY

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



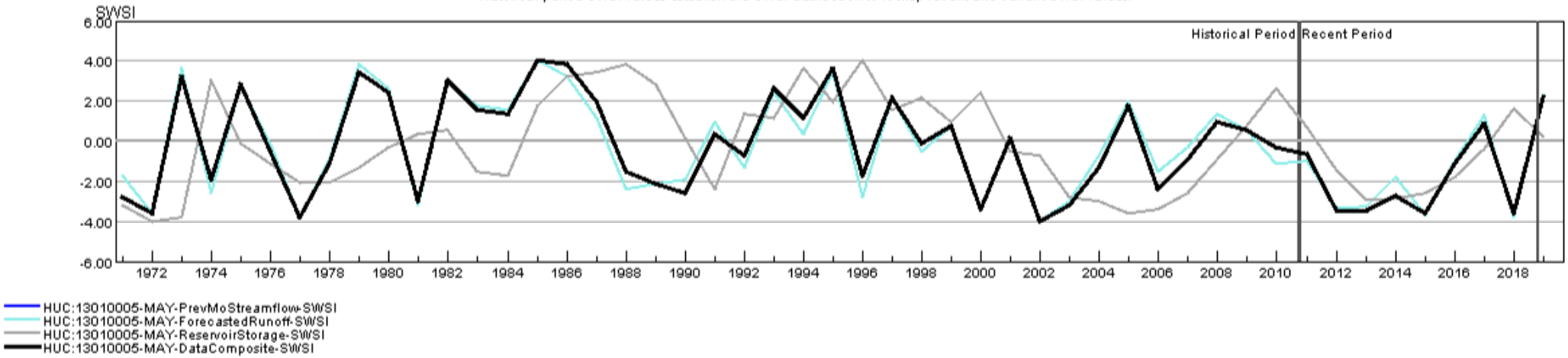
HUC 13010005 (Conejos) Surface Water Supply - MAY

Monthly component volumes



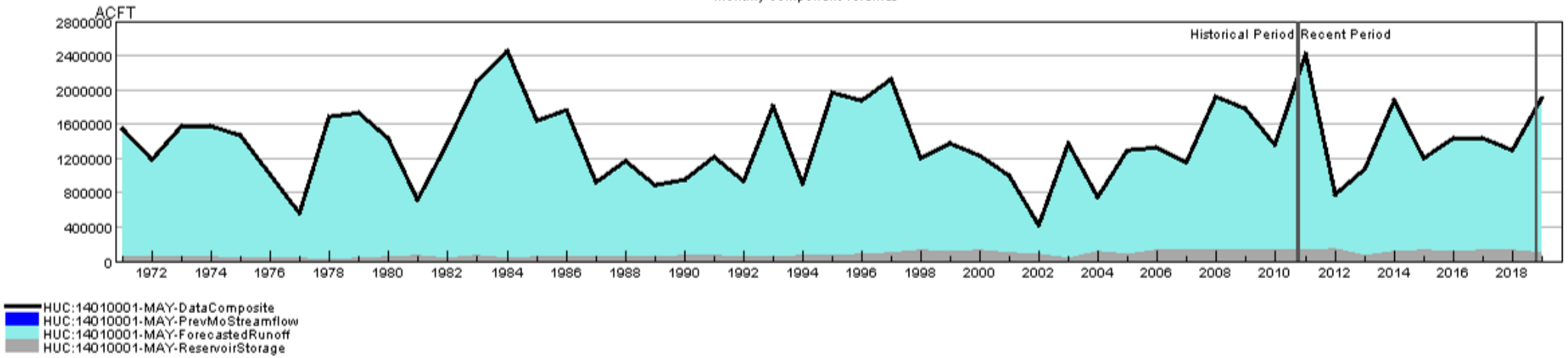
HUC 13010005 (Conejos) SWSI Values - MAY

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



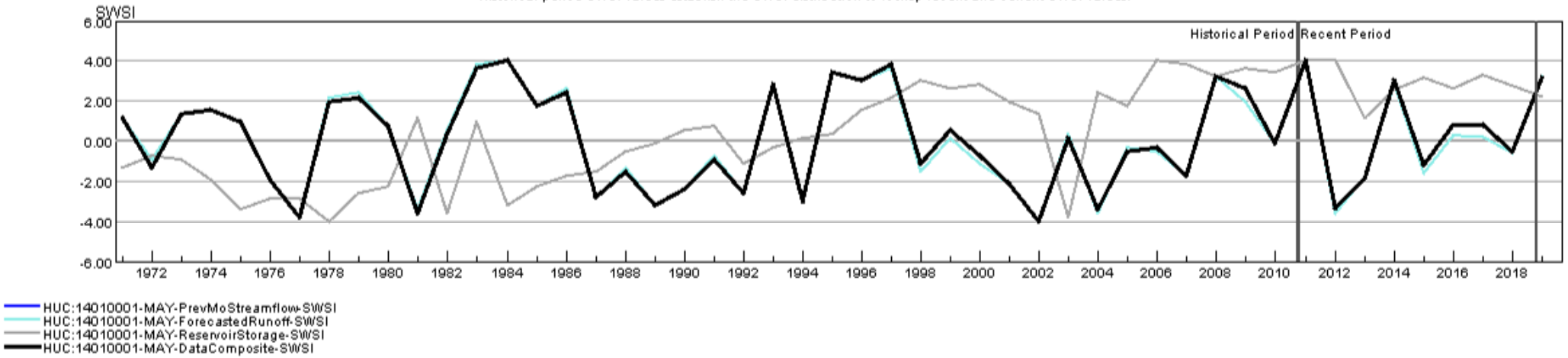
HUC 14010001 (Colorado Headwaters) Surface Water Supply - MAY

Monthly component volumes



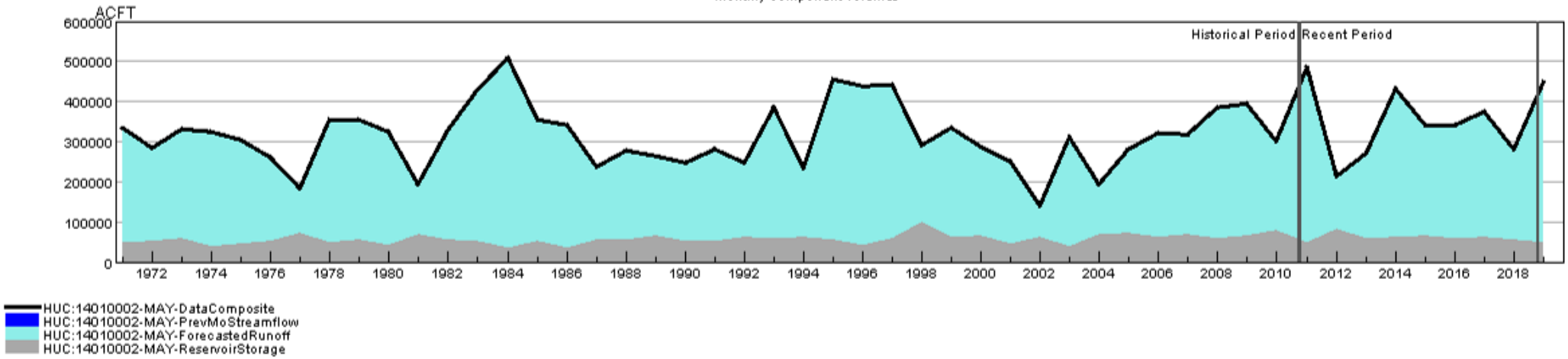
HUC 14010001 (Colorado Headwaters) SWSI Values - MAY

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



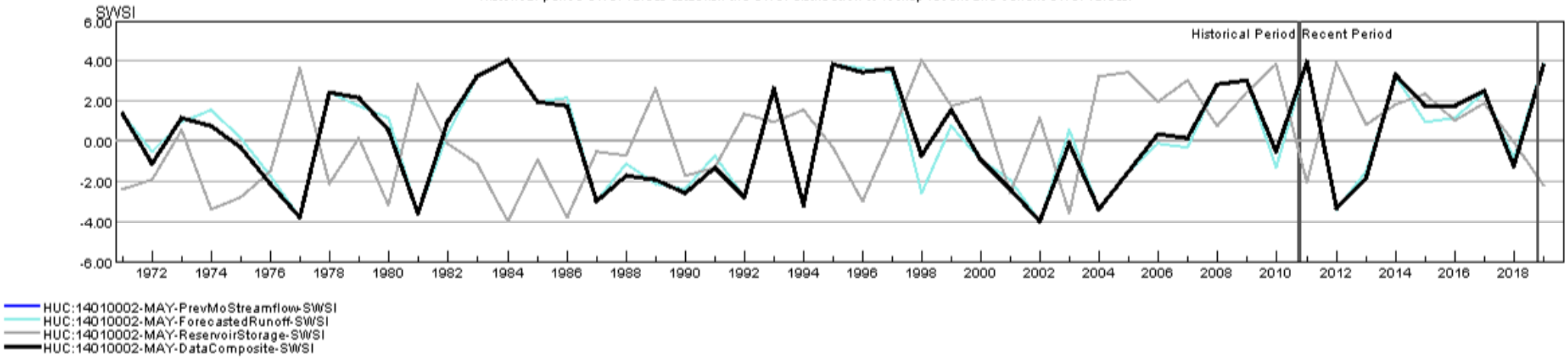
HUC 14010002 (Blue) Surface Water Supply - MAY

