# COLORADO
# WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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November 1, 2018

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 |
|---|---|
| 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: 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.

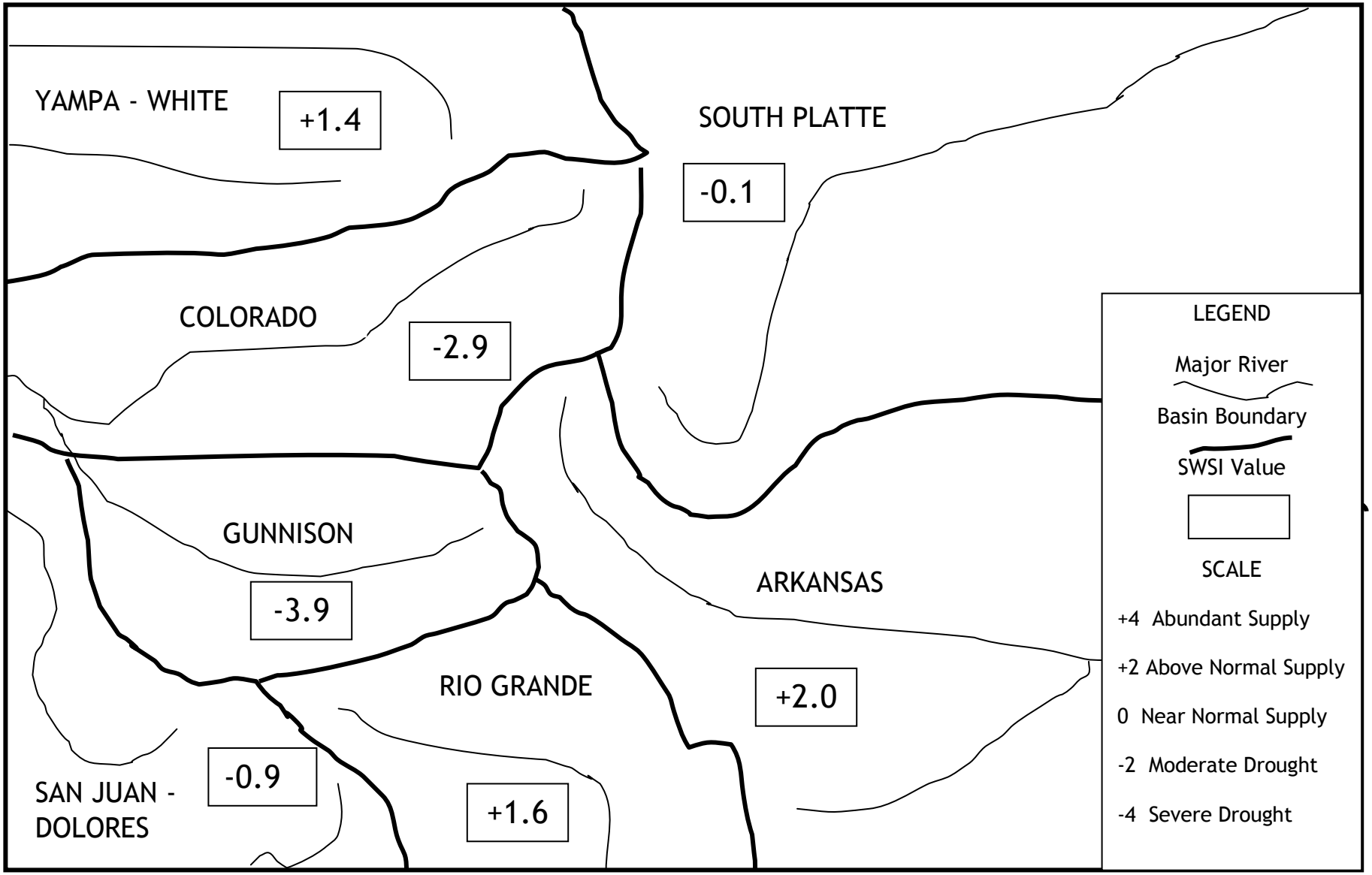
The SWSI calculation for the fall season (October 1 to December 1) is based solely on reservoir storage at the end of last month, in this case October 31. The following SWSI values were computed for each of the seven major basins for November 1, 2018. Water supply conditions, as represented by water in storage, are below normal in all but the Arkansas River, Rio Grande and Yampa basins and well below normal in the Colorado and Gunnison basins.

| Basin | November 1 SWSI | Change from Previous Month | Change from Previous Year |
|---|---|---|---|
| Arkansas | 2.0 | 0.0 | -1.0 |
| Colorado | -2.9 | 0.3 | -2.9 |
| Gunnison | -3.9 | -0.1 | -6.3 |
| Rio Grande | 1.6 | 0.1 | -1.5 |
| San Juan-Dolores | -0.9 | 0.0 | -2.5 |
| South Platte | -0.1 | 0.0 | -3.2 |
| Yampa-White | 1.4 | 0.6 | -2.2 |

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**

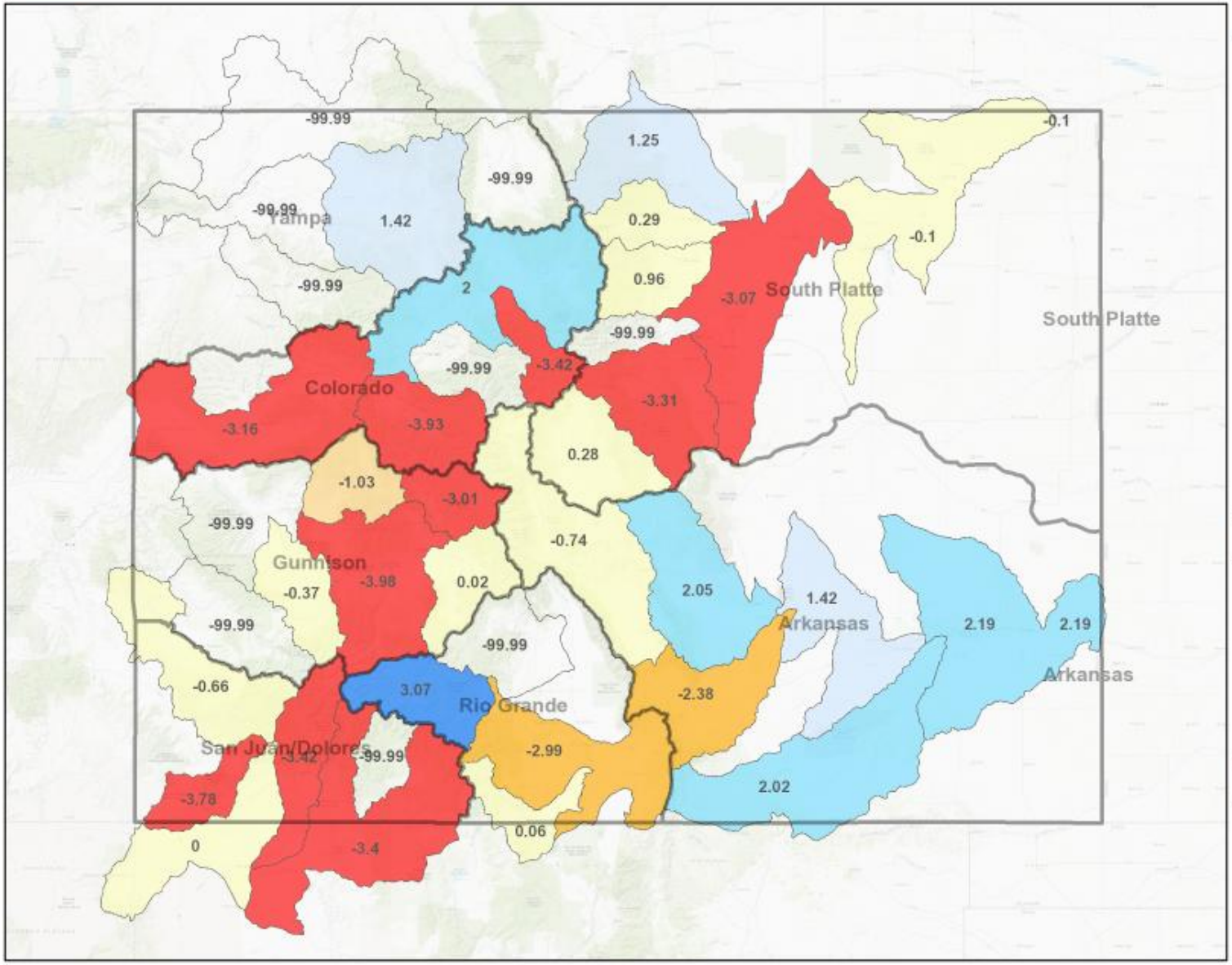



**November 1, 2018**

# SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC

CDSS
Colorado's Decision Support Systems

## SWSI November 1, 2018




### 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: 11/13/2018 8:05:16 AM

**November 1, 2018 SWSI Values by HUC and Non Exceedance Probabilities (NEP)**

| Basin | HUC ID | HUC Name | SWSI | Reservoir Storage NEP | Total Vol (AF) |
|---|---|---|---|---|---|
| Arkansas | 11020006 | Huerfano | -2.38 | 21 | 0 |
| | 11020010 | Purgatoire | 2.03 | 74 | 18,760 |
| | 11020005 | Upper Arkansas-Lake Meredith | 1.42 | 67 | 21,857 |
| | 11020009 | Upper Arkansas-John Martin Reservoir | 2.20 | 76 | 142,519 |
| | 11020001 | Arkansas Headwaters | -0.75 | 41 | 177,180 |
| | 11020002 | Upper Arkansas | 2.06 | 75 | 184,000 |
| Colorado | 14010005 | Colorado Headwaters-Plateau | -3.16 | 12 | 4,182 |
| | 14010002 | Blue | -3.43 | 9 | 58,182 |
| | 14010004 | Roaring Fork | -3.93 | 3 | 60,769 |
| | 14010001 | Colorado Headwaters | 2.00 | 74 | 113,050 |
| | 14010003 | Eagle | N/A | | |
| Gunnison | 14020003 | Tomichi | 0.03 | 50 | 175 |
| | 14020004 | North Fork Gunnison | -1.03 | 38 | 1,435 |
| | 14020006 | Uncompahgre | -0.37 | 46 | 43,640 |
| | 14020001 | East-Taylor | -3.02 | 14 | 58,764 |
| | 14020002 | Upper Gunnison | -3.98 | 2 | 347,894 |
| | 14020005 | Lower Gunnison | N/A | | |
| | 14030003 | San Miguel | N/A | | |
| Rio Grande | 13010002 | Alamosa-Trinchera | -2.99 | 14 | 2,400 |
| | 13010005 | Conejos | 0.06 | 51 | 19,500 |
| | 13010001 | Rio Grande Headwaters | 3.07 | 87 | 38,600 |
| | 13010004 | Saguache | N/A | | |
| San Juan-Dolores | 14080105 | Middle San Juan | 0.00 | 50 | 195 |
| | 14080107 | Mancos | -3.78 | 5 | 1,751 |
| | 14080104 | Animas | -3.42 | 9 | 6,964 |
| | 14080101 | Upper San Juan | -3.40 | 9 | 25,962 |
| | 14030002 | Upper Dolores | -0.67 | 42 | 169,696 |
| | 14080102 | Piedra | N/A | | |
| South Platte | 10190003 | Middle South Platte-Cherry Creek | -3.08 | 13 | 43,360 |
| | 10190005 | St. Vrain | 0.96 | 62 | 56,400 |
| | 10190012 | Middle South Platte-Sterling | -0.10 | 49 | 80,400 |
| | 10190007 | Cache La Poudre | 1.25 | 65 | 118,411 |
| | 10190001 | South Platte Headwater | 0.29 | 53 | 146,200 |
| | 10190002 | Upper South Platte | -3.32 | 10 | 240,600 |
| | 10190006 | Big Thompson | 0.30 | 54 | 464,874 |
| | 10190004 | Clear | N/A | | |
| Yampa-White | 14050001 | Upper Yampa | 1.43 | 67 | 33,994 |
| | 10180001 | North Platte Headwaters | N/A | | |
| | 14050002 | Lower Yampa | N/A | | |
| | 14050003 | Little Snake | N/A | | |
| | 14050005 | Upper White | N/A | | |

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) |
|---|---|---|---|

**November 1, 2018 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 | 5,700 | 55 |
| | | TWIN LAKES RESERVOIR | 34,159 | 24 |
| | | HOMESTAKE RESERVOIR | 41,200 | 74 |
| | | TURQUOISE LAKE | 96,121 | 35 |
| 11020006 | Huerfano | CUCHARAS RESERVOIR* | 0 | 21 |
| 11020010 | Purgatoire | TRINIDAD LAKE | 18,760 | 74 |
| 11020002 | Upper Arkansas | PUEBLO RESERVOIR | 184,000 | 75 |
| 11020009 | Upper Arkansas-John Martin Reservoir | ADOBE CREEK RESERVOIR | 9,460 | 55 |
| | | JOHN MARTIN RESERVOIR | 133,059 | 77 |
| 11020005 | Upper Arkansas-Lake Meredith | LAKE HENRY | 4,917 | 84 |
| | | MEREDITH RESERVOIR | 16,940 | 66 |
| 14010002 | Blue | GREEN MOUNTAIN RESERVOIR | 58,182 | 9 |
| 14010001 | Colorado Headwaters | WOLFORD MOUNTAIN RESERVOIR | 36,250 | 70 |
| | | WILLIAMS FORK RESERVOIR | 76,800 | 56 |
| 14010005 | Colorado Headwaters-Plateau | VEGA RESERVOIR | 4,182 | 12 |
| 14010004 | Roaring Fork | RUEDI RESERVOIR | 60,769 | 3 |
| 14020001 | East-Taylor | TAYLOR PARK RESERVOIR | 58,764 | 14 |
| 14020004 | North Fork Gunnison | PAONIA RESERVOIR | 1,435 | 38 |
| 14020003 | Tomichi | VOUGA RESERVOIR NEAR DOYLEVILLE | 175 | 50 |
| 14020006 | Uncompahgre | RIDGEWAY RESERVOIR | 43,640 | 46 |
| 14020002 | Upper Gunnison | SILVER JACK RESERVOIR | 80 | 2 |
| | | FRUITLAND RESERVOIR | 100 | 37 |
| | | CRAWFORD RESERVOIR | 760 | 1 |
| | | MORROW POINT RESERVOIR | 99,270 | 3 |
| | | BLUE MESA RESERVOIR | 247,684 | 3 |
| 13010002 | Alamosa-Trinchera | MOUNTAIN HOME** | 0 | 1 |
| | | TERRACE RESERVOIR | 2,400 | 45 |
| 13010005 | Conejos | PLATORO RESERVOIR | 19,500 | 51 |
| 13010001 | Rio Grande Headwaters | RIO GRANDE RESERVOIR** | 0 | 3 |
| | | CONTINENTAL RESERVOIR | 13,700 | 99 |
| | | SANTA MARIA RESERVOIR | 24,900 | 94 |
| 14080104 | Animas | LEMON RESERVOIR | 6,964 | 9 |
| 14080107 | Mancos | JACKSON GULCH RESERVOIR | 1,751 | 5 |
| 14080105 | Middle San Juan | LONG HOLLOW RESERVOIR | 195 | 50 |
| 14030002 | Upper Dolores | GROUNDHOG RESERVOIR | 0 | 1 |
| | | MCPHEE RESERVOIR | 169,696 | 43 |
| 14080101 | Upper San Juan | VALLECITO RESERVOIR | 25,962 | 9 |
| 10190006 | Big Thompson | LAKE LOVELAND RESERVOIR | 500 | 6 |
| | | MARIANO RESERVOIR | 600 | 16 |
| | | LONE TREE RESERVOIR | 3,200 | 38 |
| | | WILLOW CREEK RESERVOIR | 6,855 | 28 |
| | | BOYD LAKE | 32,100 | 58 |
| | | CARTER LAKE | 55,851 | 59 |
| | | LAKE GRANBY | 365,768 | 55 |

| HUC ID | HUC Name | Component Name | Component Volume (AF) | Component NEP for Month |
|---|---|---|---|---|
| 10190007 | Cache La Poudre | HALLIGAN RESERVOIR | 1,600 | 62 |
| | | CHAMBERS LAKE | 3,800 | 68 |
| | | BLACK HOLLOW RESERVOIR | 4,300 | 99 |
| | | CACHE LA POUDRE | 4,300 | 60 |
| | | WINDSOR RESERVOIR | 5,100 | 18 |
| | | FOSSIL CREEK RESERVOIR | 7,200 | 94 |
| | | COBB LAKE | 15,400 | 56 |
| | | HORSETOOTH RESERVOIR | 76,711 | 63 |
| 10190003 | Middle South Platte-Cherry Creek | HORSECREEK RESERVOIR | 0 | 1 |
| | | MILTON RESERVOIR | 6,200 | 23 |
| | | BARR LAKE | 7,100 | 17 |
| | | STANDLEY RESERVOIR | 30,060 | 34 |
| 10190012 | Middle South Platte-Sterling | EMPIRE RESERVOIR | 2,400 | 17 |
| | | RIVERSIDE RESERVOIR | 12,600 | 49 |
| | | JULESBURG RESERVOIR | 13,200 | 59 |
| | | POINT OF ROCKS RESERVOIR | 16,000 | 50 |
| | | PREWITT RESERVOIR | 16,700 | 69 |
| | | JACKSON LAKE RESERVOIR | 19,500 | 87 |
| 10190001 | South Platte Headwater | ANTERO RESERVOIR | 18,700 | 58 |
| | | SPINNEY MOUNTAIN RESERVOIR | 27,300 | 43 |
| | | ELEVENMILE CANYON RESERVOIR | 100,200 | 93 |
| 10190005 | St. Vrain | MARSHALL RESERVOIR | 4,400 | 48 |
| | | TERRY RESERVOIR | 5,000 | 56 |
| | | UNION RESERVOIR | 9,800 | 43 |
| | | BUTTONROCK (RALPH PRICE) | 14,700 | 44 |
| | | GROSS RESERVOIR | 22,500 | 68 |
| 10190002 | Upper South Platte | CHEESMAN LAKE | 55,400 | 31 |
| | | DILLON RESERVOIR | 185,200 | 9 |
| 14050001 | Upper Yampa | YAMCOLO RESERVOIR | 2,894 | 48 |
| | | STAGECOACH RESERVOIR NR OAK | 31,100 | 76 |

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

*Empty, filling restriction
**Empty for repairs

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

Basinwide Conditions Assessment

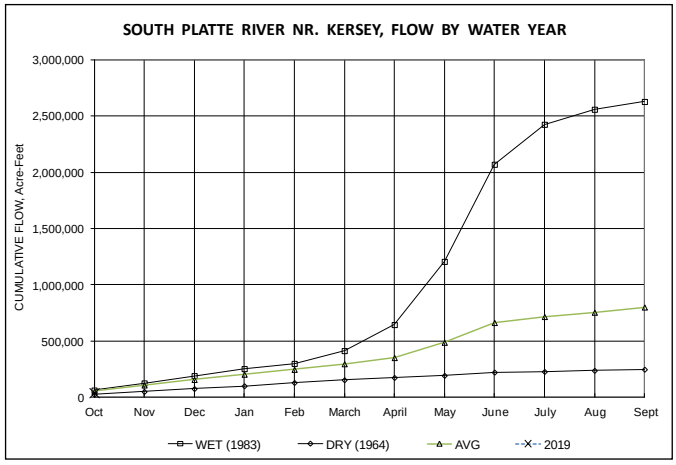
The SWSI value for the month was -0.1.

