COLORADO
WATER SUPPLY CONDITIONS UPDATE

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

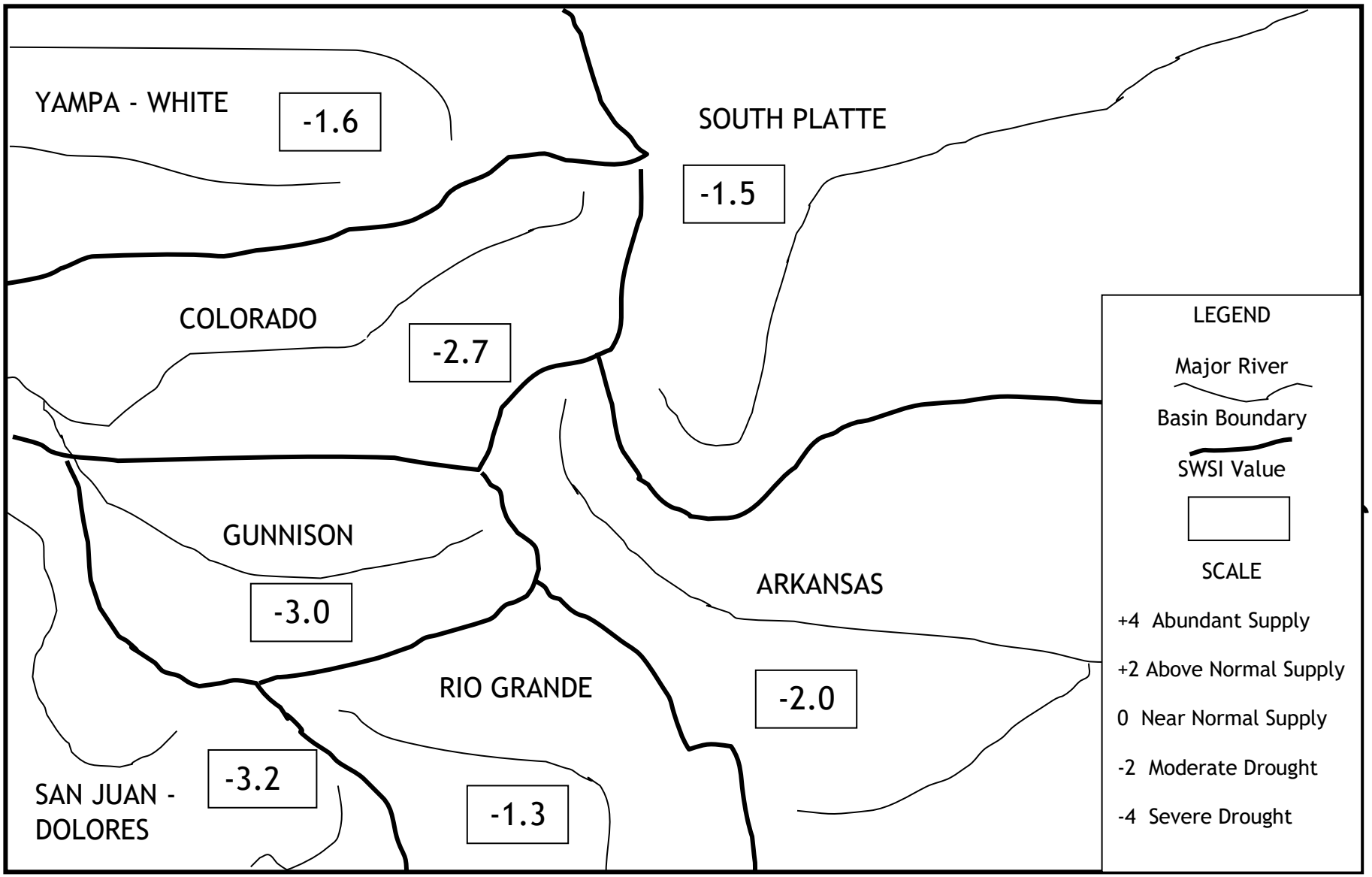
The SWSI calculation for the winter/spring season (January 1 to June 1) is based on reservoir storage at the end of last month, in this case February 28, plus the forecasted streamflow runoff volume for the runoff season (April through September in most basins). The following SWSI values were computed for each of the seven major basins for March 1, 2021. The following SWSI values were computed for each of the seven major basins for March 1, 2021. Water supply conditions, as represented by water in storage, range from below normal in the Rio Grande River Basin to well below normal in the San-Juan and Gunnison River Basins.

Basin	March 1 SWSI	Change from Previous Month	Change from Previous Year
Arkansas	-2.0	-0.4	-0.8
Colorado	-2.7	0.4	-0.9
Gunnison	-3.0	0.0	-0.2
Rio Grande	-1.3	-0.4	1.5
San Juan-Dolores	-3.2	-0.1	-0.4
South Platte	-1.5	1.1	-1.6
Yampa-White	-1.6	1.3	-0.7

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

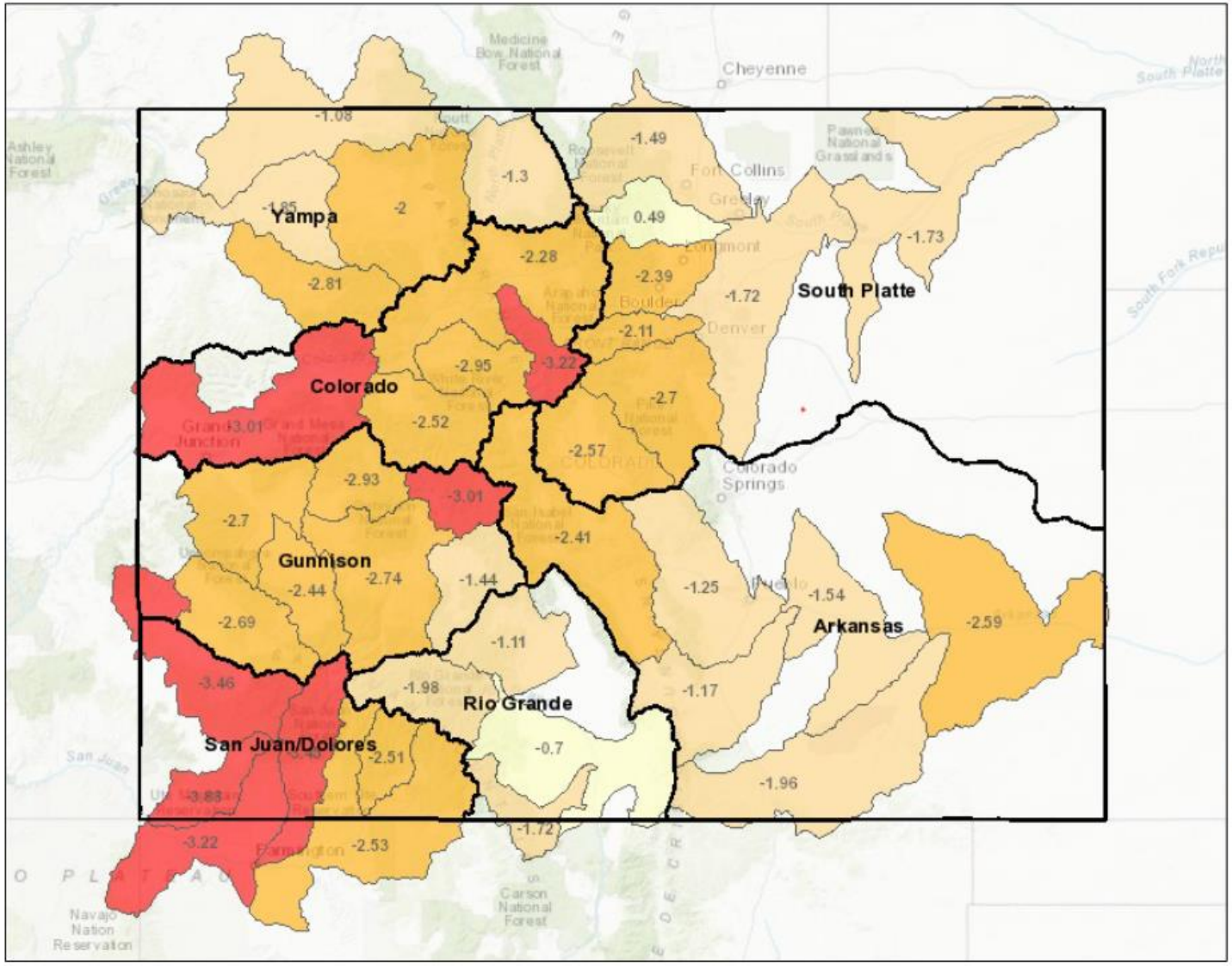


March 1, 2020

SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC

COLORADO
Division of Water Resources
Department of Natural Resources

SWSI March 1, 2021

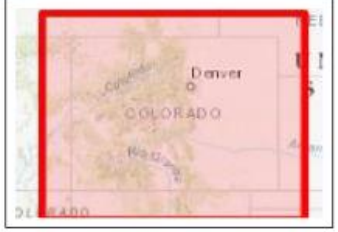


Legend

SWSI - Current Report

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

Location



Notes

113.64 0 56.82 113.64 Miles

1: 3,600,000

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

Date Prepared: 3/22/2021 10:18:45 AM

March 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	-1.17	16	47	21,300
	11020010	Purgatoire	-1.96	1	45	46,200
	11020005	Upper Arkansas-Lake Meredith	-1.55	28	31	319,928
	11020001	Arkansas Headwaters	-2.41	30	28	324,613
	11020009	Upper Arkansas-John Martin Reservoir	-2.59	21	37	418,362
	11020002	Upper Arkansas	-1.25	45	32	475,462
Colorado	14010003	Eagle	-2.96	N/A	14	220,000
	14010002	Blue	-3.22	36	11	250,073
	14010004	Roaring Fork	-2.53	7	24	518,639
	14010001	Colorado Headwaters	-2.29	99	11	1,060,170
	14010005	Colorado Headwaters-Plateau	-3.02	7	14	1,494,827
Gunnison	14020003	Tomichi	-1.45	53	33	41,401
	14030003	San Miguel	-2.70	N/A	18	73,000
	14020006	Uncompahgre	-2.45	24	19	134,736
	14020004	North Fork Gunnison	-2.93	31	15	152,099
	14020001	East-Taylor	-3.02	27	18	242,707
	14020005	Lower Gunnison	-2.70	N/A	18	755,000
	14020002	Upper Gunnison	-2.74	11	27	1,034,180
Rio Grande	13010004	Saguache	-1.12	N/A	37	25,000
	13010002	Alamosa-Trinchera	-0.70	36	40	114,894
	13010005	Conejos	-1.72	31	34	167,230
	13010001	Rio Grande Headwaters	-1.99	79	25	407,910
San Juan-Dolores	14080105	Middle San Juan	-3.23	92	9	10,840
	14080107	Mancos	-3.89	12	4	13,557
	14080102	Piedra	-2.51	N/A	20	105,000
	14080104	Animas	-3.46	19	9	262,792
	14030002	Upper Dolores	-3.46	18	18	306,780
	14080101	Upper San Juan	-2.54	4	25	393,672
South Platte	10190004	Clear	-2.11	N/A	25	87,000
	10190001	South Platte Headwater	-2.58	22	27	174,700
	10190005	St. Vrain	-2.39	31	30	197,996
	10190007	Cache La Poudre	-1.50	23	35	336,309
	10190002	Upper South Platte	-2.70	11	22	364,836
	10190006	Big Thompson	0.49	55	39	530,062
	10190003	Middle South Platte-Cherry Creek	-1.73	5	31	700,100
	10190012	Middle South Platte-Sterling	-1.74	30	31	815,900
Yampa-White	10180001	North Platte Headwaters	-1.30	N/A	34	162,000
	14050005	Upper White	-2.82	N/A	16	162,000
	14050003	Little Snake	-1.09	N/A	37	230,000
	14050001	Upper Yampa	-2.01	82	24	493,391
	14050002	Lower Yampa	-1.85	N/A	28	570,000

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 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)

March 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	6,222	21
		TWIN LAKES RESERVOIR	18,237	1
		HOMESTAKE RESERVOIR	23,771	33
		TURQUOISE LAKE	84,383	72
		ARKANSAS RIVER AT SALIDA	192,000	28
11020006	Huerfano	CUCHARAS RESERVOIR*	0	16
		HUERFANO RIVER NEAR REDWING	10,400	36
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	10,900	53
11020010	Purgatoire	TRINIDAD LAKE	6,200	1
		PURGATOIRE RIVER AT TRINIDAD	40,000	45
11020002	Upper Arkansas	PUEBLO RESERVOIR	205,462	45
		PUEBLO RESERVOIR INFLOW	270,000	32
11020009	Upper Arkansas-John Martin Reservoir	HUERFANO RIVER NEAR REDWING	10,400	36
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	10,900	53
		ADOBE CREEK RESERVOIR	31,399	23
		PURGATOIRE RIVER AT TRINIDAD	40,000	45
		JOHN MARTIN RESERVOIR	55,663	23
		PUEBLO RESERVOIR INFLOW	270,000	32
11020005	Upper Arkansas-Lake Meredith	LAKE HENRY	7,369	62
		HUERFANO RIVER NEAR REDWING	10,400	36
		CUCHARAS RIVER AT BOYD RANCH NR LA VETA	10,900	53
		MEREDITH RESERVOIR	21,259	28
		PUEBLO RESERVOIR INFLOW	270,000	32
14010002	Blue	GREEN MOUNTAIN RESERVOIR	63,073	36
		BLUE RIVER INFLOW TO GREEN MOUNTAIN RES	187,000	11
14010001	Colorado Headwaters	WOLFORD MOUNTAIN RESERVOIR	53,070	90
		WILLIAMS FORK RESERVOIR	97,100	99
		COLORADO RIVER NEAR DOTSERO	910,000	11
14010005	Colorado Headwaters-Plateau	VEGA RESERVOIR	4,827	7
		COLORADO RIVER NEAR CAMEO	1,490,000	14
14010003	Eagle	EAGLE RIVER BELOW GYPSUM	220,000	14
14010004	Roaring Fork	RUEDI RESERVOIR	58,639	7
		ROARING FORK AT GLENWOOD SPRINGS	460,000	24
14020001	East-Taylor	TAYLOR PARK RESERVOIR	63,707	27
		TAYLOR R INF TO TAYLOR PARK RESERVOIR	64,000	16
		EAST RIVER AT ALMONT	115,000	18
14020005	Lower Gunnison	GUNNISON RIVER NR GRAND JUNCTION	755,000	18
14020004	North Fork Gunnison	PAONIA RESERVOIR	2,099	31
		NORTH FORK GUNNISON R NR SOMERSET	150,000	15
14030003	San Miguel	SAN MIGUEL RIVER NEAR PLACERVILLE	73,000	18
14020003	Tomichi	VOUGA RESERVOIR NEAR DOYLEVILLE	401	53
		TOMICHI CREEK AT GUNNISON, CO	41,000	33

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
14020006	Uncompahgre	RIDGEWAY RESERVOIR	53,736	24
		UNCOMPAHGRE RIVER AT COLONA	81,000	19
14020002	Upper Gunnison	FRUITLAND RESERVOIR	261	8
		SILVER JACK RESERVOIR	320	1
		CRAWFORD RESERVOIR	2,388	5
		LAKE FORK AT GATEVIEW, CO	89,000	19
		MORROW POINT RESERVOIR	106,290	11
		BLUE MESA RESERVOIR	400,921	21
		GUNNISON R INF TO BLUE MESA RESERVOIR	435,000	25
13010002	Alamosa-Trinchera	MOUNTAIN HOME	2,286	29
		TERRACE RESERVOIR	5,708	40
		TRINCHERA CK	11,200	54
		UTE CREEK	11,500	51
		SANGRE DE CRISTO	13,800	54
		CULEBRA CREEK AT SAN LUIS	19,400	52
		ALAMOSA CREEK ABOVE TERRACE RESERVOIR	51,000	29
13010005	Conejos	PLATORO RESERVOIR	14,230	31
		CONEJOS RIVER NEAR MOGOTE	153,000	34
13010001	Rio Grande Headwaters	CONTINENTAL RESERVOIR	9,303	78
		SANTA MARIA RESERVOIR	13,969	69
		RIO GRANDE RESERVOIR	19,638	57
		RIO GRANDE NEAR DEL NORTE	365,000	25
13010004	Saguache	SAGUACHE CREEK NEAR SAGUACHE, CO	25,000	37
14080104	Animas	LEMON RESERVOIR	10,792	19
		FLORIDA RIVER INFLOW TO LEMON RESERVOIR	27,000	10
		ANIMAS RIVER AT DURANGO	225,000	9
14080107	Mancos	JACKSON GULCH RESERVOIR	2,757	12
		MANCOS RIVER NEAR MANCOS	10,800	4
14080105	Middle San Juan	LONG HOLLOW RESERVOIR	840	92
		LA PLATA RIVER AT HESPERUS	10,000	9
14080102	Piedra	PIEDRA RIVER NEAR ARBOLES	105,000	20
14030002	Upper Dolores	GROUNDHOG RESERVOIR	4,500	11
		DOLORES RIVER BELOW MCPHEE RESERVOIR	135,000	18
		MCPHEE RESERVOIR	167,280	19
14080101	Upper San Juan	VALLECITO RESERVOIR	40,672	4
		LOS PINOS RIVER NEAR BAYFIELD	108,000	14
		SAN JUAN RIVER NEAR CARRACAS	245,000	27
10190006	Big Thompson	LAKE LOVELAND RESERVOIR	2,100	13
		MARIANO RESERVOIR	2,200	26
		LONE TREE RESERVOIR	2,700	3
		WILLOW CREEK RESERVOIR	6,253	11
		BOYD LAKE	29,800	44
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	77,000	39
		CARTER LAKE	102,410	81
		LAKE GRANBY	307,599	57

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
10190007	Cache La Poudre	BLACK HOLLOW RESERVOIR	2,300	18
		CHAMBERS LAKE	4,600	70
		HALLIGAN RESERVOIR	4,700	34
		WINDSOR RESERVOIR	5,900	6
		CACHE LA POUDRE	6,500	23
		FOSSIL CREEK RESERVOIR	9,300	66
		COBB LAKE	15,500	54
		HORSETOOTH RESERVOIR	92,509	19
		CACHE LA POUDRE R AT CANYON MOUTH	195,000	35
10190004	Clear Creek	CLEAR CREEK AT GOLDEN	87,000	25
10190003	Middle South Platte-Cherry Creek	HORSECREEK RESERVOIR	0	1
		BARR LAKE	17,300	5
		MILTON RESERVOIR	20,400	88
		STANDLEY RESERVOIR	30,400	16
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	32,000	32
		BOULDER CREEK NEAR ORODELL	47,000	26
		SAINT VRAIN CREEK AT LYONS	75,000	32
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	77,000	39
		CLEAR CREEK AT GOLDEN	87,000	25
		SOUTH PLATTE RIVER AT SOUTH PLATTE	119,000	22
		CACHE LA POUDRE R AT CANYON MOUTH	195,000	35
10190012	Middle South Platte-Sterling	JULESBURG RESERVOIR	14,400	2
		PREWITT RESERVOIR	15,300	20
		EMPIRE RESERVOIR	25,100	34
		JACKSON LAKE RESERVOIR	26,100	81
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	32,000	32
		BOULDER CREEK NEAR ORODELL	47,000	26
		RIVERSIDE RESERVOIR	49,000	54
		POINT OF ROCKS RESERVOIR	54,000	19
		SAINT VRAIN CREEK AT LYONS	75,000	32
		BIG THOMPSON R AT MOUTH, NR DRAKE, CO	77,000	39
		CLEAR CREEK AT GOLDEN	87,000	25
		SOUTH PLATTE RIVER AT SOUTH PLATTE	119,000	22
		CACHE LA POUDRE R AT CANYON MOUTH	195,000	35
10190001	South Platte Headwater	ANTERO RESERVOIR	19,500	55
		SPINNEY MOUNTAIN RESERVOIR	20,700	17
		ELEVENMILE CANYON RESV INFLOW	40,000	27
		ELEVENMILE CANYON RESERVOIR	94,500	9
10190005	St. Vrain	TERRY RESERVOIR	4,700	20
		MARSHALL RESERVOIR	5,200	28
		UNION RESERVOIR	6,996	10
		GROSS RESERVOIR	10,900	30
		BUTTONROCK (RALPH PRICE) RESERVOIR	16,200	99
		SOUTH BOULDER CK NR ELDORADO SPRINGS, CO	32,000	32
		BOULDER CREEK NEAR ORODELL	47,000	26
		SAINT VRAIN CREEK AT LYONS	75,000	32

HUC ID	HUC Name	Component Name	Component Volume (AF)	Component NEP by Month
10190002	Upper South Platte	CHEESMAN LAKE	46,836	5
		SOUTH PLATTE RIVER AT SOUTH PLATTE	119,000	22
		DILLON RESERVOIR	199,000	18
14050003	Little Snake	LITTLE SNAKE RIVER NEAR LILY	230,000	37
14050002	Lower Yampa	YAMPA RIVER NEAR MAYBELL	570,000	28
10180001	North Platte Headwaters	NORTH PLATTE R NR NORTHGATE	162,000	34
14050005	Upper White	WHITE RIVER NEAR MEEKER	162,000	16
14050001	Upper Yampa	YAMCOLO RESERVOIR	4,891	14
		STAGECOACH RESERVOIR NR OAK CREEK	32,500	87
		ELKHEAD CREEK ABOVE LONG GULCH	46,000	31
		YAMPA RIVER AT STEAMBOAT SPRINGS	160,000	18
		ELK RIVER NEAR MILNER, CO	250,000	34

NEP is non exceedance percentage (percentile) 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)

3

Basinwide Conditions Assessment

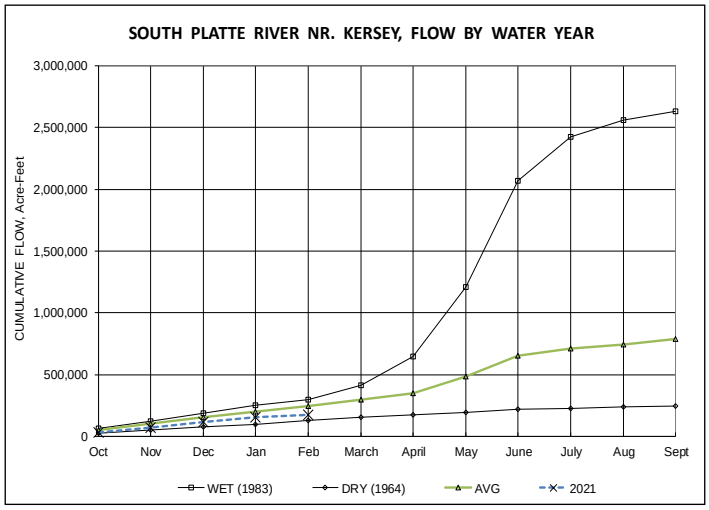
The SWSI value for the month was -1.5.

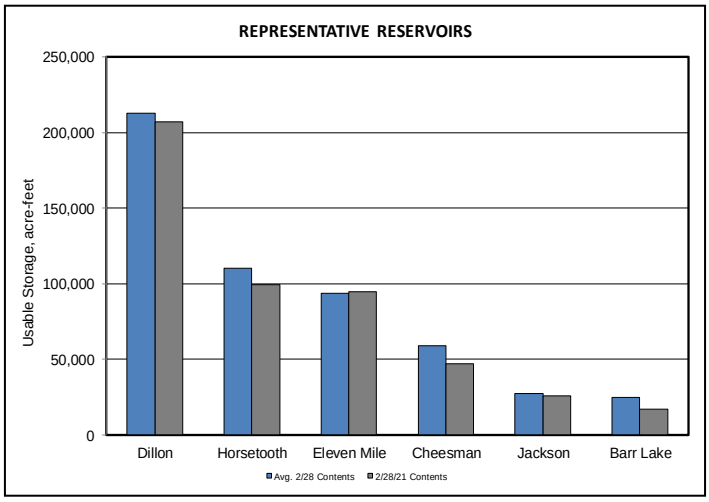
The South Platte River basin in northeastern Colorado experienced above average precipitation in the mountainous areas at 150% of average, while portions of the eastern plains experienced below average precipitation at approximately 75% of average for the month of February. Temperatures throughout the South Platte River basin experience cooler than normal temperatures, with temperatures on average 5 degrees Fahrenheit below average throughout the basin during the month of February. The month of February finished in a lot better condition regarding snowpack than the start of the month which started near 76% of average on February 1 and was near 90% on March 1 as reported by the USDA South Platte Basin High/Low Snowpack Summary. The USDA NRCS Colorado Streamflow Forecasts Summary for March 1, 2021 projects streamflows below average throughout the basin, with a range of 70-89% for the entire South Platte basin drainage.

The trend of below average temperatures and above average precipitation in the mountainous areas resulted in the continued widespread drought conscious throughout the basin easing slightly. Portions of the northeast plains improved from a USDA Drought Monitor rating of D3 (Extreme drought) to a rating of D2 (Severe Drought), while portions of Jefferson Larimer, Douglas and Elbert Counties improving during the month of February from a rating of D4 (Exceptional Drought) to a rating gof D3. The mountainous areas and the northern most counties remain in widespread drought with a rating of D2, while counties on the south of the basin end the month of February with a rating of D3. It is hopeful that forecast of early March snow storms bring more drought relief throughout the South Platte River basin.

The above conditions along with high demand for the filling of storage reservoirs throughout the basin, resulted in flows on the mainstem of the South Platte River basin below average throughout the basin. Flows at the Kersey gage downstream of the City of Greeley, were below average throughout the month of February with average daily flows of approximately 370 cfs, 54% of the historic mean value of 682 cfs. The average daily flows at the Julesburg gage for the month of February were 168 cfs, only 29% of the historic mean value of 589 cfs. The demand for filling of depleted reservoirs throughout Division 1 and below average flows of native water in the rivers will continue the trend of below average flows throughout the Winter into Spring, especially at the Julesburg gage near the state line.

With the continued trend of below average precipitation and below average streamflows, many reservoirs on the eastern plains continue to slowly fill in priority, resulting in senior calling water rights on the mainstem of the South Platte River and tributaries by reservoirs. Throughout much of the month of February, the controlling calls on the South Platte River mainstem on the upper end of basin were controlled by the Burlington Canal 1909 Barr Lake just below Denver. The middle portion of the South Platte River mainstem was controlled for much of the month with the 1909 Milton Reservoir call diverted at the Evans No. 2 Canal located just north of the Town of Fort Lupton. The lower portion of the South Platte River was controlled during the month of February with a Prewitt Reservoir 1910 call diverted from the river just downstream of the Town of Brush. There were no calls below the Prewitt Reservoir Inlet Canal to the stateline during the month of February. With many of the reservoirs below average and the reservoirs on the eastern plains empty to near empty at the start of November and slowly filling throughout the winter, it is anticipated that the calls on the South Platte will be controlled by senior reservoir calls until they reach winter fill, into the Spring of 2021 snowmelt runoff season. Many tributaries have internal calls senior to those on the South Platte River controlling diversions within their individual sub-basins.