Monthly component volumes



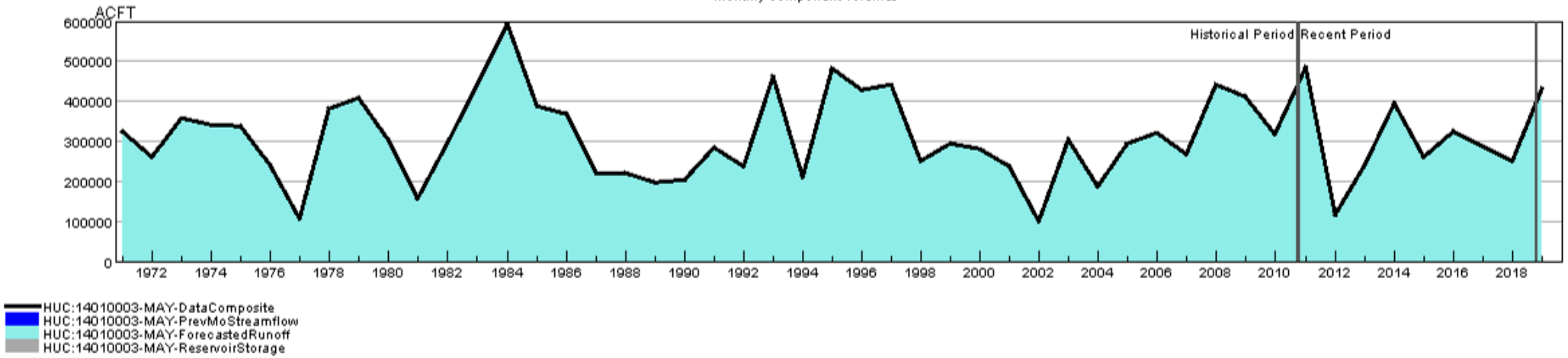
HUC 14010002 (Blue) SWSI Values - MAY

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



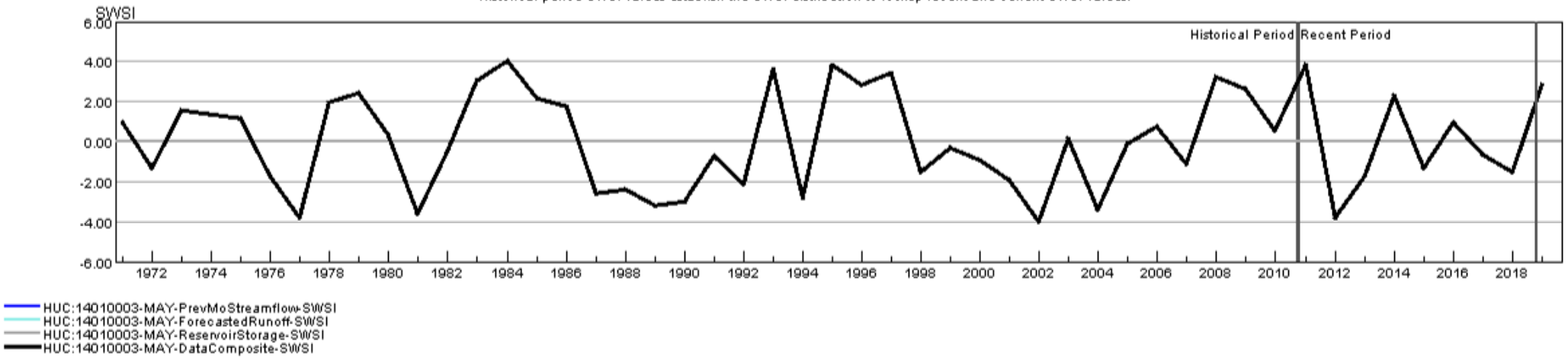
HUC 14010003 (Eagle) Surface Water Supply - MAY

Monthly component volumes



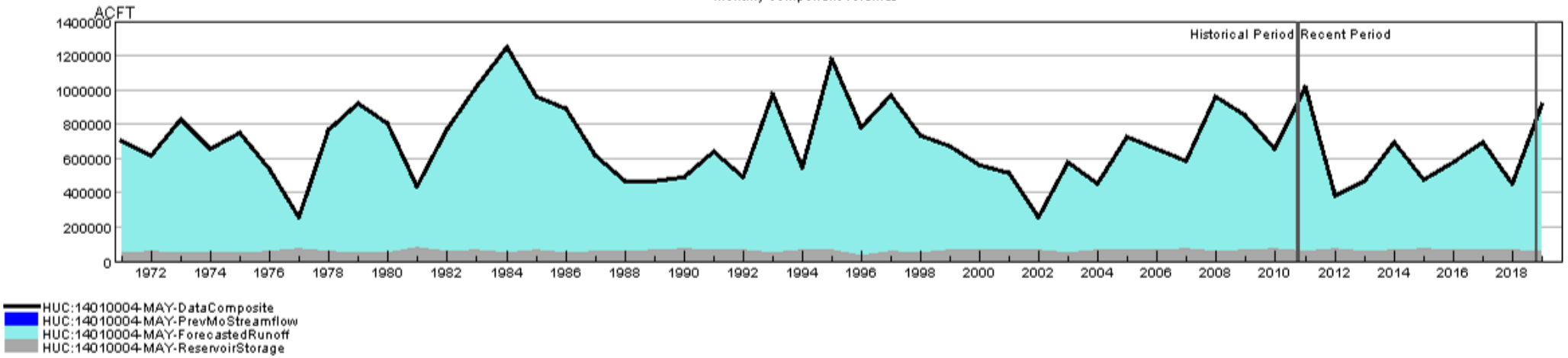
HUC 14010003 (Eagle) SWSI Values - MAY

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



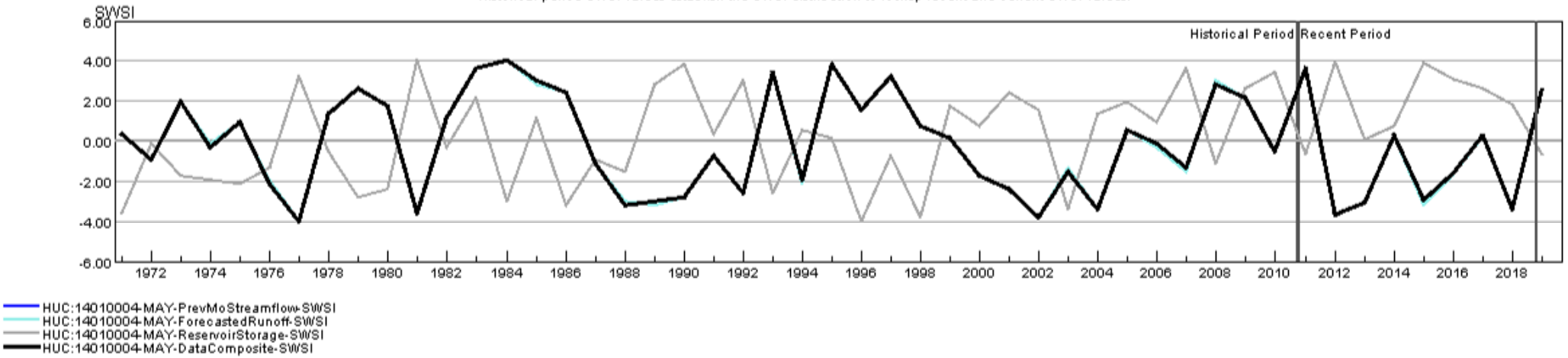
HUC 14010004 (Roaring Fork) Surface Water Supply - MAY

Monthly component volumes



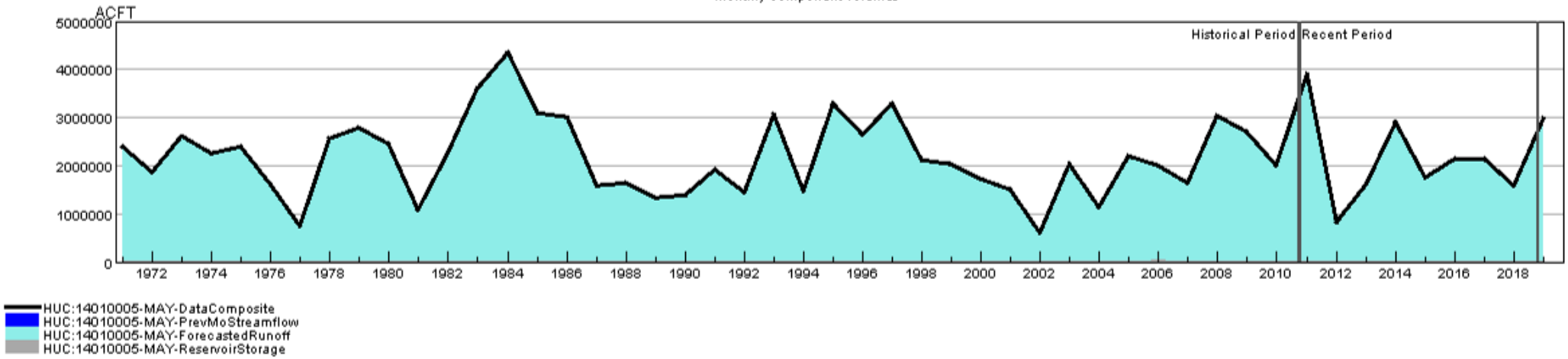
HUC 14010004 (Roaring Fork) SWSI Values - MAY

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



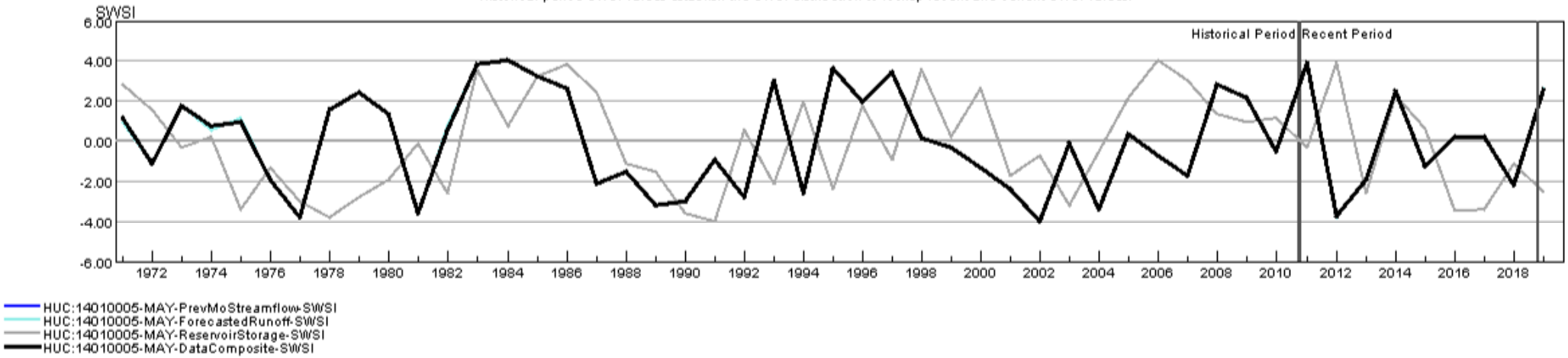
HUC 14010005 (Colorado Headwaters-Plateau) Surface Water Supply - MAY