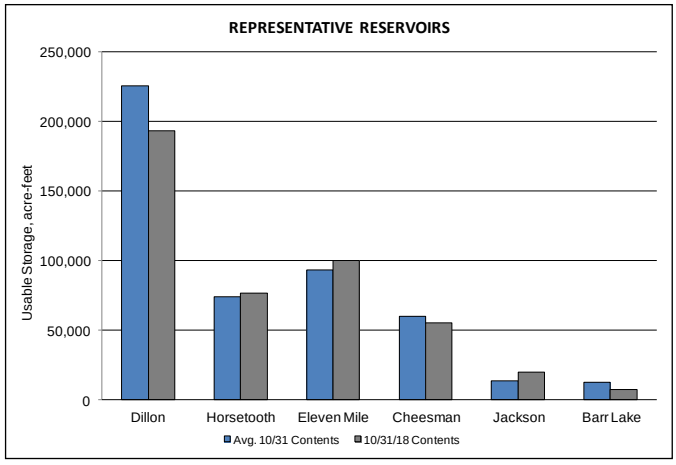
Northeast Colorado experienced below average temperatures during the first half of October, warmer than average temperatures during the middle portion of October, ending the month with below average temperatures and precipitation. These conditions during the month of October resulted in just below average stream flows throughout much of the South Platte River basin, however the cooler temperatures and precipitation allowed several junior recharge water rights and reservoir storage rights to divert towards the later portion of October. Reservoir storage releases ramped down during the month of October due to weather, demand and harvesting of many crops. The cooler weather and near average precipitation is much welcomed heading into the reservoir fill season beginning November 1st.

The USDA Drought Monitor rating for northeast Colorado remained constant during the month of October, with a rating of DO (abnormally dry) in the westerly (mountainous/foothill areas) areas of Larimer, Boulder, Jefferson, Douglas, Elbert and Arapaho Counties; a rating of D1 (moderate drought) in Gilpin, Clear Creek, and Park Counties; a rating of portions of Lincoln, El Paso, Teller and Park Counties rated as D1-D2 (moderate to severe). The DO (abnormally dry) extended easterly into Morgan and Washington Counties. The remainder of the eastern plains in the South Platte and Republican River basins continue to receive average to above average precipitation and are not currently in a drought condition.

The overall slightly below average temperatures and near average precipitation during the month of October resulted in just below average flows at the Kersey gage, with the average daily flows for the month of October approximately 626 cfs, 92% of the historic mean value of 678.9 cfs. The average daily flows at the Julesburg gage for the month of October was 126 cfs, 40% of the historic mean value of 311.5 cfs, partly due to diversions to recharge and junior reservoir storage.

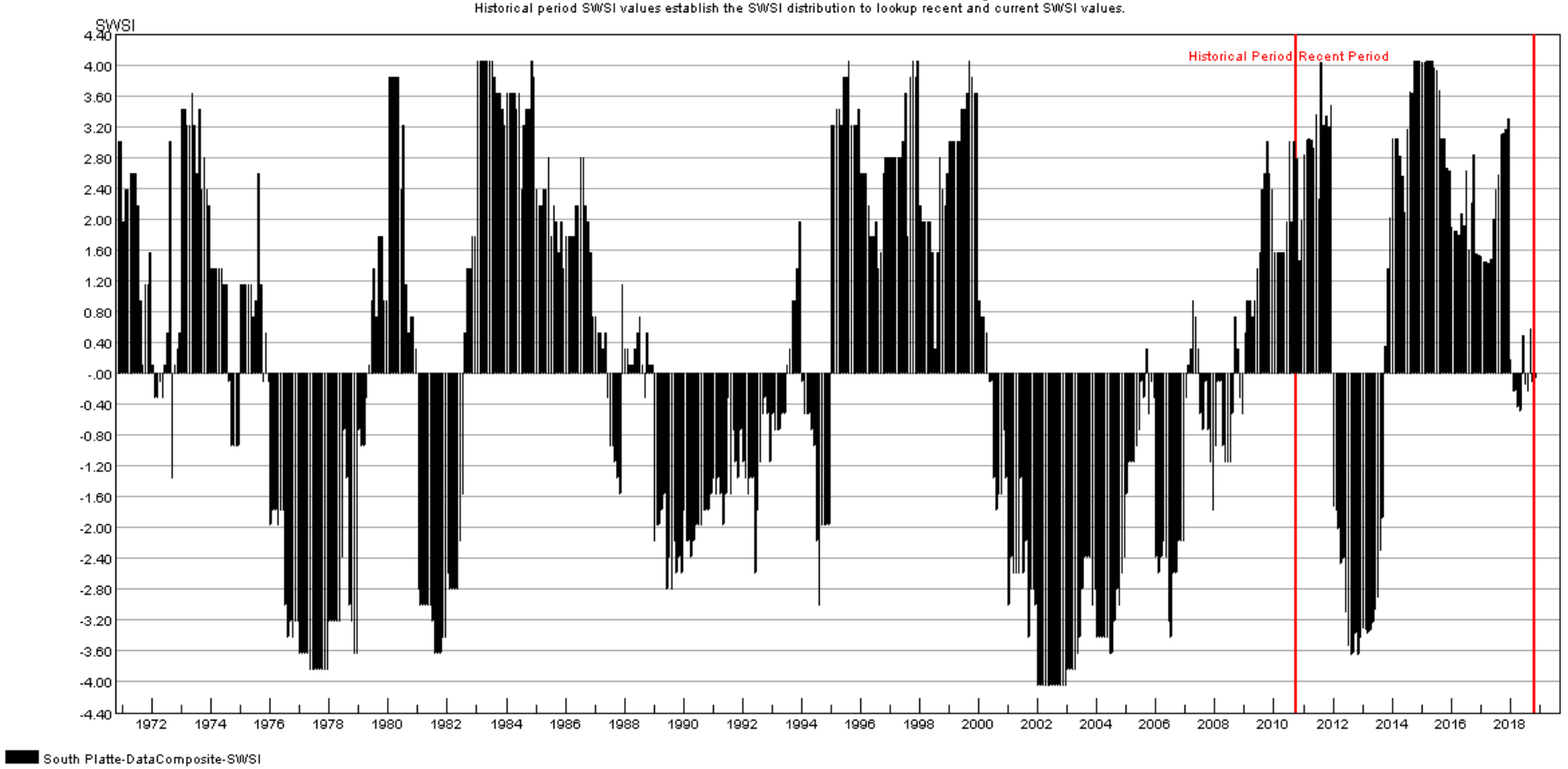
October welcomed a change from the previous months with below average temperatures and near normal precipitation. The first snowfall of the year occurred near the middle of October on the Front Range, and the beginning of October in many upper tributary basins. The South Platte River Compact requires the delivery of 150 cfs at the state line to be maintained, and when short the requirement to place the 1897 South Platte River Compact Call near Sterling and downstream to the state line. However, the cool weather and much welcomed precipitation resulted in the 1897 Compact Call being removed on September 26th and not occurring during the month of October. The mainstem of the South Platte above Chatfield Reservoir started the month of October dry with an 1864 calling priority during the beginning and middle portion of the month for approximately 10 days, then controlled by the call downstream of Chatfield Reservoir after mid-October. The call went more junior during the month of October on the main stem downstream of Chatfield Reservoir starting October with a 1885 priority, going less senior around October 6th through the remainder of October to a priority of 1909 at the Burlington Ditch. The lower portion of the South Platte River was controlled in early October by a 1922 water right, moving more junior throughout October to a 1936 reservoir fill right in mid-October, ending October with junior reservoir fill and recharge rights circa 1990's and early 2000. Some of the tributaries in the foothill and mountainous areas were fortunate to see average to above average precipitation and below average temperatures during the month of October. Below average temperatures and much welcomed precipitation welcomed the November 1 start of the new irrigation year and the reservoir fill season.



# South Platte Basin SWSI History

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



## Basinwide Conditions Assessment

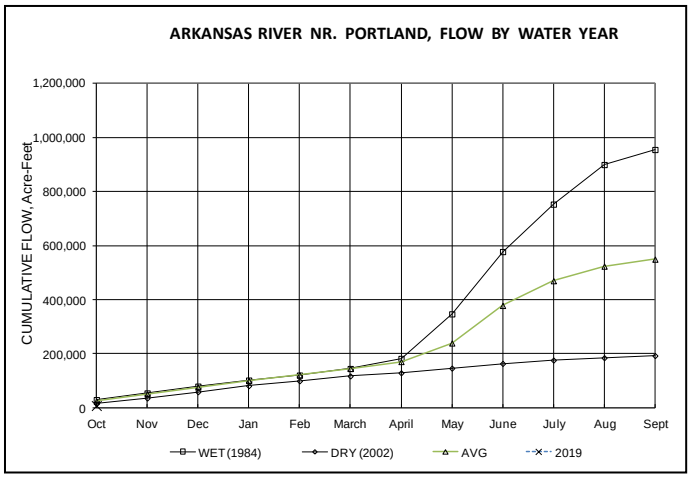
The SWSI value for the month was +2.0.

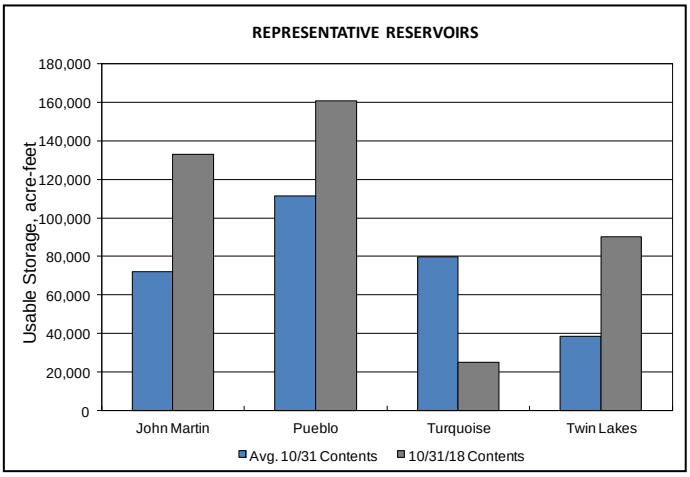
## Outlook

The river call during October ranged from the 5/4/1881 Bessemer Ditch call to the 2/26/1887 Oxford Farmers Ditches call.
A meeting of the Winter Water Board of Directors was held on October 19, 2018. Planning for the upcoming storage season which runs from November 15, 2018 through March 14, 2019 was the topic at this meeting.
Winter Compact storage in John Martin Reservoir began at midnight on October 31, 2018.
Storage in Trinidad Reservoir began on October 15, 2018.

## Administrative/Management Concerns

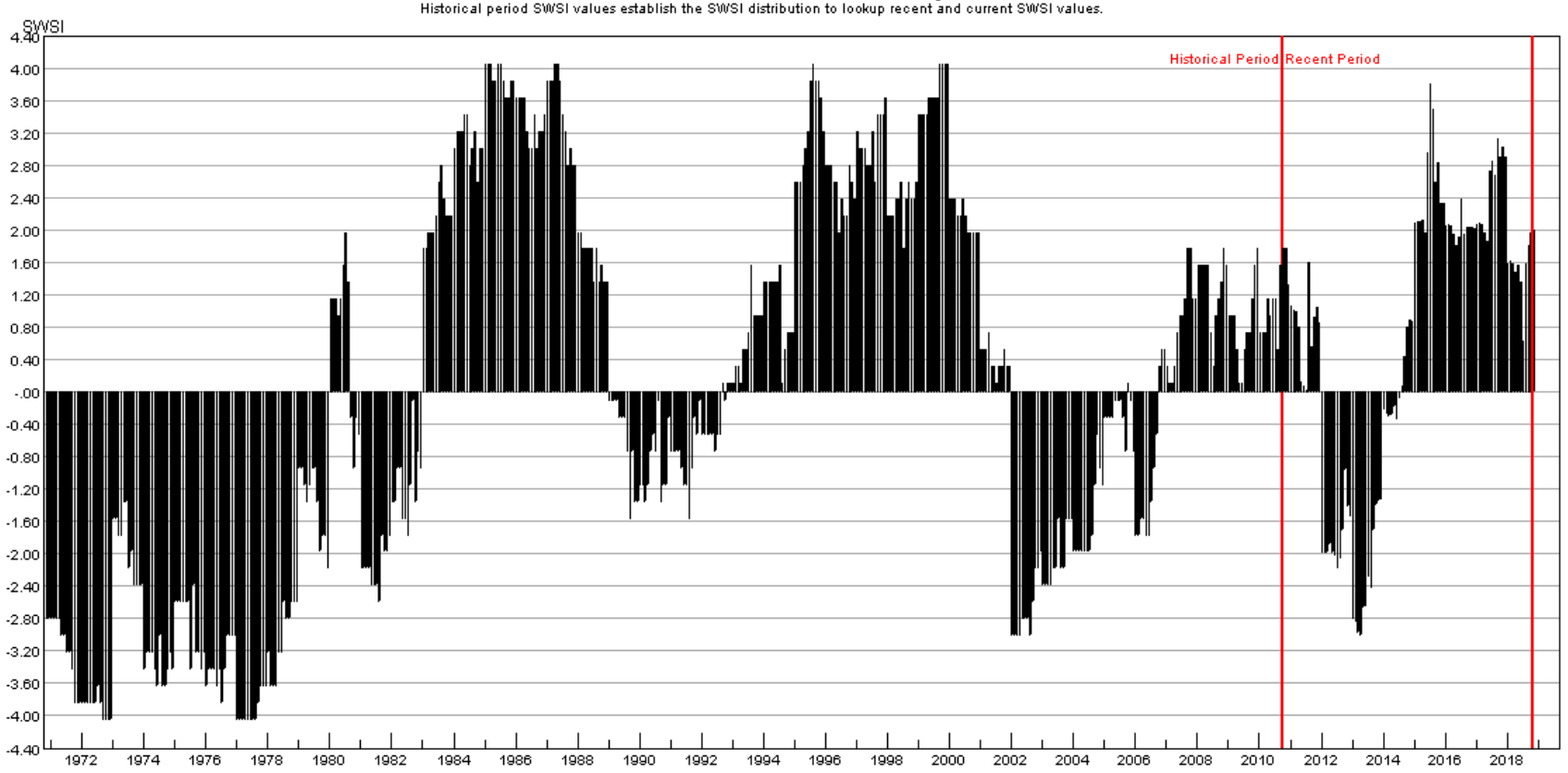
2018 having been an exceptionally dry year left reservoirs around the basin relatively depleted and ready to begin storing during the winter storage season or taking advantage of low volumes to complete maintenance work. Several reservoir related projects in the Basin are currently underway or gearing up for construction during the winter season such as a dredging project at John Martin Reservoir to clear the stilling basin sediment. The downstream channel on Trinidad Reservoir is also being evaluated for capacity limits to make compact related releases and new stage area capacity surveys on Trinidad and John Martin Reservoirs are being finalized. Work continues on Big Johnson Reservoir in District 10 to repair the outlet works and mobilization efforts are being initiated to raze Cucharas Number 5 Dam on the mainstem of the Cucharas River. Also in the Southern region work is almost complete on a series of gages and monitoring wells on the Huerfano River for a new Futile Call Model being created for the reach. Work continues on the Arkansas DSS system and is making progress towards completion.



# Arkansas Basin SWSI History

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



## Basinwide Conditions Assessment

The SWSI value for the month was +1.6.

Flow at the gaging station Rio Grande near Del Norte averaged 213 cfs (44% of normal). The Conejos River near Mogote had a mean flow of 70 cfs (52% of normal). Streamflow in the majority of the upper Rio Grande basin was below average during October due to lack of rain. There were two dustings of snow in the high country during October – a welcome relief for the parched conditions in the area mountains. The second brought snow to the Valley floor for Halloween. However, the Valley floor is still over an inch below average on annual accumulated precipitation.

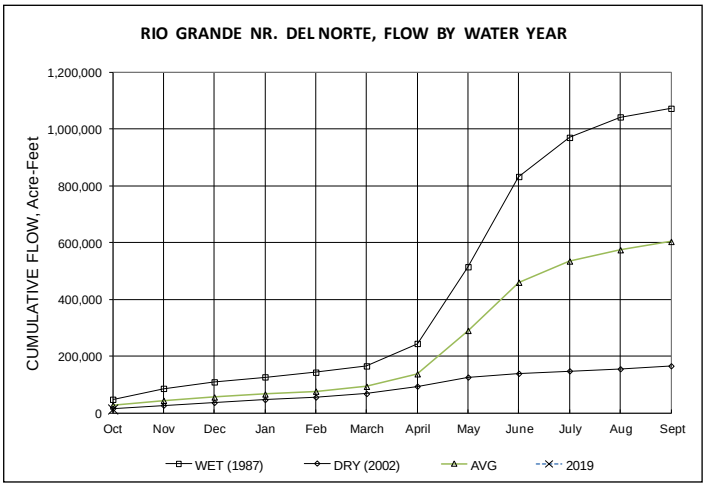
Reservoir storage in the basin has been severely depleted to help meet irrigation demand.