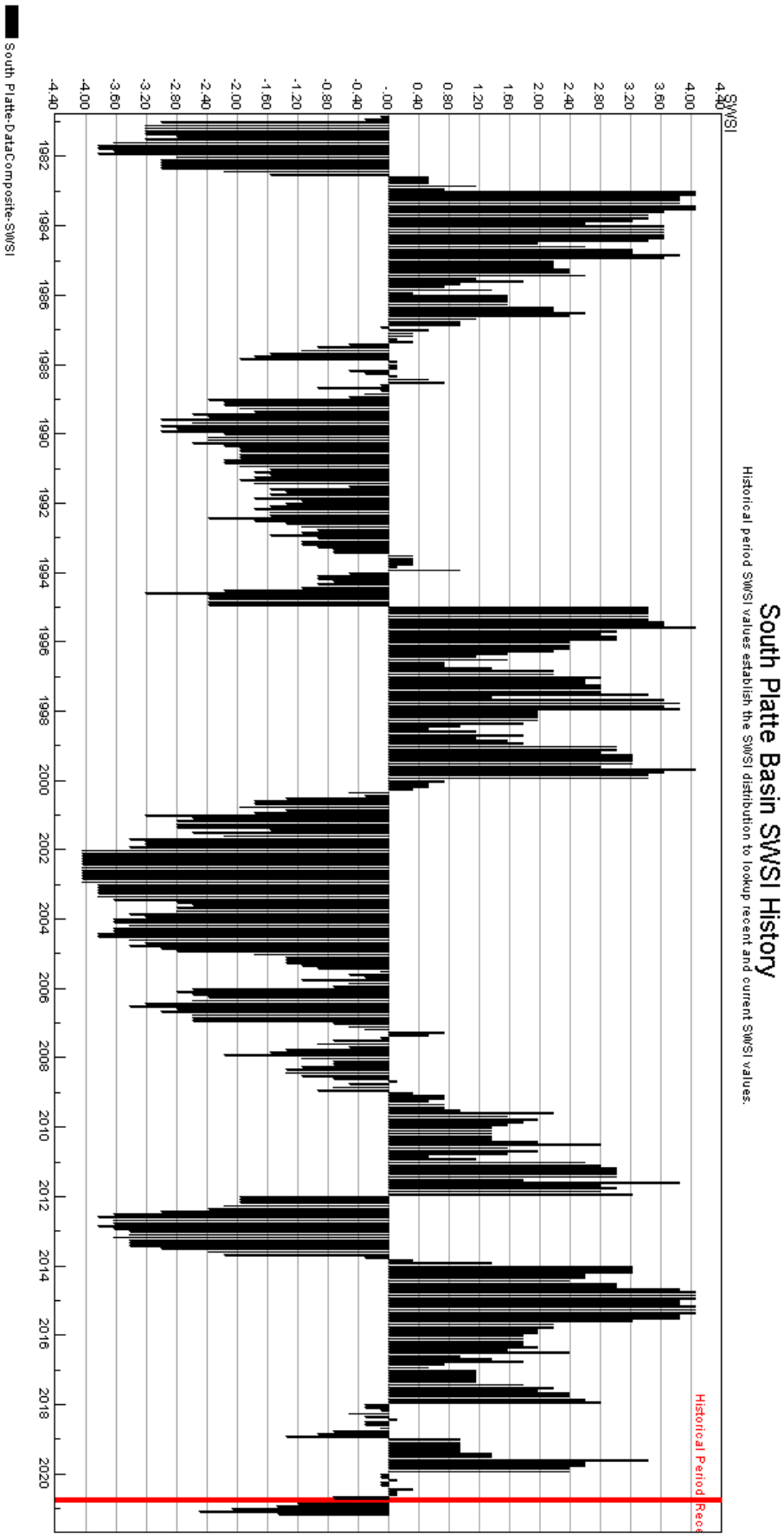




Reservoir storage levels throughout the South Platte River mainstem ended the month of February slightly below the historical average at the 6 SWSI Representative Reservoirs (Dillon, Horsetooth, Eleven Mile, Cheeseman, Jackson, and Barr Lake) at 491,571 acre-feet volume, which is 94% of the long term average (1961-current). Additionally, 32 indexed

reservoirs throughout Division 1 basin ended the month of February at 95% of the long term average with a storage volume of 792,743 acre-feet representing 70% of total full capacity for the reservoirs. This is slightly below the long term average of 73% of total full capacity for the end of February storage in the 32 indexed reservoirs throughout Division 1. Given the current below average precipitation and native flows in the rivers and streams, it is expected much competition by reservoir priorities to fill in priority will be experienced throughout the Spring, with the possibility of the more junior reservoir water rights not being filled. A large Spring storm projected the weekend of March 12th could really impact the reservoir fill season by providing much needed flows and to delay the demand for direct flow water rights.

The temperature and precipitation outlook into March, April, and May prepared by the National Weather Service, in northeastern Colorado indicates an 50-60% probability of above average temperatures and a 40-50% probability of below precipitation throughout the South Platte River Basin and Republican River Basin.



Basinwide Conditions Assessment

The SWSI value for the month was -2.0.

Outlook

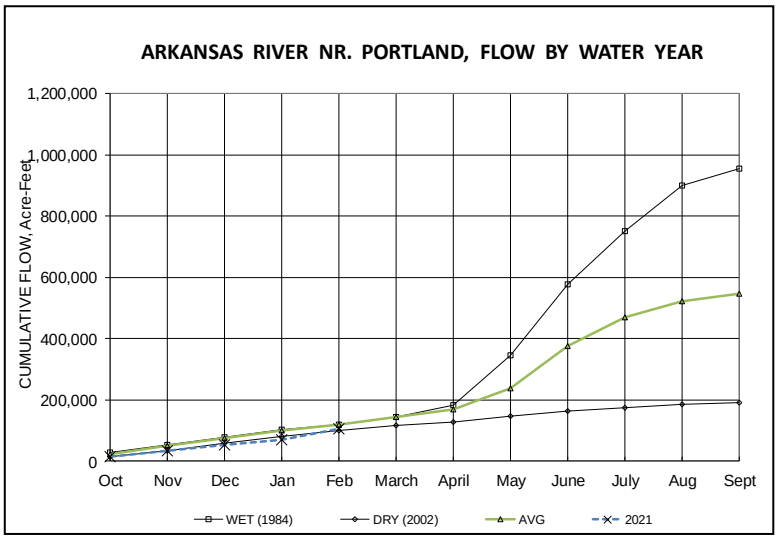
Reservoir storage in the Pueblo Winter Water Program totaled 76,737 acre-feet as of the end of February. This storage amount is higher than last year's storage to date (88% higher than last year) and represents about 66% of the past five-year average (116,165 ac-ft). Conservation storage in John Martin Reservoir has accumulated 10,142 acre-feet which is less than half of the 27,000 ac-ft stored last year for the same time period. This is lower than the 1950 to 1975 pre-Winter Water Storage Period average of 17,810 acre-feet.

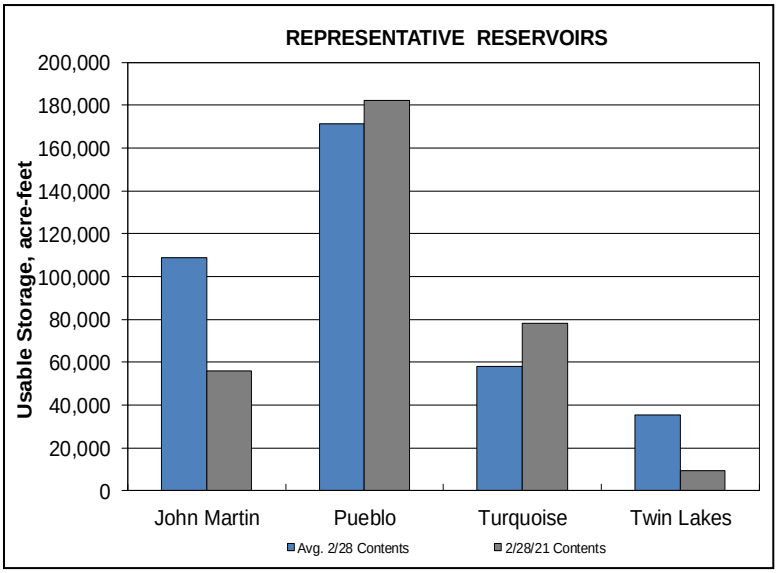
Snowpack was down to 92% at the end of February, a decrease of 3%. Conditions in the basin remained dry at the end of February.

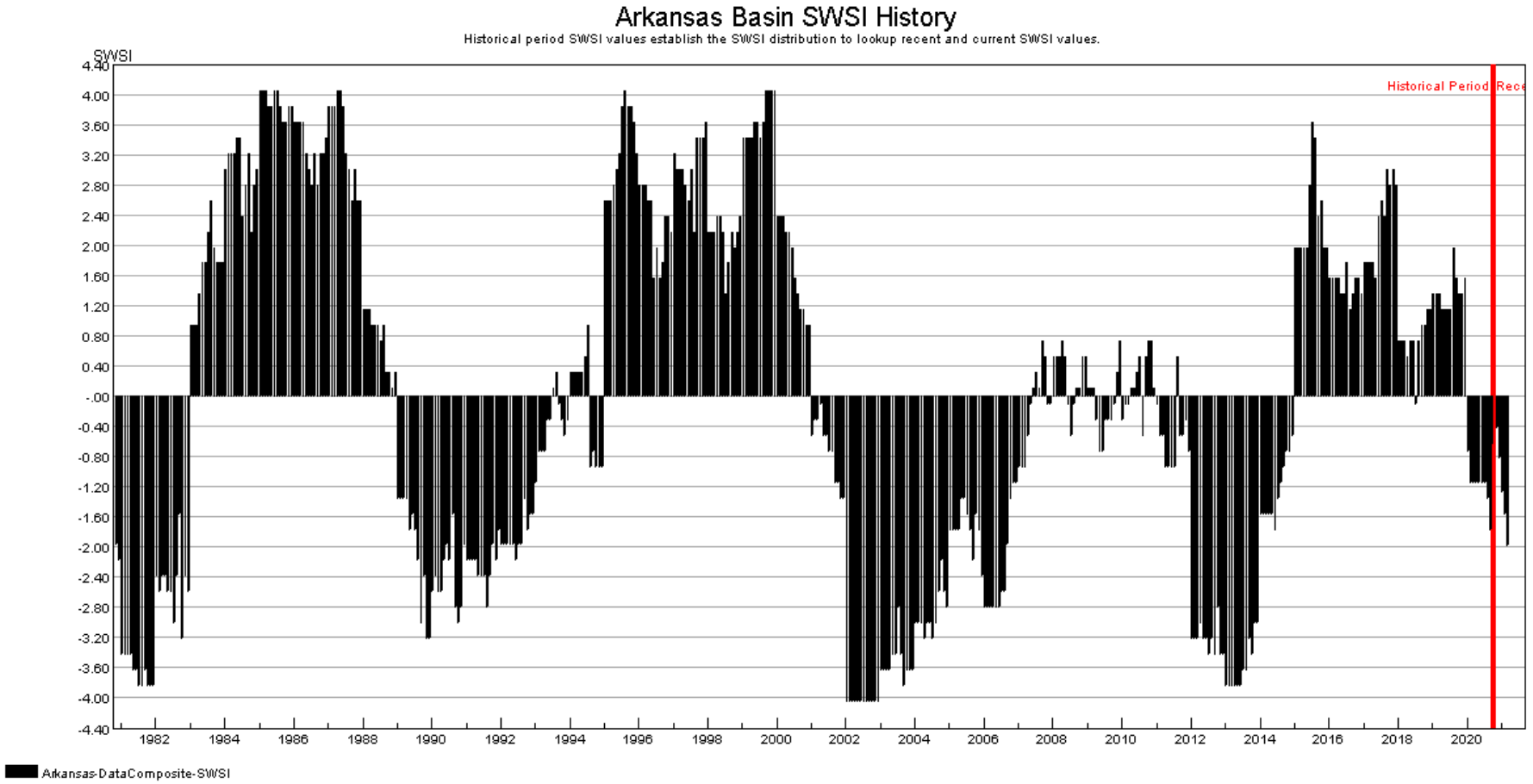
Administrative Concerns

The Division Engineer continued to process protests related to the initial abandonment list. The Pond Management initiative started with the mailing of several hundred informational brochures to pond owners across the Arkansas Basin. The Division Administration team started work on a Twin Lakes Augmentation Shares evaluation tool that should be available to the public before May.

Ongoing concerns still relate to the spilling of account water from Pueblo Reservoir. Because of the spill potential in Pueblo, entities with water in excess capacity accounts are moving water and it has to be out by April 15. The Division is continuing to work with the various entities to manage the spilling of account water.






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 -1.3.

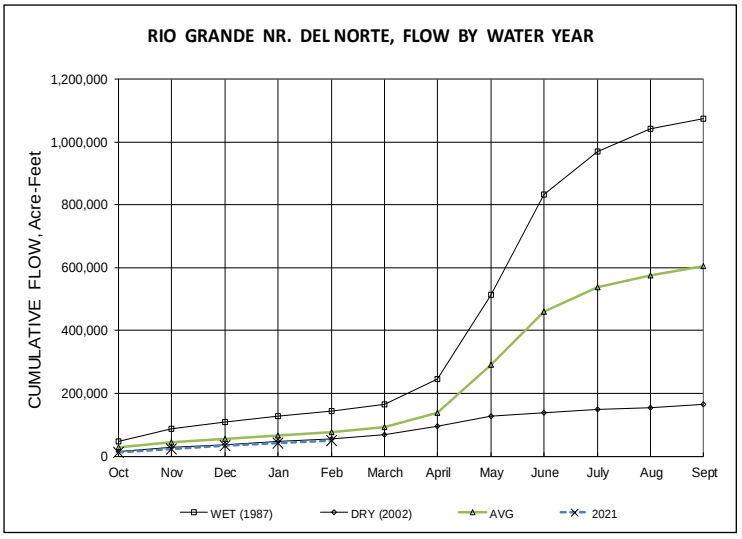
Flow at the gaging station Rio Grande near Del Norte averaged 152 cfs (85% of normal). The Conejos River near Mogote had a mean flow of 49 cfs (89% of normal). Flow to the state line was 80% of normal.

Temperatures were again well above normal in the San Luis Valley during February. Alamosa received 0.28 inches of precipitation during the month, very near the long-term average.

Outlook

Snowpack conditions throughout the upper Rio Grande basin kept pace with the median snowpack accumulation line during February. This basin led the State throughout the month in snowpack compared to average. The snowpack accumulation this winter is similar to last winter. Water users are hoping the snow keeps falling through the end of Aril though. Last year's disappointing runoff was directly related to no snowfall in April and a dry summer.

Due to the extensive drought last year, recent NRCS stream flow forecasts are calling for below average runoff in the upper Rio Grande basin this year. The expected April through September runoffs range from 42% of average for the Rio San Antonio at the southwestern corner of the San Luis Valley to 92% for Costilla Creek in the southeast corner of the Valley. Simply put, the Sangre de Cristo Mountains are expected to have better runoff than the San Juan Mountains this year.

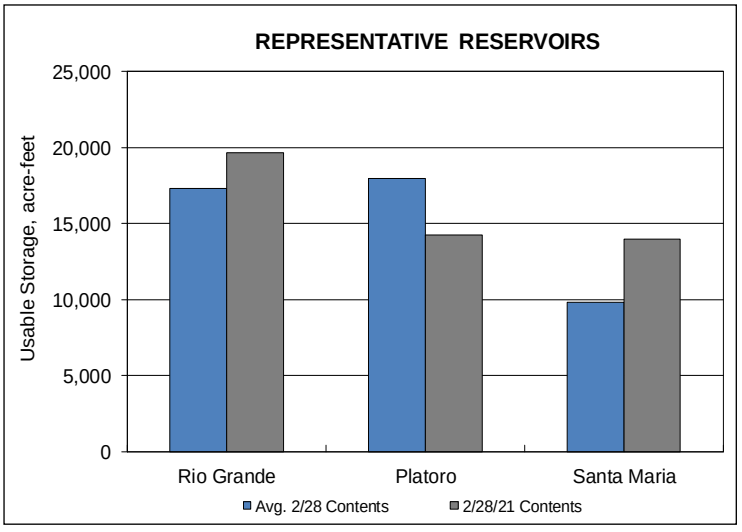


The NOAA three-month outlook suggests this basin and most of Colorado should expect above normal temperatures and below normal precipitation for the April through June period.

Administrative/Management Concerns

A healthy snowpack and runoff could ease some of the tension for area farmers and ranchers who rely on groundwater pumping for irrigation. Full implementation of the Groundwater Use Rules begins March 15, 2021. All non-exempt groundwater use must have augmentation or coverage by a groundwater management subdistrict to use groundwater by this date to continue use.

The 82nd annual meeting of the Rio Grande Compact Commission will be held via teleconference on Thursday, April 8, 2021. The public is invited to attend. The meeting is scheduled to start at 9:00 a.m. MDT. Please contact the Division office for more details at (719) 589-6683.

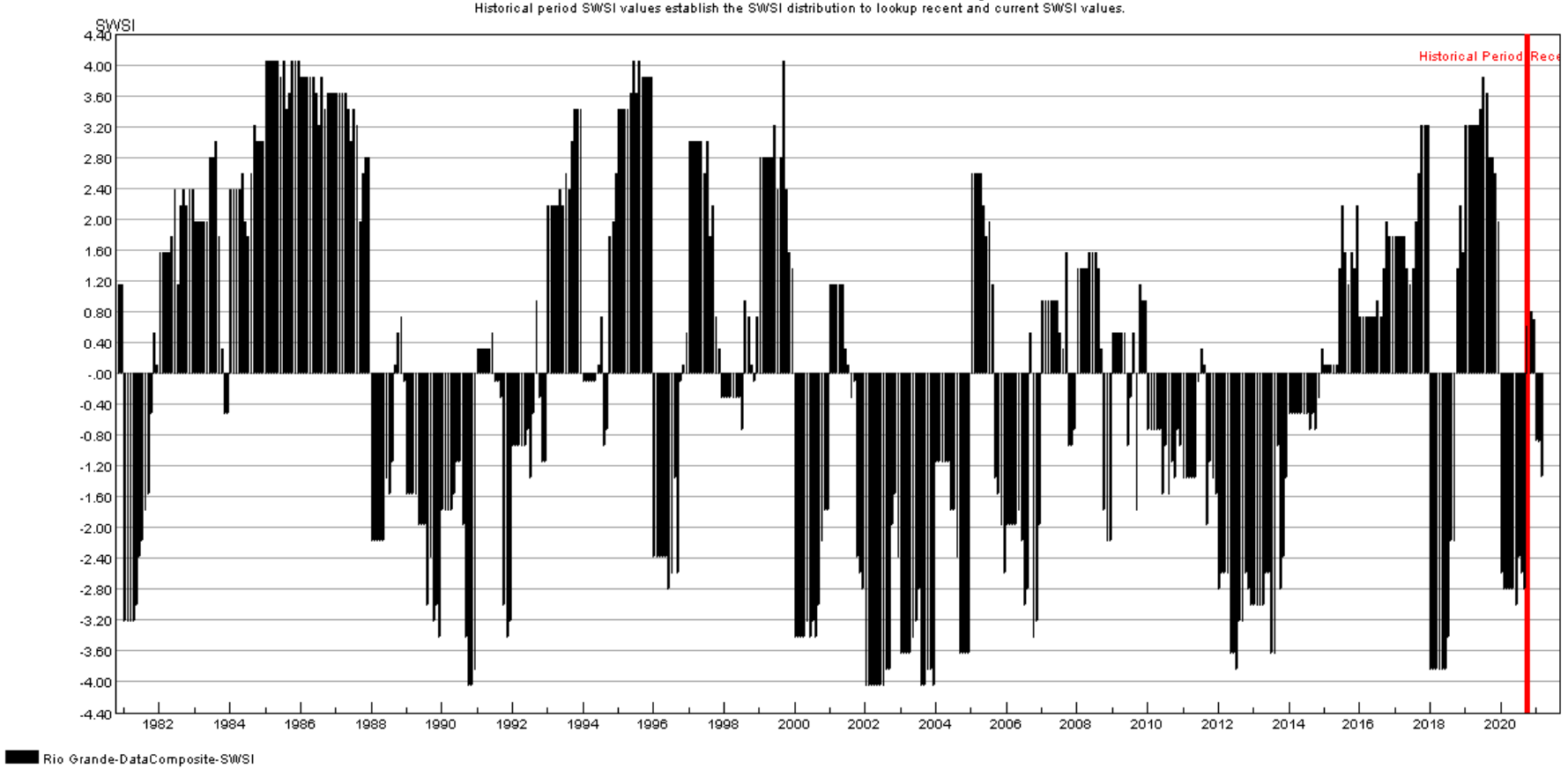


Public Use Impacts

If the current trend of warm and dry conditions persists, the Division Engineer expects early calls for irrigation water this year. Some of the calls will be honored in hope the irrigators catch the early run-off in what is expected to be another water short year. The Rio Grande and Conejos River basins should expect a start-up date of April 1.

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 -3.0.

Basin Wide Conditions Outlook

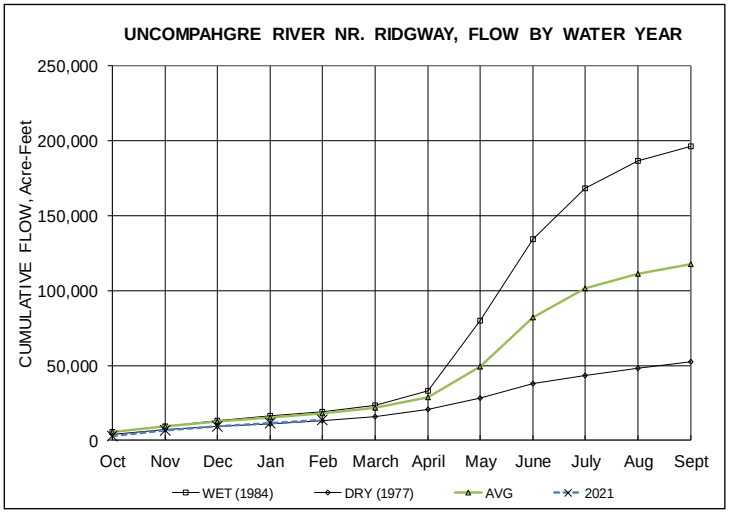
Precipitation in most of the Gunnison basin remained below average in March at between 70 and 90 percent of average. However, far northern areas, such as the Grand Mesa, received near average precipitation for the first time in months. As mentioned last month, precipitation during the first part of February was promising, but the remaining part of the month was dry. Snowpack conditions, as measured by the average snow water equivalent (SWE) at all Snotel stations throughout the Gunnison basin, are lagging behind last year. For example, last year the basin contained 92 percent of the median on March 1st and in 2021 it only contains 79 percent of the median. The recent storm during the second weekend in March, that dumped massive amounts of snow on the front range, did improve conditions some, but only to 84 percent of the median on March 15th. This places the basin near the amount of SWE in 2012, but ahead of the 2002 water year by about 2 inches of SWE and ahead of 2018 by 4 inches of SWE as of March 15th.

Outlook

NOAA's El-Nino/Southern Oscillation (ENSO) forecast continues to predict that the current La Niña will transition to neutral conditions in the April to June period. The long term forecast for the period from March to May continues to predict a likelihood of below average precipitation and above average temperatures.

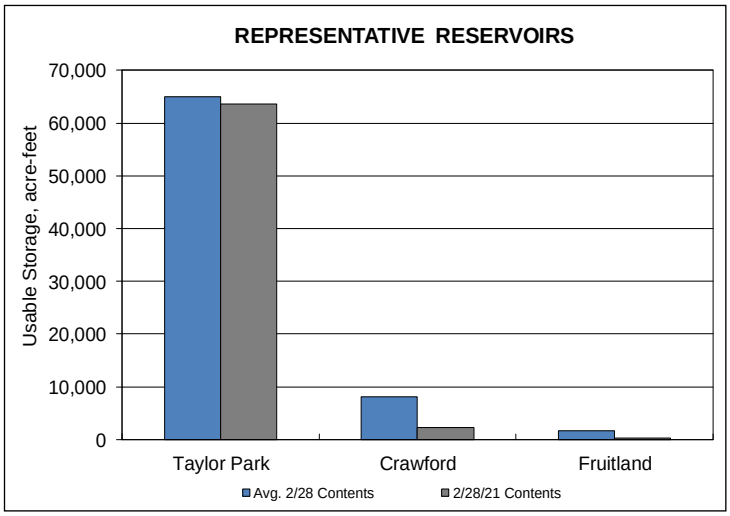
Administrative/Management Concerns

The transfer of Taylor Park Reservoir first fill account water into the Aspinall Unit continued at approximately 160 ac-ft per day through February. A total of 34,942 ac-ft has been moved into the Aspinall Unit as of March 15th and would be available for diversion at the Gunnison Tunnel. The Uncompahgre Valley Water Users Association (UVWUA) is planning on beginning diversions at the Gunnison Tunnel on March 17th to start up their system as onion growers would like to begin planting the week of March 21st. Inflows into the Aspinall Unit have been averaging nearly 300 cfs below last year at 400 cfs, which means that the Gunnison Tunnel can only divert up to 400 cfs without using storage from the first fill account stored in Blue Mesa Reservoir. As such, the UVWUA has indicated that they plan to watch the calculated inflows produced by the Gunnison River accounting tool and ramp up diversions only to that amount in order to avoid using storage this early in the season. In addition, they have indicated that they will likely be running at less than full delivery to their users in 2021 due to the expected poor runoff.



The March 15th inflow forecast prepared by the Colorado Basin River Forecast Center (CBRFC) for Blue Mesa Reservoir is only 460,000 ac-ft, or 68 percent of average. This would place the basin in a Moderately Dry year category under the Aspinall Operations EIS ROD and the peak flow target would be only for one day at 5,800 cfs while the peak specified in the Black Canyon Federal Reserve water right would be 2,360 cfs for one day as well.

It appears that the Division of Water Resources may need to administer reservoirs in the Grand Mesa system this year because of a potential call from downstream. In anticipation of that call, which could begin on April 1st, water commissioners are beginning the process of determining levels in the reservoirs by digging snow off of their gage rods to determine the amount of storage in place when the call goes on. This measurement is used to determine the amount of water that each reservoir stored out-of-priority and must release later in the season when the water commissioner can operate the outlet gates.

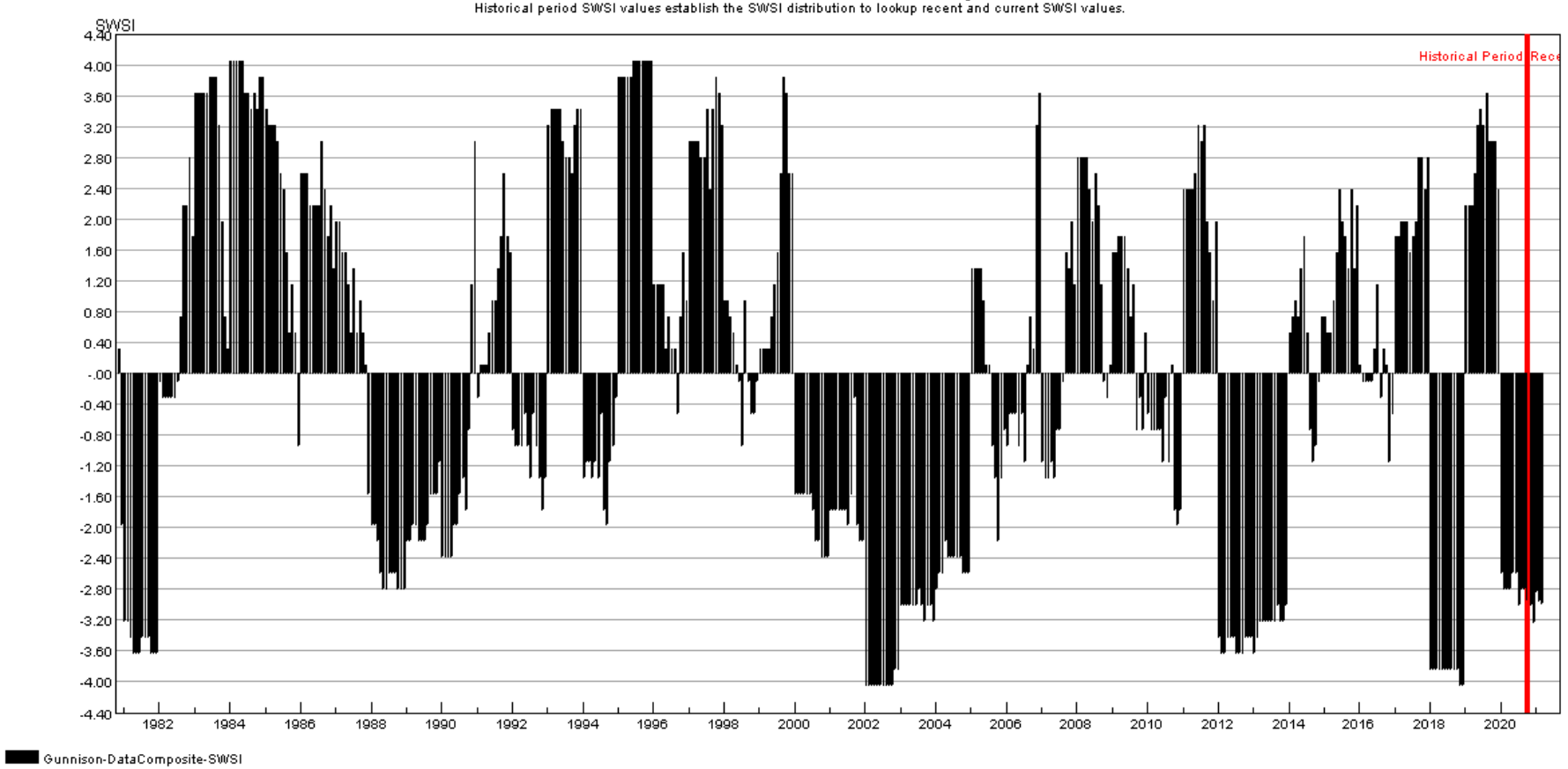


Public Use Impacts

As we get closer to May and June when the Bureau of Reclamation will make their releases to reach peak targets below Crystal Dam, anglers and boaters that intend to float the Gunnison Gorge should pay attention to when they plan those releases as it will significantly and quickly alter flows in that stretch of the Gunnison River.