Monthly component volumes



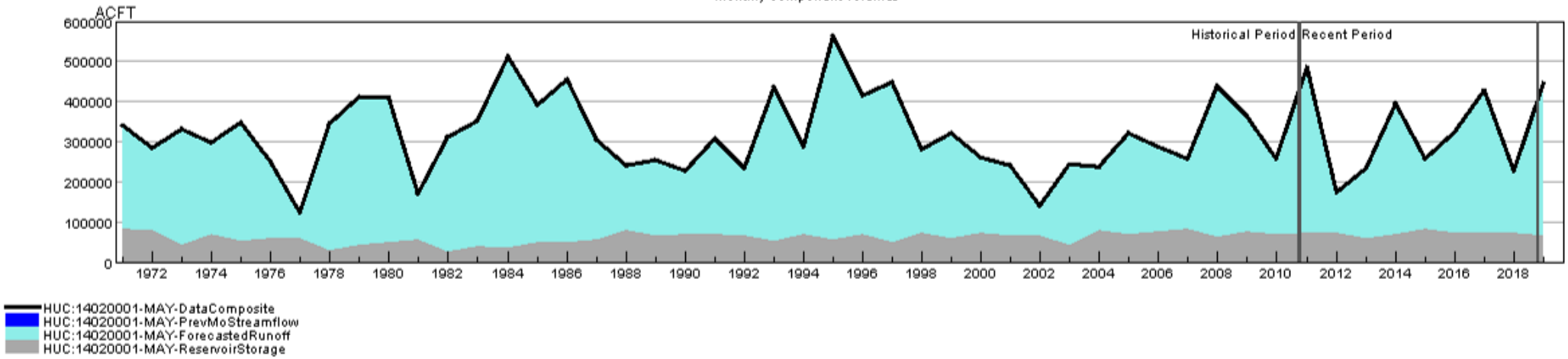
HUC 14010005 (Colorado Headwaters-Plateau) SWSI Values - MAY

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



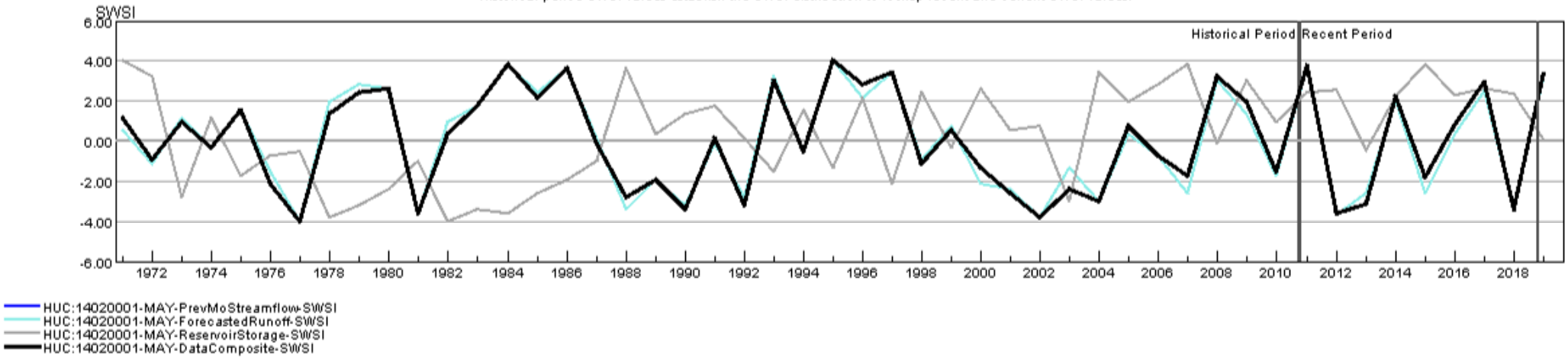
HUC 14020001 (East-Taylor) Surface Water Supply - MAY

Monthly component volumes



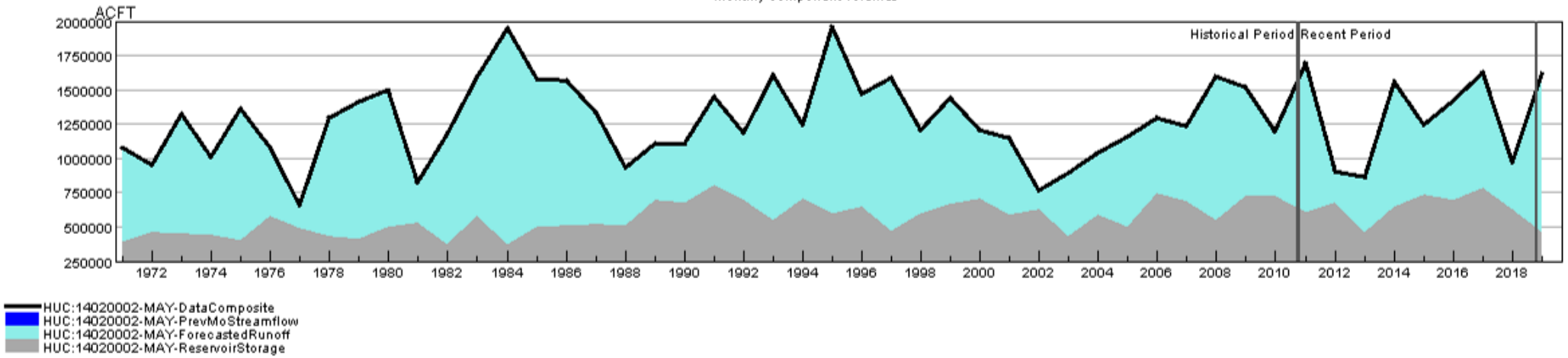
HUC 14020001 (East-Taylor) SWSI Values - MAY

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



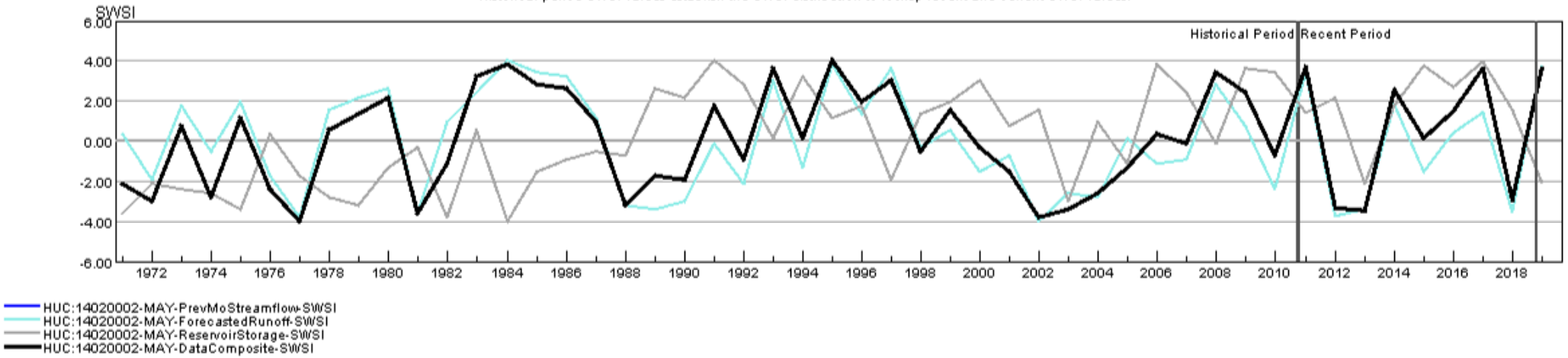
HUC 14020002 (Upper Gunnison) Surface Water Supply - MAY

Monthly component volumes



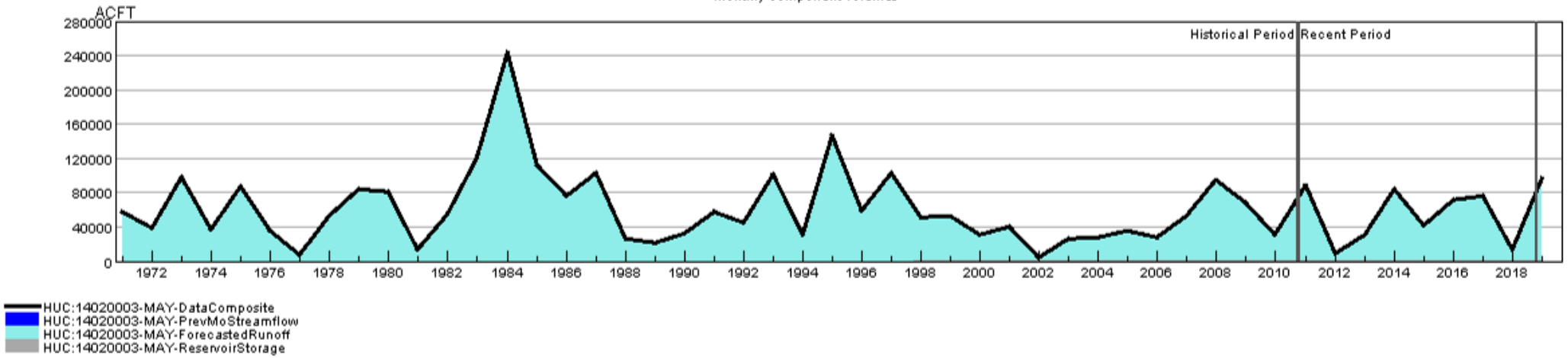
HUC 14020002 (Upper Gunnison) SWSI Values - MAY