## Outlook

Recently-released National Weather Service 90-day precipitation and temperature outlooks call for a very good chance of above average precipitation for December, 2018 through April, 2019 for this region.

## Administrative/Management Concerns

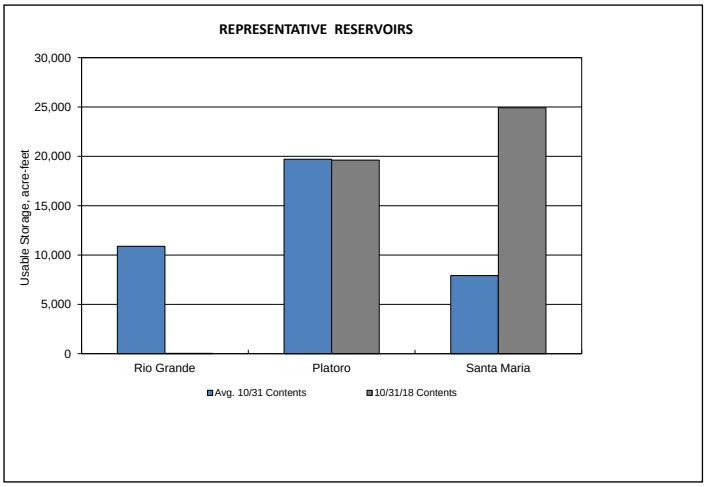
Reservoirs! These marvelous vessels help capture winter inflows and flood flows to re-regulate for the benefit of several irrigation companies in the San Luis Valley. The upper Rio Grande basin in Colorado has about 300,000 acre-feet of usable storage in the above-ground reservoirs. These reservoirs typically benefit a particular group of irrigators, i.e. Sanchez Ditch and Reservoir Company shareholders. Storage in these reservoirs was heavily used during the 2018 irrigation season, leaving many in no or low storage levels.




Empty reservoirs at this time include Rio Grande and Mountain Home. Both will have extensive outlet works repair this winter. Reservoirs with very low carryover storage for 2019 include: Terrace, Sanchez, and Smith. The effect of the 2018 drought will be felt for several years unless a couple boomer runoff years get them re-filled. Next month, the status of the San Luis Valley aquifers – the underground reservoirs.

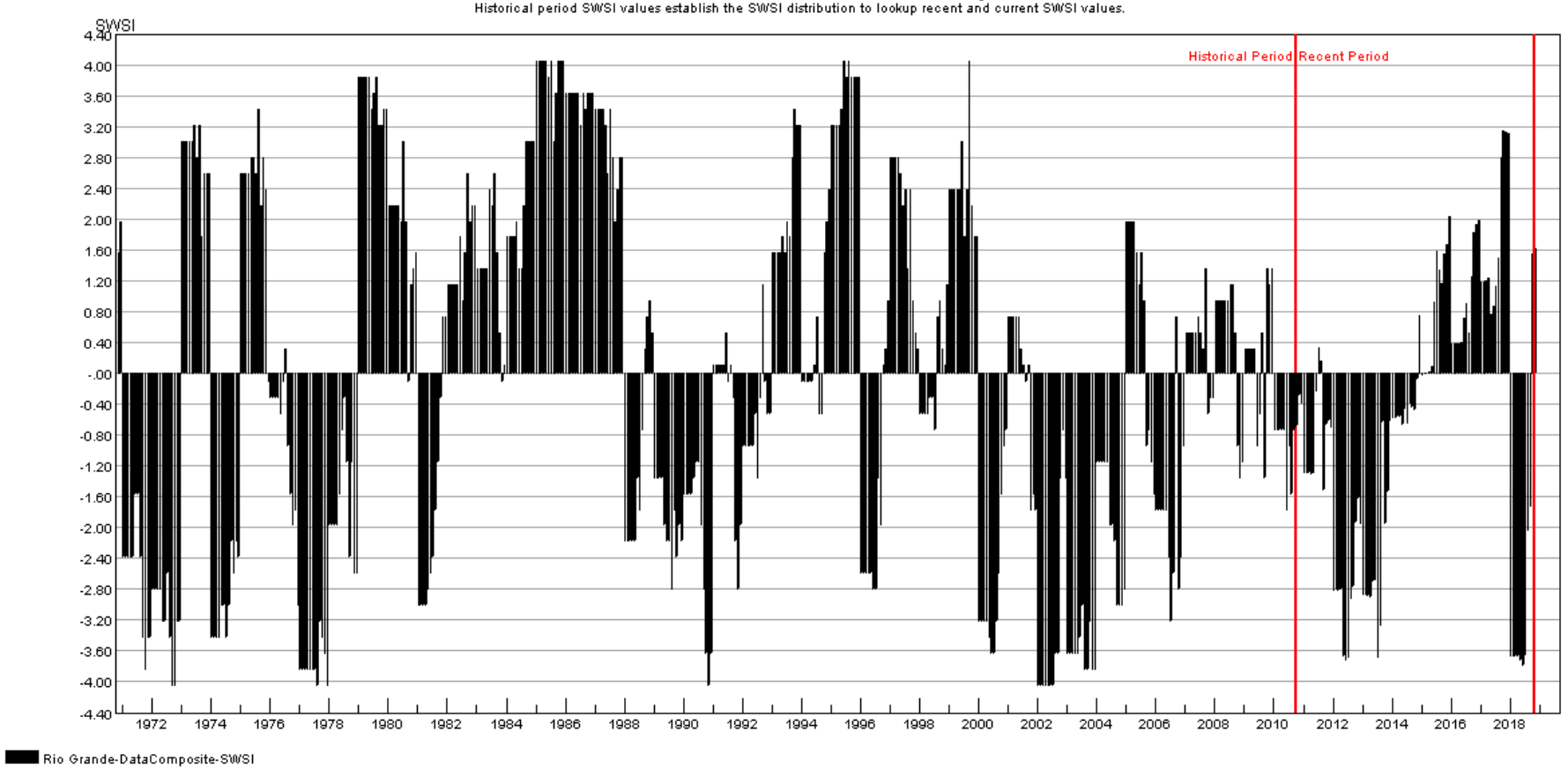
## Public Use Impact

The autumn weather patterns have been very comfortable and have had little or no effect on crop harvest. Low streamflow conditions are hard on the stream environment and those who use the creeks for stockwatering.



# 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 -3.9.

Following a water year where precipitation was well below average for eleven of twelve months, October provided a glimmer of hope to start the new water year with above average precipitation across the Gunnison basin. Precipitation was greater than 110% of average in all areas, but drainages in the north and west, such as the Uncompahgre Plateau and Grand Mesa, received 150-200% of average. In fact, the Park Reservoir Snotel gauge received over 7 inches of precipitation during October, which is greater than 200% of average. Streamflows increased following the precipitation, but dry soil conditions caused many gauges to return or remain below the 25th percentile flow for most of October.

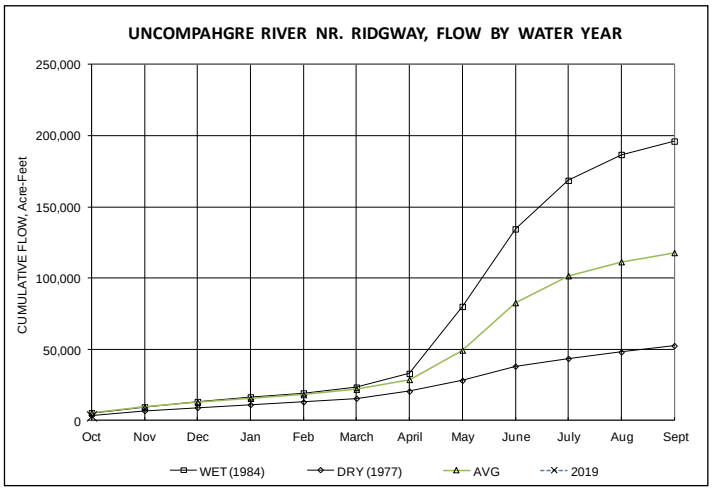
Outlook

NOAA climate forecasts continue to show the Gunnison basin on the northern edge of an area expected to receive greater than average precipitation during November through January.

Administrative/Management Concerns

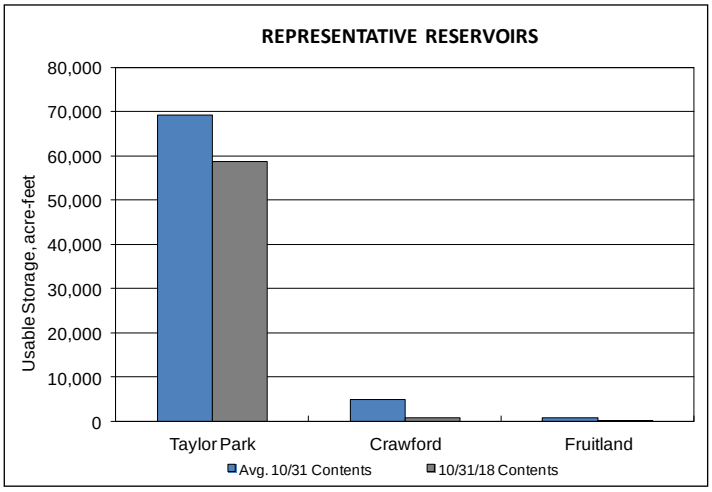
Blue Mesa Reservoir contained 247,000 acre-feet on November 1st, which is lower than the 262,000 minimum in 2002, but above the end of season minimum from 1977 of 214,000 acre-feet.

The UVWUA reduced diversions at the Gunnison Tunnel to 600 cfs on October 8th and further reduced them to 420 cfs in mid-October. Tunnel diversions ceased on November 1st and will resume periodically during the winter to refill Fairview Reservoir for municipal uses through the Project 7 Water Authority system that provides treated water to most of the Uncompahgre Valley. Taylor Park Reservoir's first fill account was exhausted by exchanging water stored under the Aspinall Unit water rights into Taylor Park on September 30th. The aforementioned Gunnison Tunnel diversions, however, required the use of storage for sixteen days in October. As a result, 7,029 acre-feet of Taylor Park second fill storage was used by exchange with Aspinall Unit during October. This brought the total amount of water stored by exchange under Aspinall Unit water rights in Taylor Park to 26,777 acre-feet on October 31st. This amount is deducted from the physical amount carried over into Taylor Park's 2019 first fill account on November 1st as it must be released to the Aspinall Unit under conditions included in the decree for case no. 86CW203. Consequently, carryover into 2019 under the Taylor Park first fill account was calculated as 31,989 acre-feet.




Demand for storage from the Grand Mesa Water Users Association (GMWUA) reduced greatly during October due to precipitation. This was a blessing considering that few reservoirs contained much usable storage on October 31st anyway.

One stream where October precipitation made a measurable difference was the Slate River. Discharge at the gauge rose to above the 23 cfs minimum instream flow water right and remained there for all of October, which allowed the Water Commissioner to remove the call.

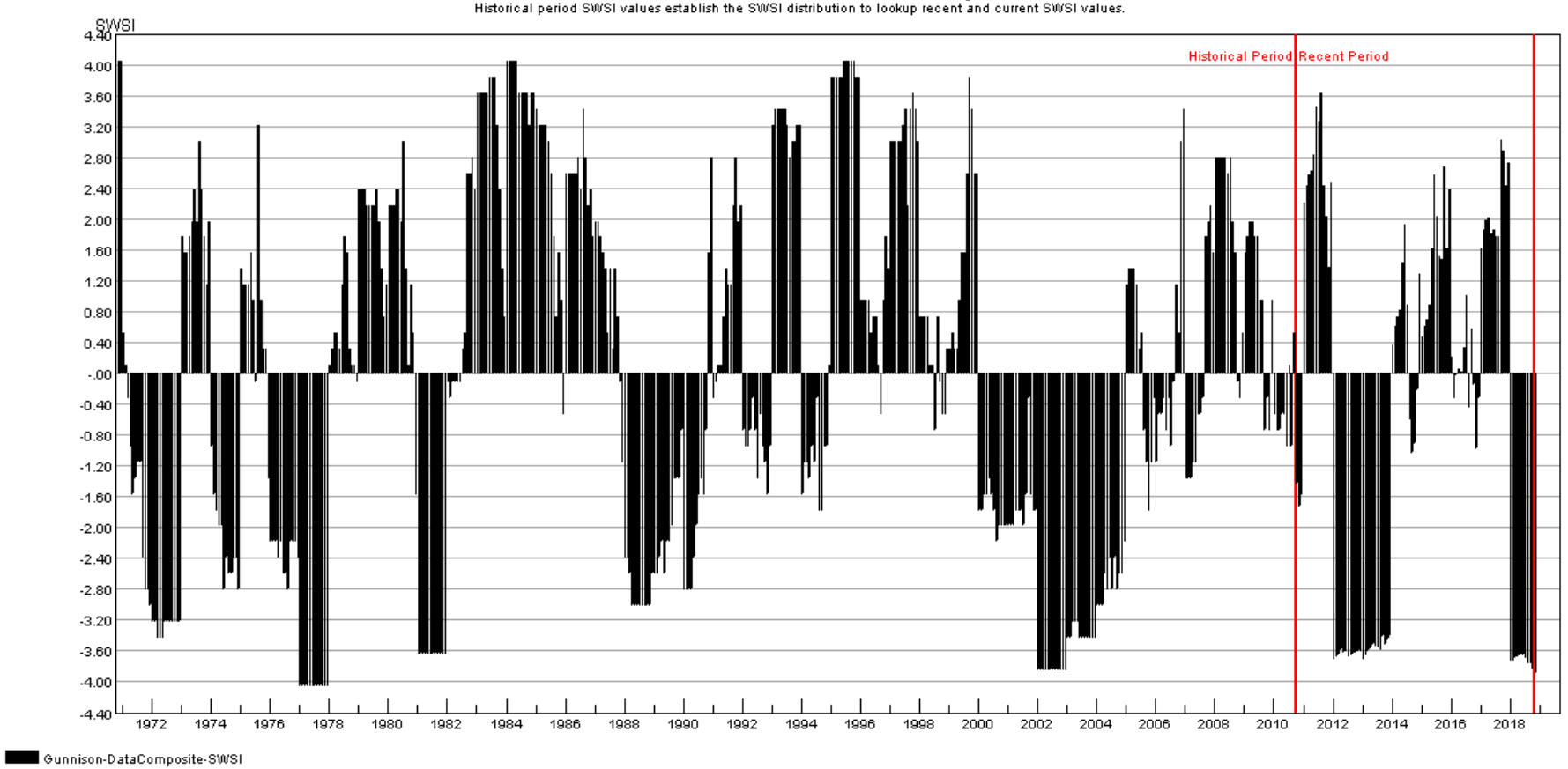



Public Use Impacts

The Gunnison basin began the snow accumulation season in encouraging fashion with Snotel sites such as Schofield Pass, Park Reservoir, and Red Mountain Pass reporting 145%, 175% and 242% of the 30-year median, respectively. The cooler weather and natural snow resulted in favorable snowmaking conditions for resorts such as Crested Butte. In fact, Crested Butte began making snow on November 1st were able to make snow during most of the day for the first two weeks of November and conditions are already much better than in early December last year.

# 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 -2.9.

## Outlook

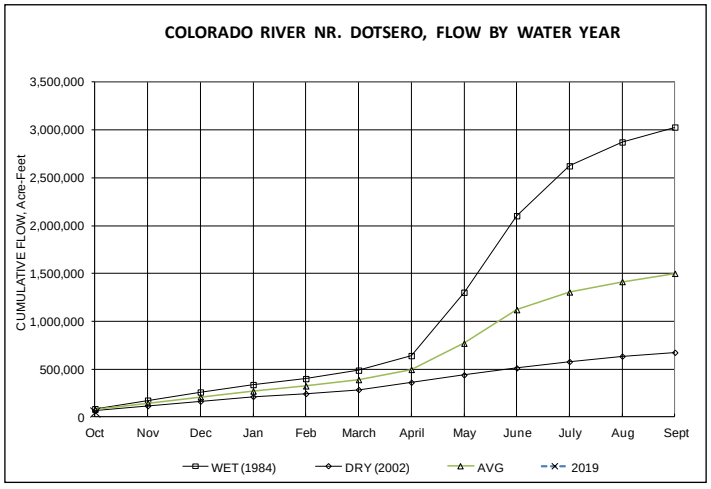
Colorado River flows and tributary flows are running below average. River flows are forecasted to continue below average throughout November. Below average precipitation with above average temperature is forecast for western Colorado through November.

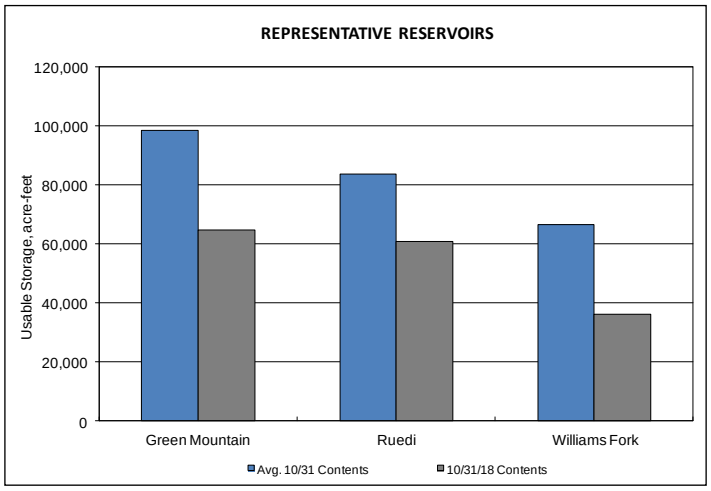
## Administrative/Management Concerns

The call on the Colorado River mainstem is the Senior Shoshone Power Plant water right. Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) have discontinued irrigating for the season. Green Mountain is releasing to pass inflows, release contract water, CB-T replacement water and HUP water.