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

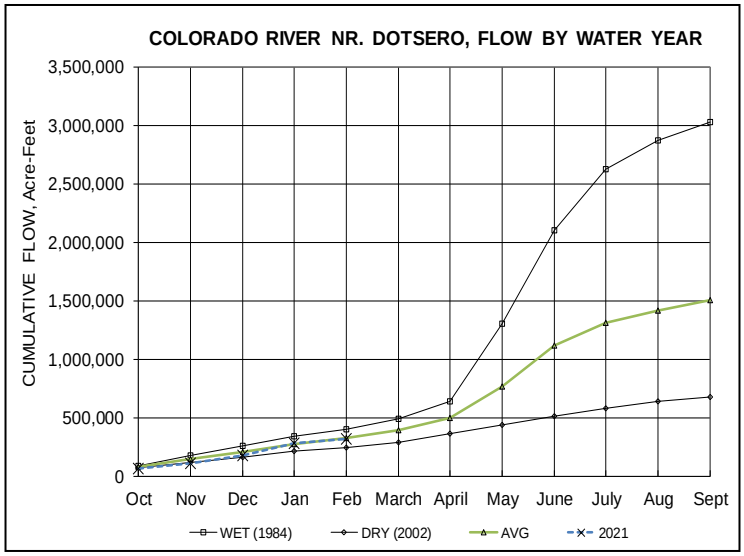
Colorado River flows are running below average with tributary flows also running below average throughout March. As of March 15, the Upper Colorado River Basin snowpack was 86 percent of median snow water equivalent and 77 percent of average precipitation. Forecasts call for below average precipitation and below average temperatures for western Colorado through March.

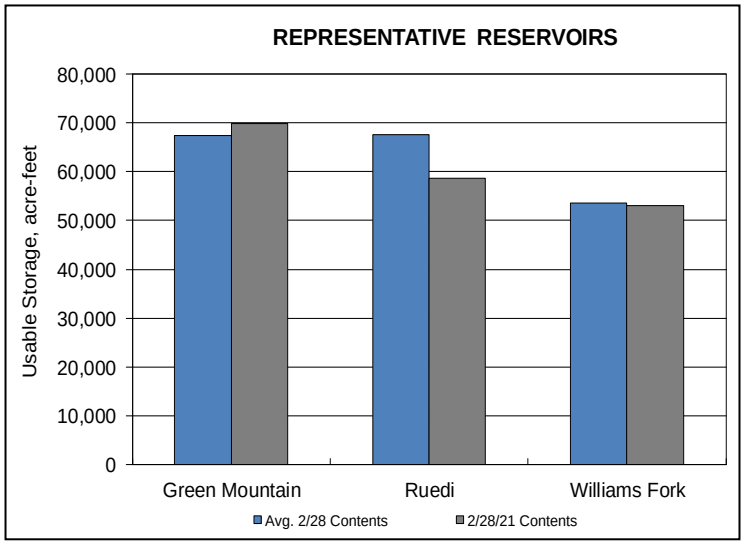
Administrative/Management Concerns

The call on the Colorado River main stem remains the Shoshone Hydro Power right for 1250 cfs. Accordingly, Green Mountain Reservoir is releasing to pass inflows, provide contract and HUP obligations and make C-BT replacements.

Public Use Impacts

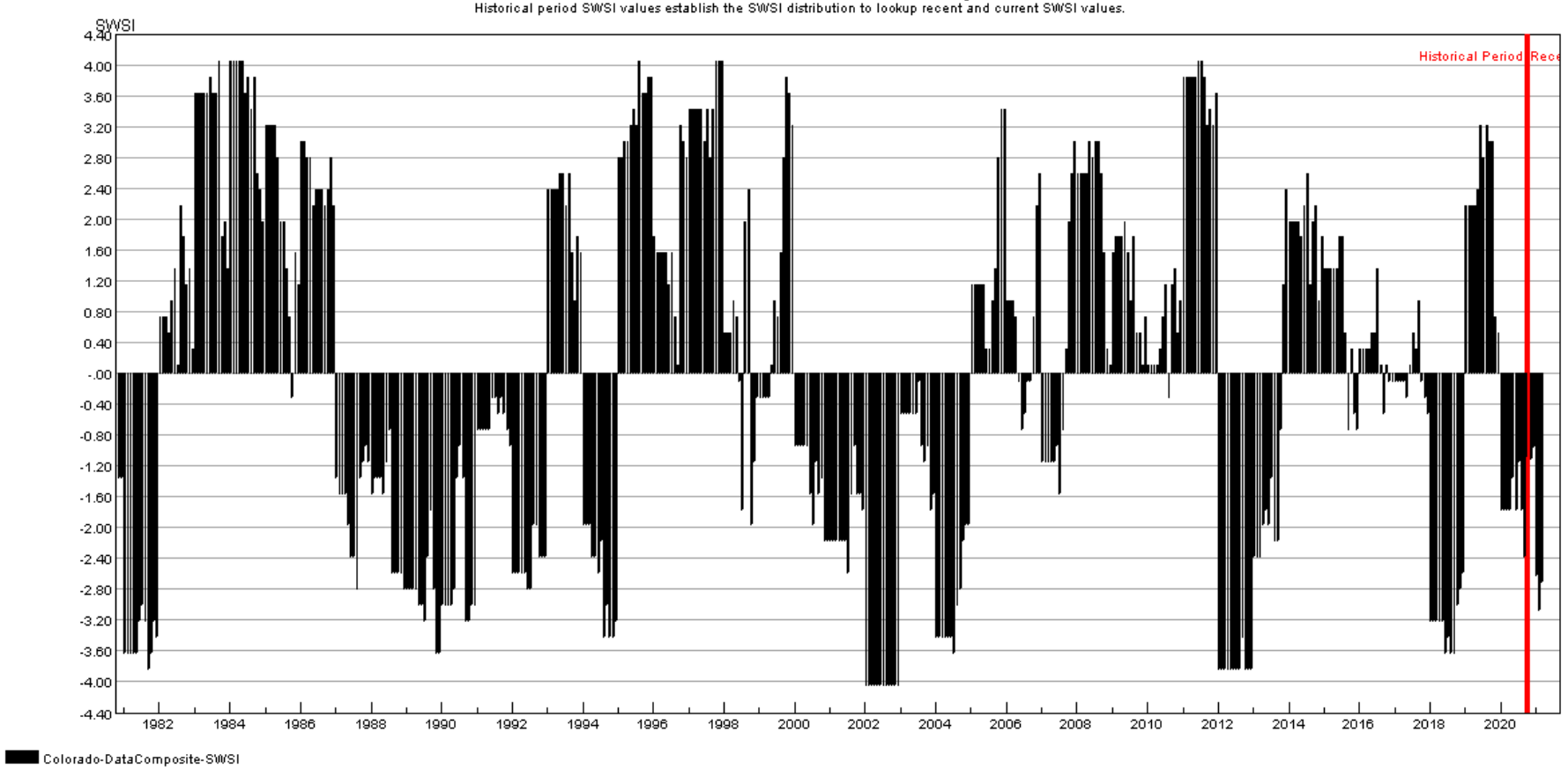
Hanging Lake Trail is scheduled to reopen on May 1, 2021 for the first time since its closure due to the Grizzly Creek Fire in August of 2020. The structures along the trail and lake were untouched by the fire. Hikers must obtain permits through Visit Glenwood Springs.





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 -1.6.

Snowpack *(25 sites)* – Yampa and White River basins were 84% of the monthly median for SWE. This is down from last year's SWE median of 113%. The North Platte River basin was 90% of the monthly median for SWE and is down from last year's SWE median of 118%. For the entire Yampa, White and North Platte River basins the lowest percent of median was at the Rabbit Ears SNOTEL site at 72%. The highest percent of median was at the Sandstone RS SNOTEL station at 105%. **Averages are from 1981-2010 records*

Precipitation (24 sites) – Yampa and White River basins were 136% of the monthly average, putting the basin at 75% of average for the water year to date. This is down from last year's monthly average of 141%, and down from last year's water year to date of 103%. North Platte River basin was 169% of the monthly average, putting the basin at 90% for the water year to date. This is up from last year's monthly average of 158%, and down from last year's water year to date of 114%. For the entire Yampa, White and North Platte River basins the lowest percent of average, at 100%, was the Burro Mountain SNOTEL station. The highest, at 220%, was the Battle Mountain SNOTEL station, with 3.3 inches.
**Averages are from 1981-2010 records*

Temperatures – The average monthly temperature for NOAA Colorado Climate Division 2: Colorado River Drainage was 24.9° F. This is +0.5°F from the average of 24.4°F. This temperature ranks 66 for lowest of the previous 127 years of data. For the NOAA Colorado Climate Division 4: Platte Drainage, the average temperature was 22.8°F, -4.5°F from the average of 27.3°F, ranking 21.
**Averages are from 1901-2000 records*

Reservoir Outlook

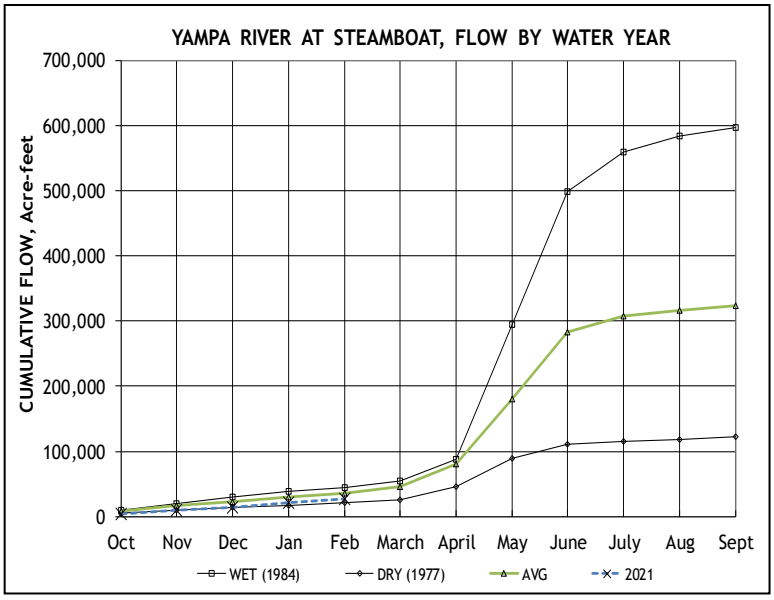
Elkhead Reservoir – February 28, 2021 capacity level was 16,002 AF of 25,550 AF – 62.6% capacity.

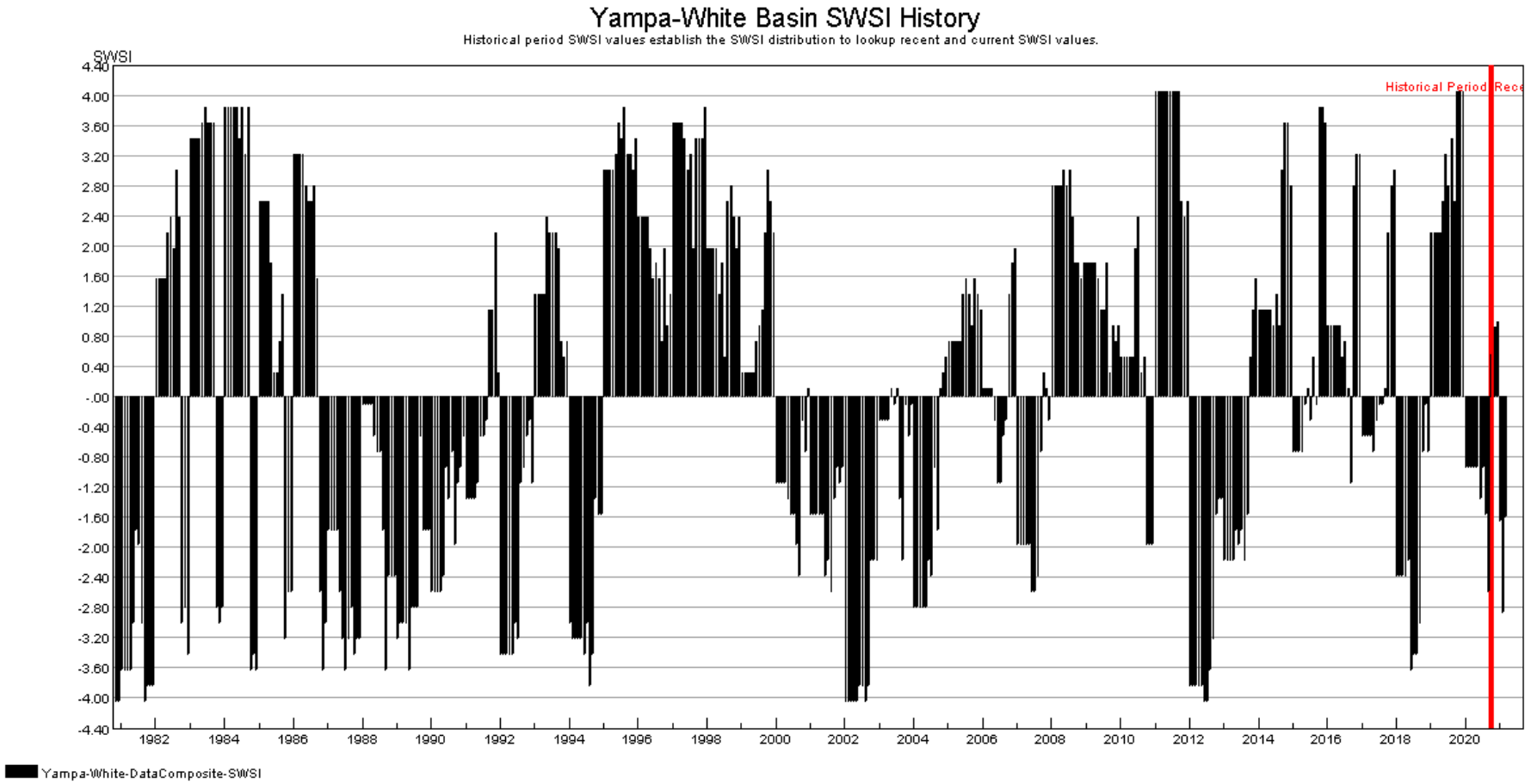
Fish Creek Reservoir – February 28, 2021 elevation was 9863.0' at 1,605 AF of 4,160 AF – 38.8% capacity.

Stagecoach Reservoir – February 28, 2021 capacity level was 32,500 AF of 36,500 AF – 89% of capacity, 121% of average, 95% of last year.

Yamcolo Reservoir – February 28, 2021 capacity level was at 4,900 AF of 8,700 AF – 56% of capacity, 79% of average, 73% of last year.

**Averages are from 1901-2000 records*

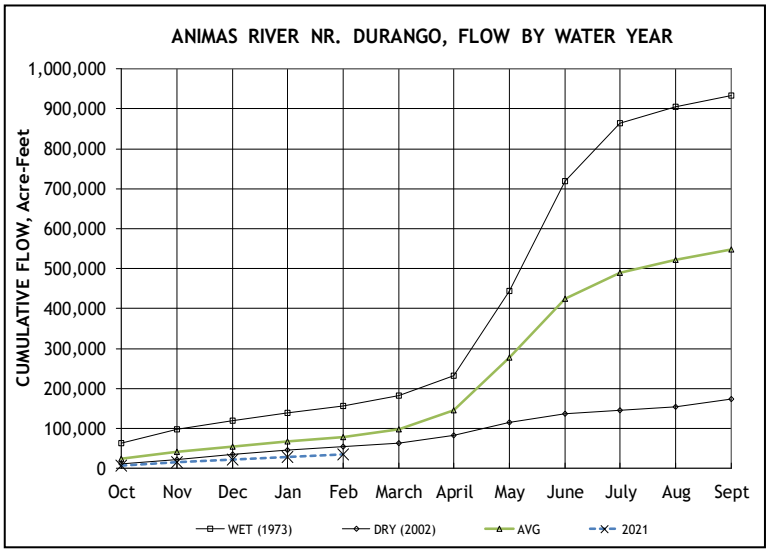



Yampa-White Basin SWSI History
Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.
SWSI
4.40
4.00
3.60
3.20
2.80
2.40
2.00
1.60
1.20
0.80
0.40
-.00
-0.40
-0.80
-1.20
-1.60
-2.00
-2.40
-2.80
-3.20
-3.60
-4.00
-4.40
Historical Period
1982
1984
1986
1988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

Basinwide Conditions Assessment

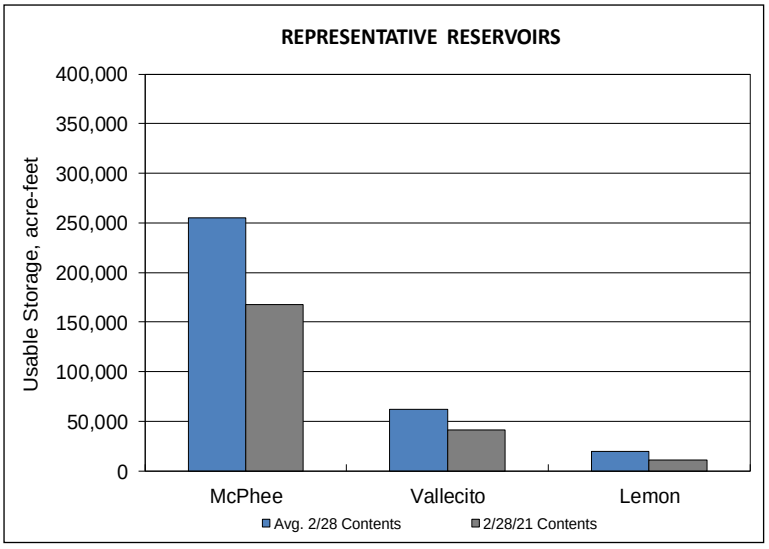
The SWSI value for the month was -3.2.

Flow at the Animas River at Durango averaged 101 cfs (49% of average). The flow at the Dolores River at Dolores was estimated to average 26 cfs (46% of average). The La Plata River at Hesperus was estimated to average 3.3 cfs (44% of average). Precipitation in Durango was 1.08 inches for the month, 65% of the 30-year average of 1.66 inches. Precipitation to date in Durango, for the water year is 4.39 inches, 53% of the 30-year average of 8.30 inches. The average high and low temperatures for the month of February in Durango were 45º and 18º. In comparison, the 30-year average high and low for the month is 46º and 19º. At the end of the month Vallecito Reservoir contained 41,548 acre-feet compared to its average content of 57,318 acre-feet (72% of average). McPhee Reservoir was up to 167,302 acre-feet compared to its average content of 259,989 (64% of average), while Lemon Reservoir was up to 11,140 acre-feet as compared to its average content of 19,662 acre-feet (57% of average).



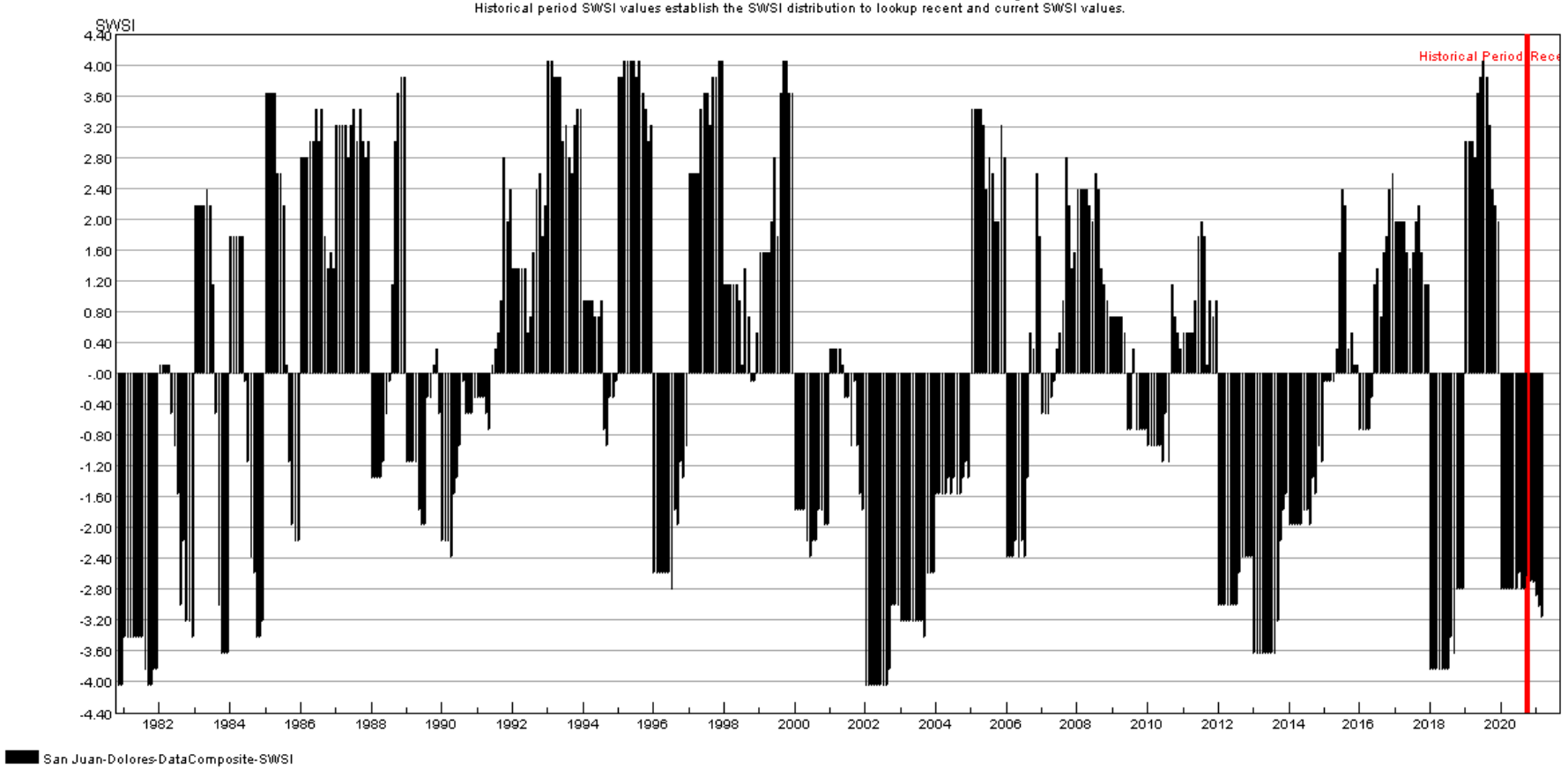
Outlook

Precipitation (1.08 inches) was below average for February in Durango. There were 71 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 are well below average for the month. This is the worst period of record on the Animas River at Durango stream gauge out of 111 years of record. There were 108 out of 110 years of record where the total flow past the Dolores stream gauge was more than this year. There were 103 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. On February 28, the NRCS SNOTEL sites reported an average snow-water-equivalent within the basin at 80%. Last month the average snow-water-equivalent at the end of the month was 81%.



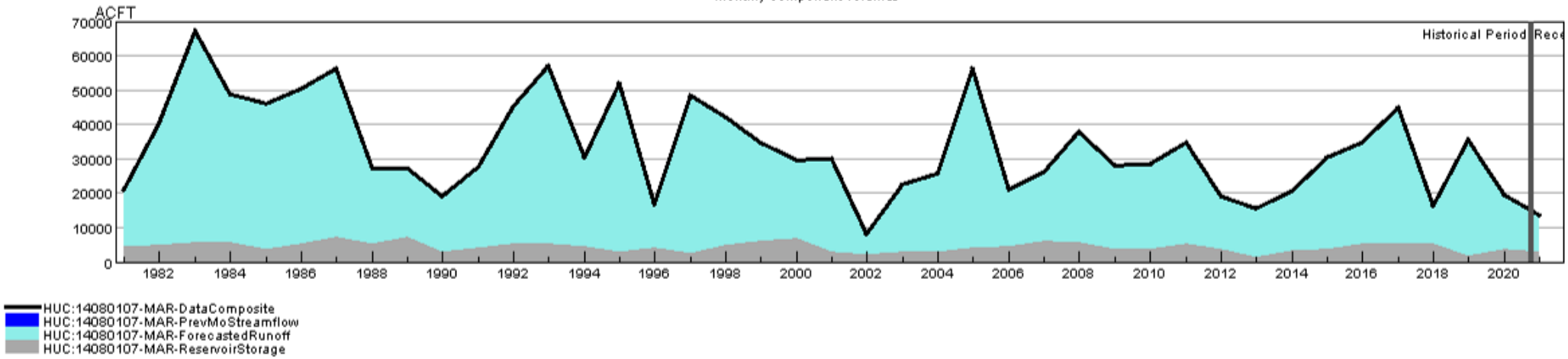
San Juan-Dolores Basin SWSI History

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



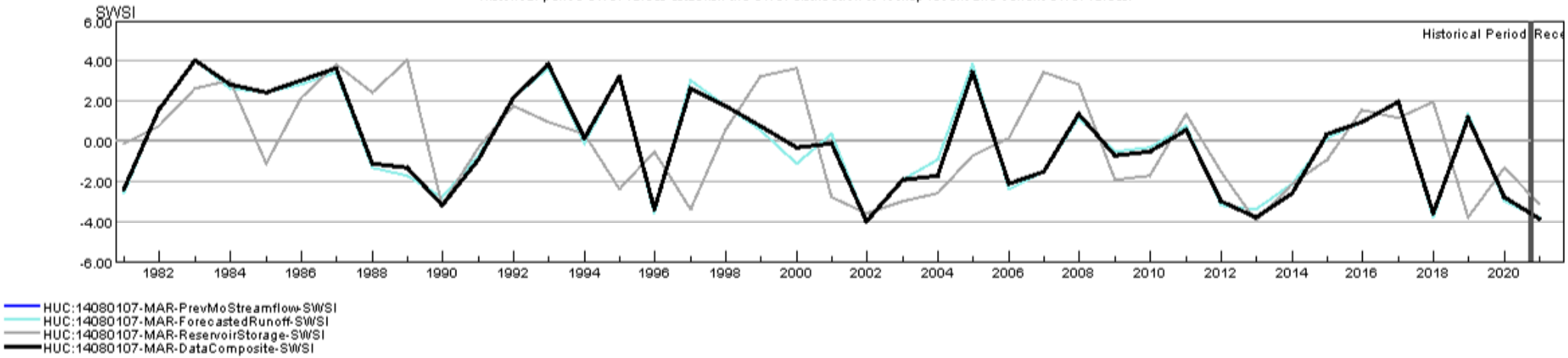
HUC 14080107 (Mancos) Surface Water Supply - MAR

Monthly component volumes



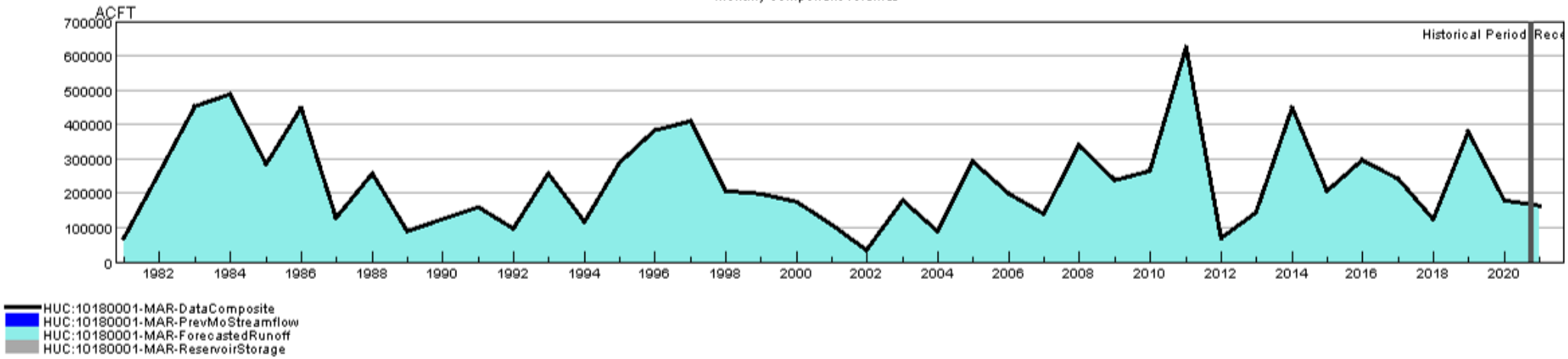
HUC 14080107 (Mancos) SWSI Values - MAR

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



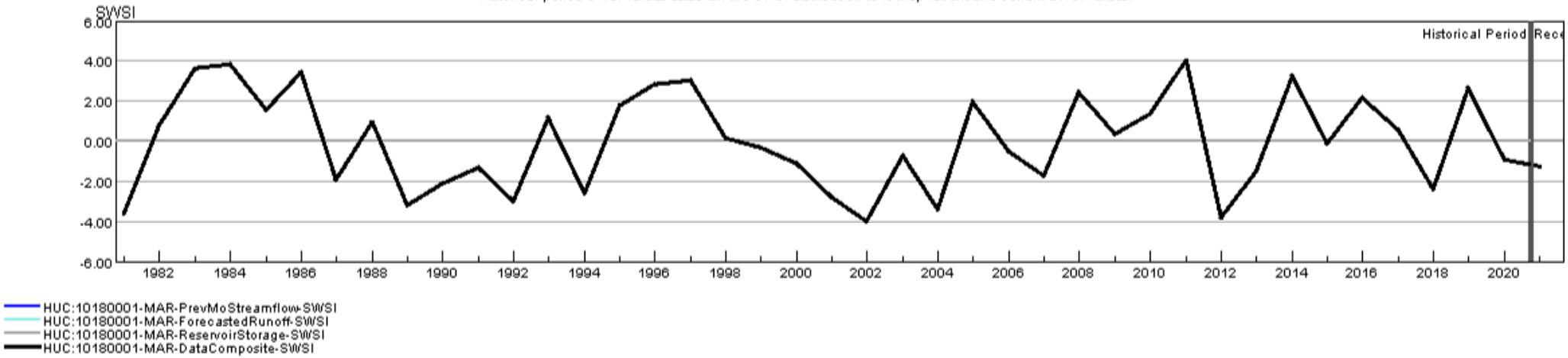
HUC 10180001 (North Platte Headwaters) Surface Water Supply - MAR