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



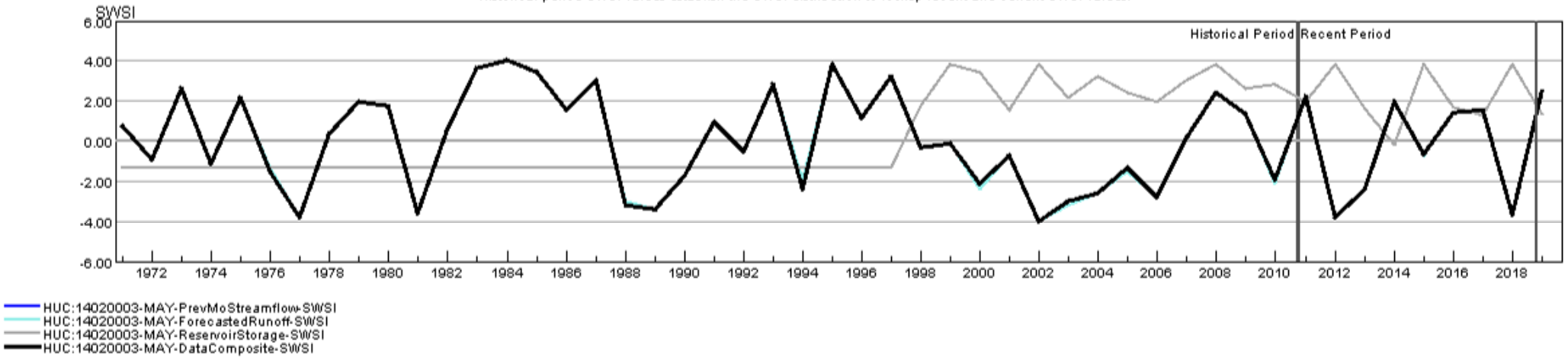
HUC 14020003 (Tomichi) Surface Water Supply - MAY

Monthly component volumes



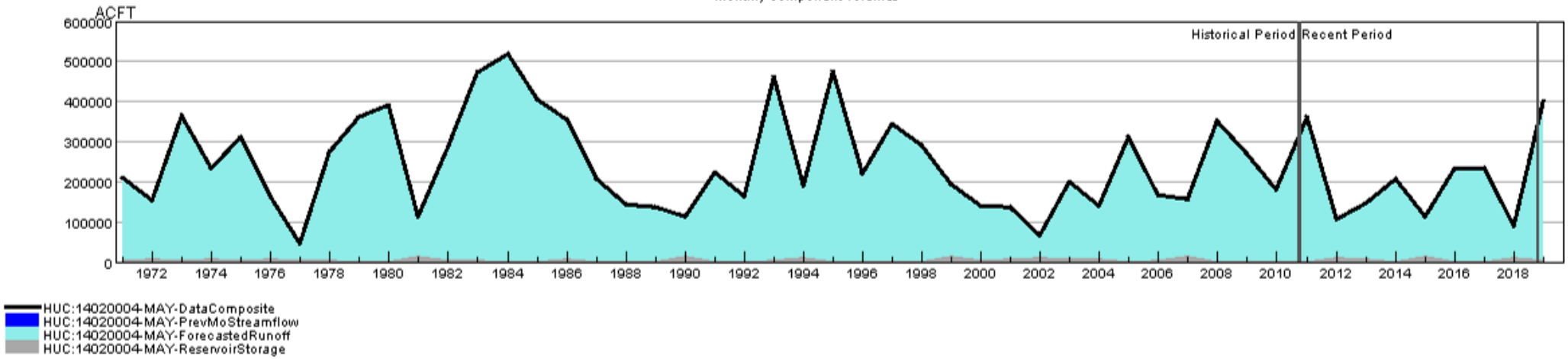
HUC 14020003 (Tomichi) SWSI Values - MAY

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



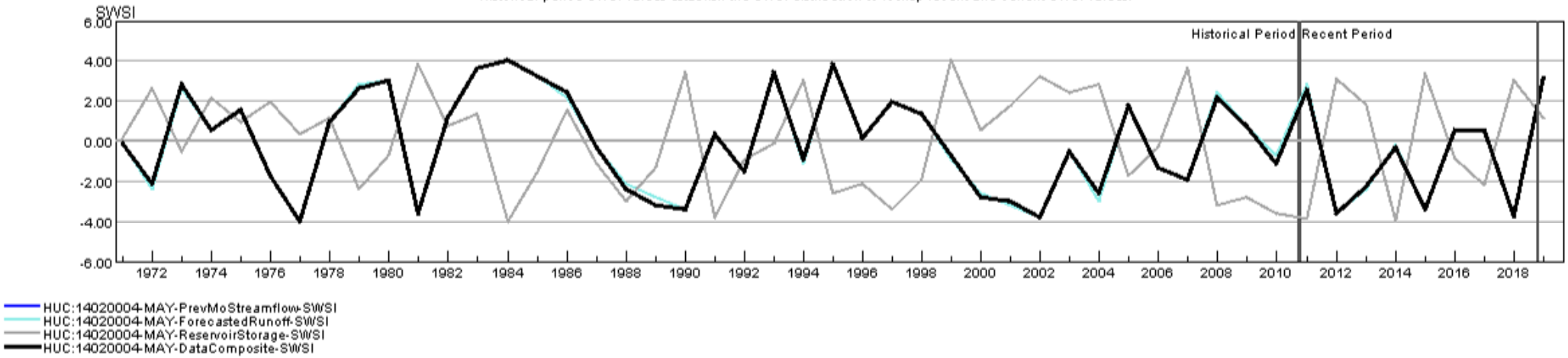
HUC 14020004 (North Fork Gunnison) Surface Water Supply - MAY

Monthly component volumes



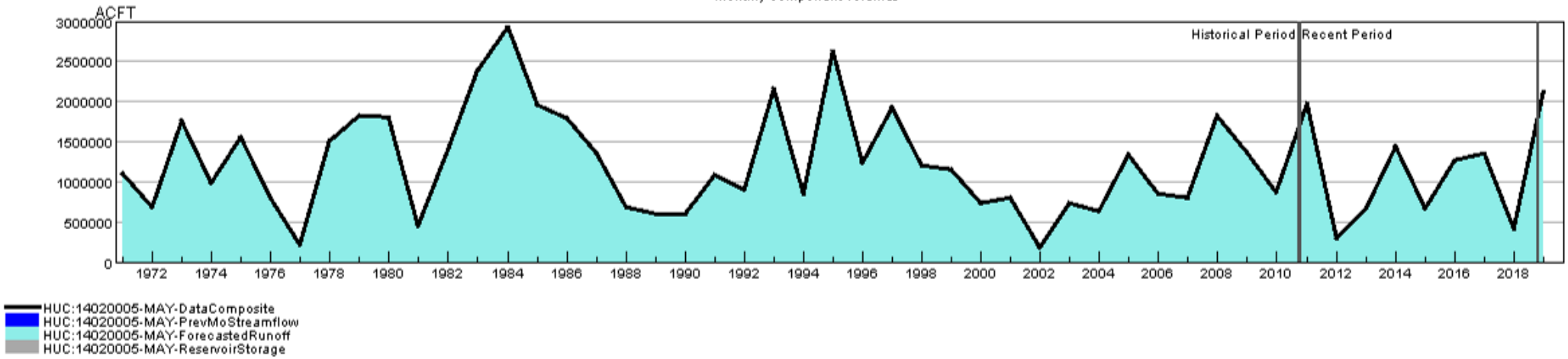
HUC 14020004 (North Fork Gunnison) SWSI Values - MAY

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



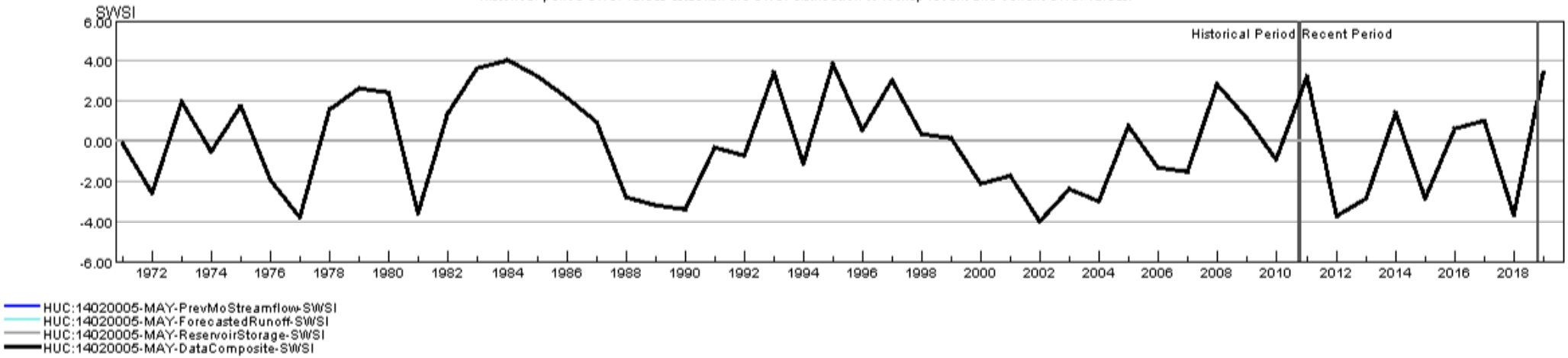
HUC 14020005 (Lower Gunnison) Surface Water Supply - MAY