## Public Use Impacts

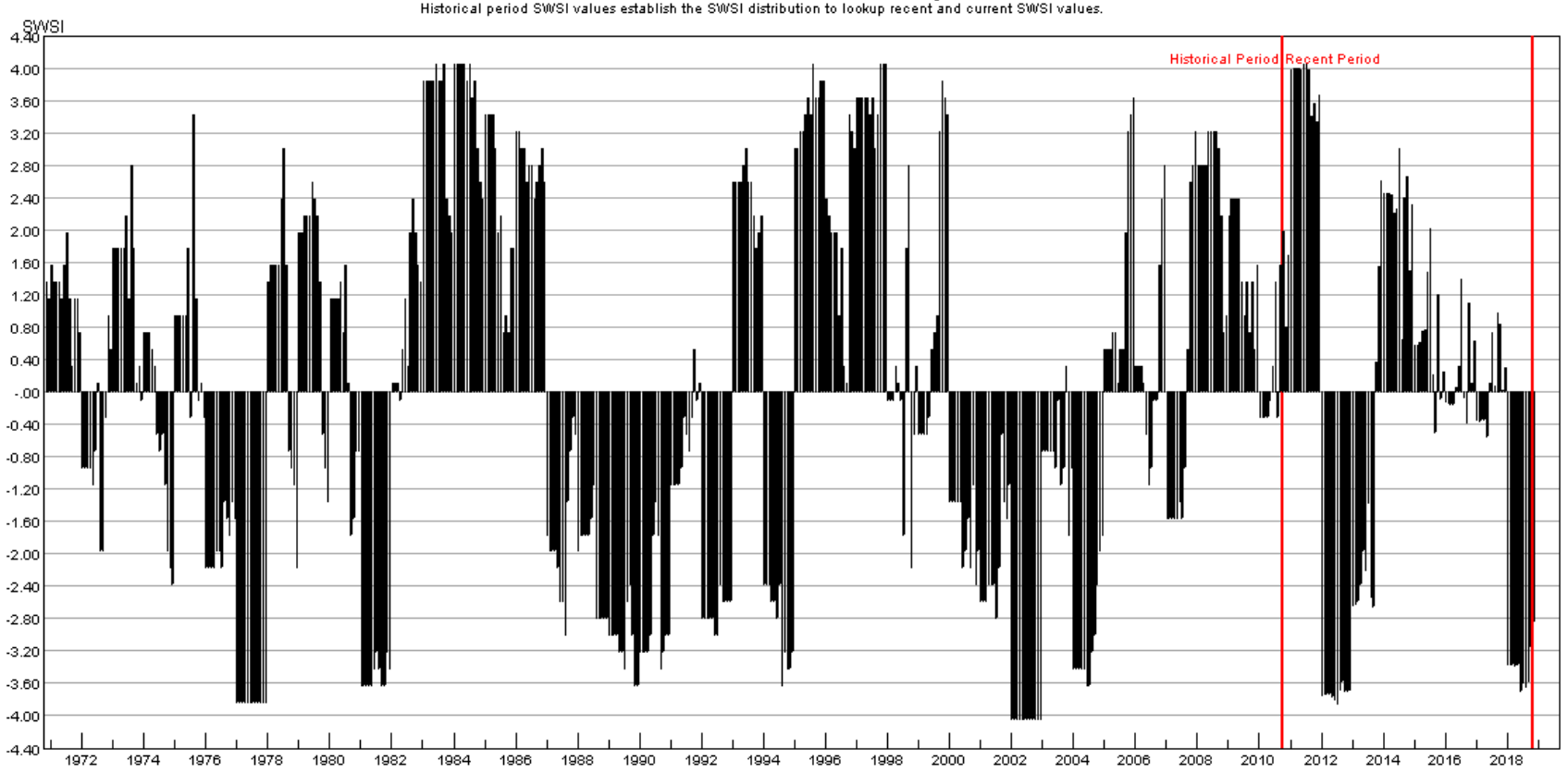
Ski areas are opening for the 2018-19 ski season, with some opening early thanks to the early season snowfall. As the weather cools down, most, if not all of the ski areas will be making snow and will continue through November.



# 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 +1.4.

October precipitation was above average in the Yampa, White, and North Platte River basins. Precipitation for the month, as measured at the SNOTEL sites operated by NRCS, was reported at 109% of average for the Yampa, White, and North Platte River basins. Total precipitation for the water year as a percent of average to date in the combined basins at the end of October was 109%.

The Yampa River gage remains open through the winter.

Outlook

As of October 31st Fish Creek Reservoir was storing approximately 2,147 AF, 52% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir was storing 2,900 AF (33% capacity) at the end of October 2018. The capacity of Yamcolo Reservoir is 8,700 AF. The G3 website is down for Elkhead Reservoir. On October 31, 2018, Stagecoach Reservoir was storing 31,100 AF, 85% of capacity.

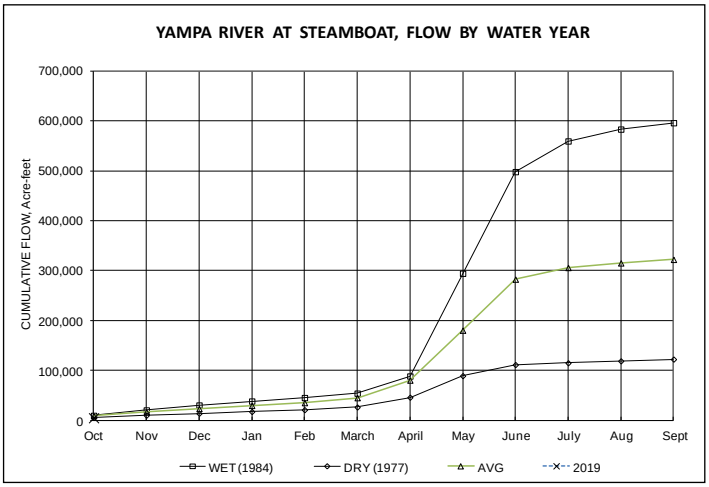
Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Yamcolo Reservoir for irrigation purposes, and Elkhead Creek Reservoir for municipal, industrial, recreational, and fish recovery releases. Stagecoach Reservoir is primarily used for recreation though a significant amount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

Public Use Impacts

Stagecoach Reservoir is closed to motorized boating. Please see website for current fishing conditions. Limited campsites are available during the winter (October 1 through May 15) in the Pinnacle campground on a first-come/first-serve basis and include 30 amp electrical hookups. Water is not available and the dump station is closed.

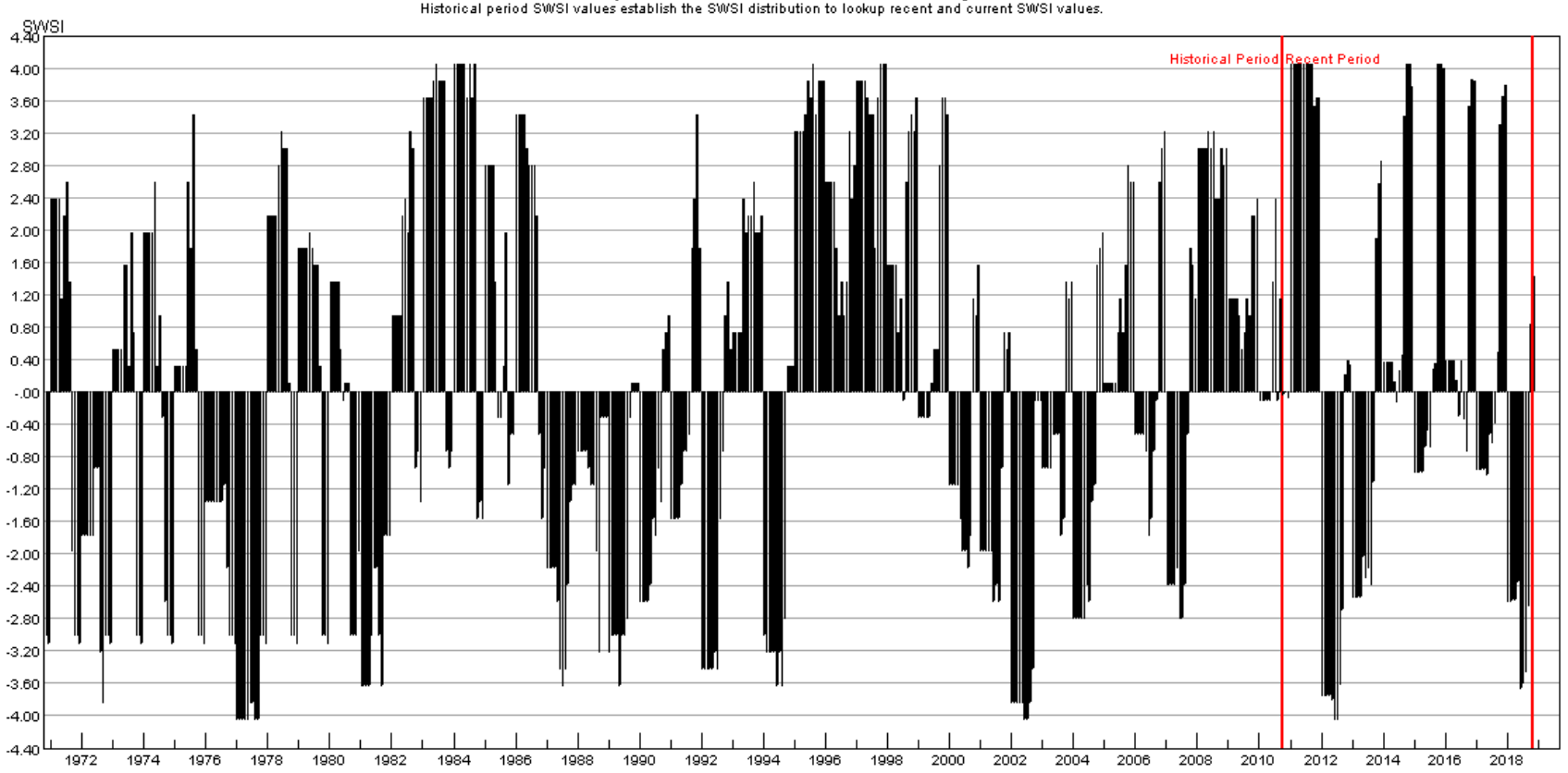
Boating at Steamboat Lake is now closed. Winter camping with electrical outlets is available on a first-come/first-serve basis in the Marina parking lot. Camper cabins are open and reservable year-round by calling 970-879-7019. Sunrise Vista is open and the road into Dutch Hill towards the Marina and Swim Beach areas is also open. The Dutch Hill Campground areas are closed for the season and Sage Flats is closed for construction. Check the park conditions website for the fishing report. No fire restrictions are in place at Steamboat Lake. Ice is beginning to form in the coves and along the shore of the lake.

There is no longer any fire restrictions in Moffat, Rio Blanco, Routt or Jackson counties.



# Yampa-White Basin SWSI History

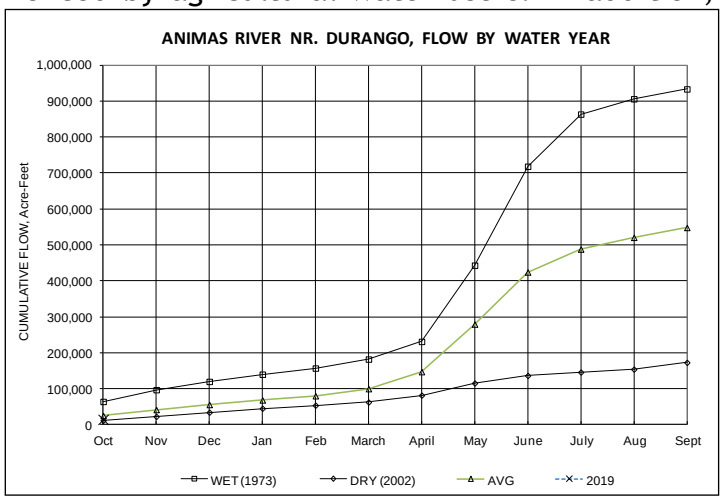
Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.



## Basinwide Conditions Assessment

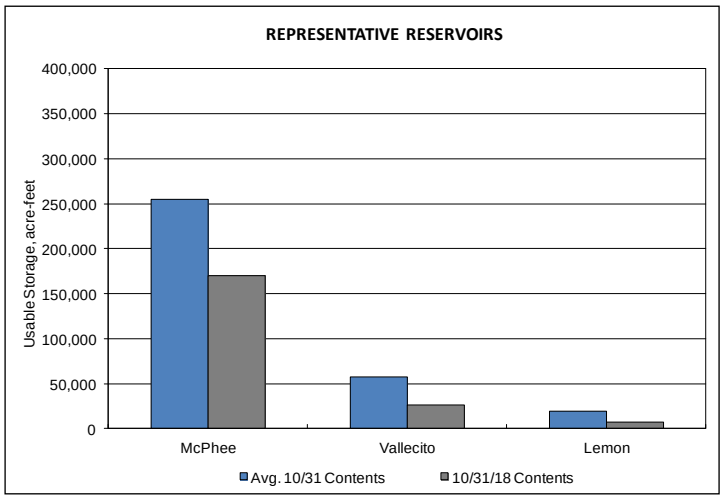
The SWSI value for the month was -0.9.

Flow at the Animas River at Durango averaged 236 cfs (57% of average). The flow at the Dolores River at Dolores average is 74 cfs (56% of average). The La Plata River at Hesperus averaged 12.1 cfs (78% of average). Precipitation in Durango was 3.83 inches for the month, 210% of the 30-year average of 1.82 inches. Precipitation to date in Durango, for the water year, is 3.83 inches, 210% of the 30-year average of 1.82 inches. End of last month precipitation to date, for the water year was 39% of average. The average high and low temperatures for the month of October in Durango were 63° and 37°. In comparison, the 30-year average high and low for the month is 66° and 34°. At the end of the month Vallecito Reservoir contained 26,801 acre-feet compared to its average content of 53,287 acre-feet (50% of average). McPhee Reservoir was up to 169,720 acre-feet compared to its average content of 262,639 (65% of average), while Lemon Reservoir was up to 7,318 acre-feet as compared to its average content of 19,266 acre-feet (38% of average). As with all SWSI calculations, the NEP and SWSI values for the Upper Dolores are based on a comparison of water volumes available for water supply back to 1970. Although conditions in the Upper Dolores are comparable to 2002 and 2012, since McPhee Reservoir was not constructed until the 1980's, the earlier years of record do not have any water attributed to McPhee, resulting in an October 1 SWSI closer to normal (-0.68) than what is being experienced by agricultural water users. In addition, the water in McPhee Reservoir below the active pool of 151,000 acre-feet is not available to irrigation users but only to the relatively minor demands for municipal, industrial, and fish and wildlife uses.



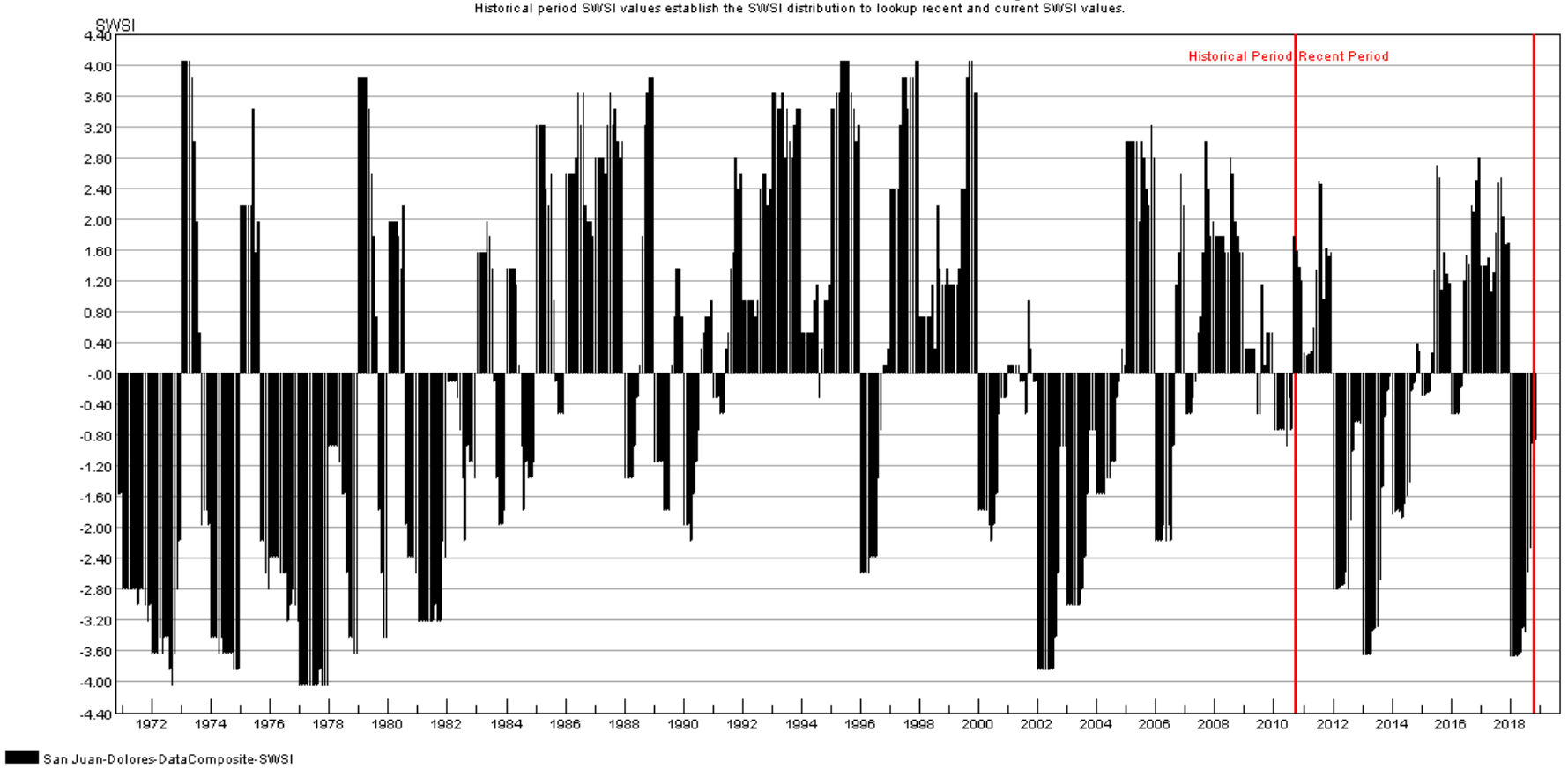

## Outlook

Precipitation (3.83 inches) was well above average for October in Durango. There were 19 years out of 124 years of record where there was more precipitation than this year. The flows in the rivers within the basin remained well below average for this time of year, but did increase when compared to the flow at the end of September. There are 88 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 76 out of 110 years of record where the total flow past the Dolores stream gauge was more than this year and 38 out of 102 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year. On October 31, the NRCS SNOTEL sites reported an average snow-water-equivalent within the basin at 242%.