Monthly component volumes



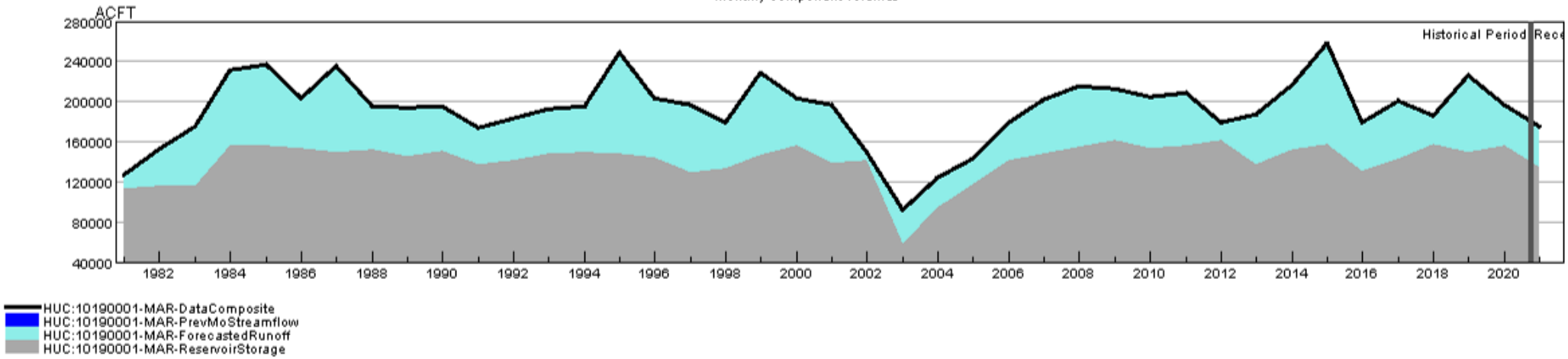
HUC 10180001 (North Platte Headwaters) SWSI Values - MAR

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



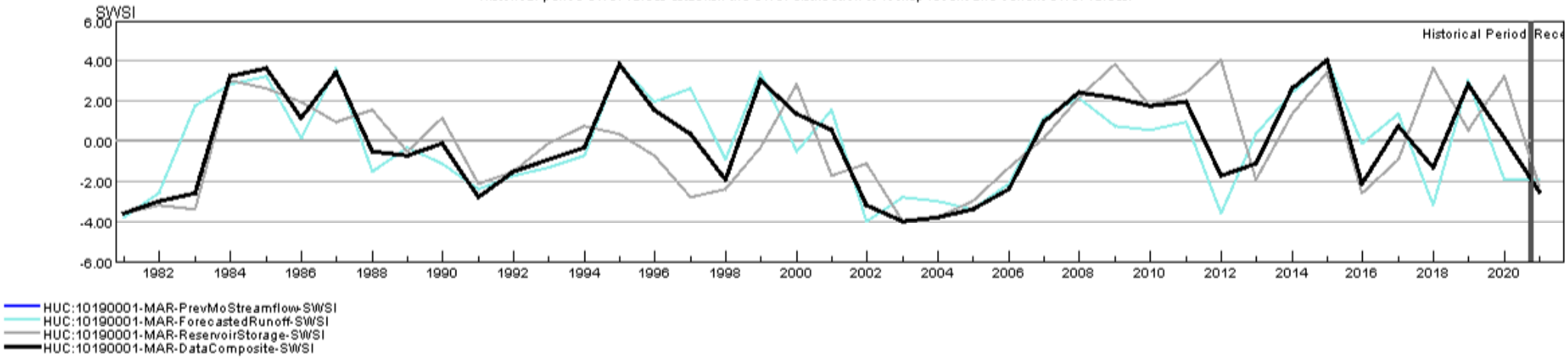
HUC 10190001 (South Platte Headwater) Surface Water Supply - MAR

Monthly component volumes



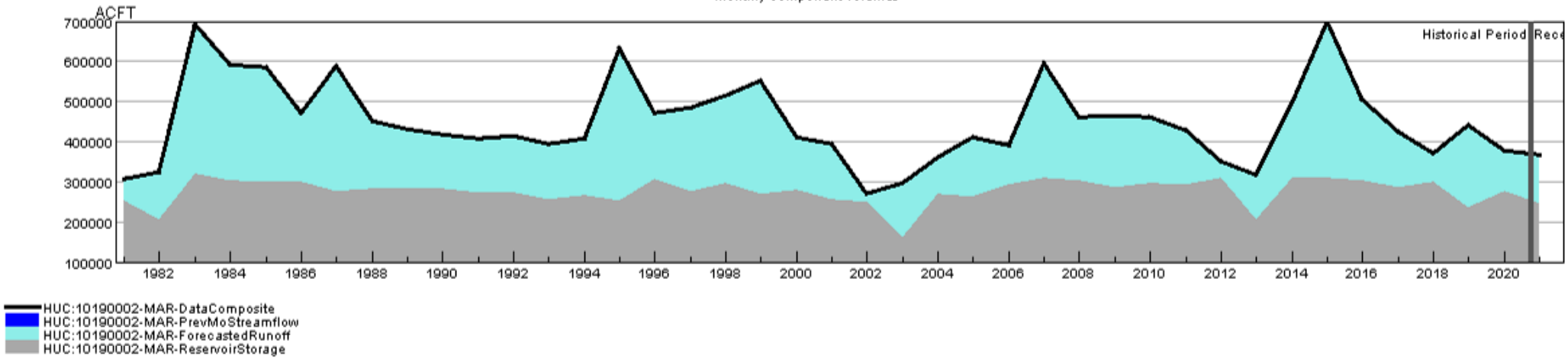
HUC 10190001 (South Platte Headwater) SWSI Values - MAR

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



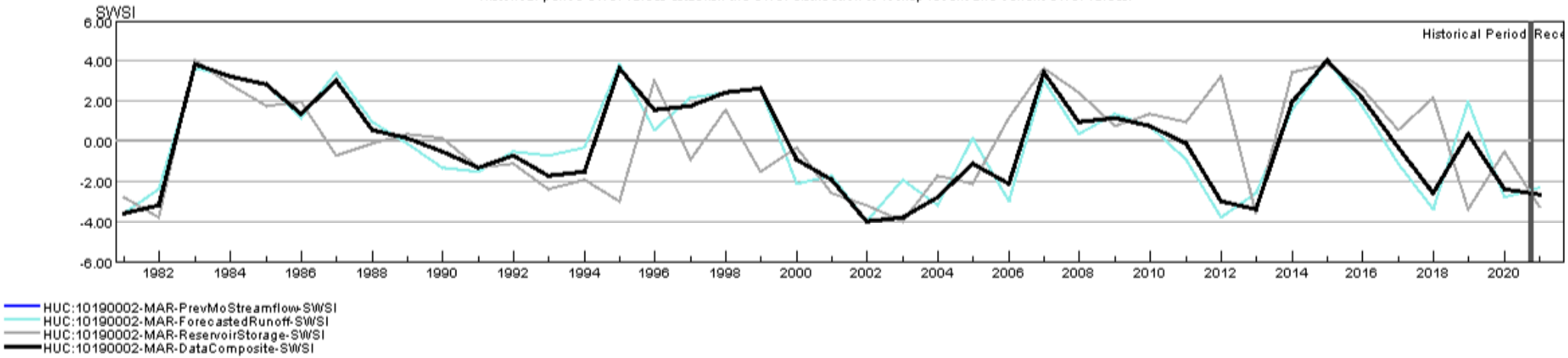
HUC 10190002 (Upper South Platte) Surface Water Supply - MAR

Monthly component volumes



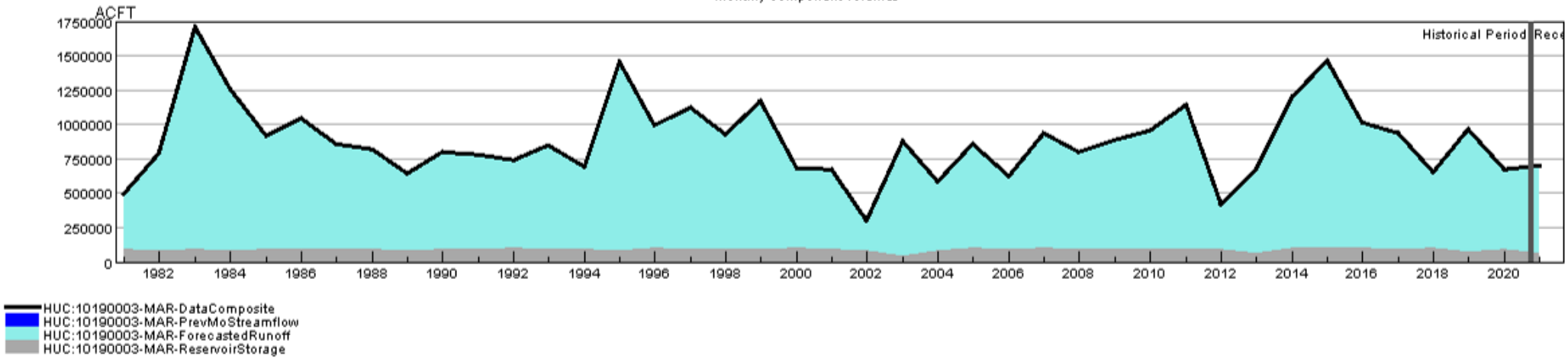
HUC 10190002 (Upper South Platte) SWSI Values - MAR

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



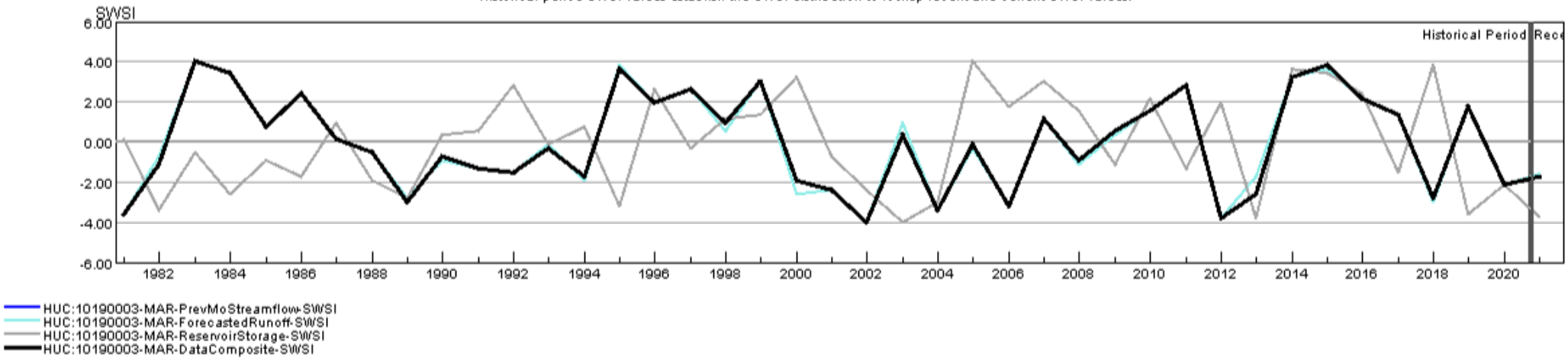
HUC 10190003 (Middle South Platte-Cherry Creek) Surface Water Supply - MAR

Monthly component volumes



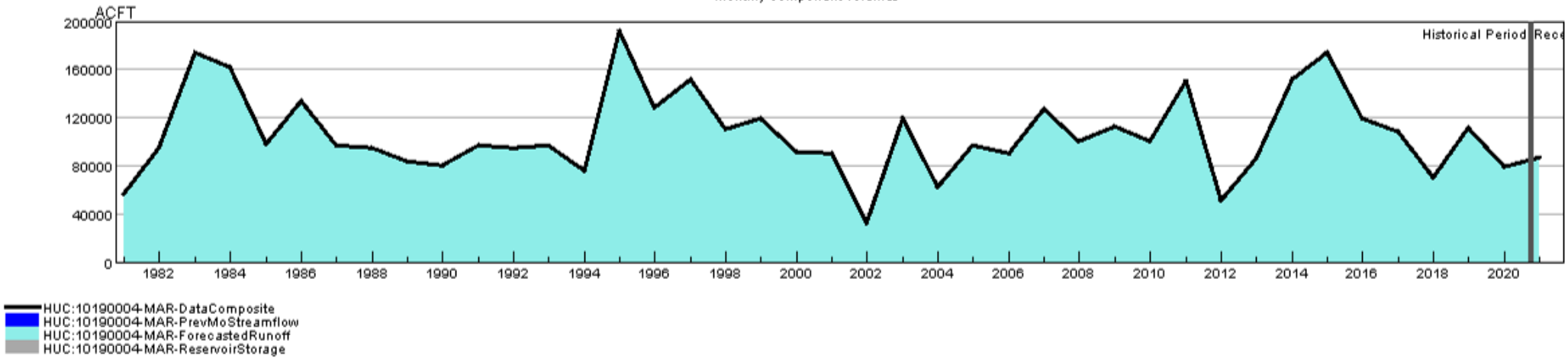
HUC 10190003 (Middle South Platte-Cherry Creek) SWSI Values - MAR

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



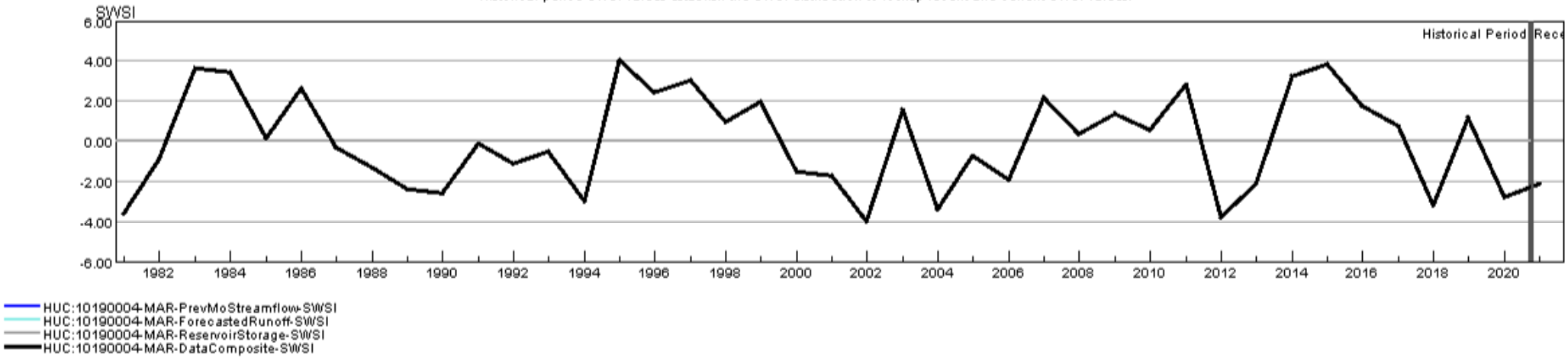
HUC 10190004 (Clear) Surface Water Supply - MAR

Monthly component volumes



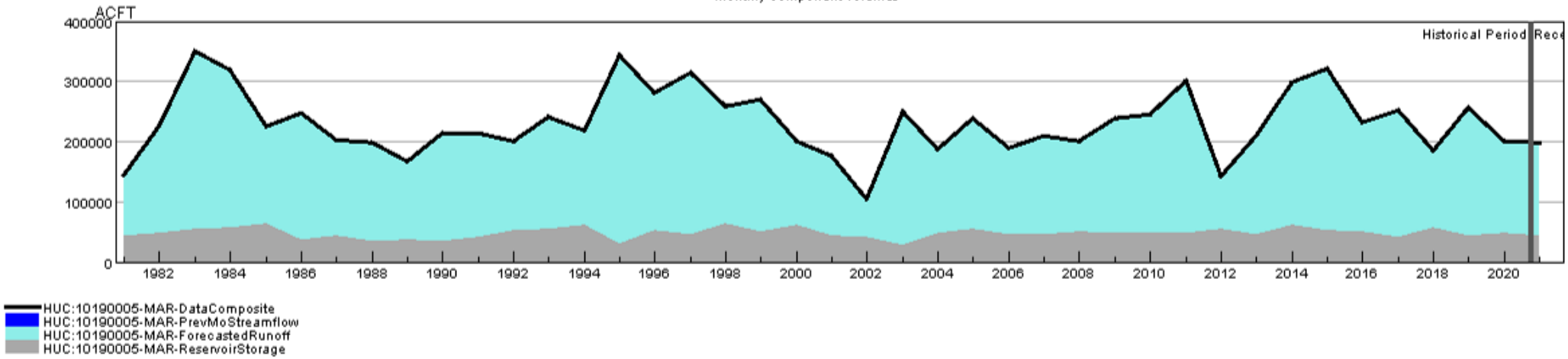
HUC 10190004 (Clear) SWSI Values - MAR

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



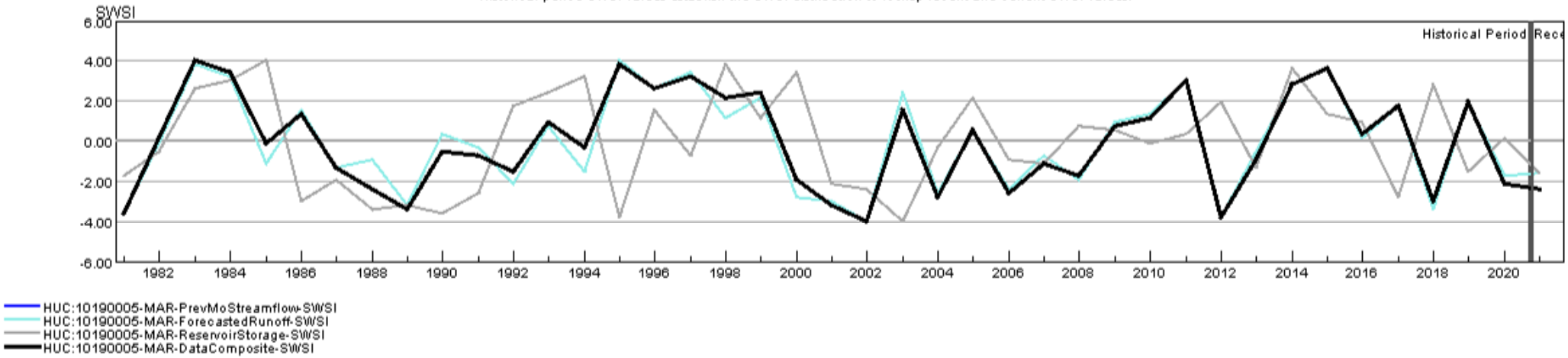
HUC 10190005 (St. Vrain) Surface Water Supply - MAR

Monthly component volumes



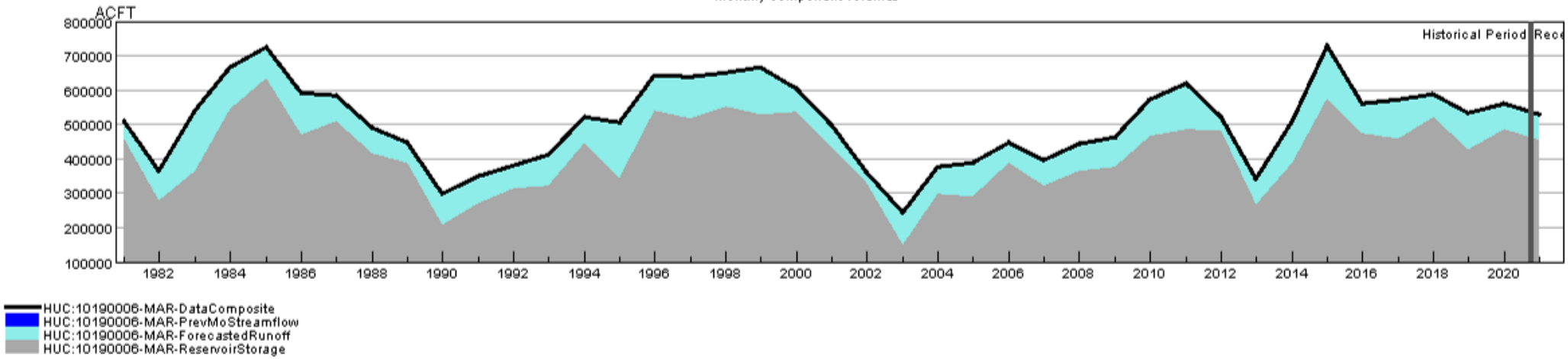
HUC 10190005 (St. Vrain) SWSI Values - MAR

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



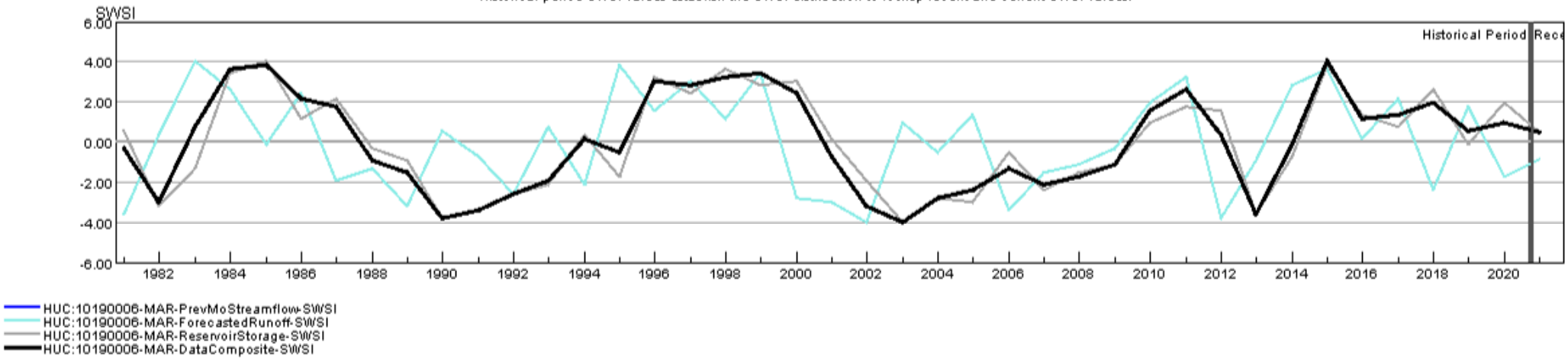
HUC 10190006 (Big Thompson) Surface Water Supply - MAR

Monthly component volumes



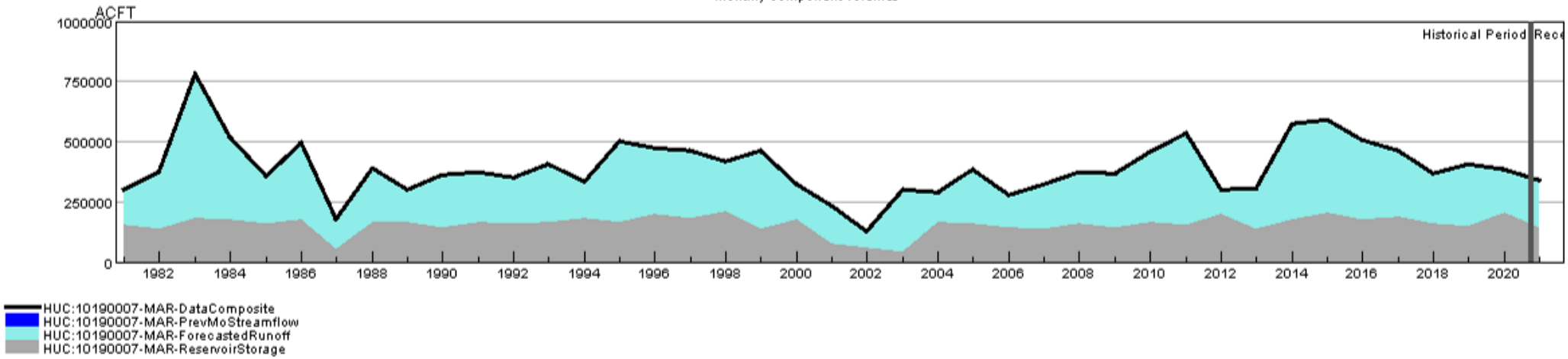
HUC 10190006 (Big Thompson) SWSI Values - MAR

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



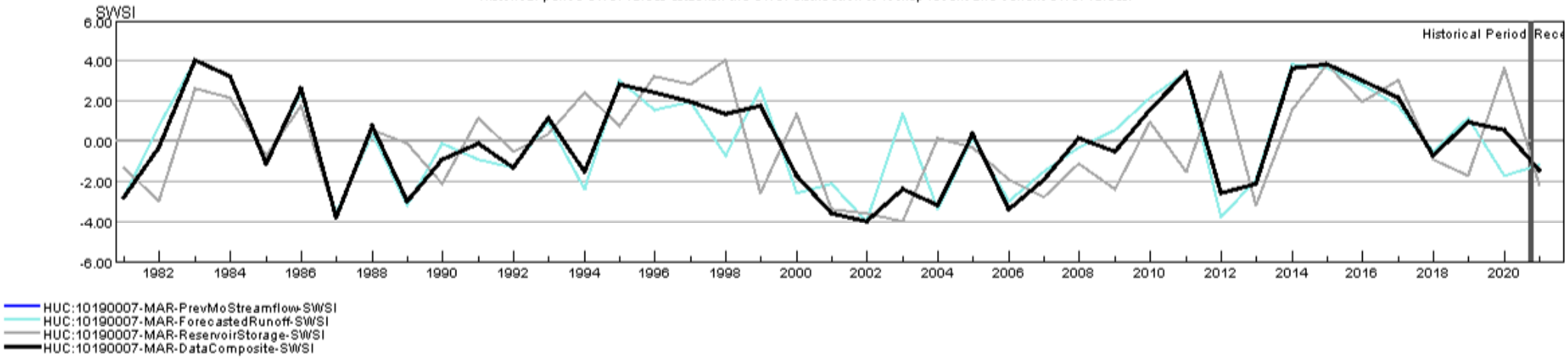
HUC 10190007 (Cache La Poudre) Surface Water Supply - MAR

Monthly component volumes



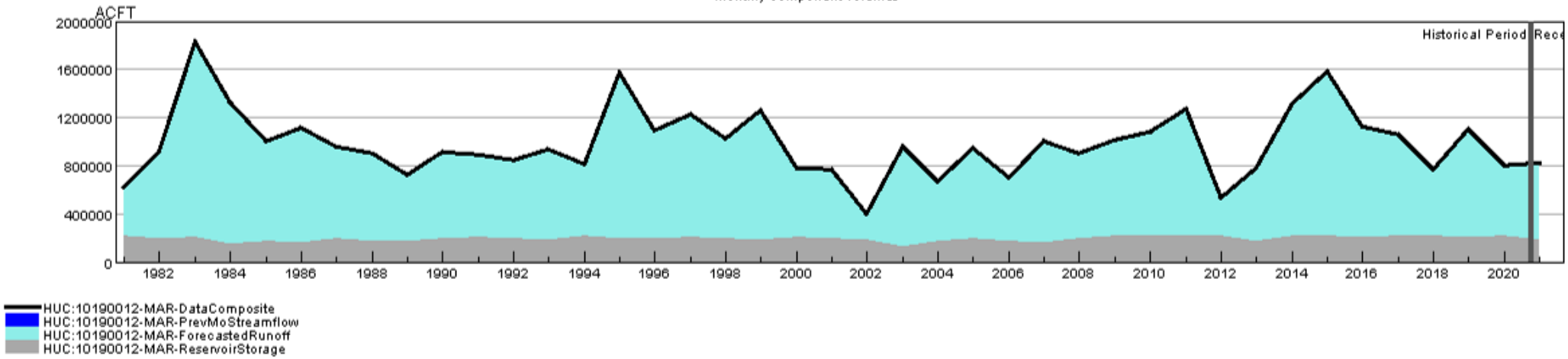
HUC 10190007 (Cache La Poudre) SWSI Values - MAR