Monthly component volumes



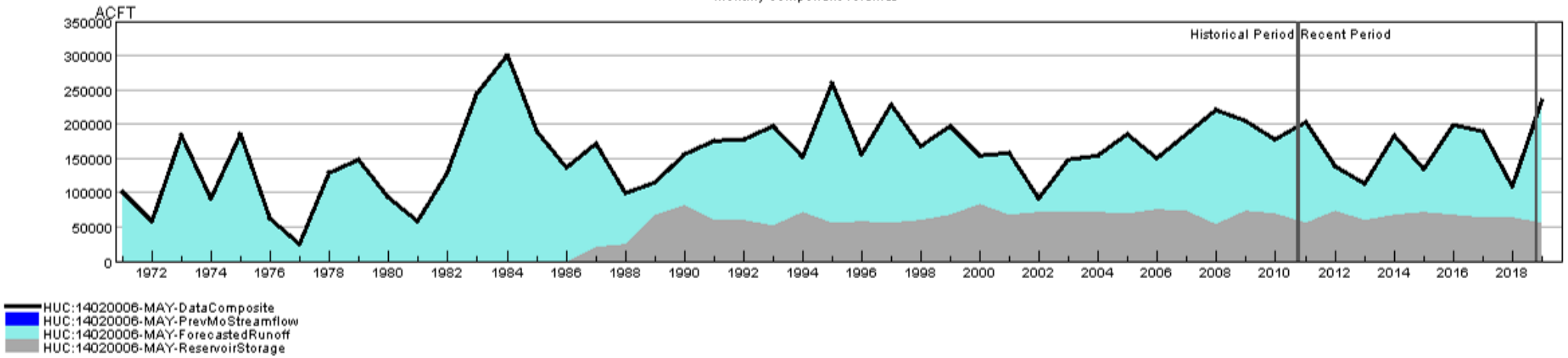
HUC 14020005 (Lower Gunnison) SWSI Values - MAY

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



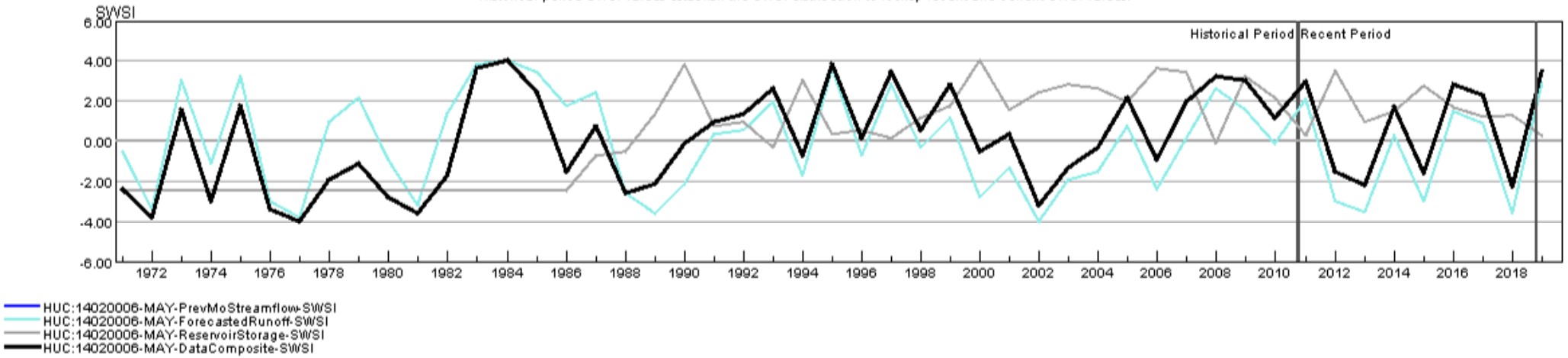
HUC 14020006 (Uncompahgre) Surface Water Supply - MAY

Monthly component volumes



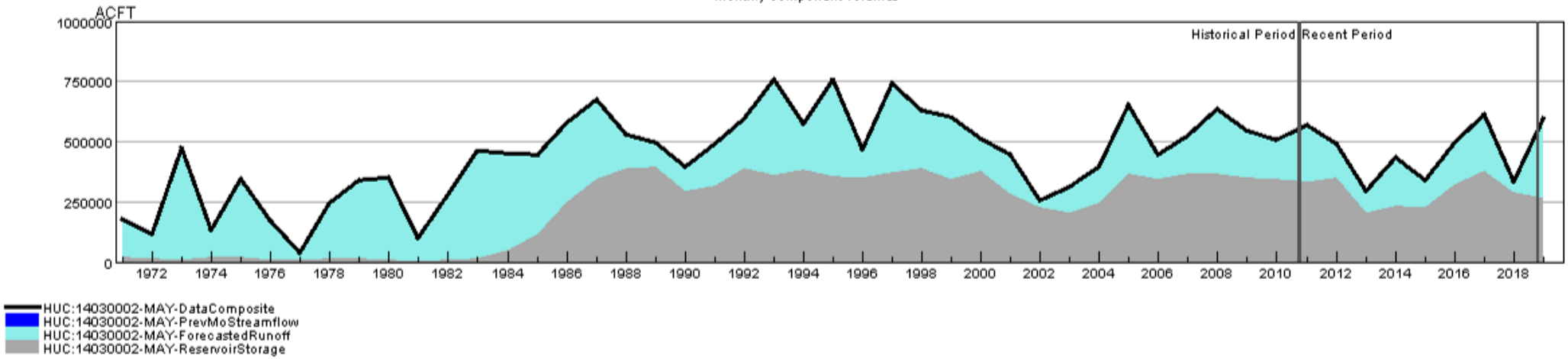
HUC 14020006 (Uncompahgre) SWSI Values - MAY

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



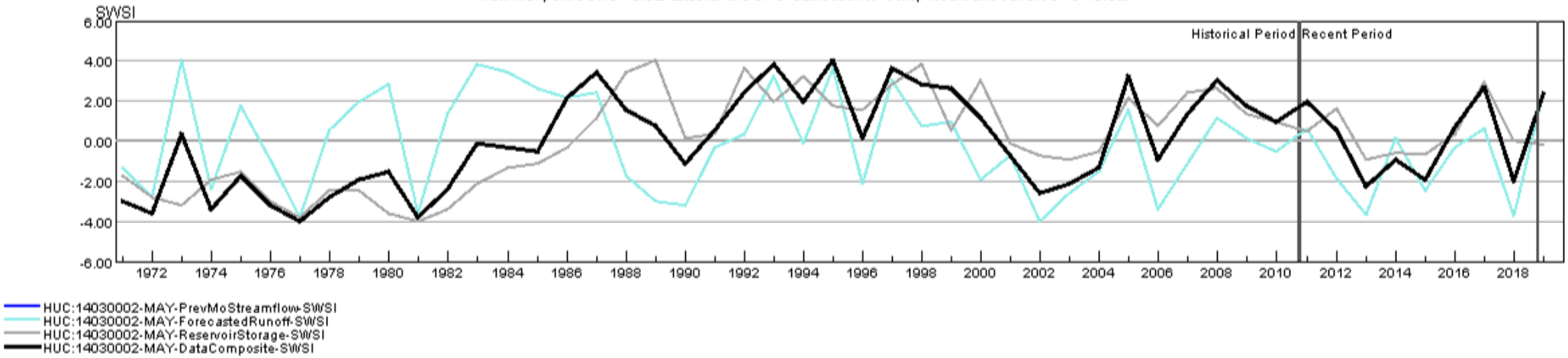
HUC 14030002 (Upper Dolores) Surface Water Supply - MAY

Monthly component volumes



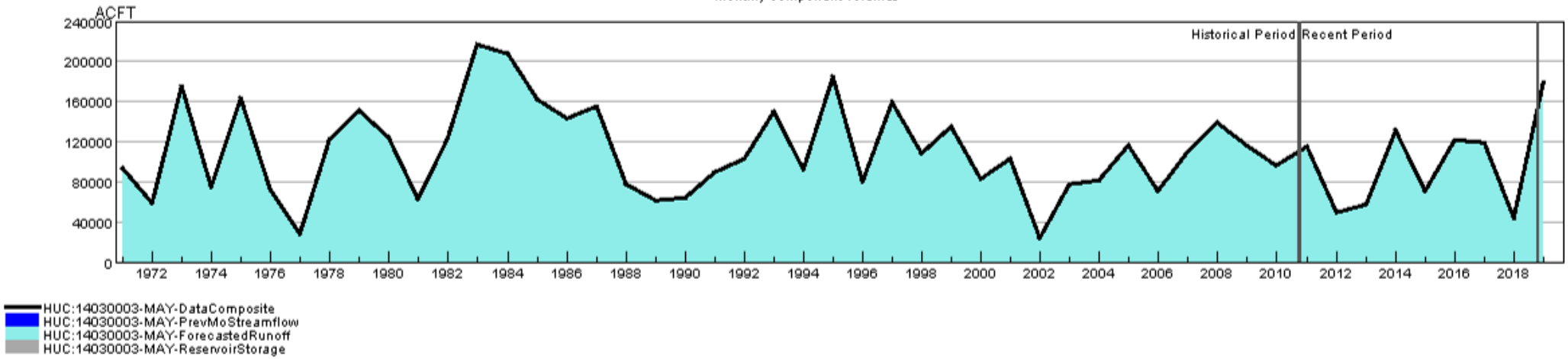
HUC 14030002 (Upper Dolores) SWSI Values - MAY