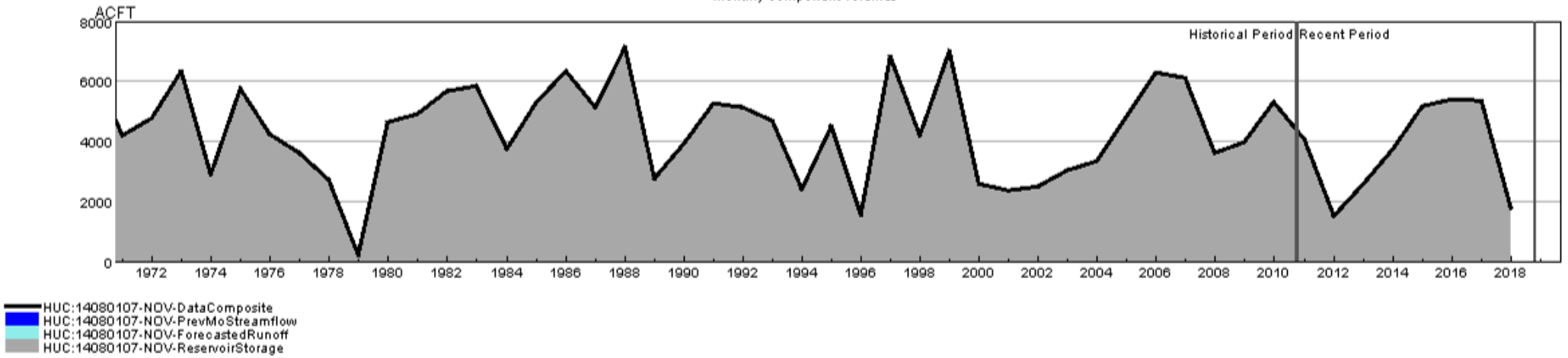
# San Juan-Dolores Basin SWSI History

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



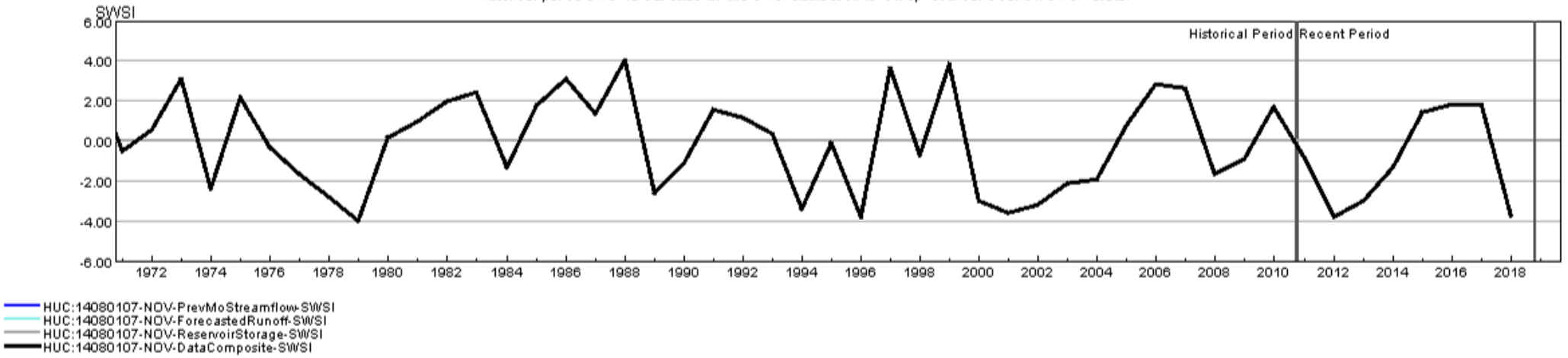
## HUC 14080107 (Mancos) Surface Water Supply - NOV

Monthly component volumes



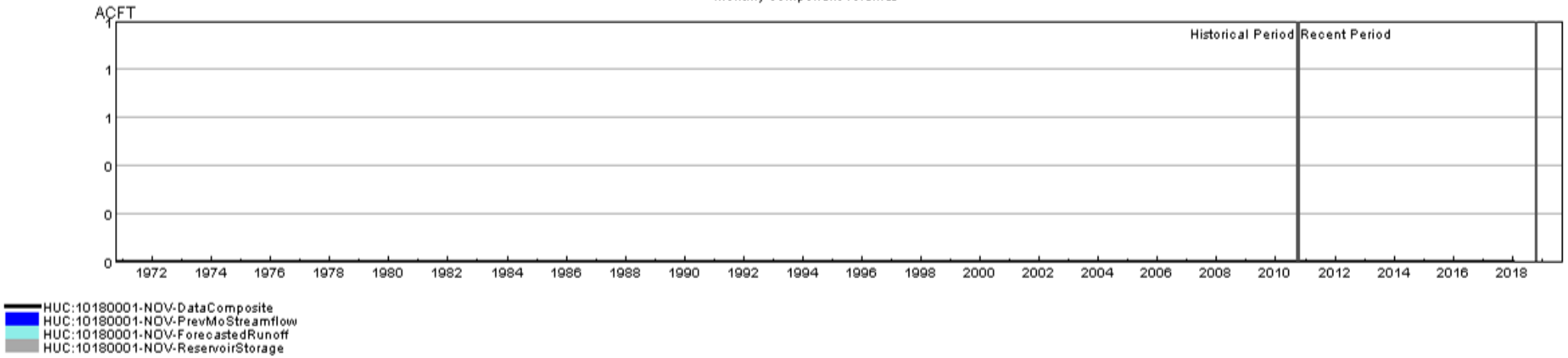

## HUC 14080107 (Mancos) SWSI Values - NOV

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



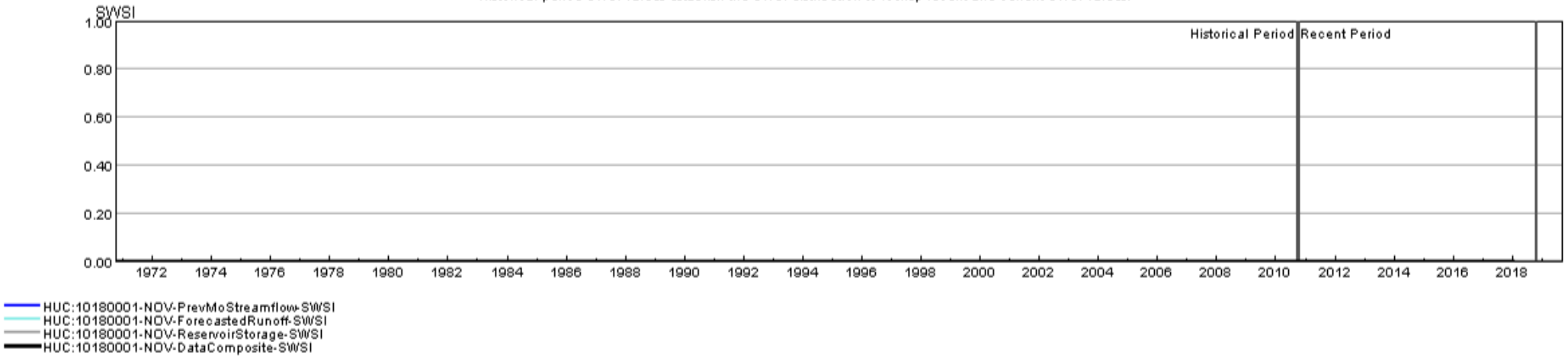
## HUC 10180001 (North Platte Headwaters) Surface Water Supply - NOV

Monthly component volumes



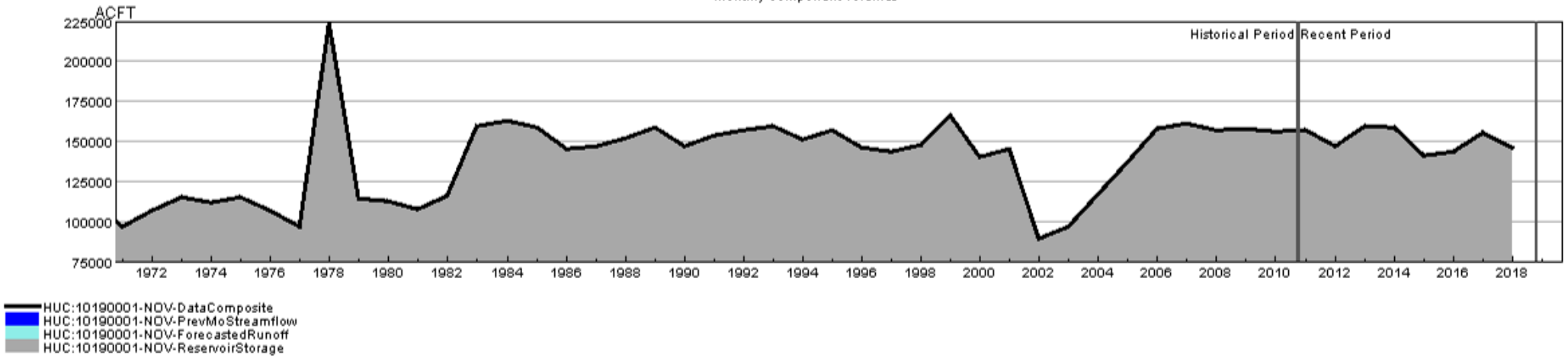

## HUC 10180001 (North Platte Headwaters) SWSI Values - NOV

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



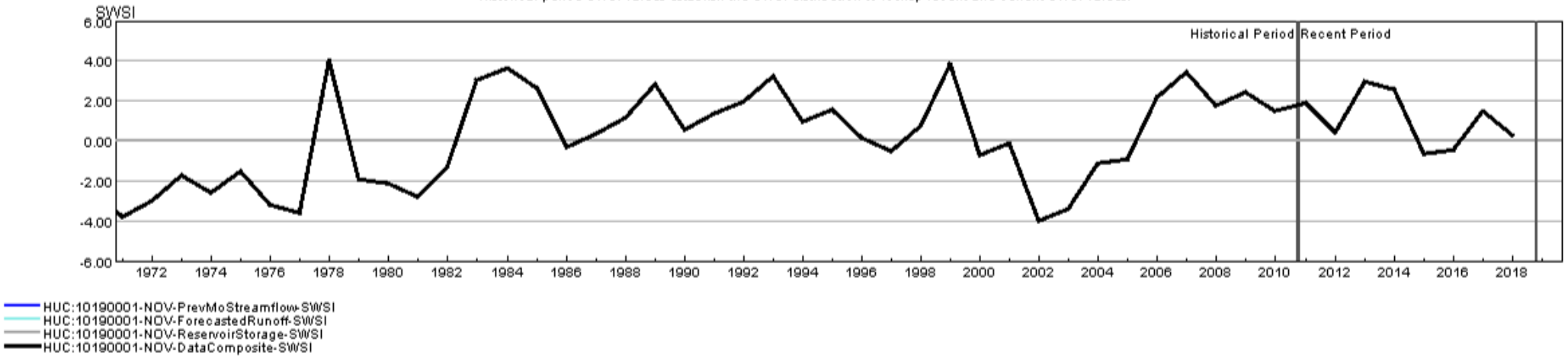
## HUC 10190001 (South Platte Headwater) Surface Water Supply - NOV

Monthly component volumes



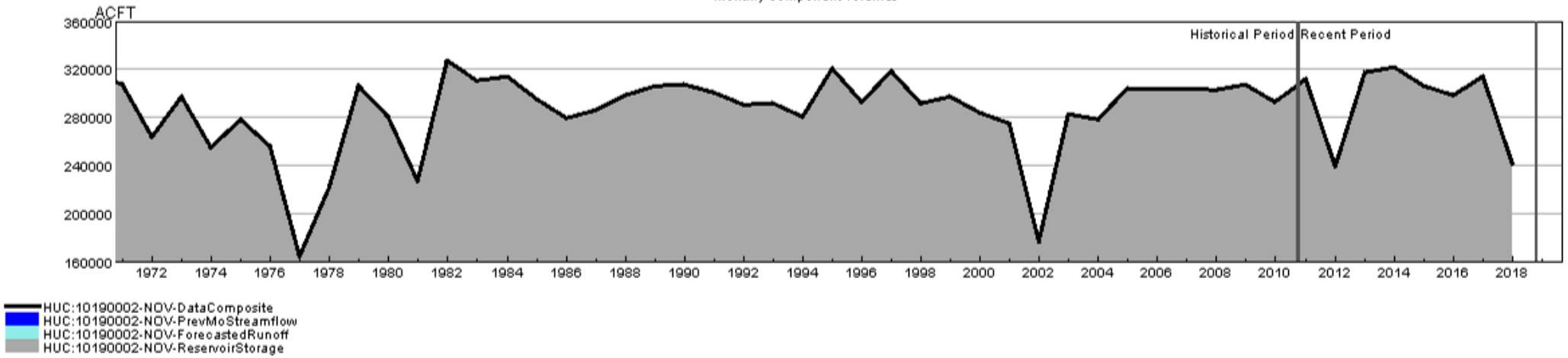

## HUC 10190001 (South Platte Headwater) SWSI Values - NOV

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



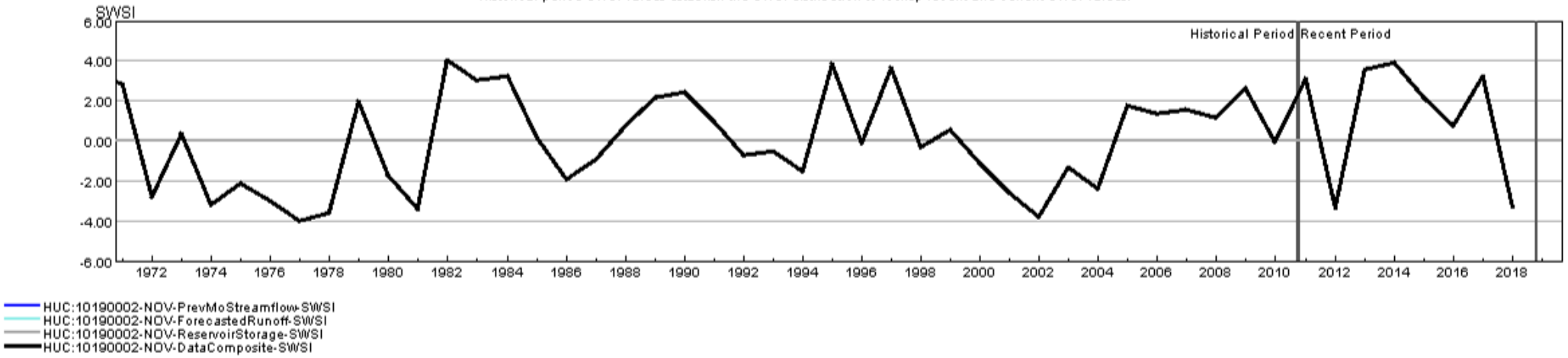
## HUC 10190002 (Upper South Platte) Surface Water Supply - NOV

Monthly component volumes



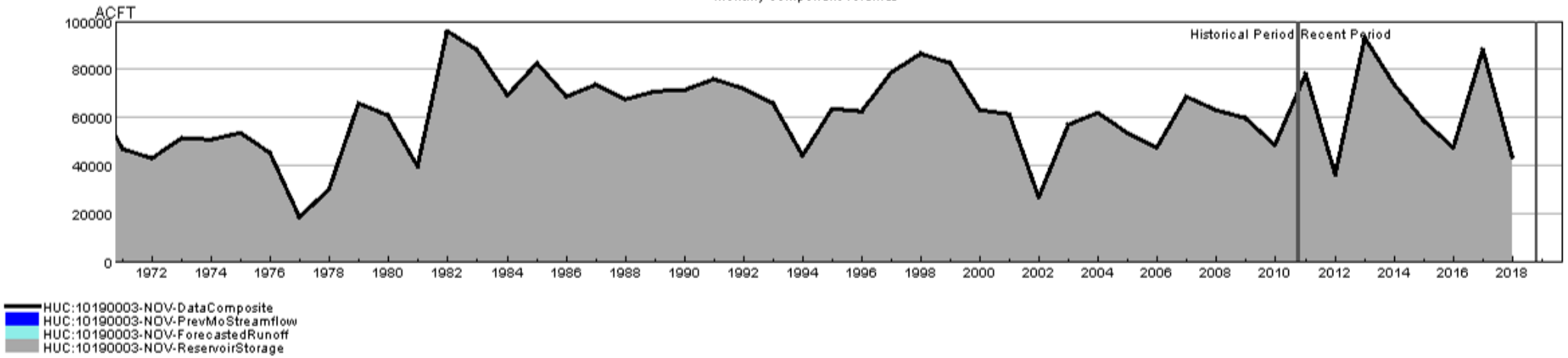

## HUC 10190002 (Upper South Platte) SWSI Values - NOV

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



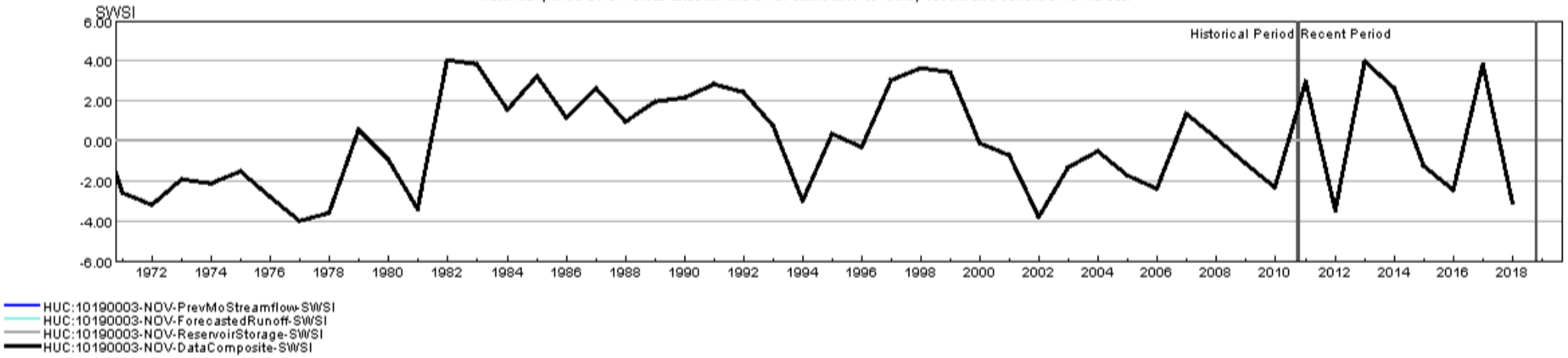
## HUC 10190003 (Middle South Platte-Cherry Creek) Surface Water Supply - NOV