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



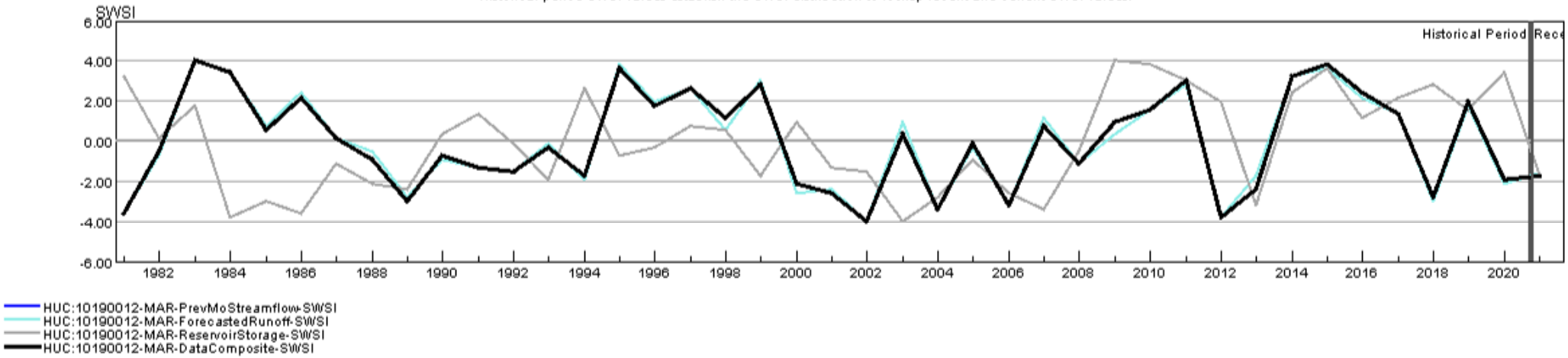
HUC 10190012 (Middle South Platte-Sterling) Surface Water Supply - MAR

Monthly component volumes



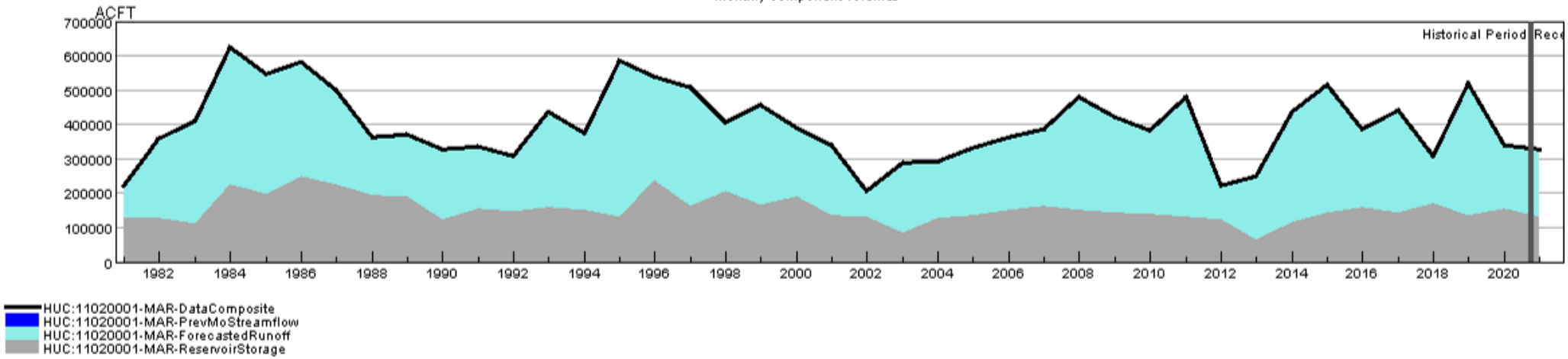
HUC 10190012 (Middle South Platte-Sterling) SWSI Values - MAR

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



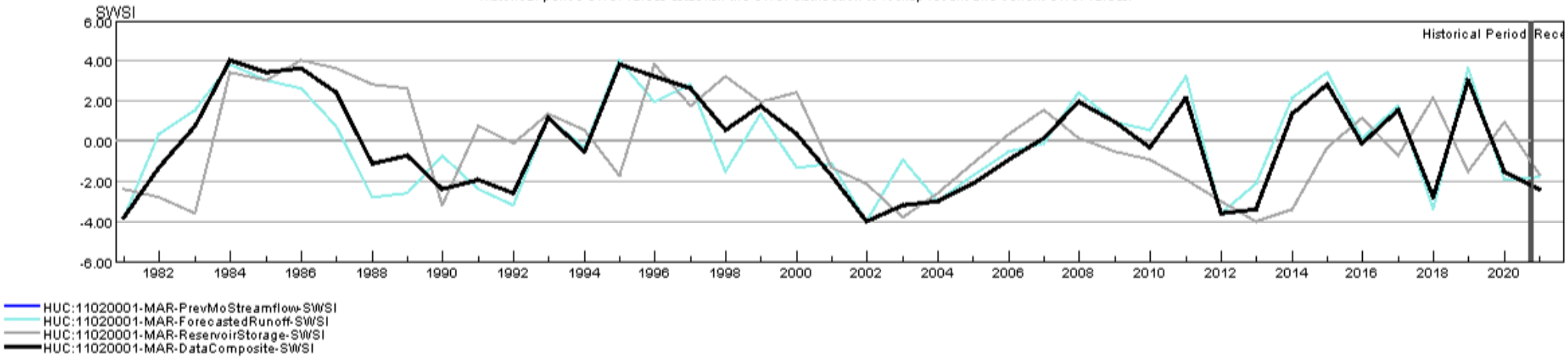
HUC 11020001 (Arkansas Headwaters) Surface Water Supply - MAR

Monthly component volumes



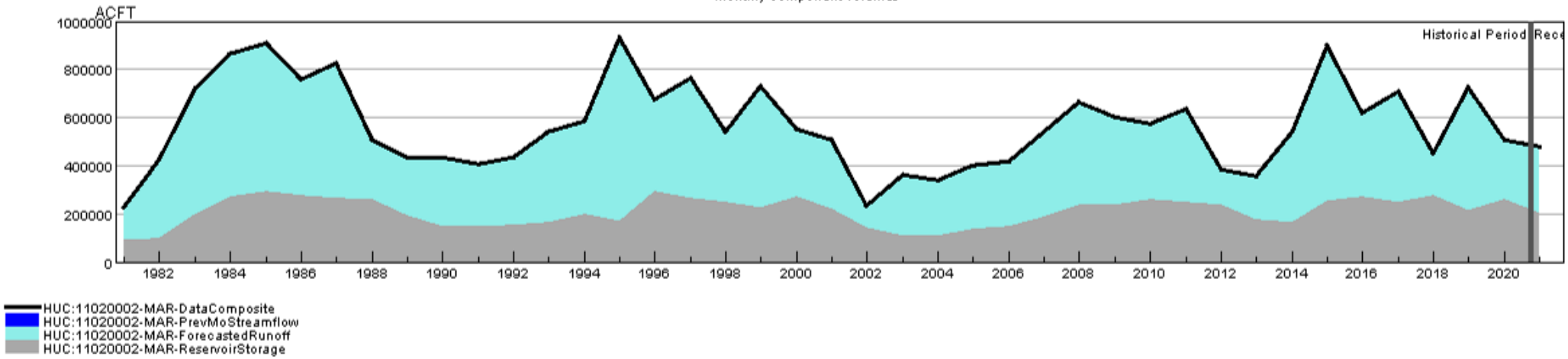
HUC 11020001 (Arkansas Headwaters) SWSI Values - MAR

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



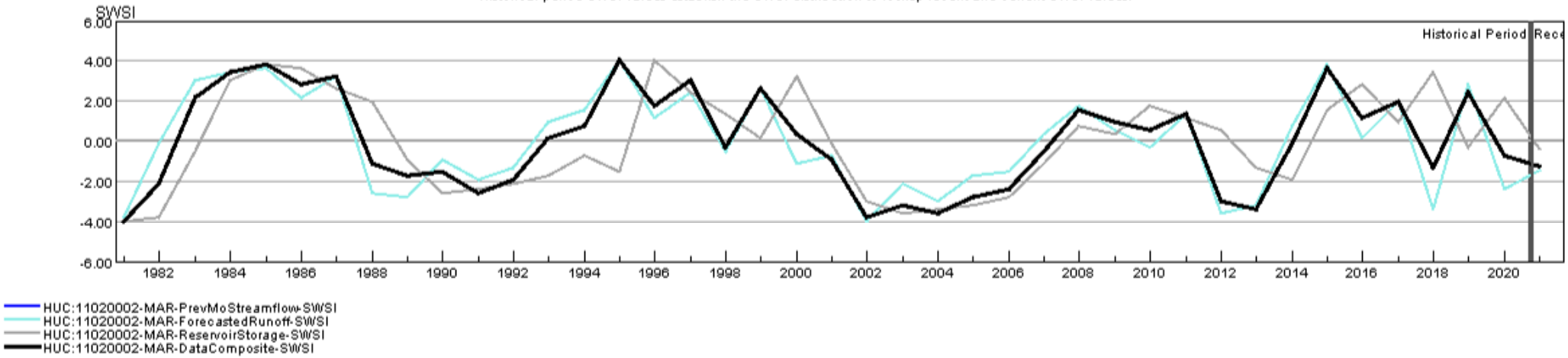
HUC 11020002 (Upper Arkansas) Surface Water Supply - MAR

Monthly component volumes



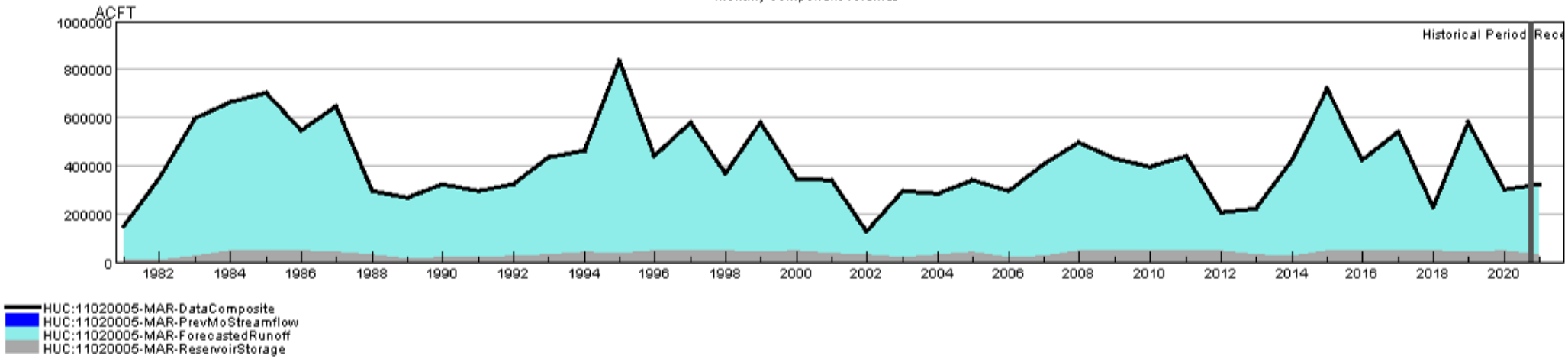
HUC 11020002 (Upper Arkansas) SWSI Values - MAR

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



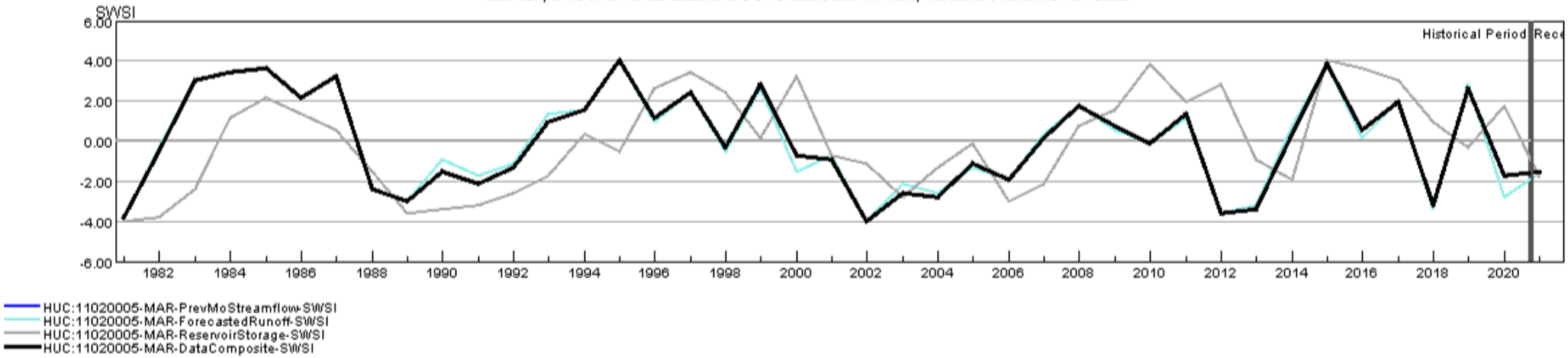
HUC 11020005 (Upper Arkansas-Lake Meredith) Surface Water Supply - MAR

Monthly component volumes



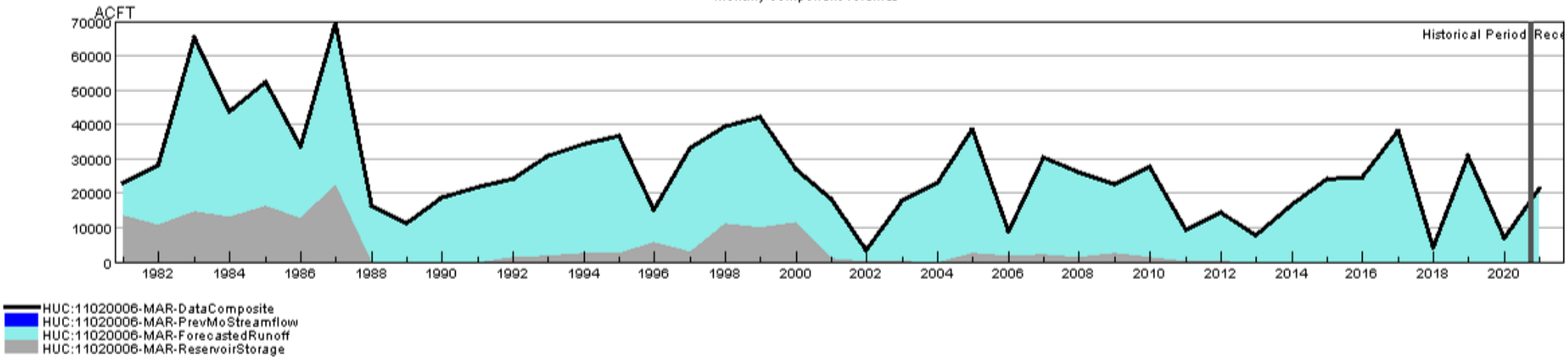
HUC 11020005 (Upper Arkansas-Lake Meredith) SWSI Values - MAR

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



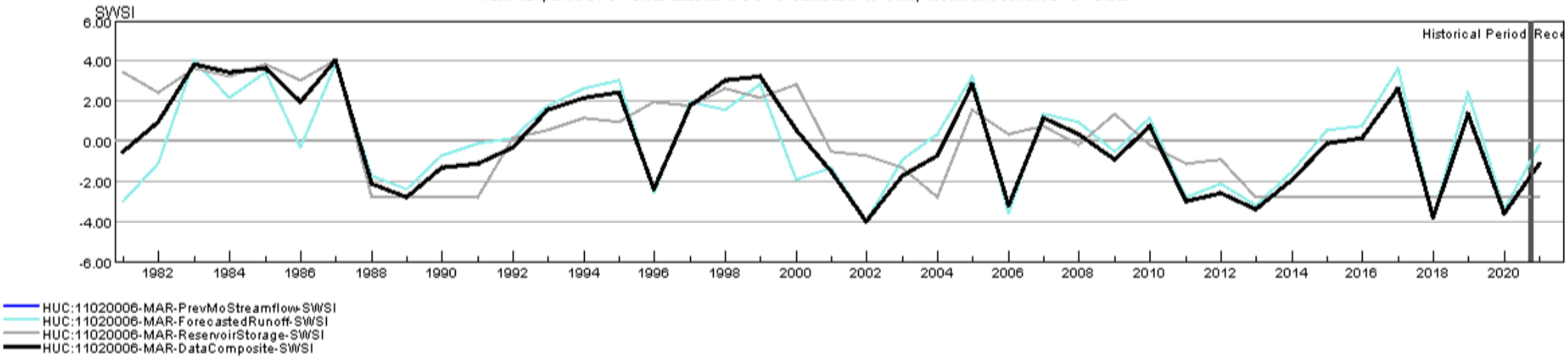
HUC 11020006 (Huerfano) Surface Water Supply - MAR

Monthly component volumes



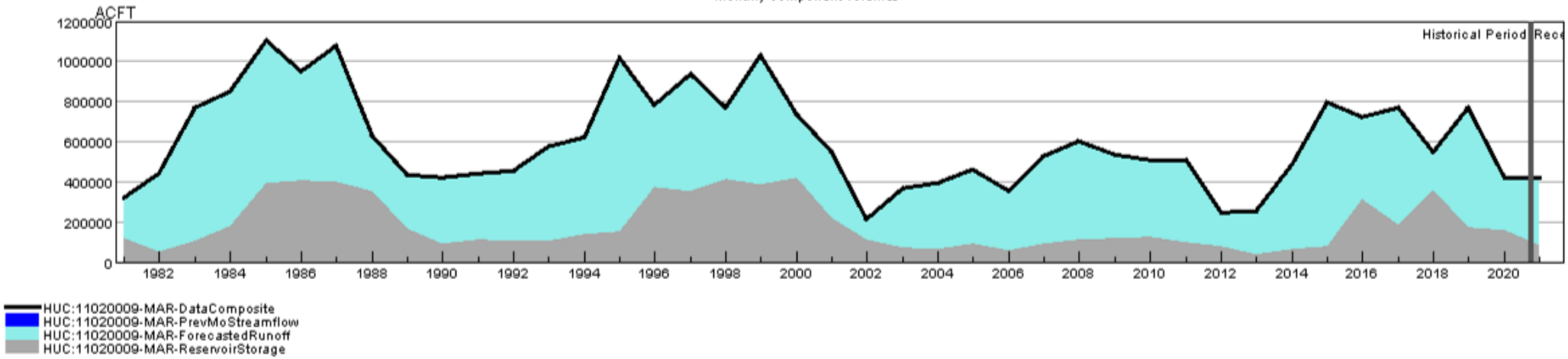
HUC 11020006 (Huerfano) SWSI Values - MAR

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



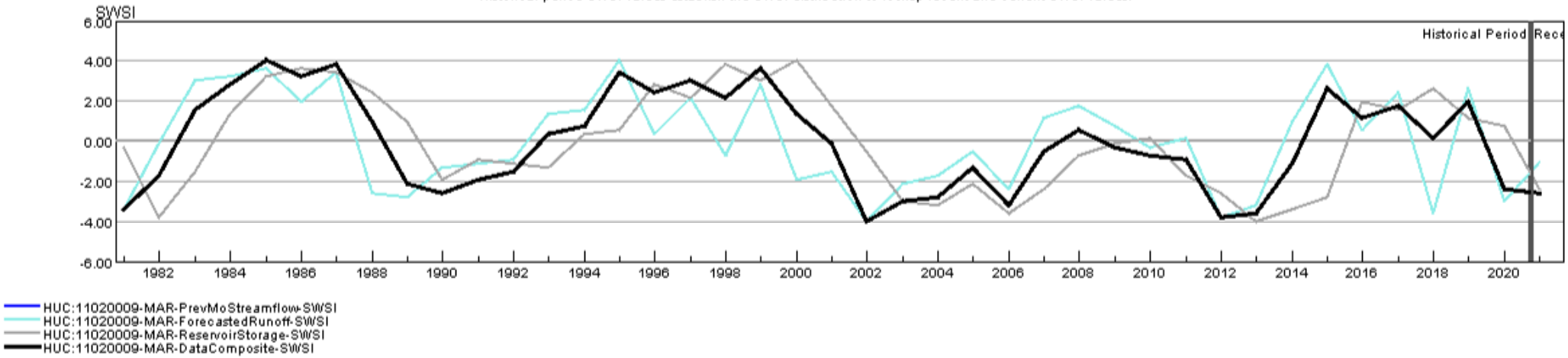
HUC 11020009 (Upper Arkansas-John Martin Reservoir) Surface Water Supply - MAR

Monthly component volumes



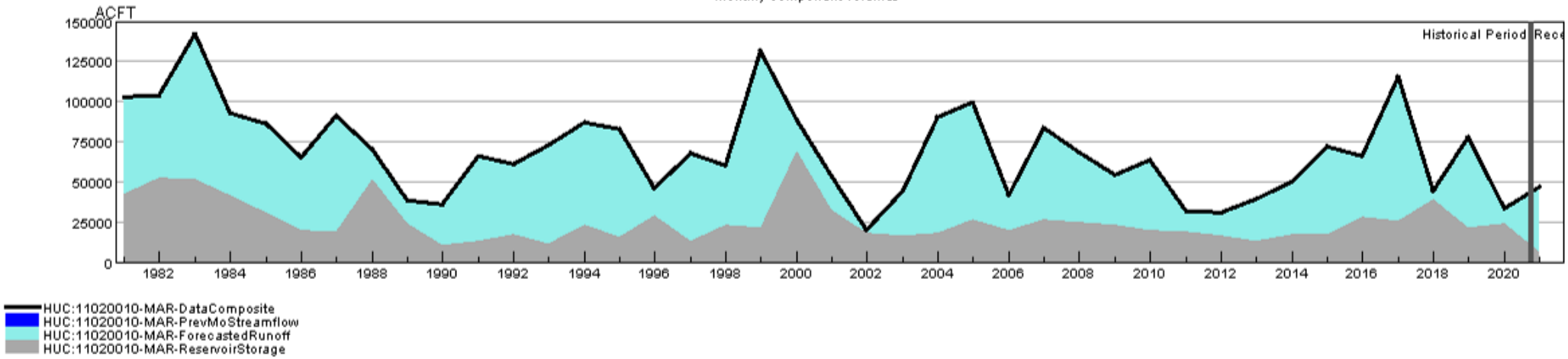
HUC 11020009 (Upper Arkansas-John Martin Reservoir) SWSI Values - MAR

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



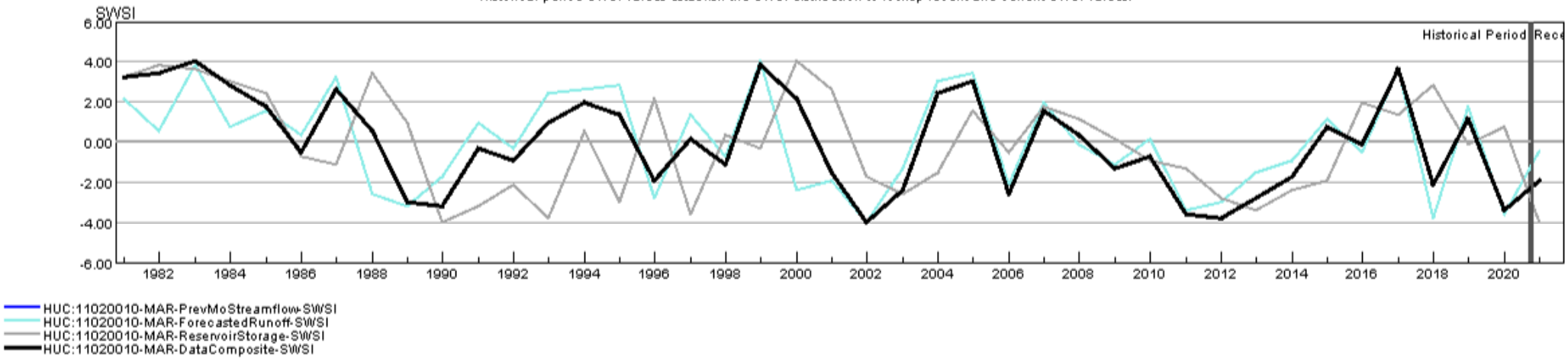
HUC 11020010 (Purgatoire) Surface Water Supply - MAR

Monthly component volumes



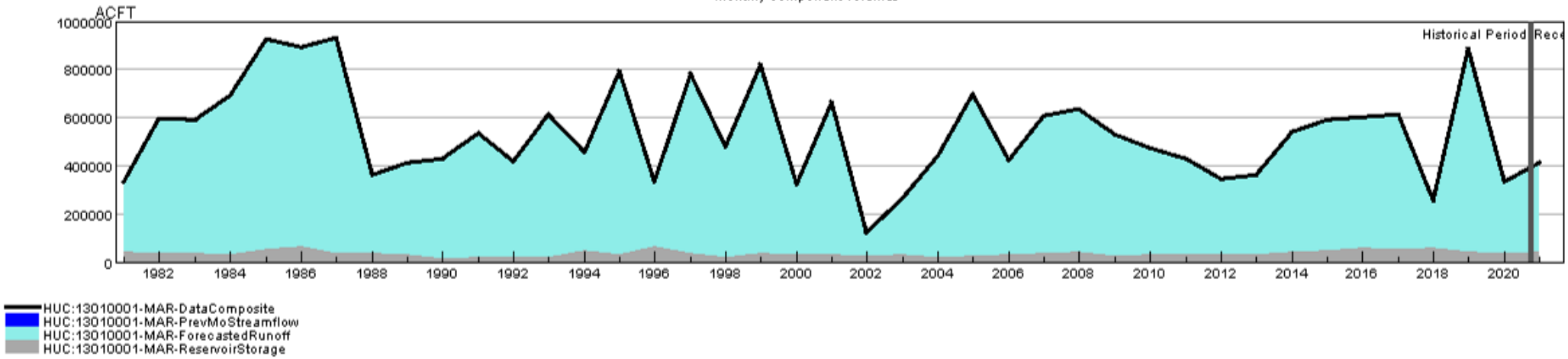
HUC 11020010 (Purgatoire) SWSI Values - MAR

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



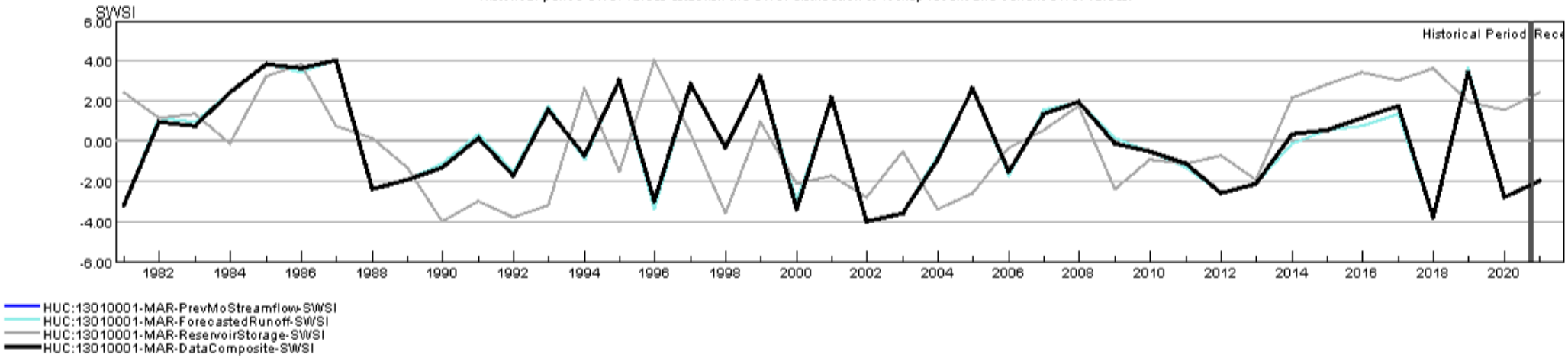
HUC 13010001 (Rio Grande Headwaters) Surface Water Supply - MAR