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



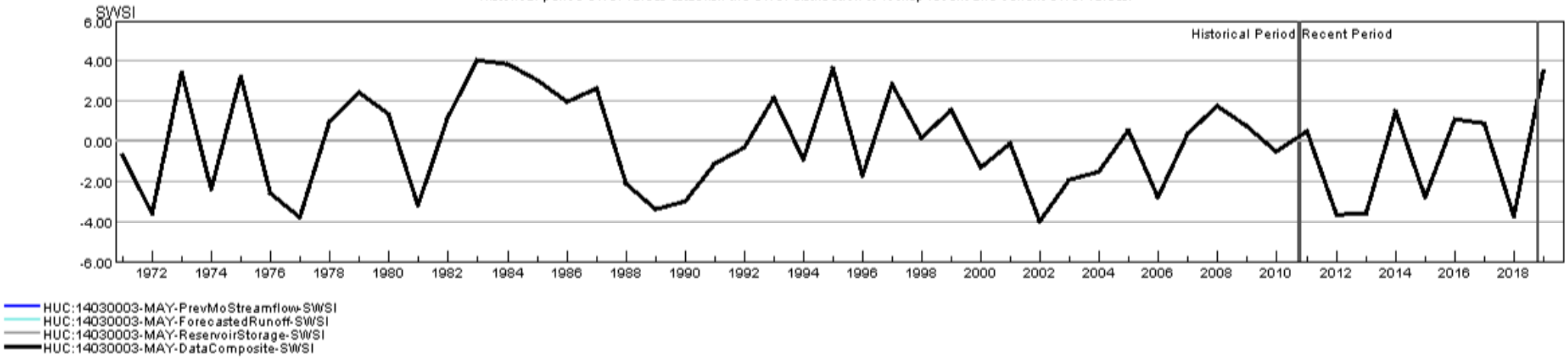
HUC 14030003 (San Miguel) Surface Water Supply - MAY

Monthly component volumes



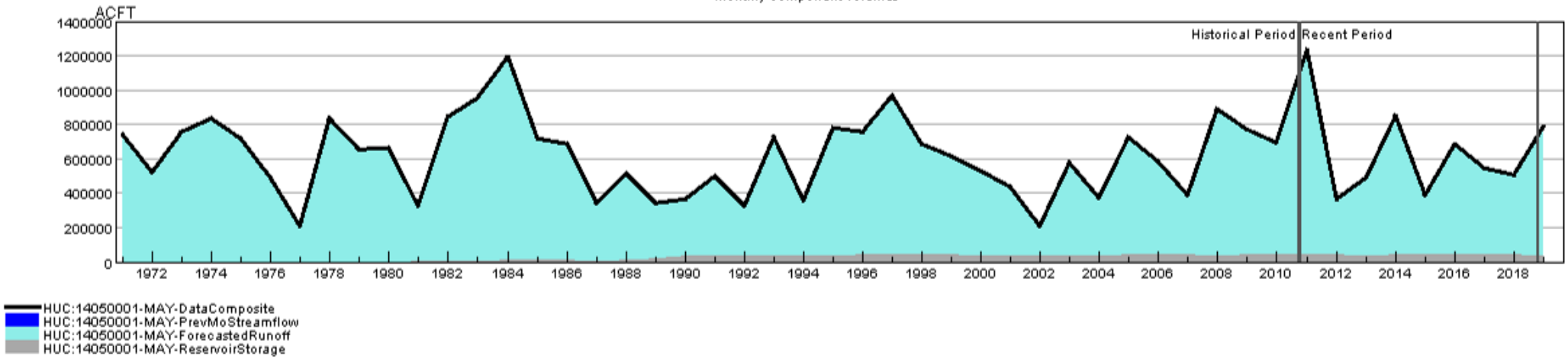
HUC 14030003 (San Miguel) SWSI Values - MAY

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



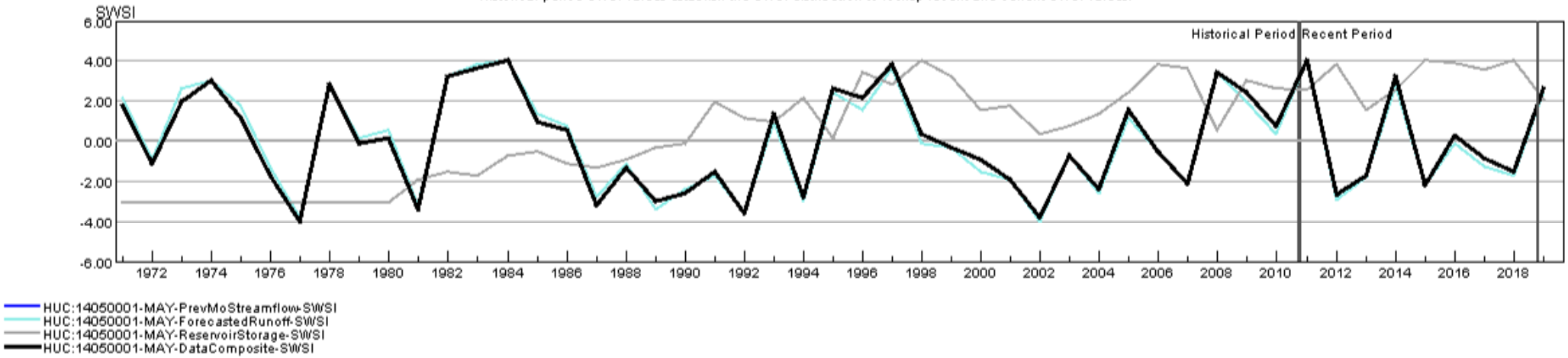
HUC 14050001 (Upper Yampa) Surface Water Supply - MAY

Monthly component volumes



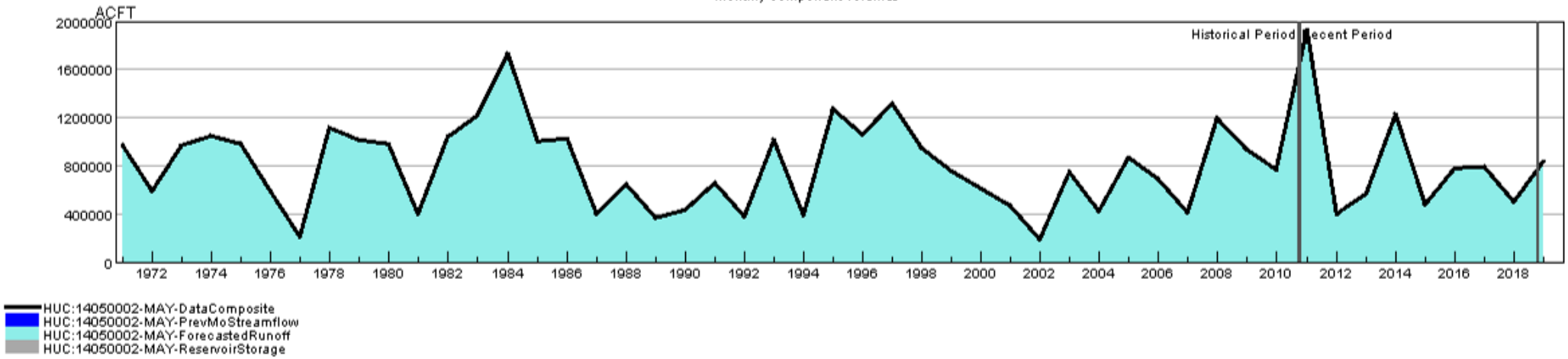
HUC 14050001 (Upper Yampa) SWSI Values - MAY

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



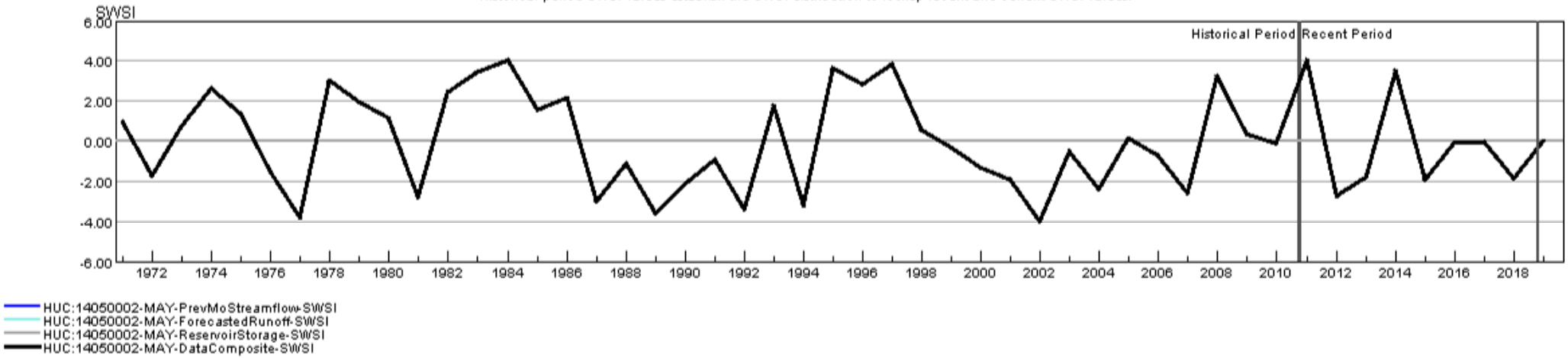
HUC 14050002 (Lower Yampa) Surface Water Supply - MAY

Monthly component volumes



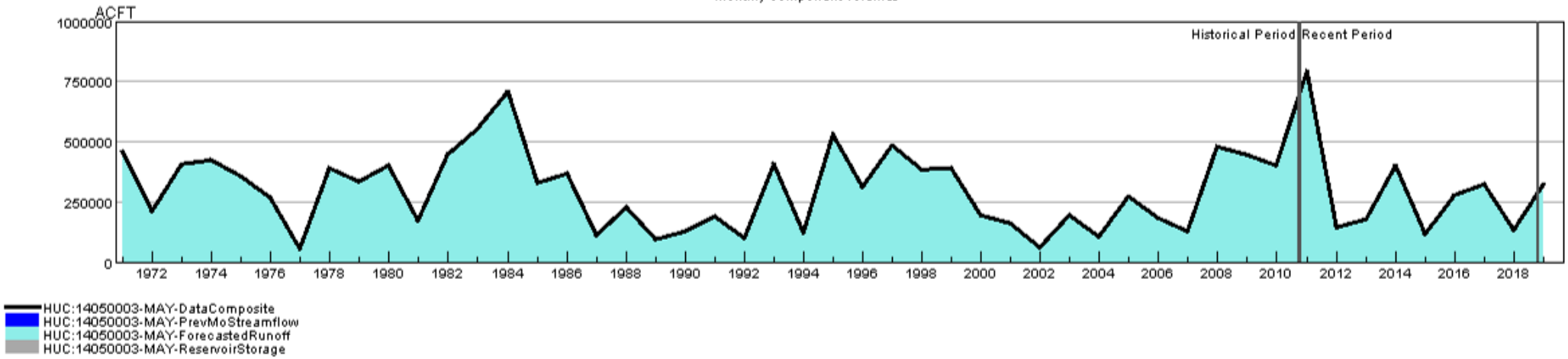
HUC 14050002 (Lower Yampa) SWSI Values - MAY