Monthly component volumes



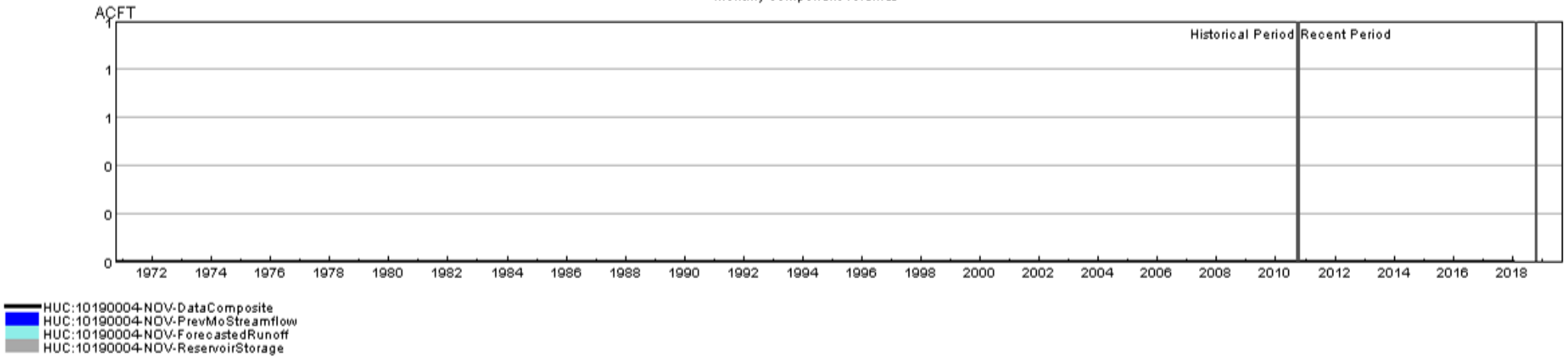

## HUC 10190003 (Middle South Platte-Cherry Creek) SWSI Values - NOV

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



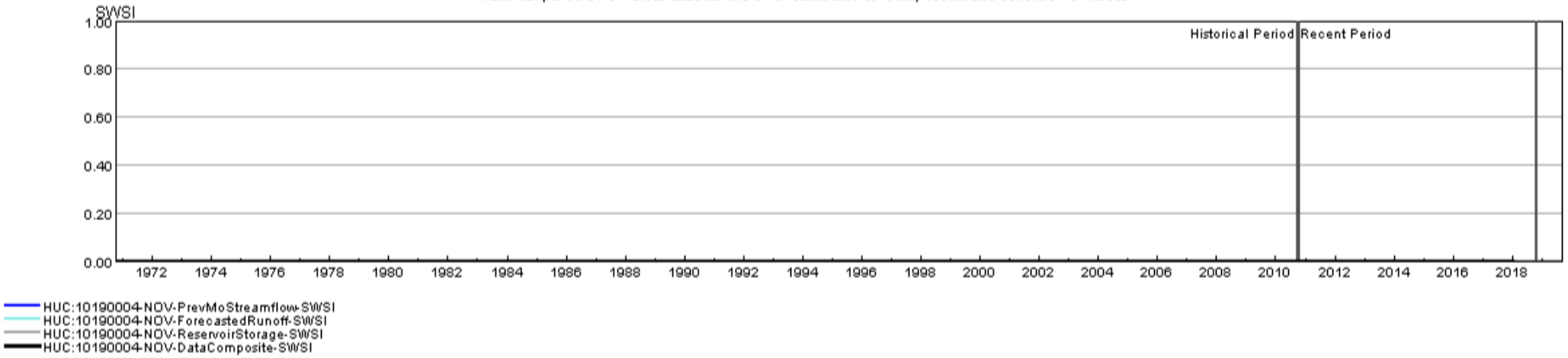
# HUC 10190004 (Clear) Surface Water Supply - NOV

Monthly component volumes



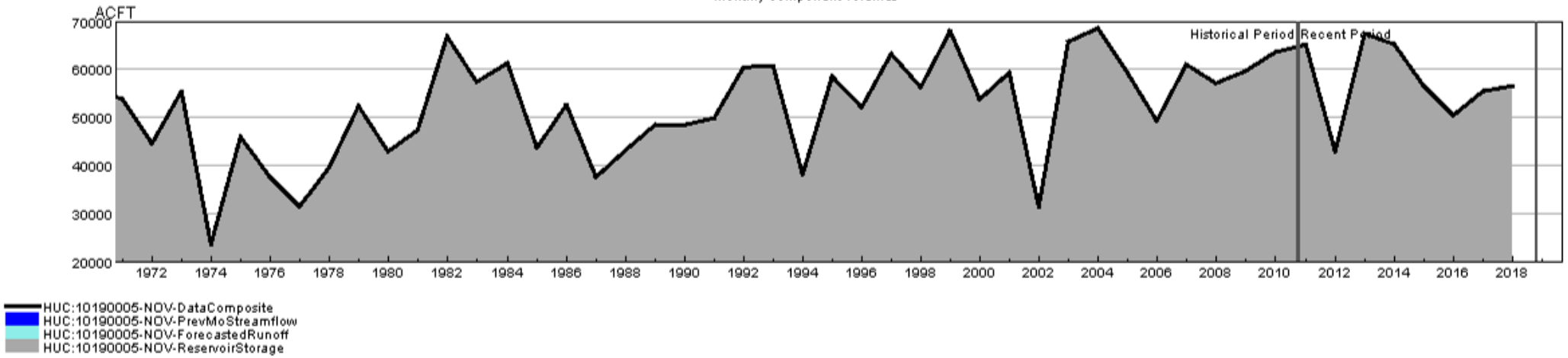

# HUC 10190004 (Clear) SWSI Values - NOV

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



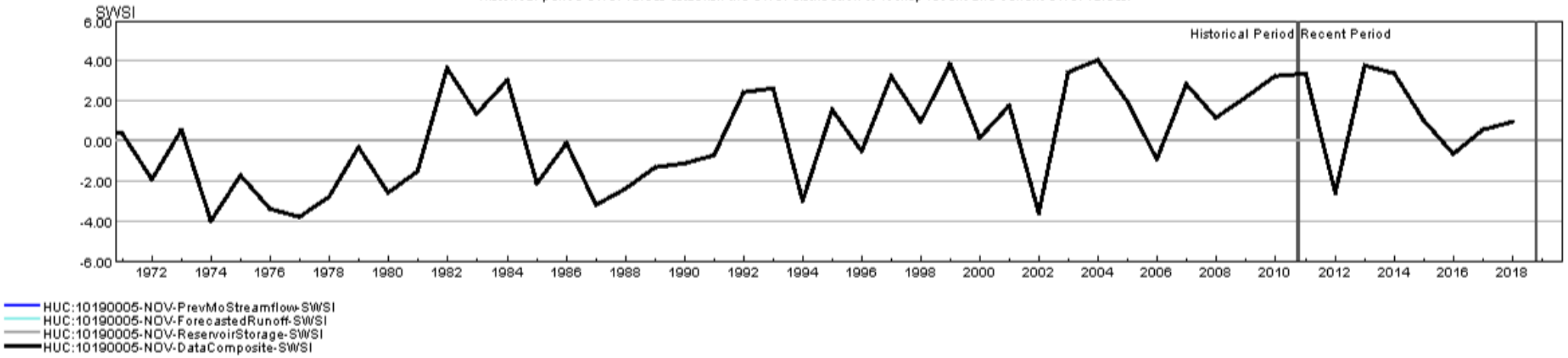
## HUC 10190005 (St. Vrain) Surface Water Supply - NOV

Monthly component volumes



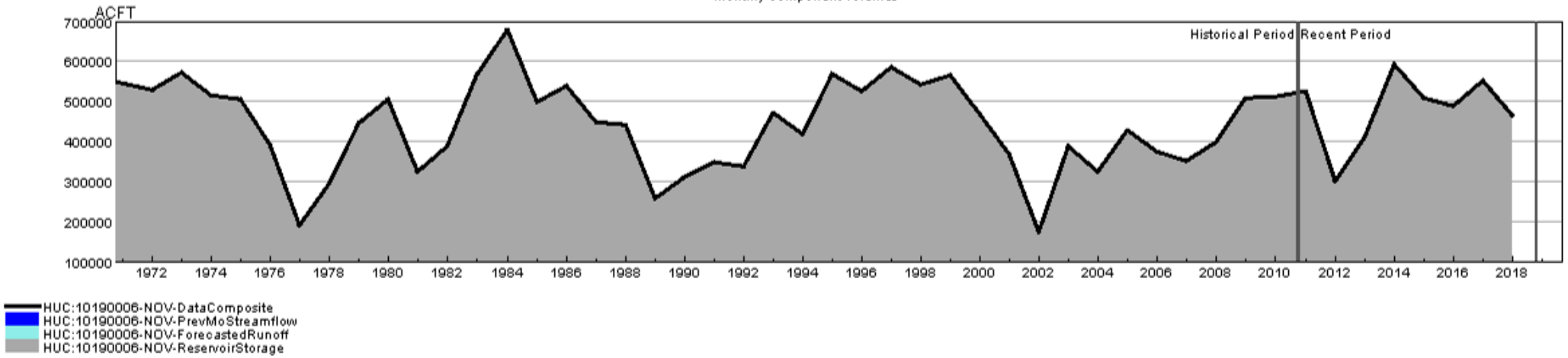

## HUC 10190005 (St. Vrain) SWSI Values - NOV

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



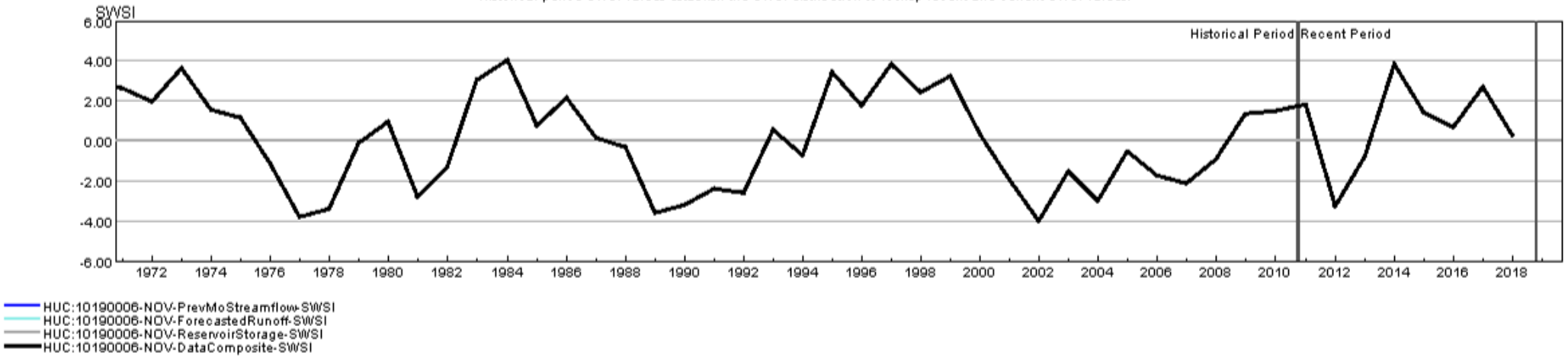
## HUC 10190006 (Big Thompson) Surface Water Supply - NOV

Monthly component volumes



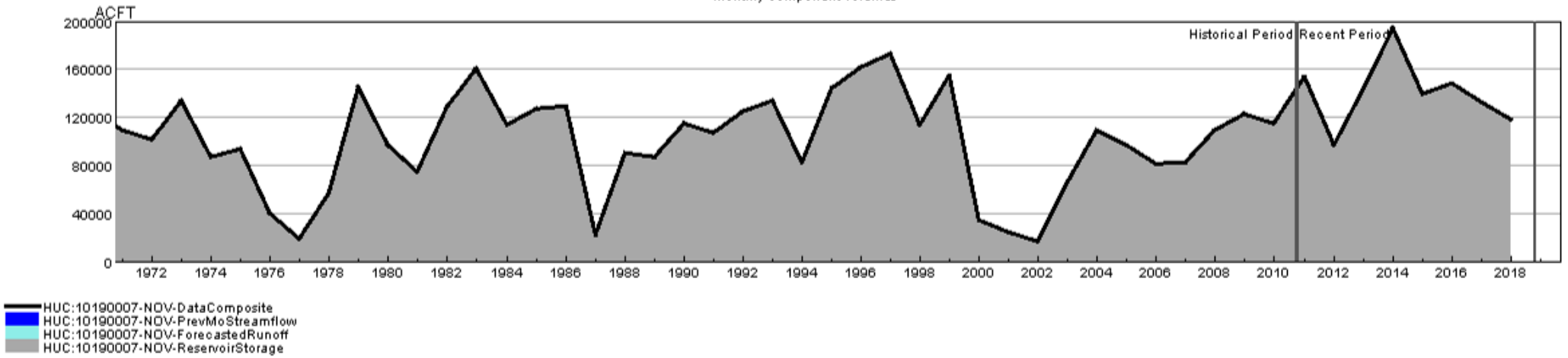

## HUC 10190006 (Big Thompson) SWSI Values - NOV

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



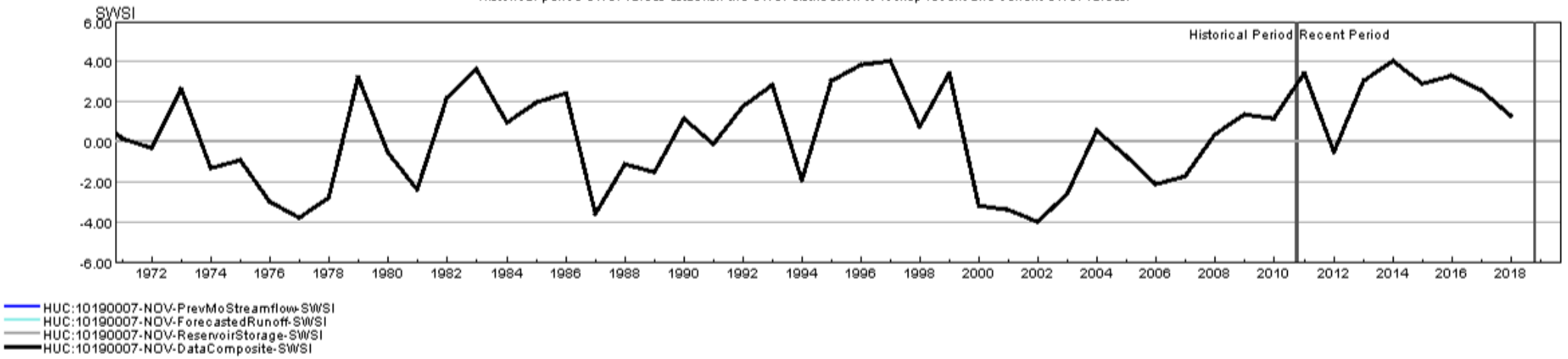
## HUC 10190007 (Cache La Poudre) Surface Water Supply - NOV