Monthly component volumes



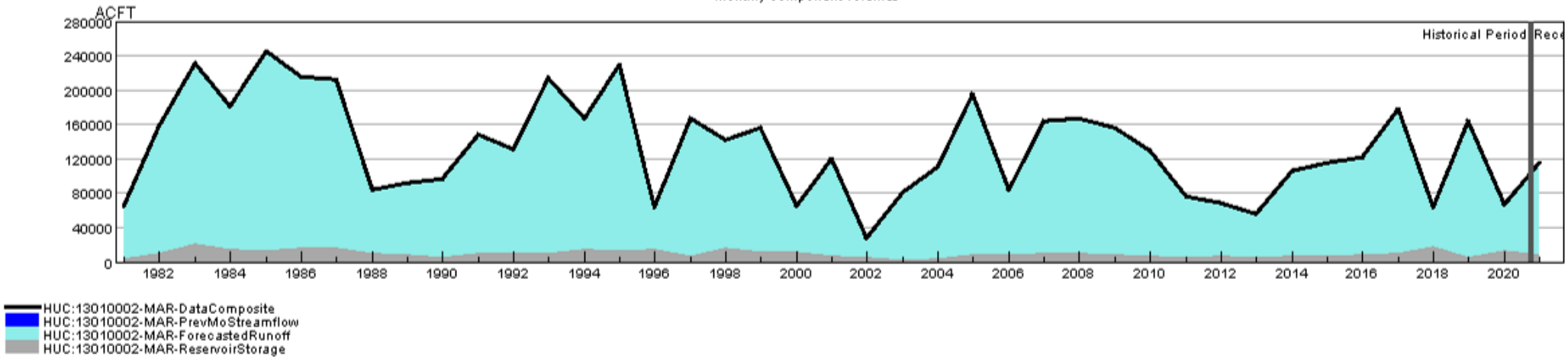
HUC 13010001 (Rio Grande Headwaters) SWSI Values - MAR

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



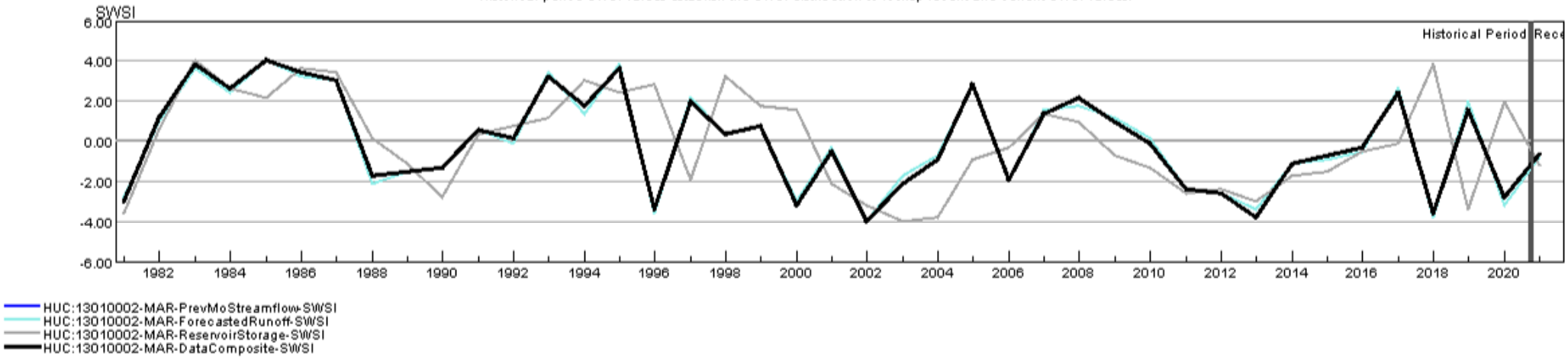
HUC 13010002 (Alamosa-Trinchera) Surface Water Supply - MAR

Monthly component volumes



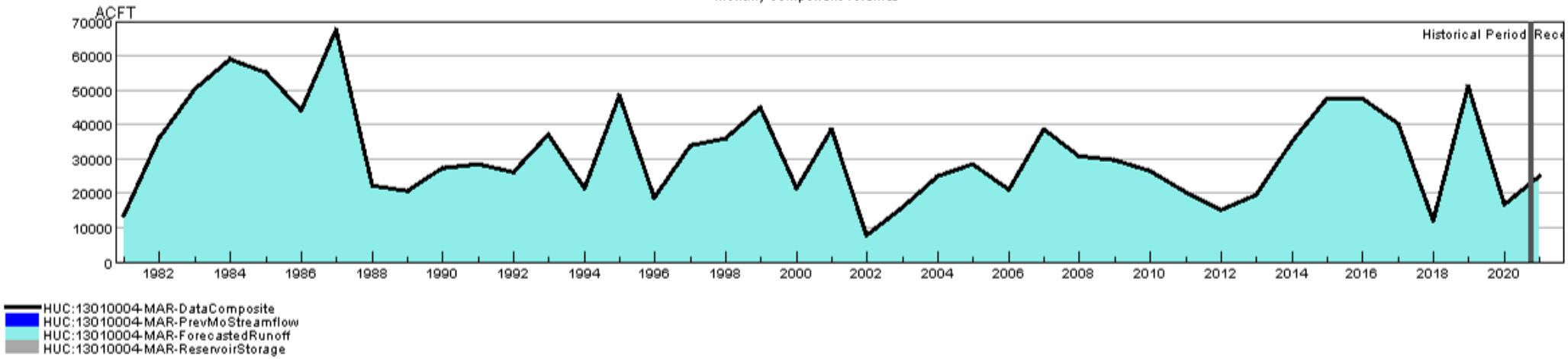
HUC 13010002 (Alamosa-Trinchera) SWSI Values - MAR

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



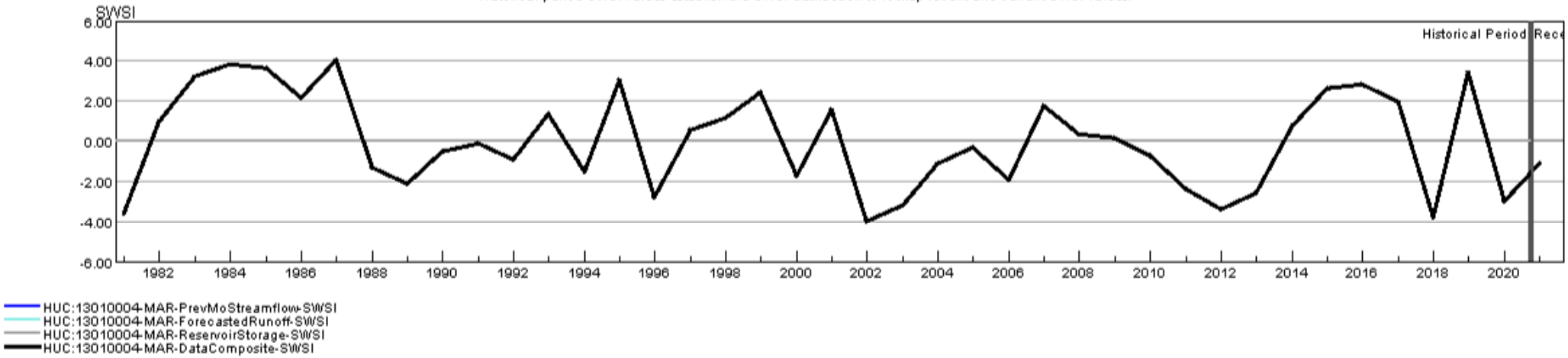
HUC 13010004 (Saguache) Surface Water Supply - MAR

Monthly component volumes



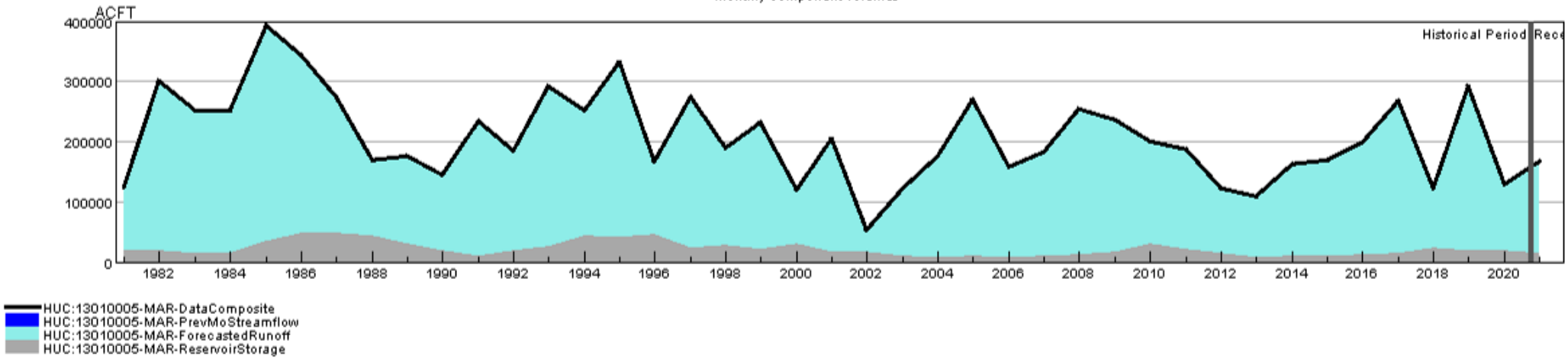
HUC 13010004 (Saguache) SWSI Values - MAR

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



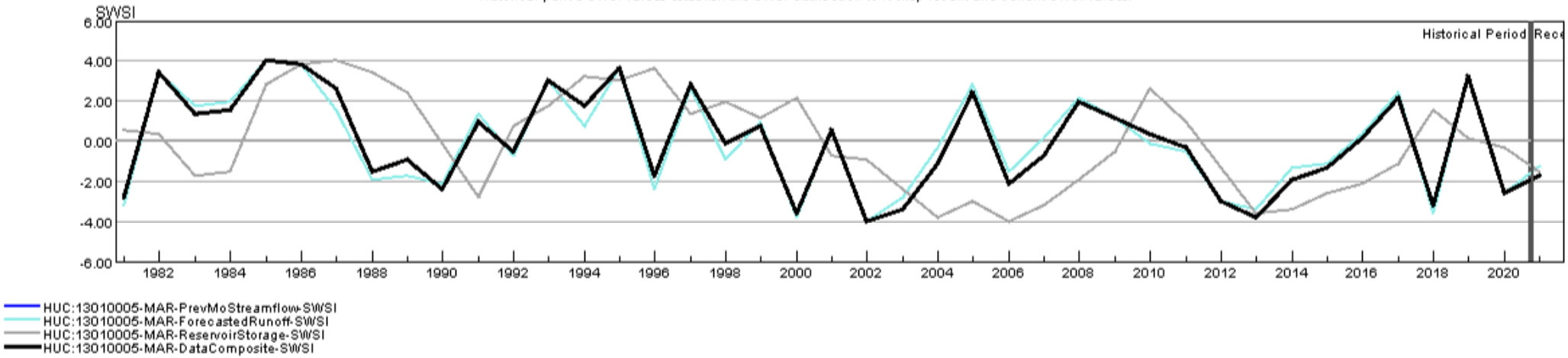
HUC 13010005 (Conejos) Surface Water Supply - MAR

Monthly component volumes



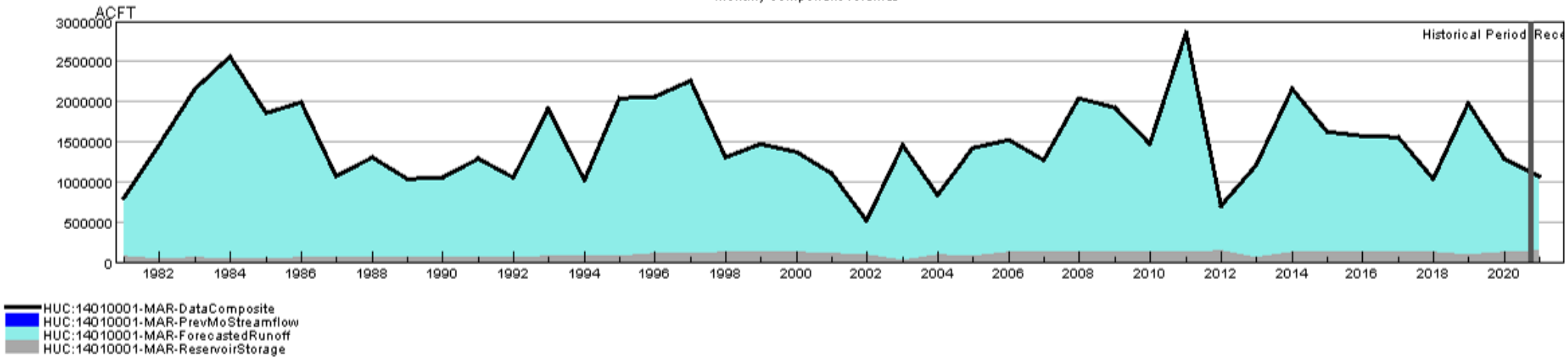
HUC 13010005 (Conejos) SWSI Values - MAR

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



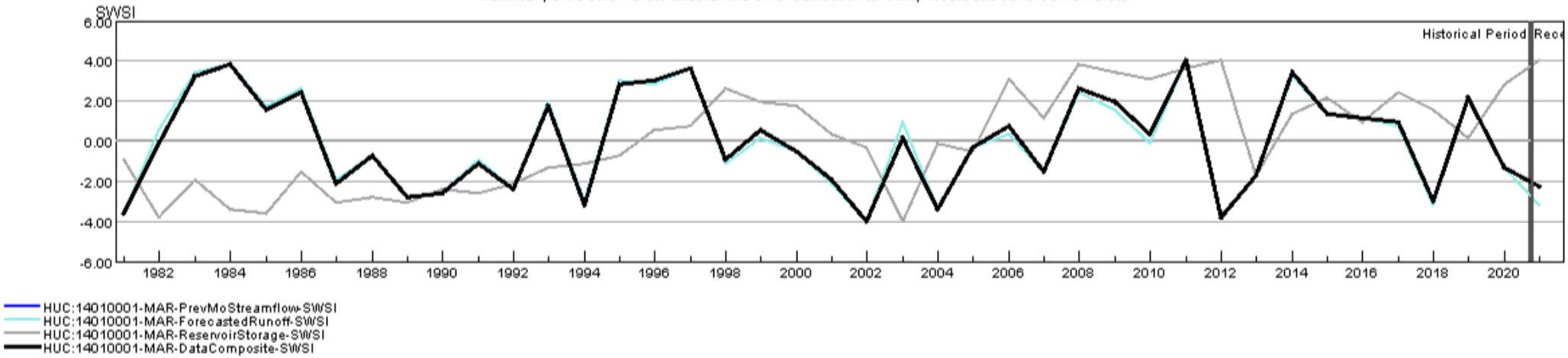
HUC 14010001 (Colorado Headwaters) Surface Water Supply - MAR

Monthly component volumes



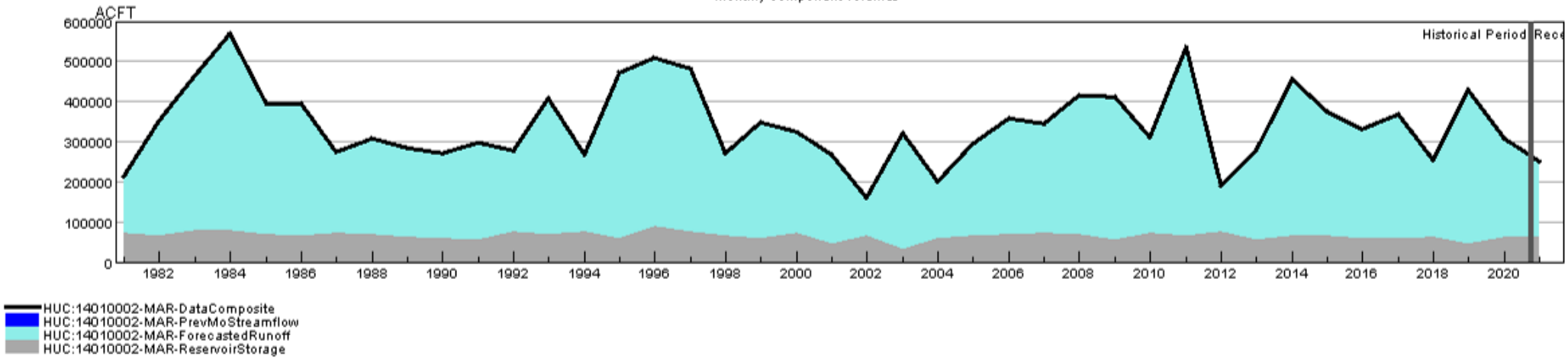
HUC 14010001 (Colorado Headwaters) SWSI Values - MAR

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



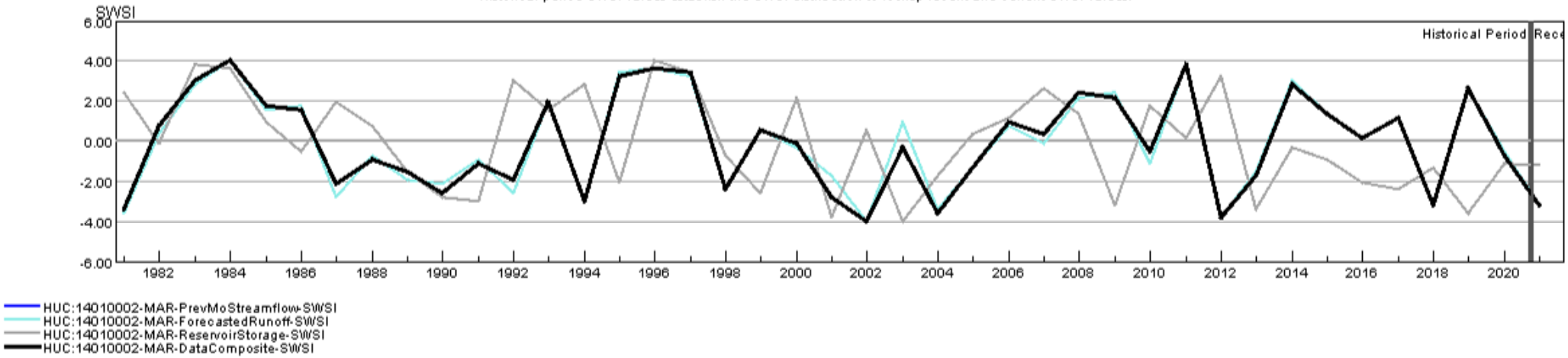
HUC 14010002 (Blue) Surface Water Supply - MAR

Monthly component volumes



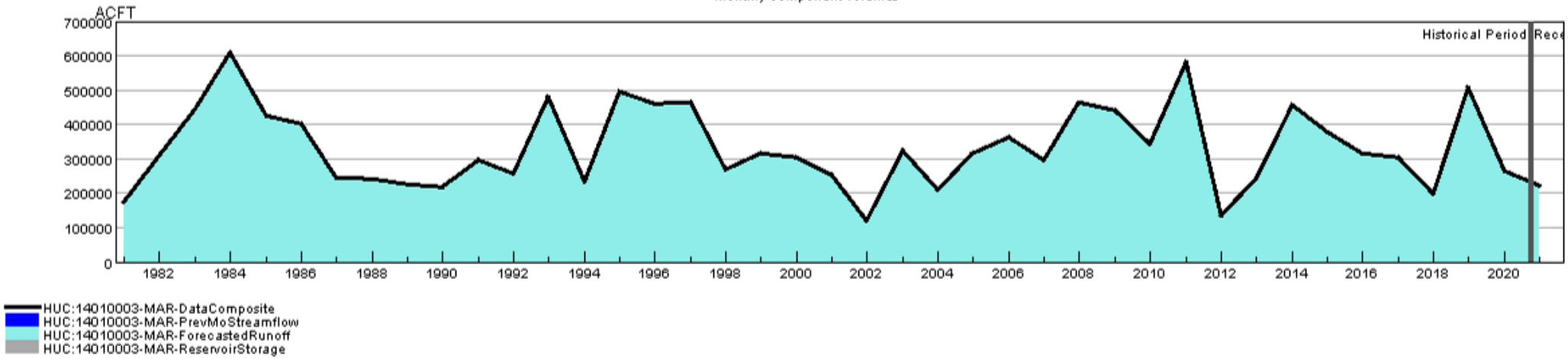
HUC 14010002 (Blue) SWSI Values - MAR

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



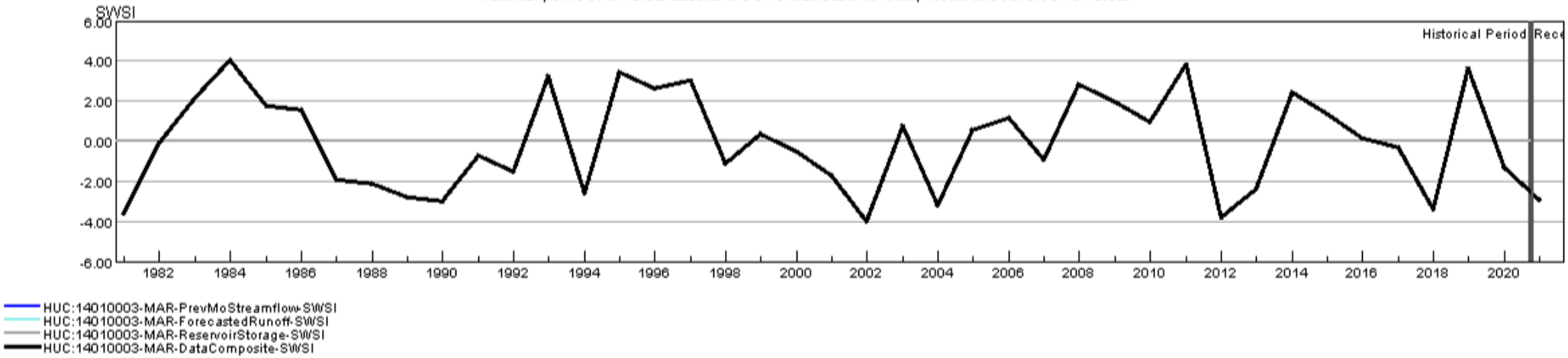
HUC 14010003 (Eagle) Surface Water Supply - MAR

Monthly component volumes



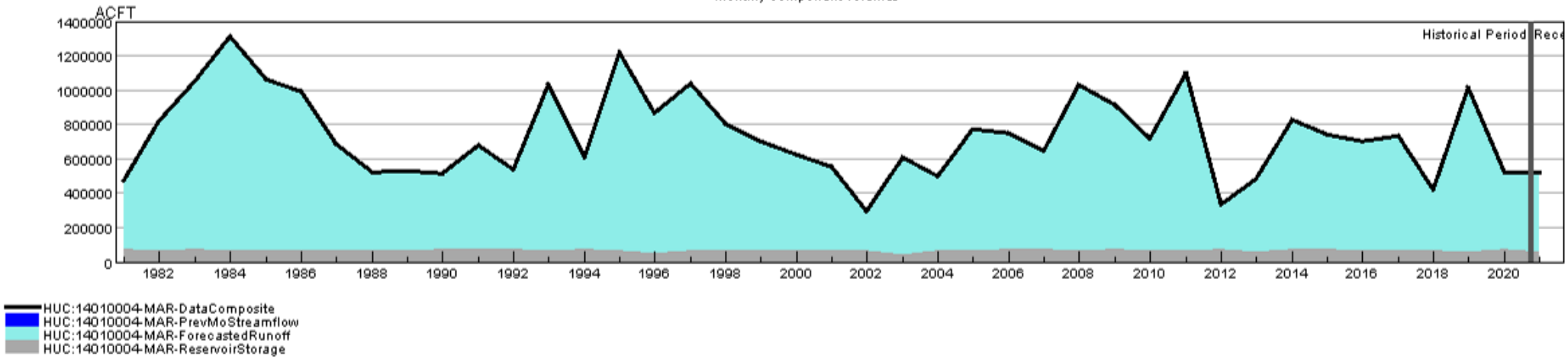
HUC 14010003 (Eagle) SWSI Values - MAR

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



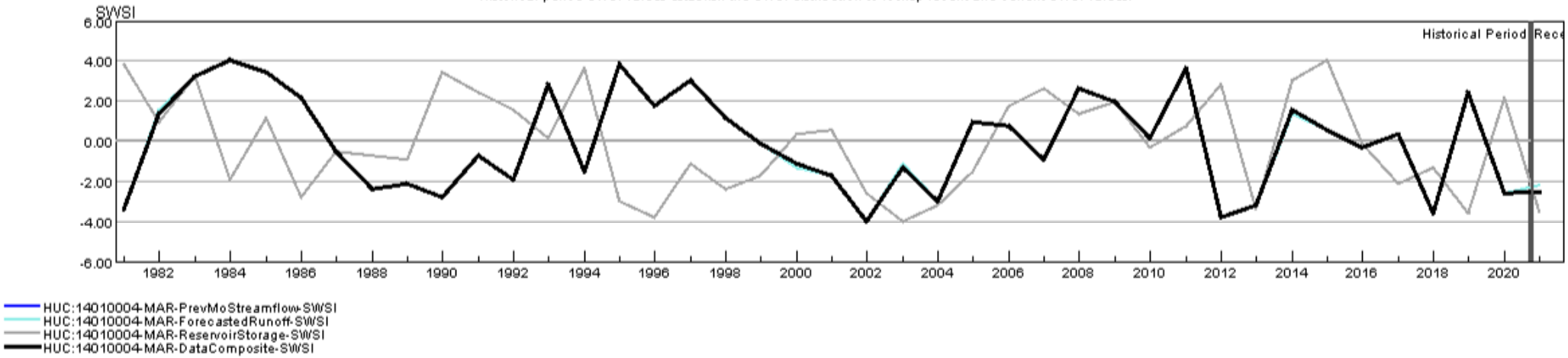
HUC 14010004 (Roaring Fork) Surface Water Supply - MAR

Monthly component volumes



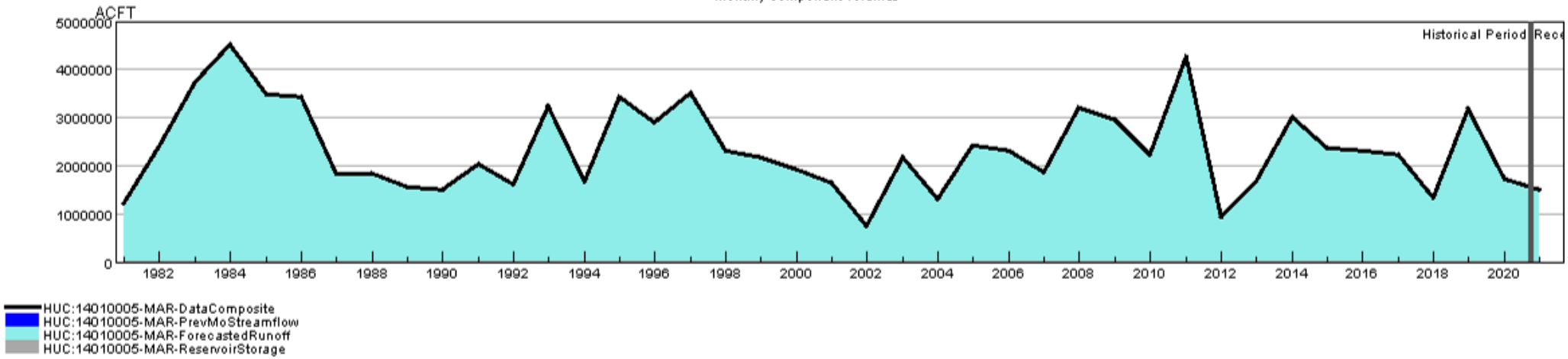
HUC 14010004 (Roaring Fork) SWSI Values - MAR

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



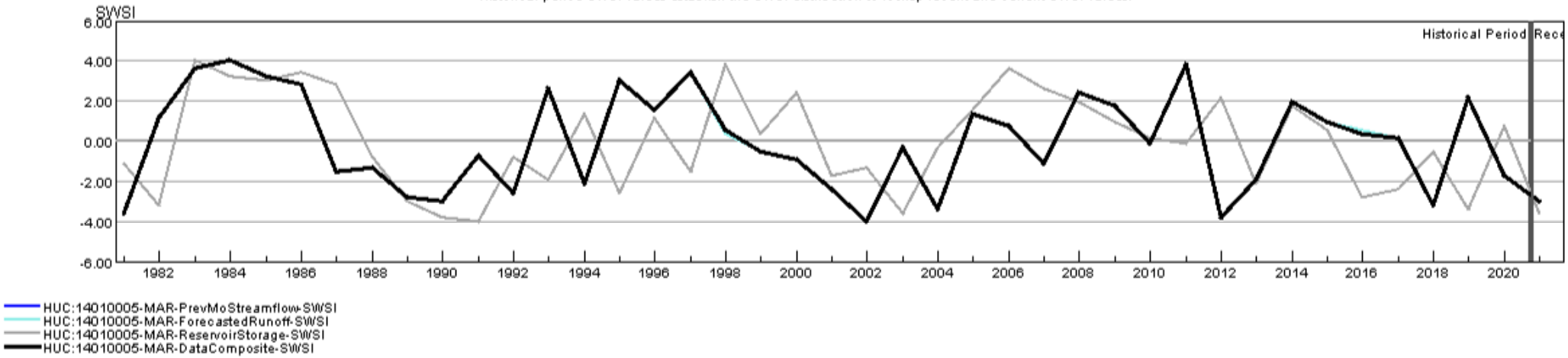
HUC 14010005 (Colorado Headwaters-Plateau) Surface Water Supply - MAR