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



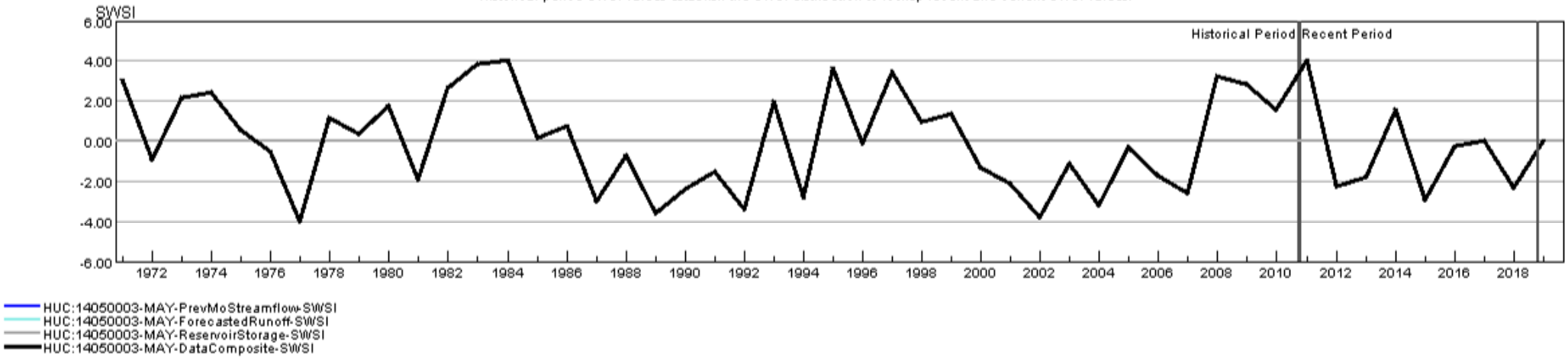
HUC 14050003 (Little Snake) Surface Water Supply - MAY

Monthly component volumes



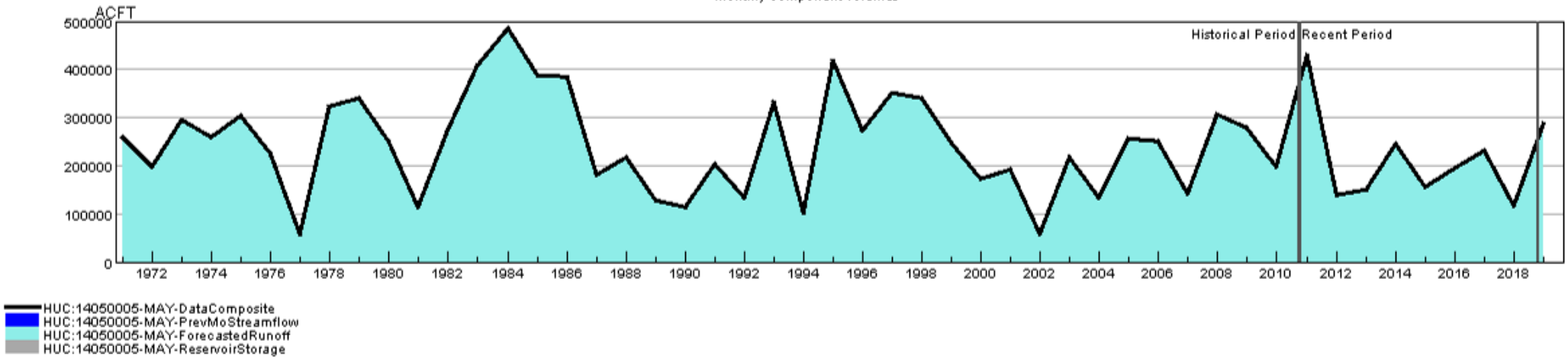
HUC 14050003 (Little Snake) SWSI Values - MAY

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



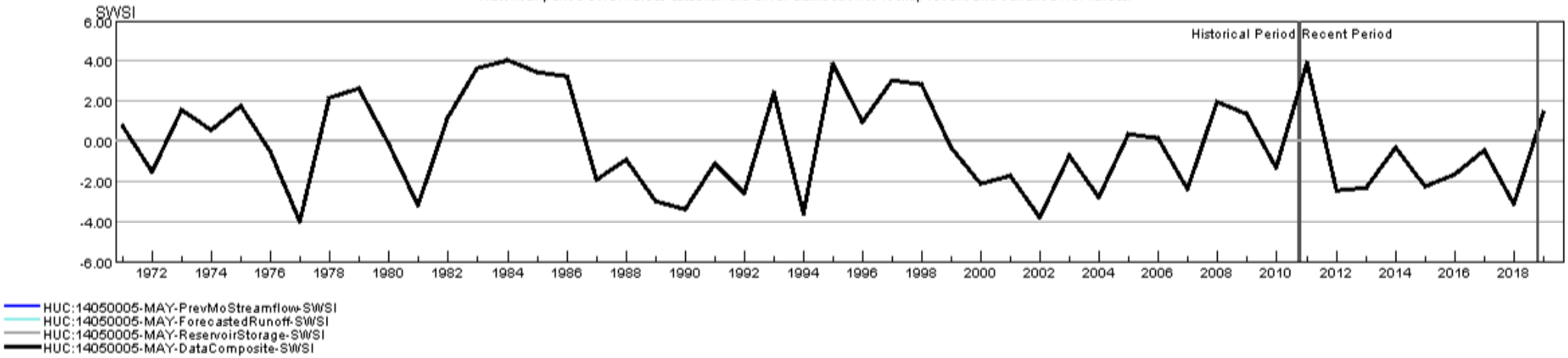
HUC 14050005 (Upper White) Surface Water Supply - MAY

Monthly component volumes



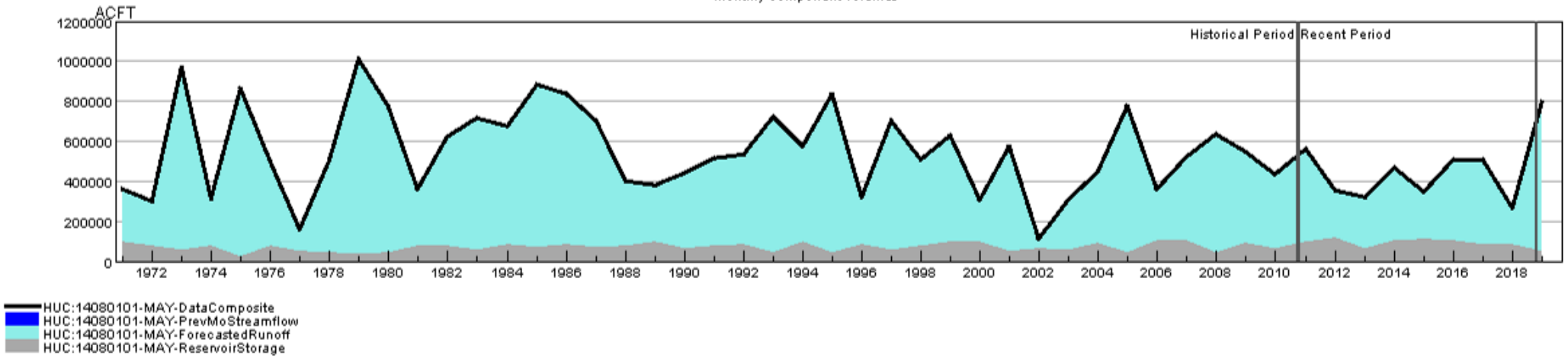
HUC 14050005 (Upper White) SWSI Values - MAY

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



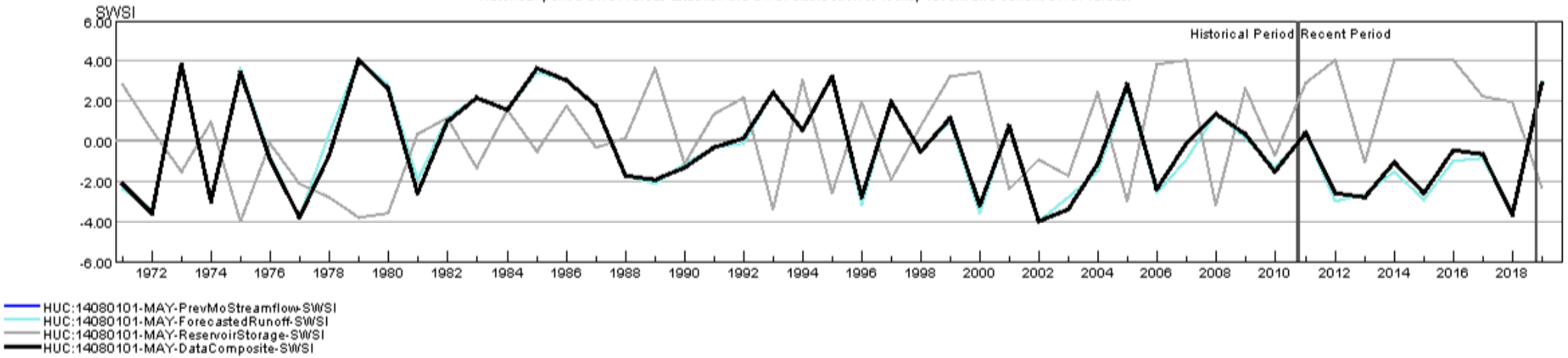
HUC 14080101 (Upper San Juan) Surface Water Supply - MAY