Monthly component volumes



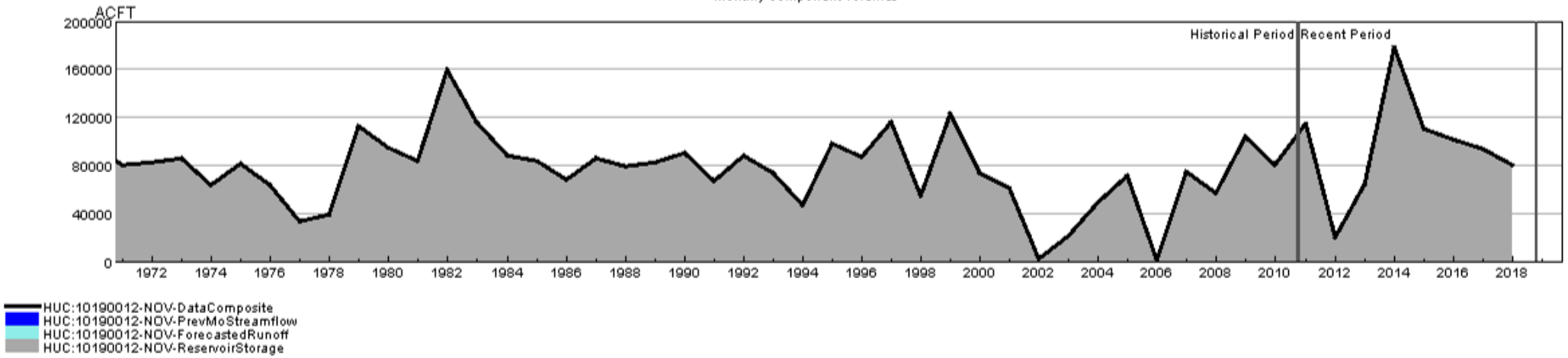

## HUC 10190007 (Cache La Poudre) SWSI Values - NOV

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



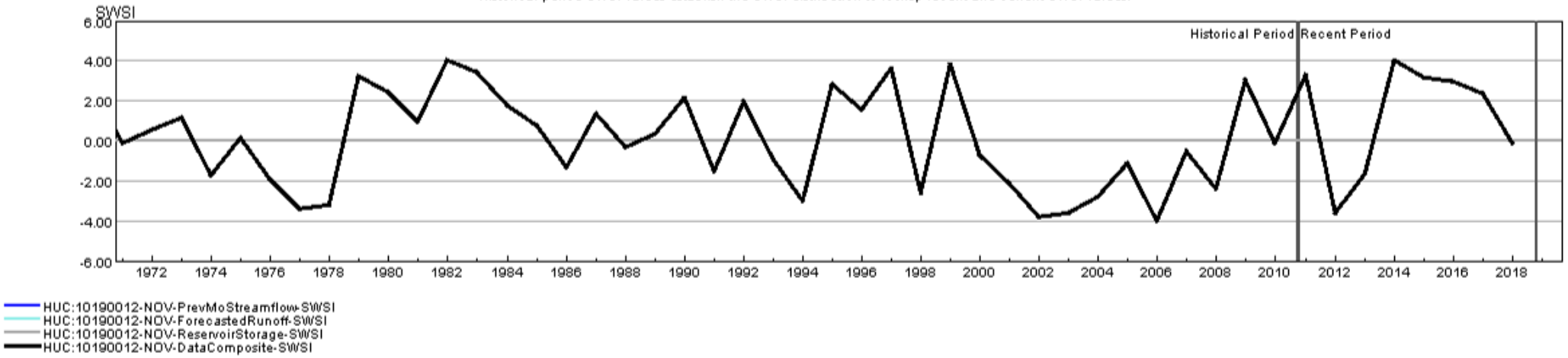
## HUC 10190012 (Middle South Platte-Sterling) Surface Water Supply - NOV

Monthly component volumes



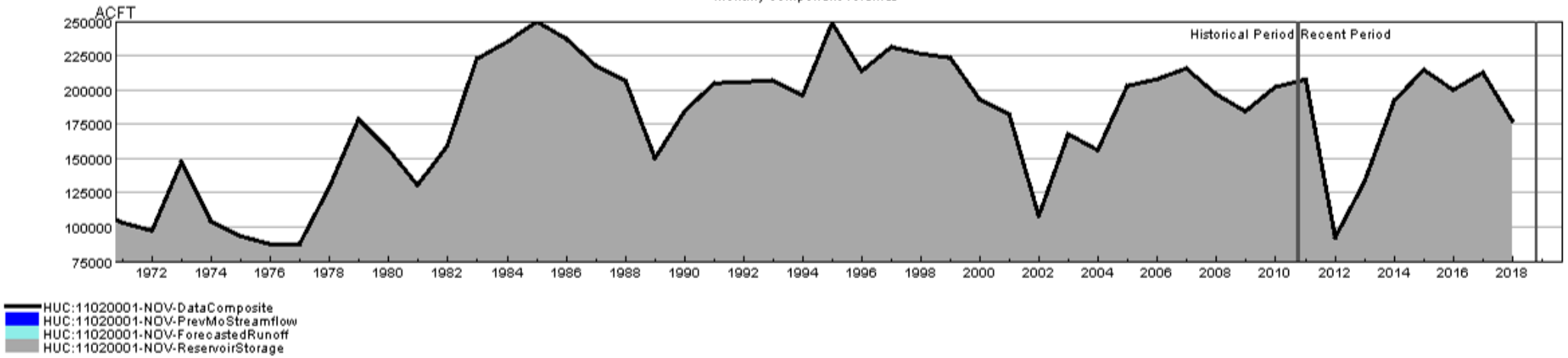

## HUC 10190012 (Middle South Platte-Sterling) SWSI Values - NOV

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



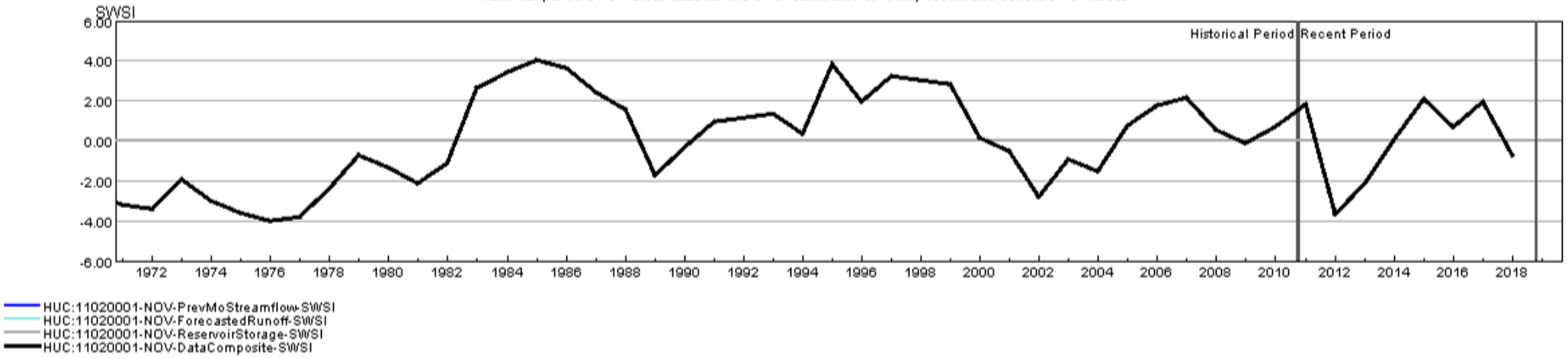
## HUC 11020001 (Arkansas Headwaters) Surface Water Supply - NOV

Monthly component volumes



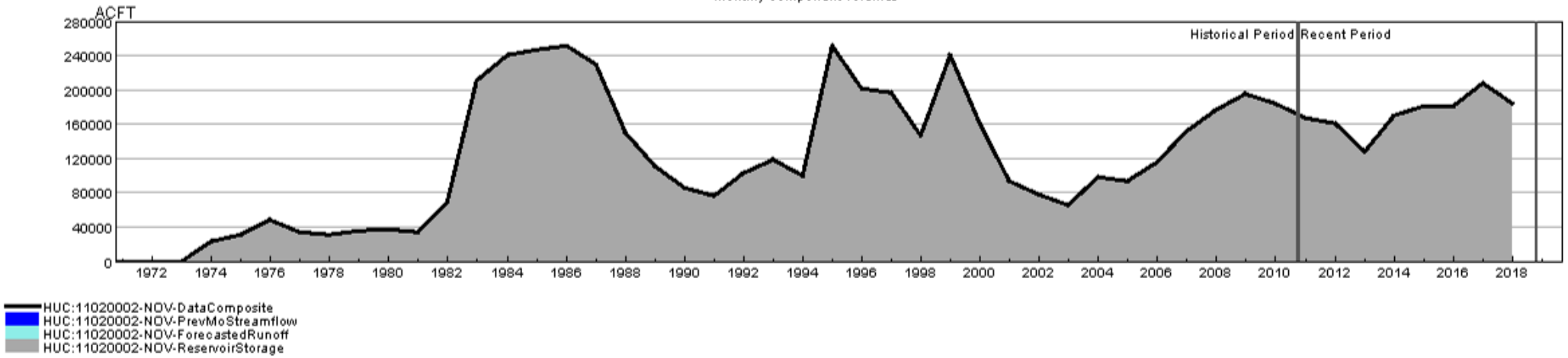

## HUC 11020001 (Arkansas Headwaters) SWSI Values - NOV

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



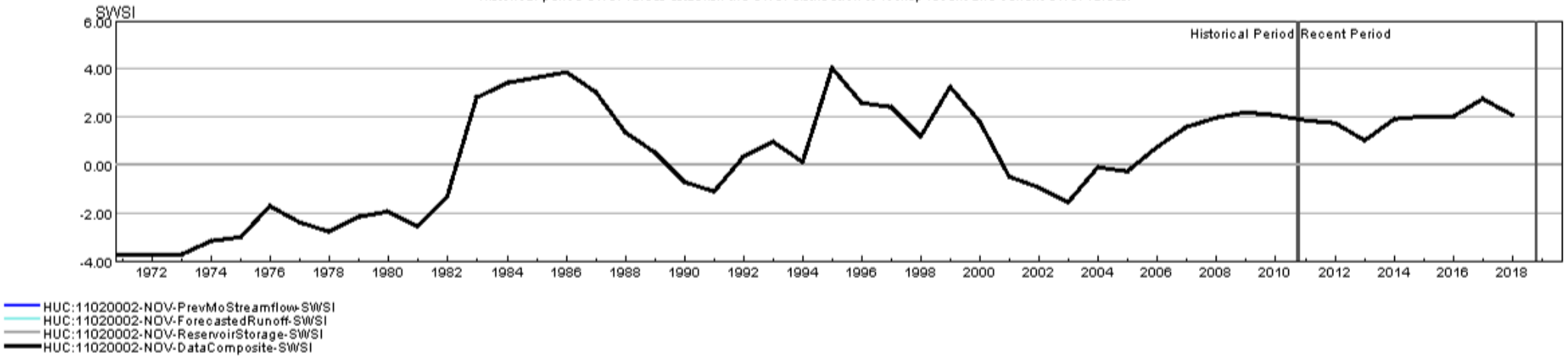
## HUC 11020002 (Upper Arkansas) Surface Water Supply - NOV

Monthly component volumes



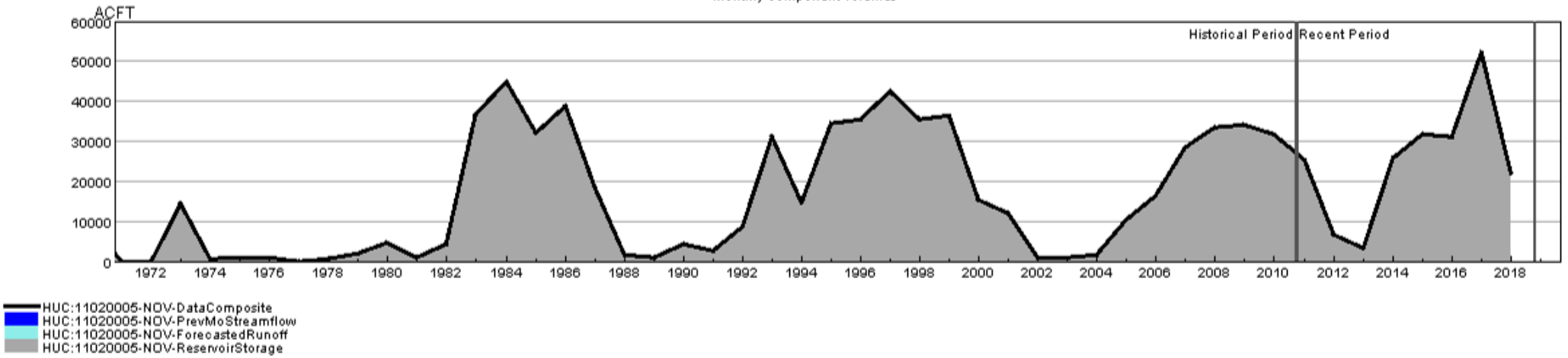

## HUC 11020002 (Upper Arkansas) SWSI Values - NOV

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



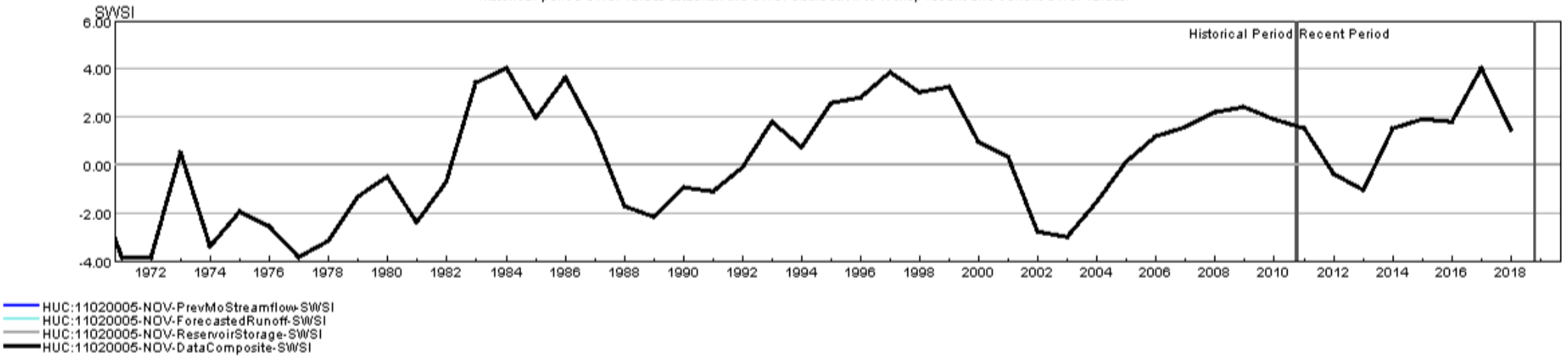
## HUC 11020005 (Upper Arkansas-Lake Meredith) Surface Water Supply - NOV

Monthly component volumes



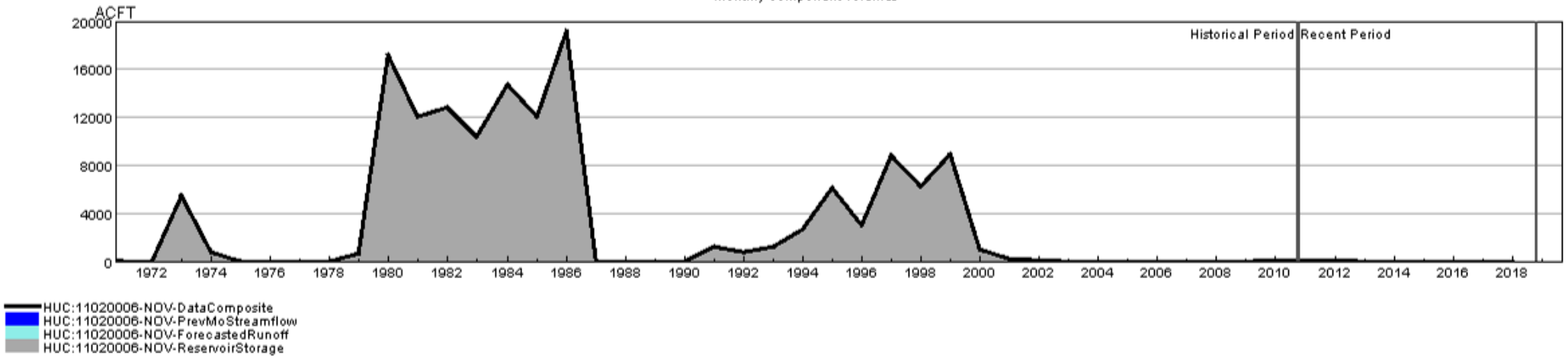

## HUC 11020005 (Upper Arkansas-Lake Meredith) SWSI Values - NOV

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



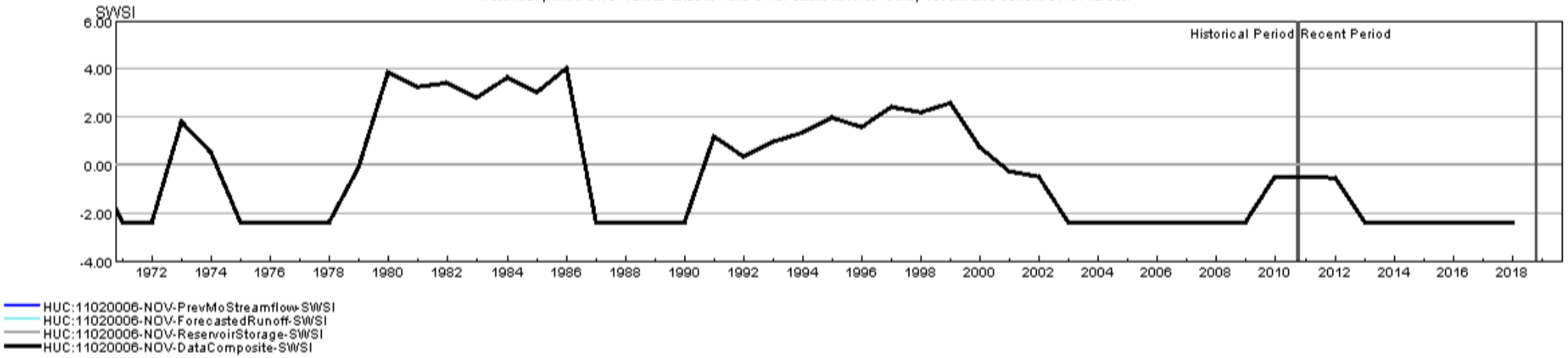
## HUC 11020006 (Huerfano) Surface Water Supply - NOV