Monthly component volumes



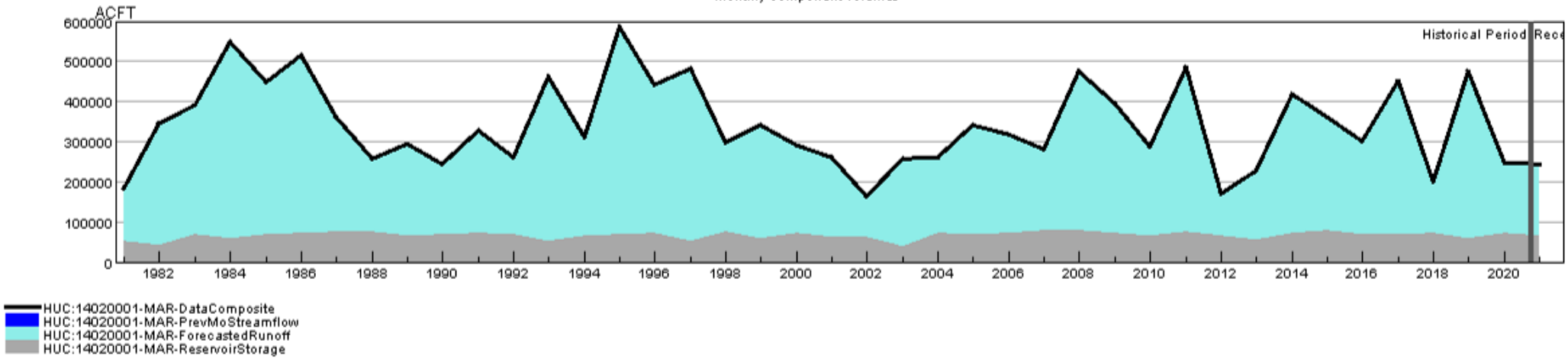
HUC 14010005 (Colorado Headwaters-Plateau) SWSI Values - MAR

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



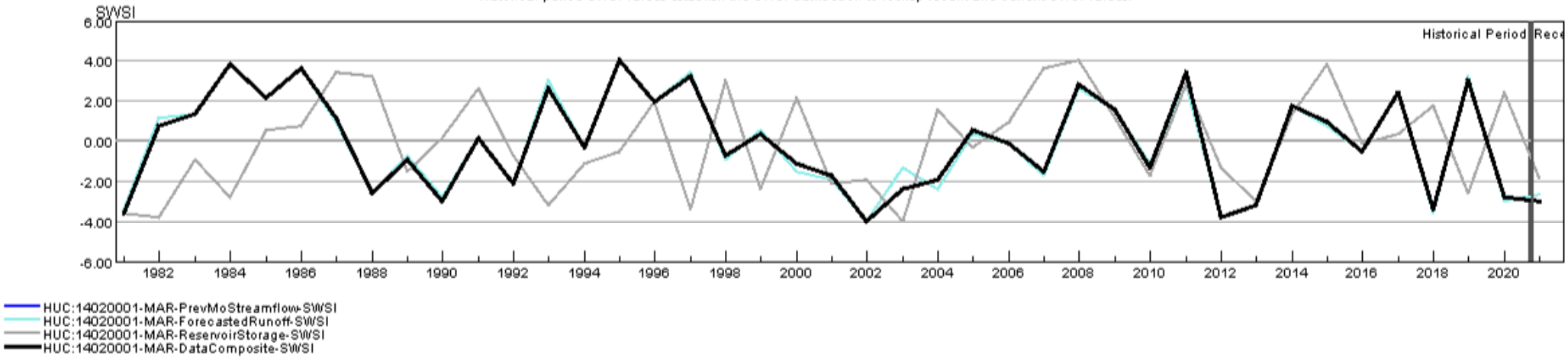
HUC 14020001 (East-Taylor) Surface Water Supply - MAR

Monthly component volumes



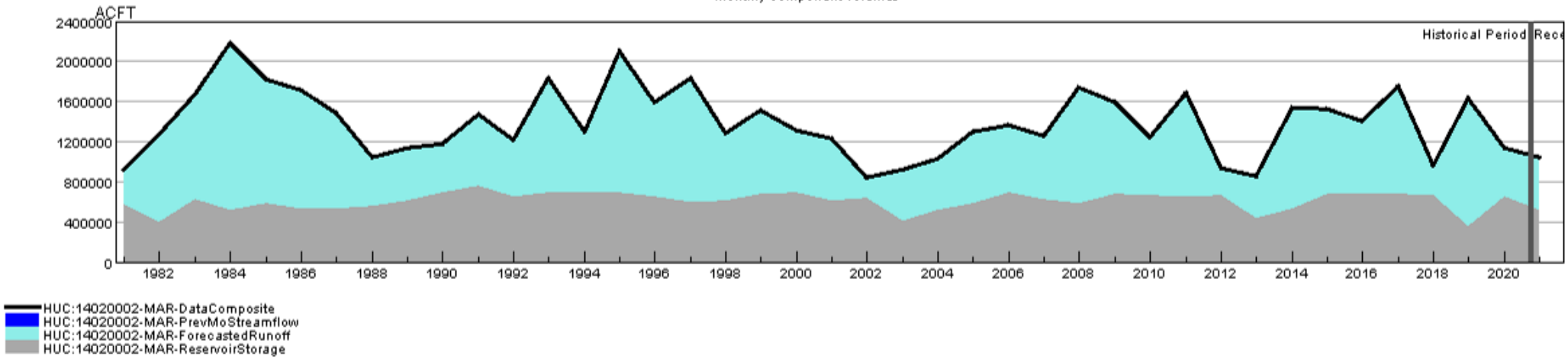
HUC 14020001 (East-Taylor) SWSI Values - MAR

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



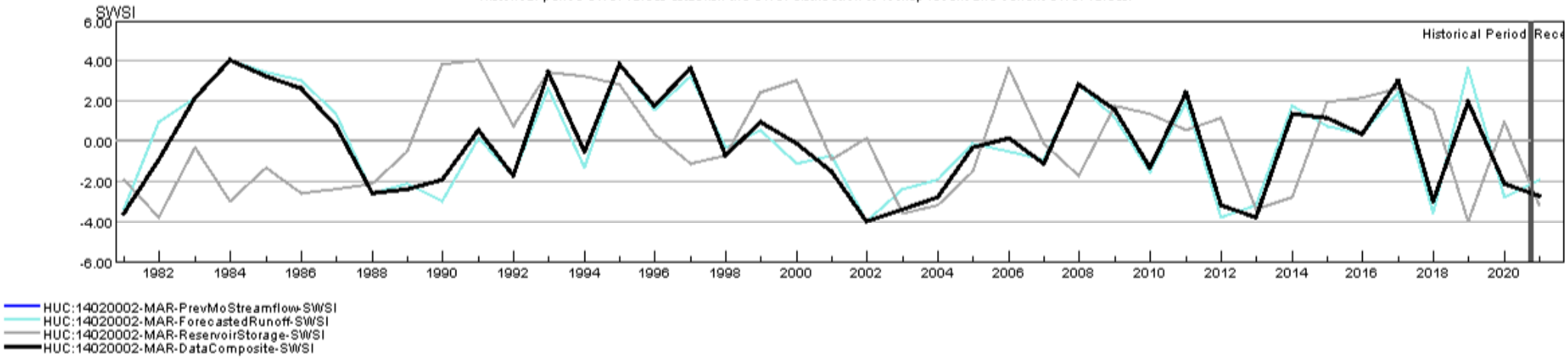
HUC 14020002 (Upper Gunnison) Surface Water Supply - MAR

Monthly component volumes



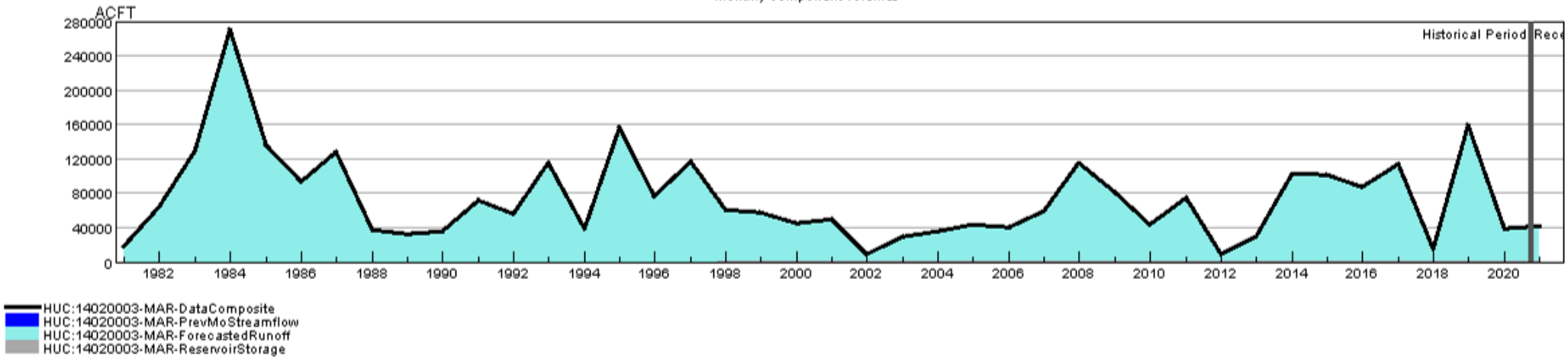
HUC 14020002 (Upper Gunnison) SWSI Values - MAR

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



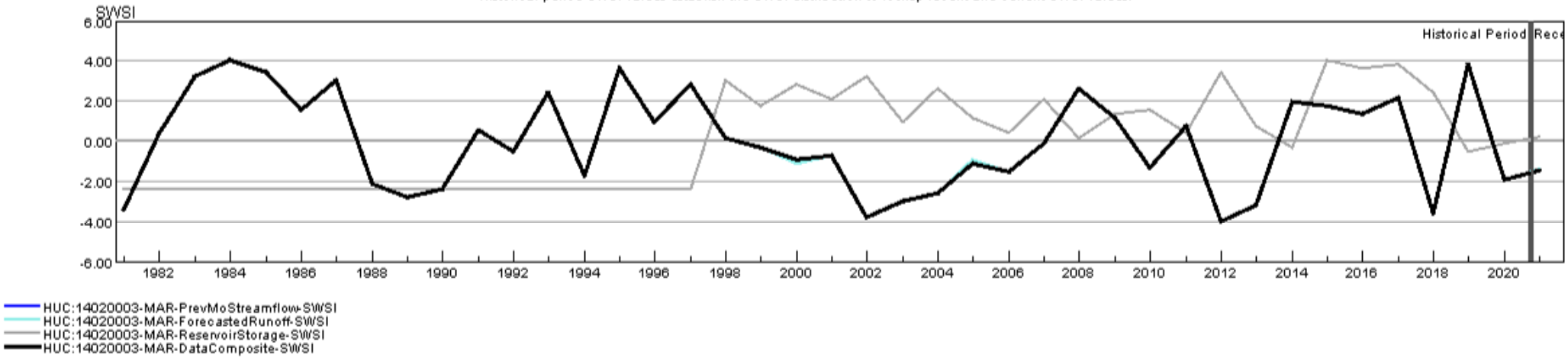
HUC 14020003 (Tomichi) Surface Water Supply - MAR

Monthly component volumes



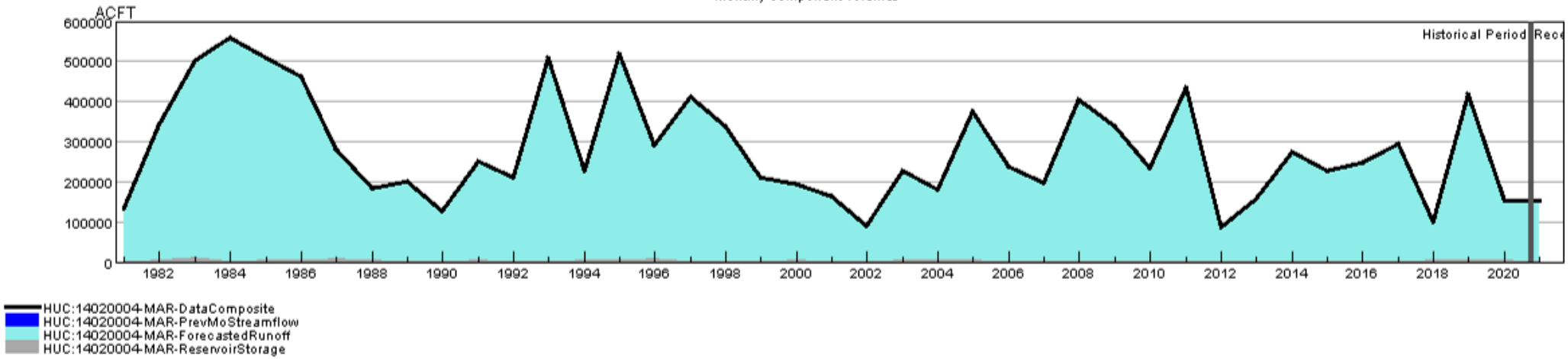
HUC 14020003 (Tomichi) SWSI Values - MAR

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



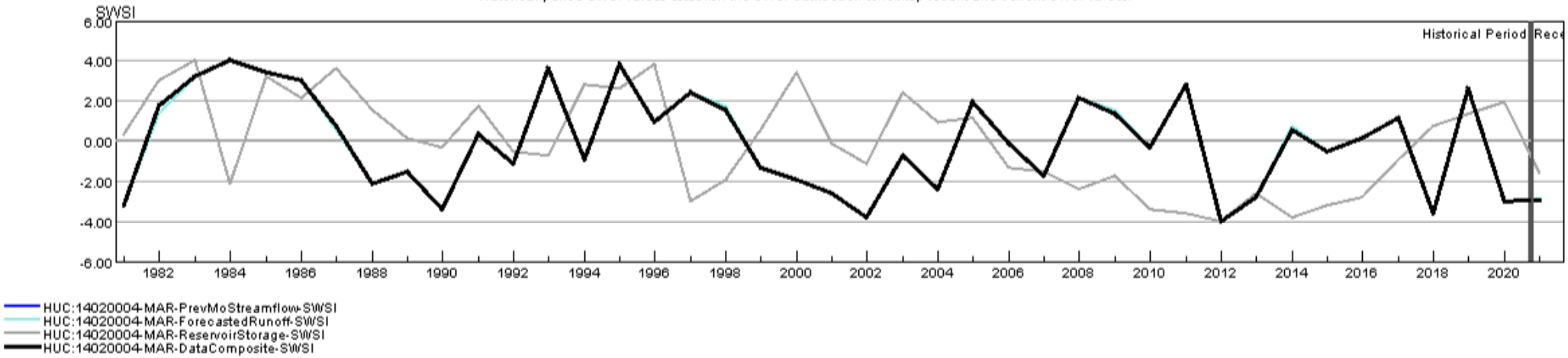
HUC 14020004 (North Fork Gunnison) Surface Water Supply - MAR

Monthly component volumes



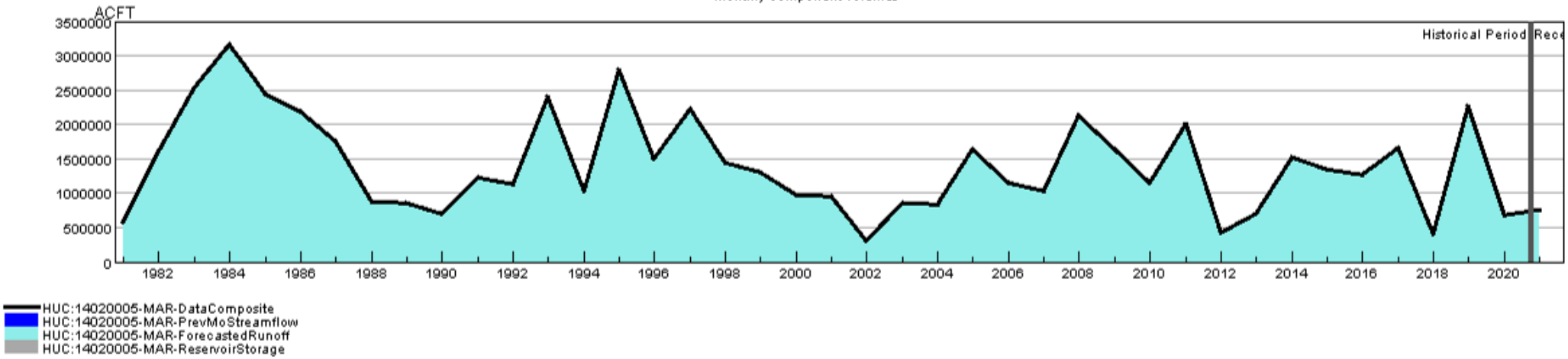
HUC 14020004 (North Fork Gunnison) SWSI Values - MAR

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



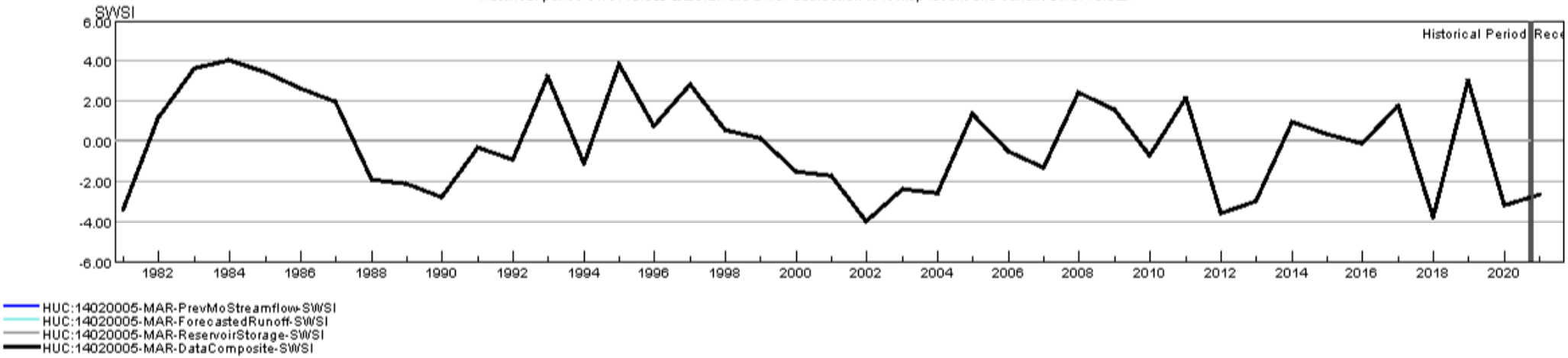
HUC 14020005 (Lower Gunnison) Surface Water Supply - MAR

Monthly component volumes



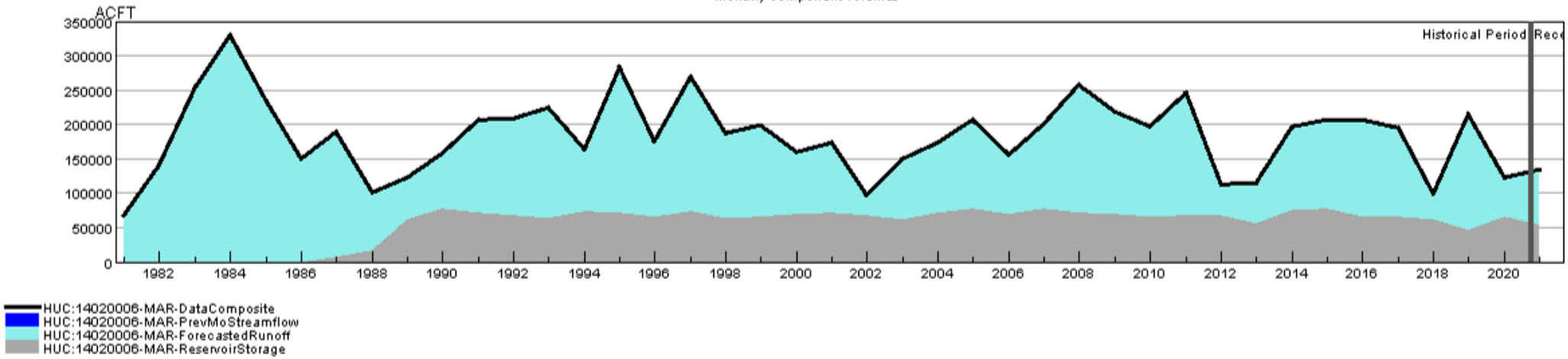
HUC 14020005 (Lower Gunnison) SWSI Values - MAR

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



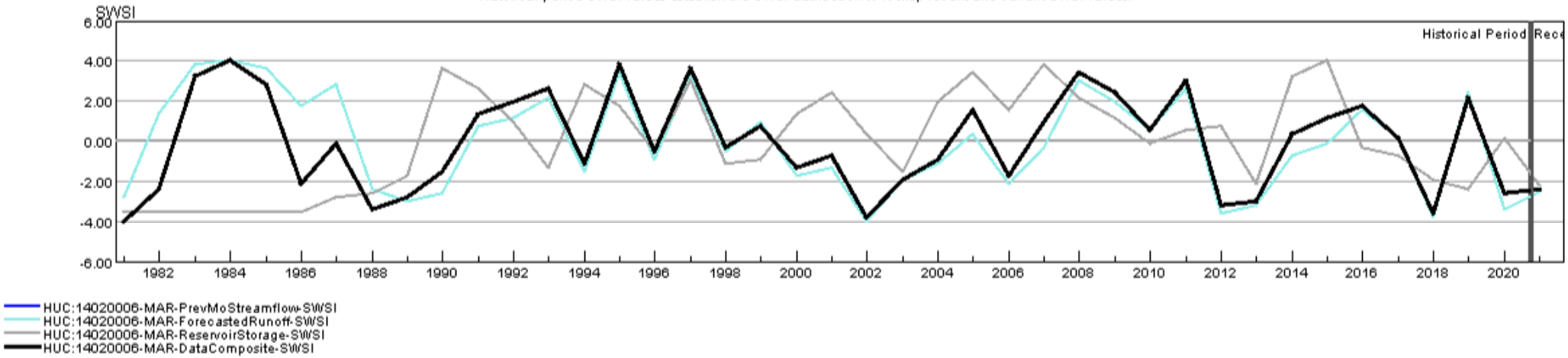
HUC 14020006 (Uncompahgre) Surface Water Supply - MAR

Monthly component volumes



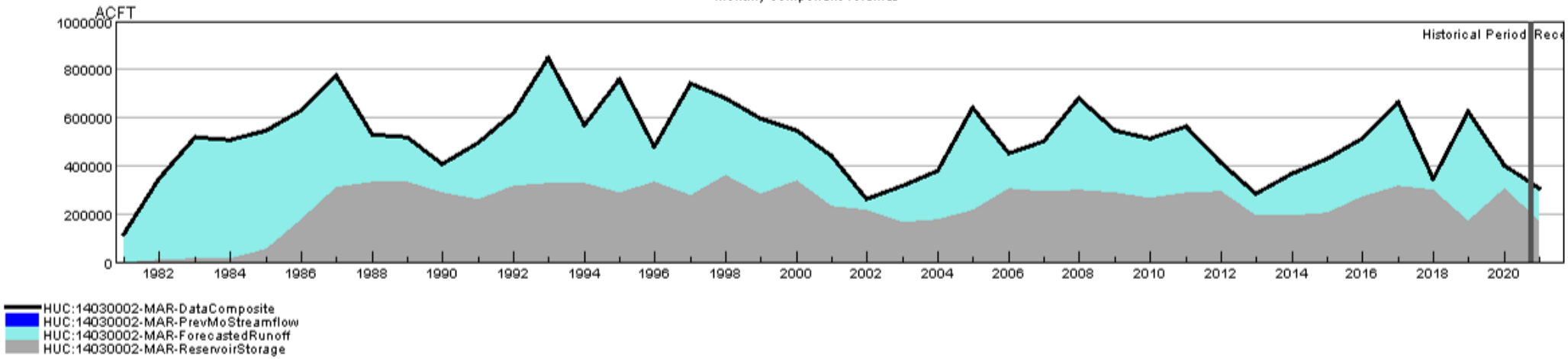
HUC 14020006 (Uncompahgre) SWSI Values - MAR

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



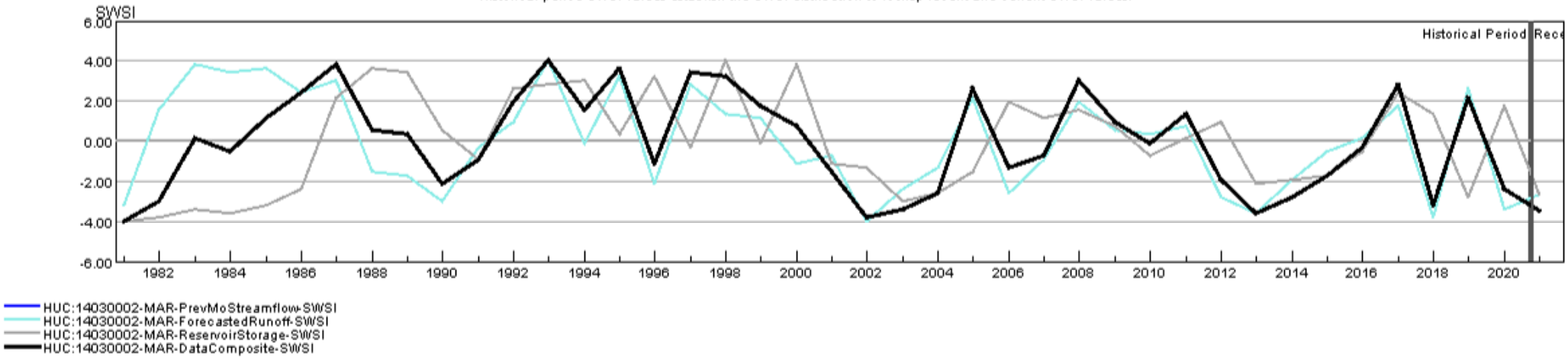
HUC 14030002 (Upper Dolores) Surface Water Supply - MAR

Monthly component volumes



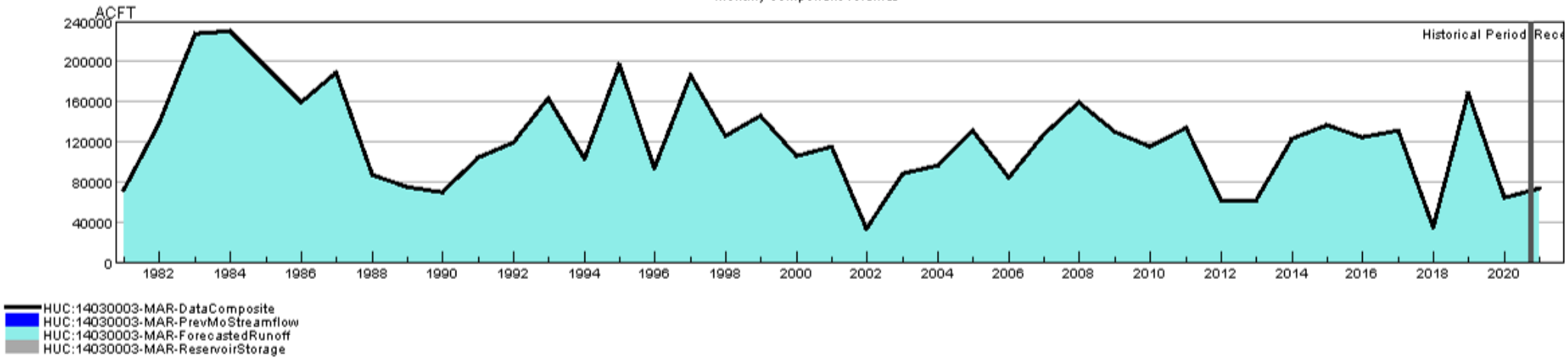
HUC 14030002 (Upper Dolores) SWSI Values - MAR