Monthly component volumes



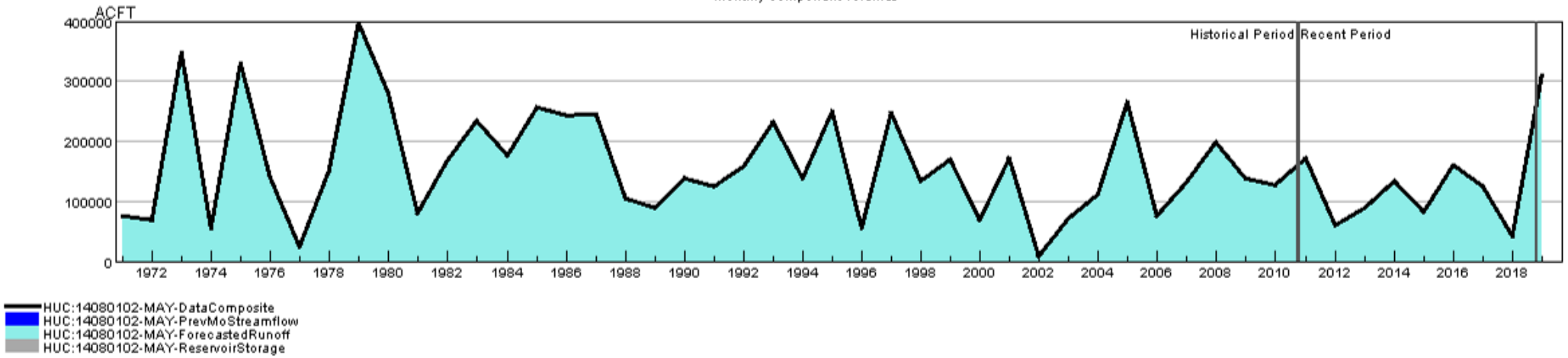
HUC 14080101 (Upper San Juan) SWSI Values - MAY

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



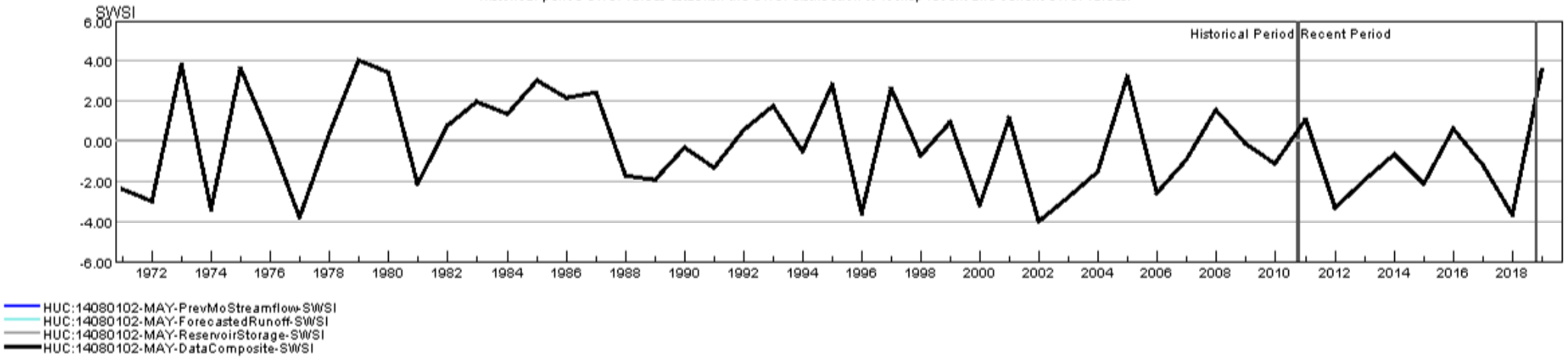
HUC 14080102 (Piedra) Surface Water Supply - MAY

Monthly component volumes



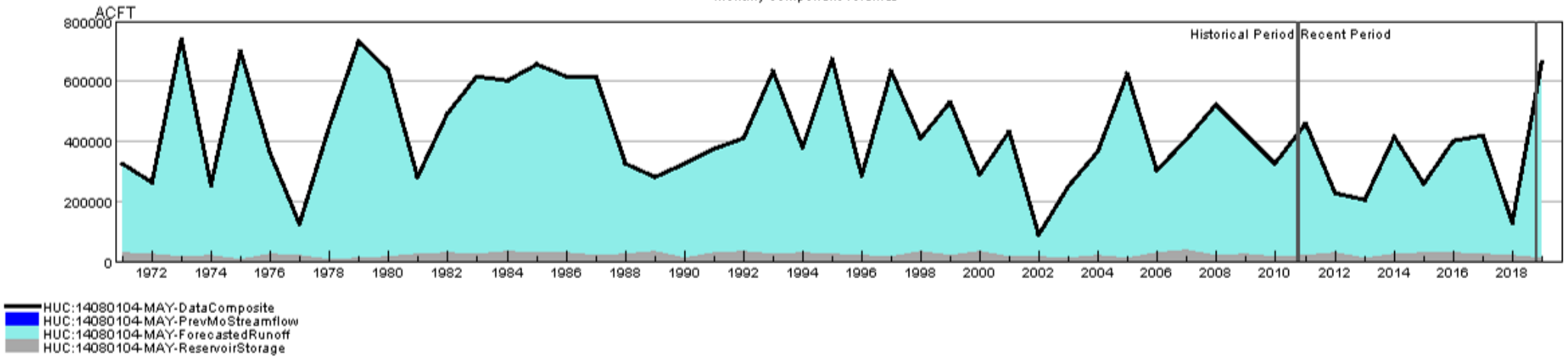
HUC 14080102 (Piedra) SWSI Values - MAY

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



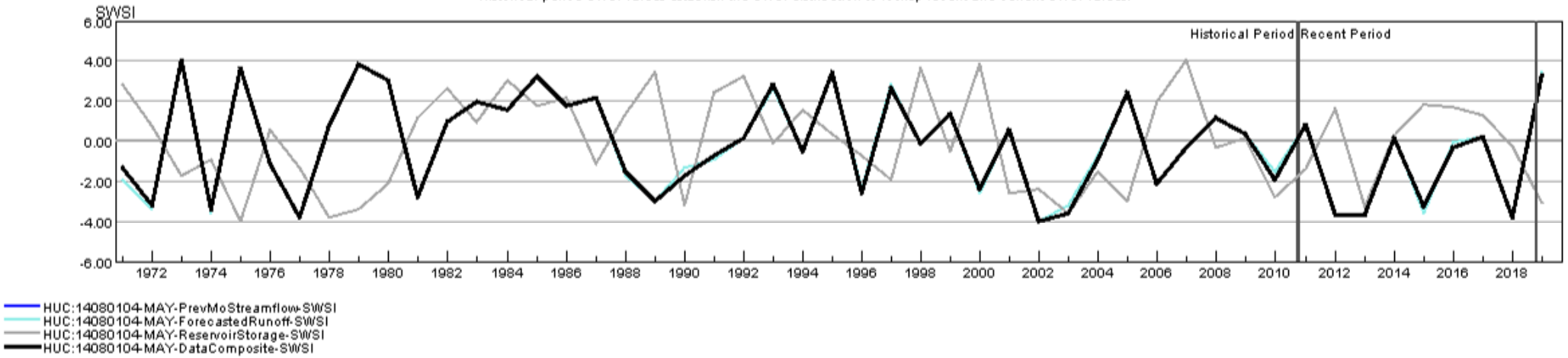
HUC 14080104 (Animas) Surface Water Supply - MAY

Monthly component volumes



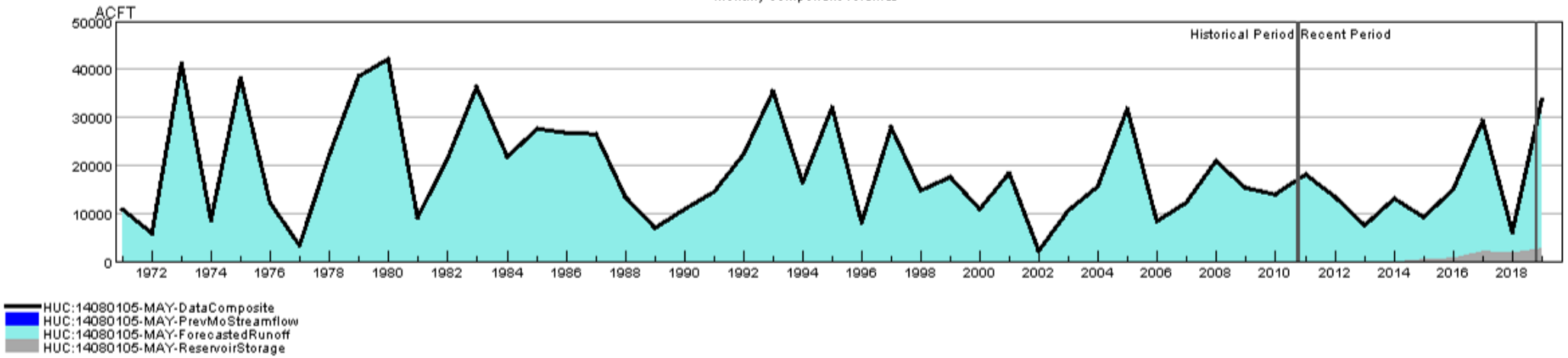
HUC 14080104 (Animas) SWSI Values - MAY

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



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

Monthly component volumes



HUC 14080105 (Middle San Juan) SWSI Values - MAY

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