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



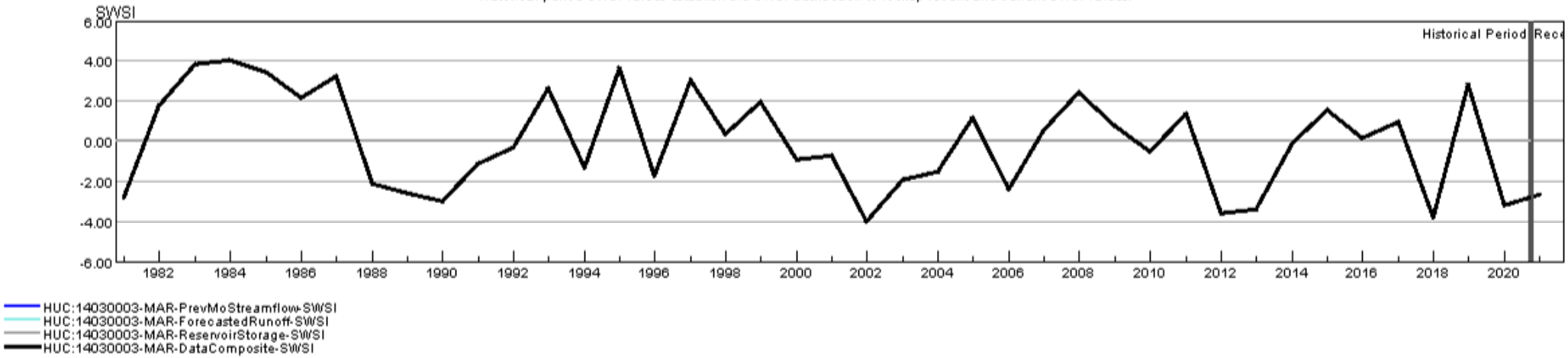
HUC 14030003 (San Miguel) Surface Water Supply - MAR

Monthly component volumes



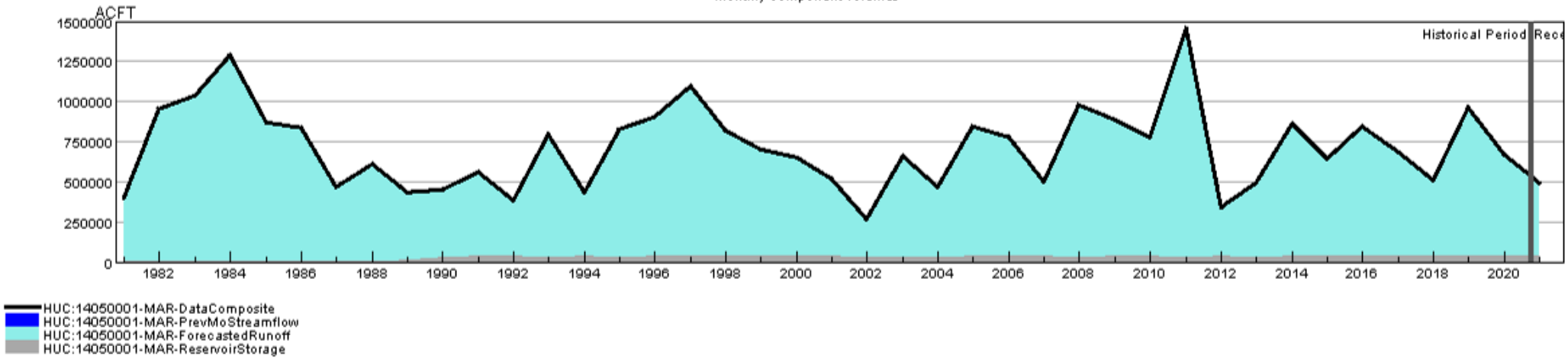
HUC 14030003 (San Miguel) SWSI Values - MAR

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



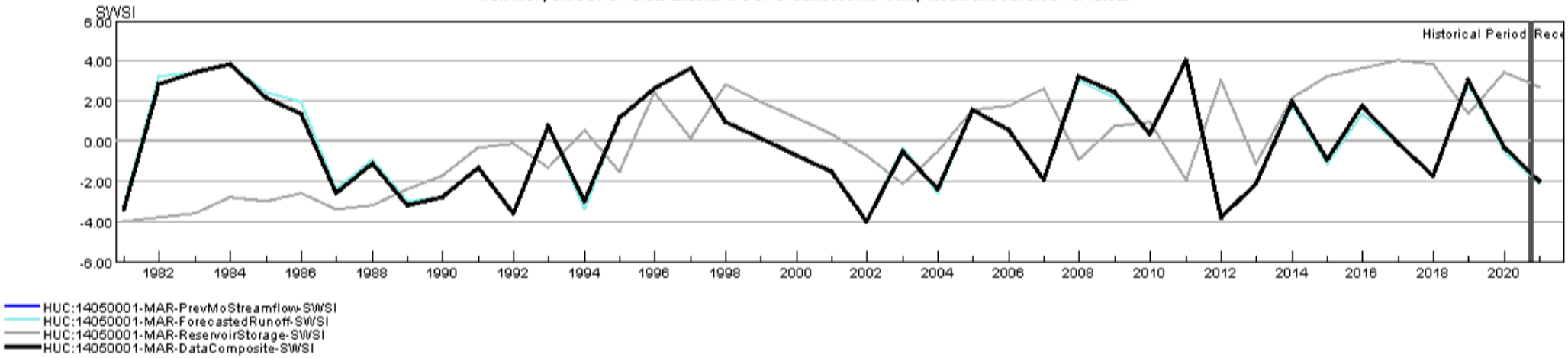
HUC 14050001 (Upper Yampa) Surface Water Supply - MAR

Monthly component volumes



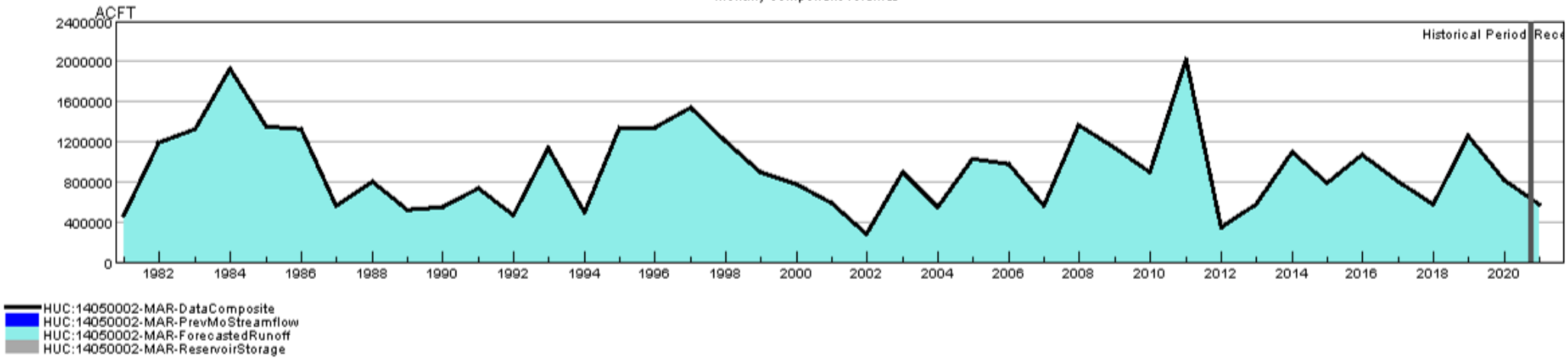
HUC 14050001 (Upper Yampa) SWSI Values - MAR

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



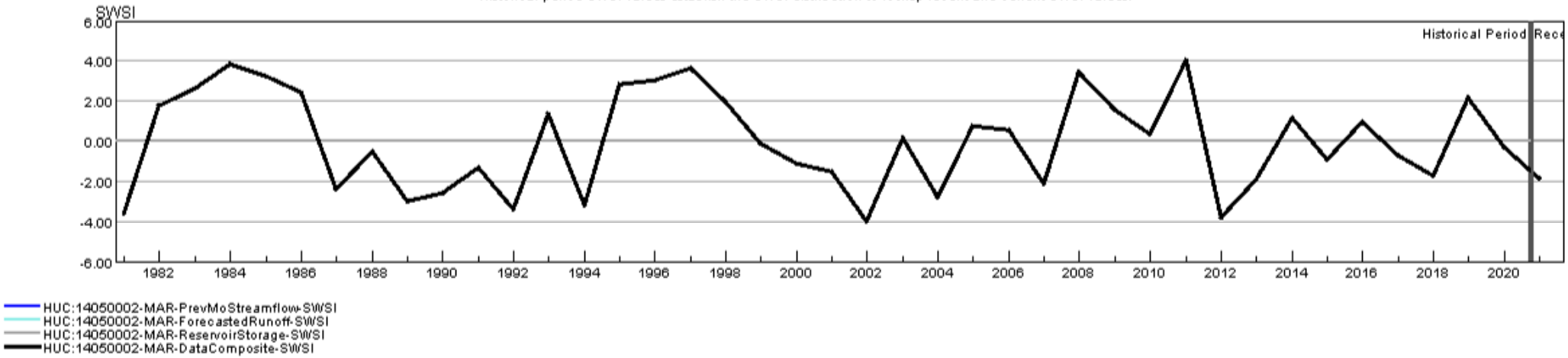
HUC 14050002 (Lower Yampa) Surface Water Supply - MAR

Monthly component volumes



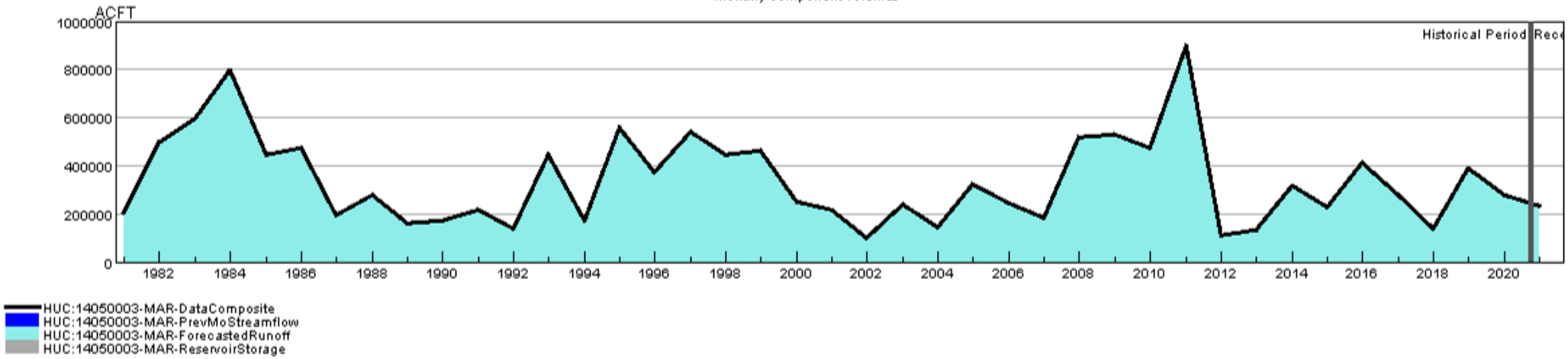
HUC 14050002 (Lower Yampa) SWSI Values - MAR

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



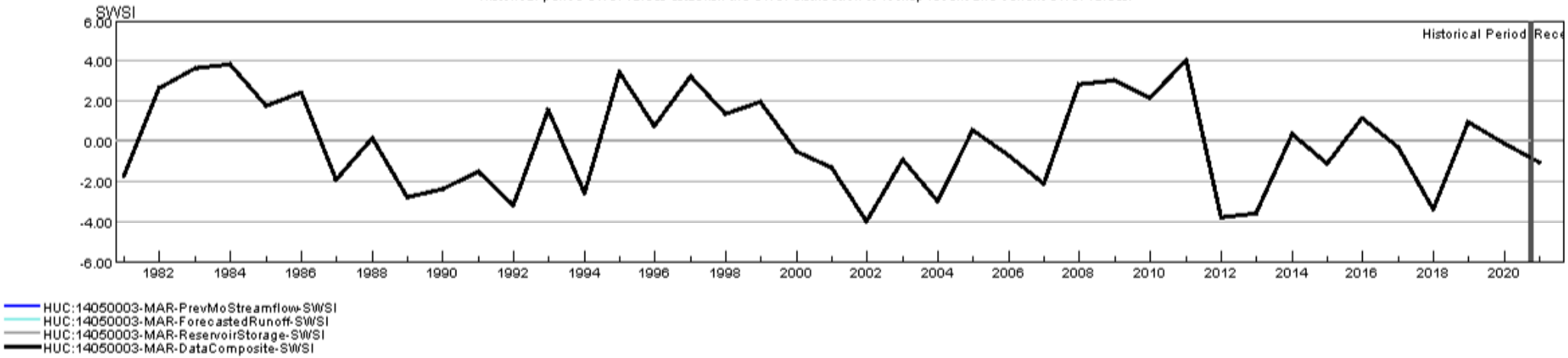
HUC 14050003 (Little Snake) Surface Water Supply - MAR

Monthly component volumes



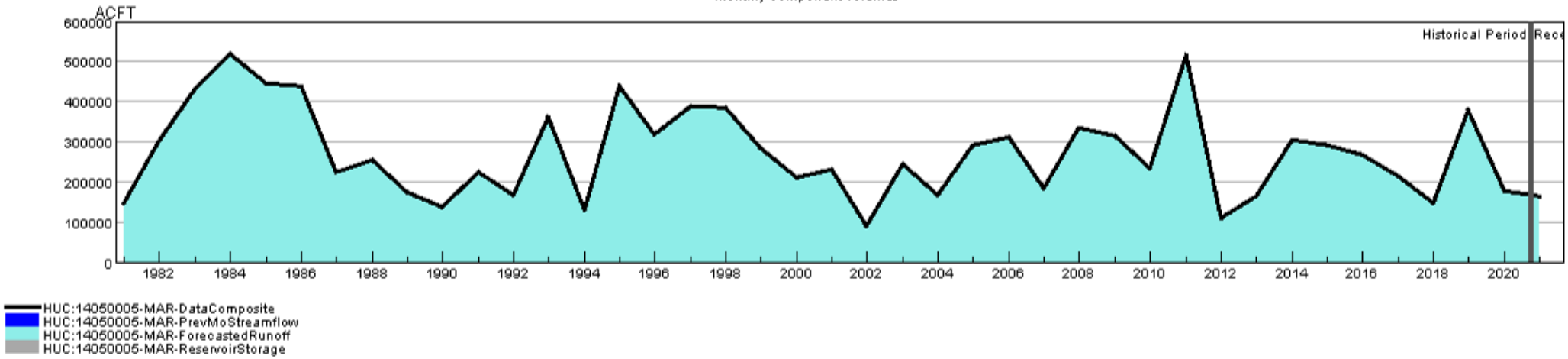
HUC 14050003 (Little Snake) SWSI Values - MAR

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



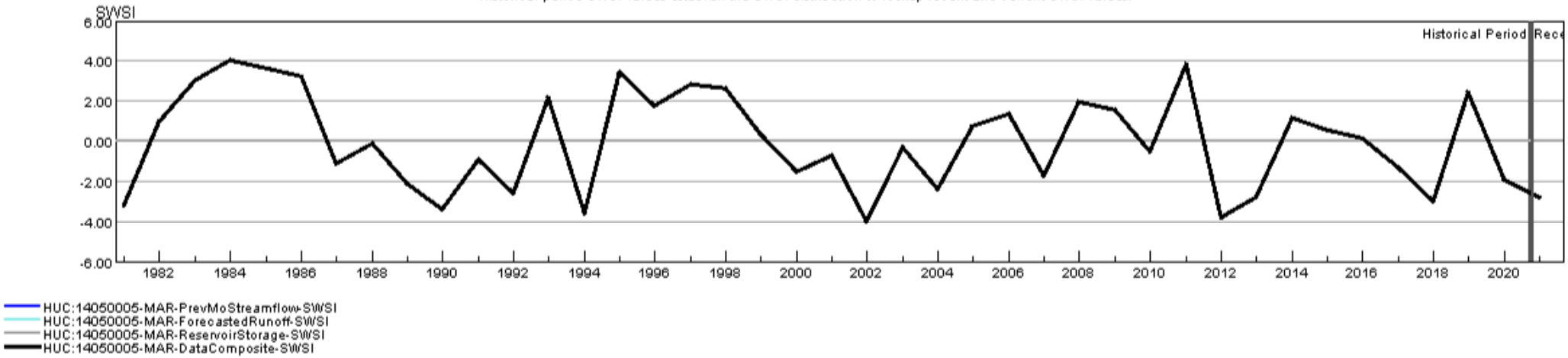
HUC 14050005 (Upper White) Surface Water Supply - MAR

Monthly component volumes



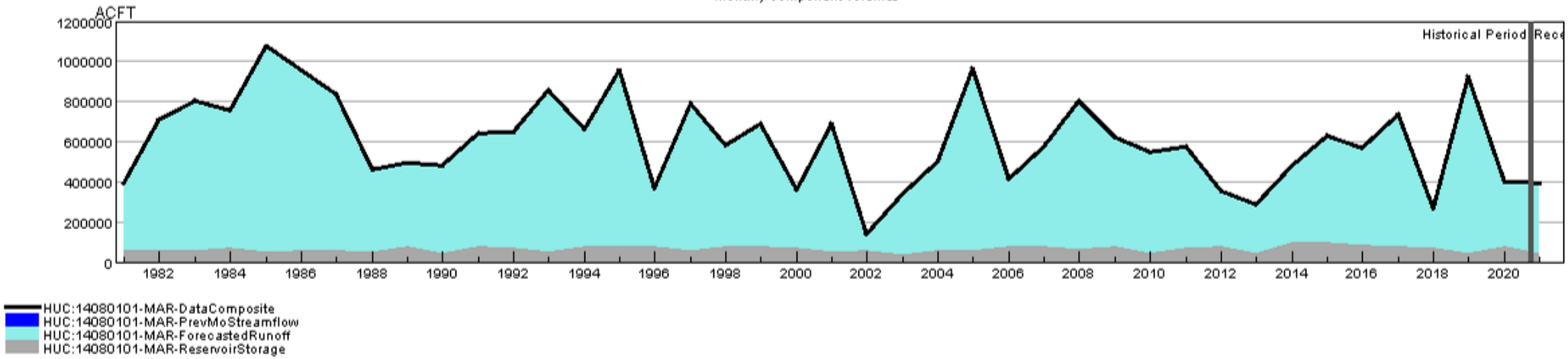
HUC 14050005 (Upper White) SWSI Values - MAR

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



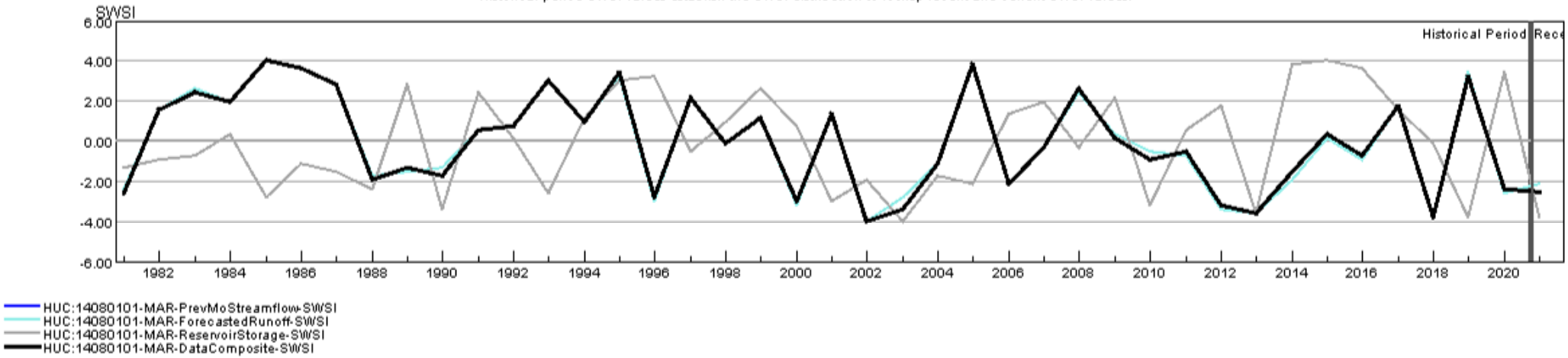
HUC 14080101 (Upper San Juan) Surface Water Supply - MAR

Monthly component volumes



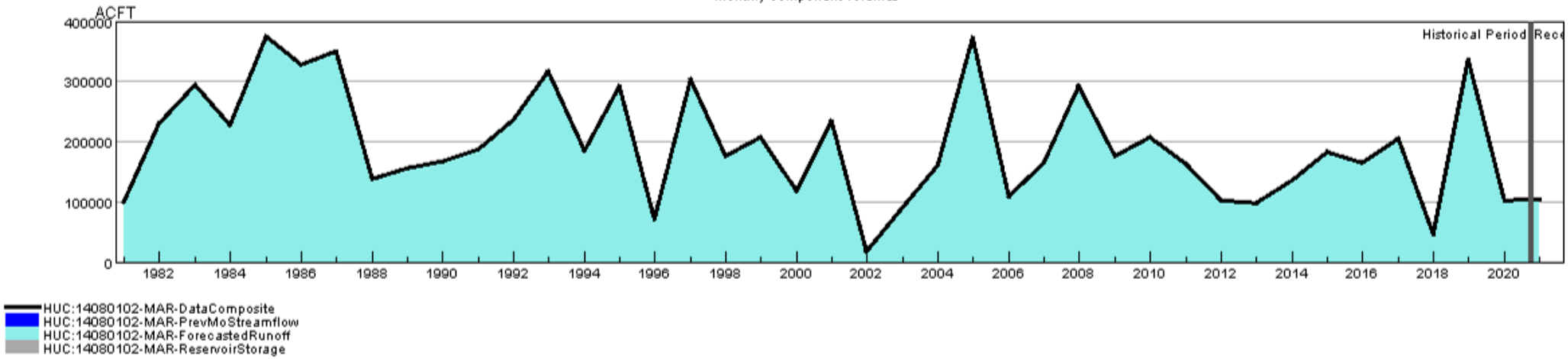
HUC 14080101 (Upper San Juan) SWSI Values - MAR

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



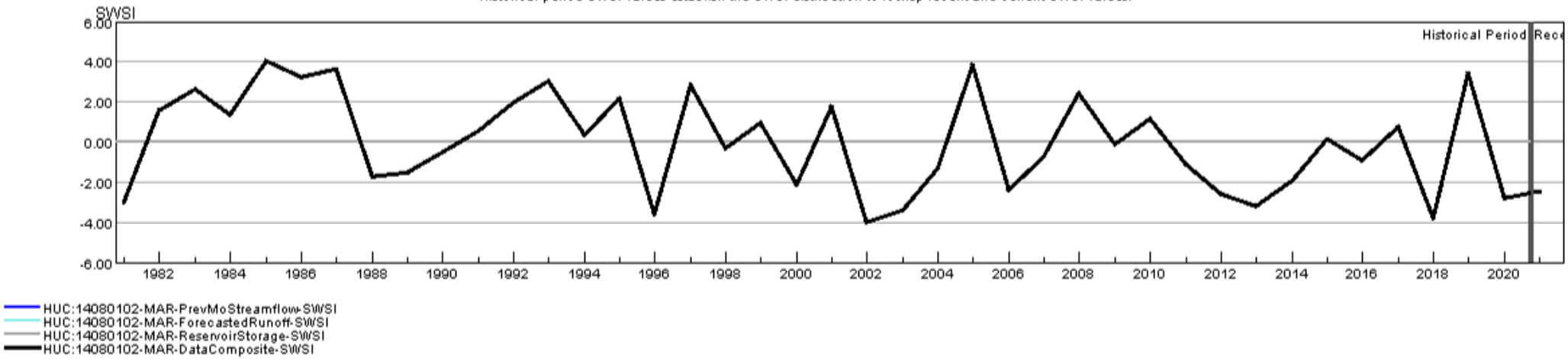
HUC 14080102 (Piedra) Surface Water Supply - MAR

Monthly component volumes



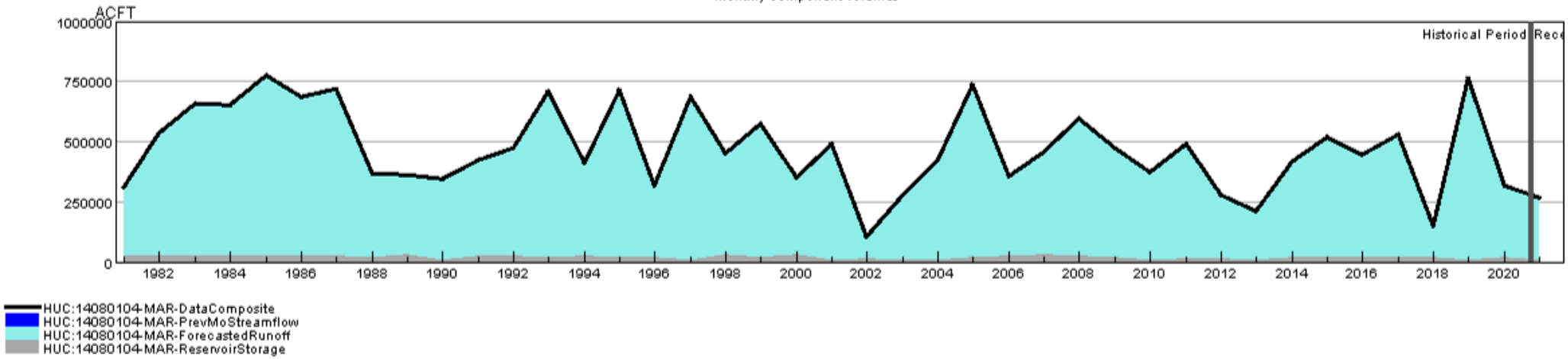
HUC 14080102 (Piedra) SWSI Values - MAR

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



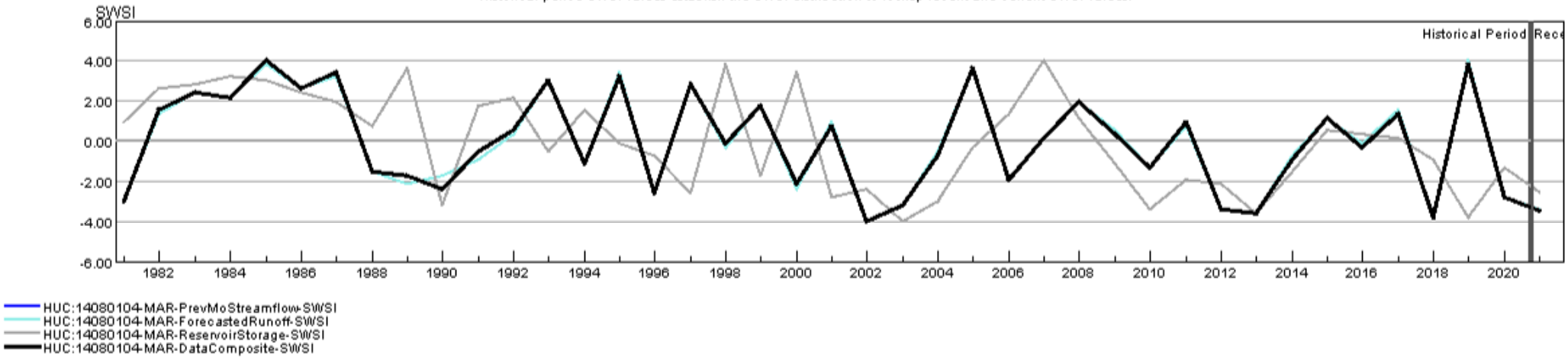
HUC 14080104 (Animas) Surface Water Supply - MAR

Monthly component volumes



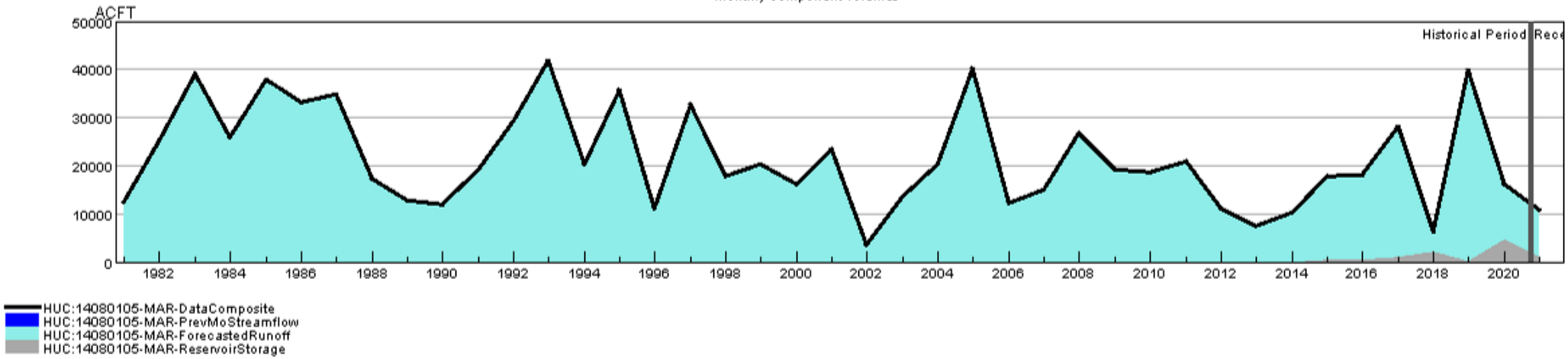
HUC 14080104 (Animas) SWSI Values - MAR

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



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

Monthly component volumes



HUC 14080105 (Middle San Juan) SWSI Values - MAR

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