Monthly component volumes



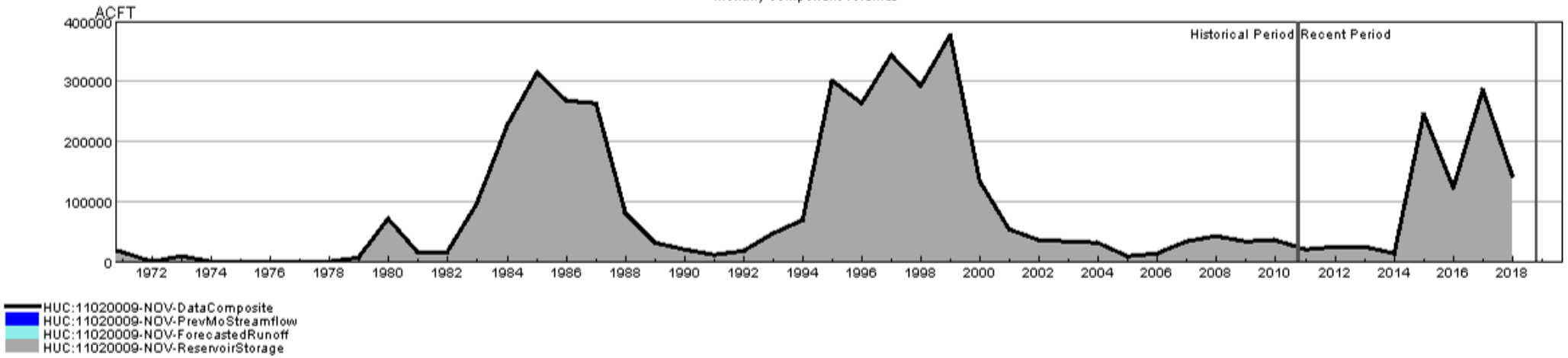

## HUC 11020006 (Huerfano) SWSI Values - NOV

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



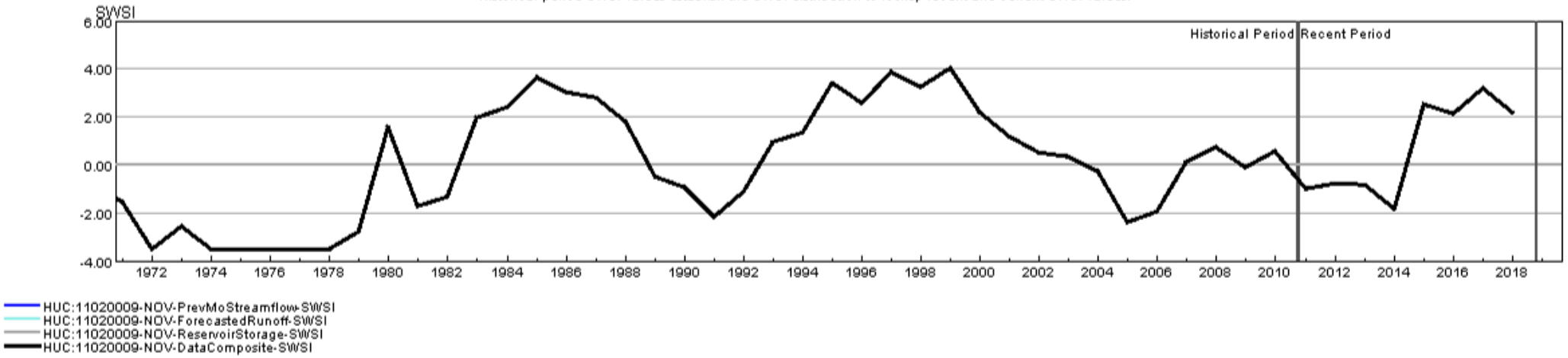
## HUC 11020009 (Upper Arkansas-John Martin Reservoir) Surface Water Supply - NOV

Monthly component volumes



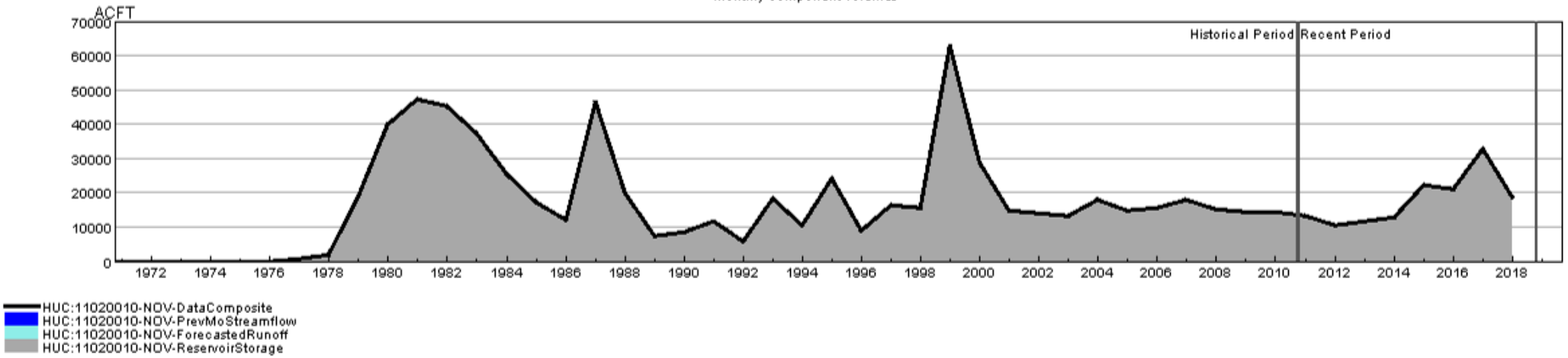

## HUC 11020009 (Upper Arkansas-John Martin Reservoir) SWSI Values - NOV

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



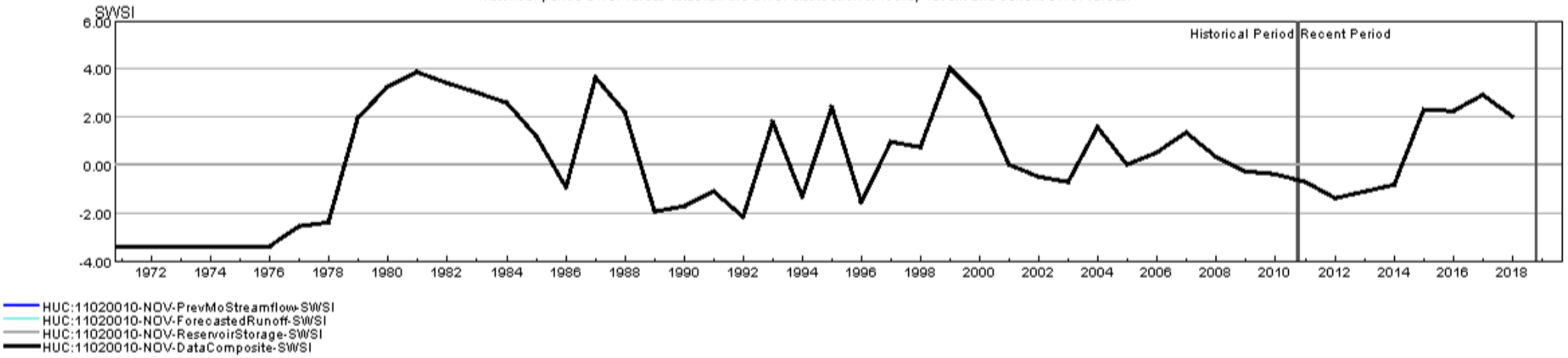
## HUC 11020010 (Purgatoire) Surface Water Supply - NOV

Monthly component volumes



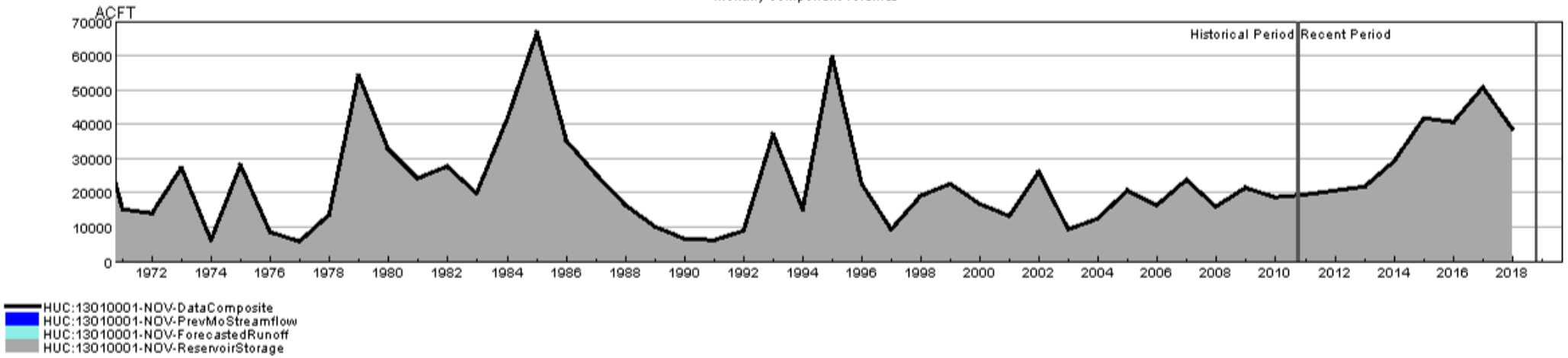

## HUC 11020010 (Purgatoire) SWSI Values - NOV

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



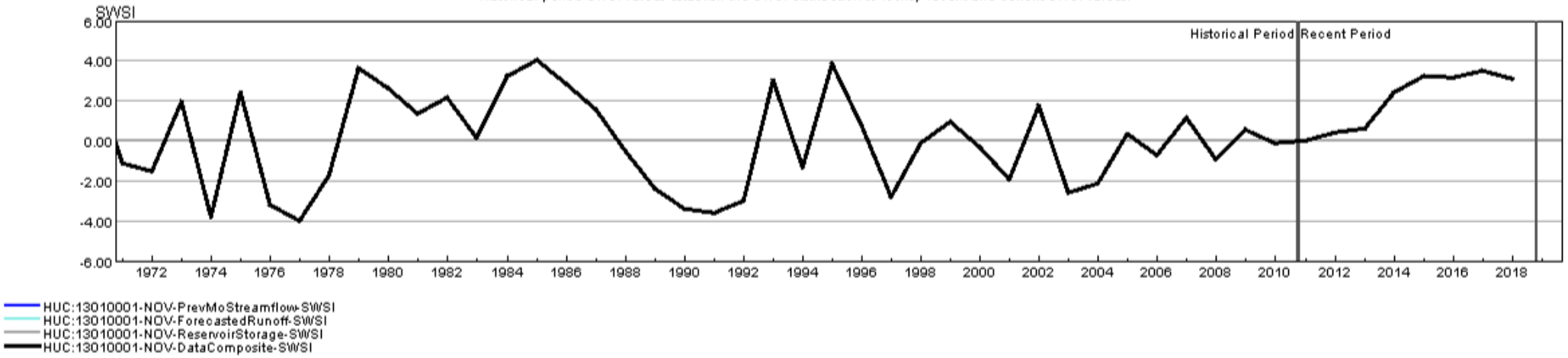
## HUC 13010001 (Rio Grande Headwaters) Surface Water Supply - NOV

Monthly component volumes



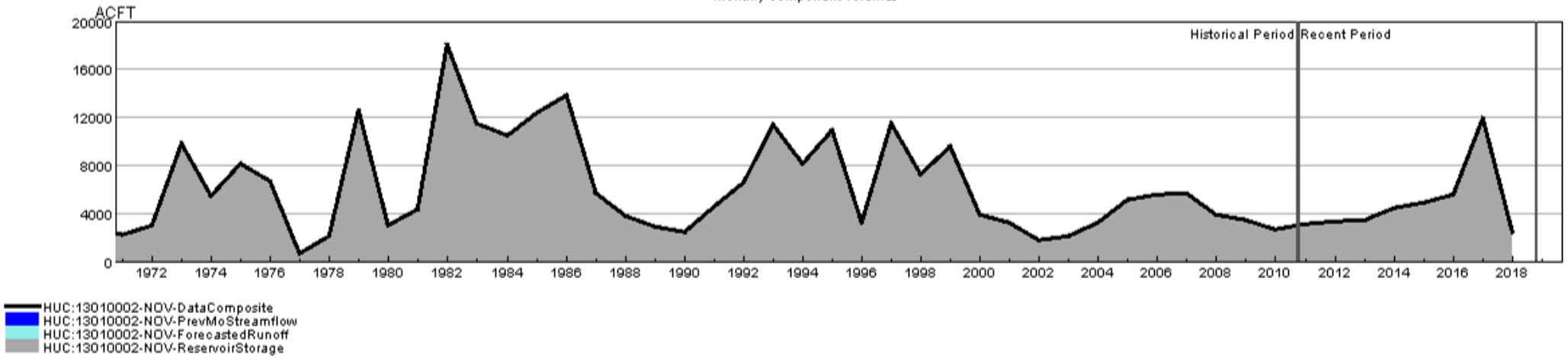

## HUC 13010001 (Rio Grande Headwaters) SWSI Values - NOV

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



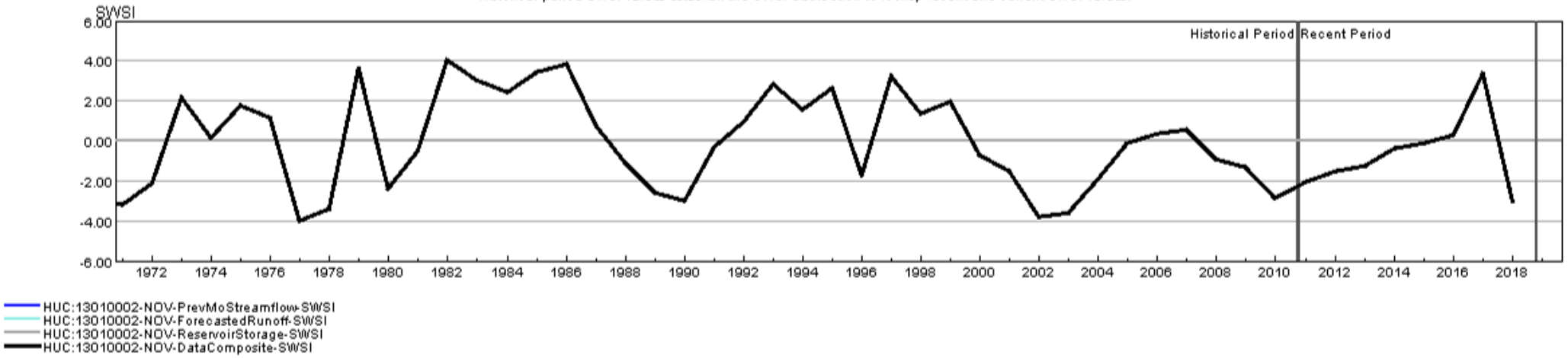
## HUC 13010002 (Alamosa-Trinchera) Surface Water Supply - NOV

Monthly component volumes



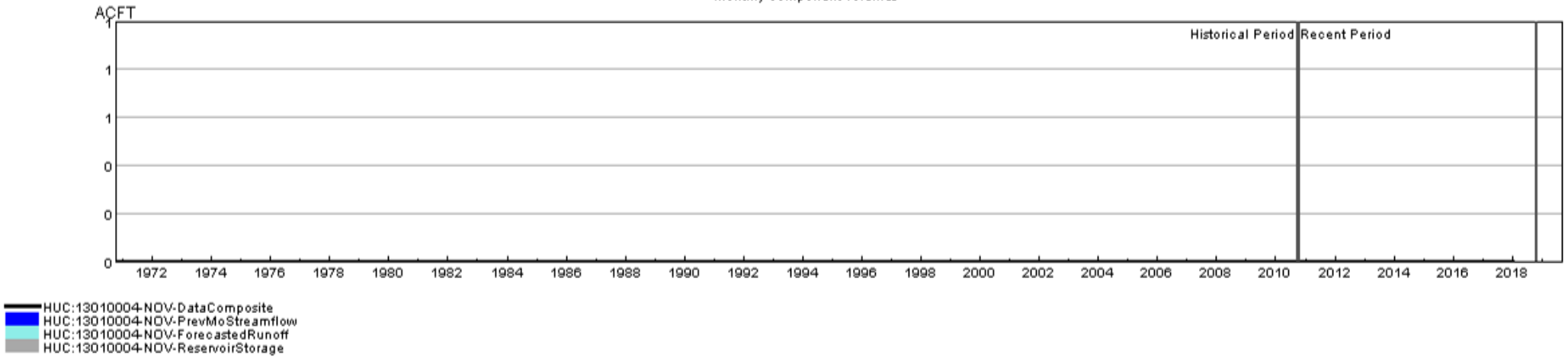

## HUC 13010002 (Alamosa-Trinchera) SWSI Values - NOV

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



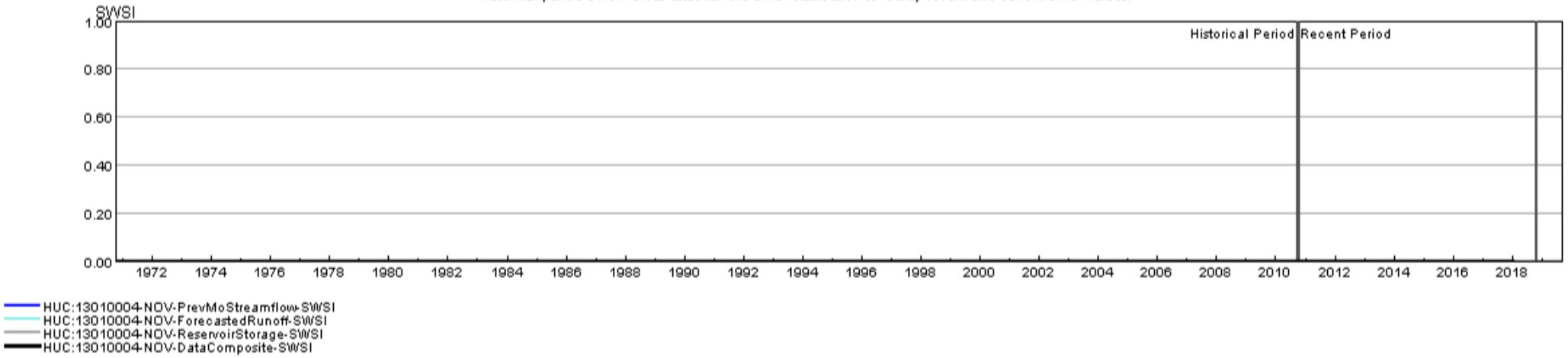
## HUC 13010004 (Saguache) Surface Water Supply - NOV

Monthly component volumes



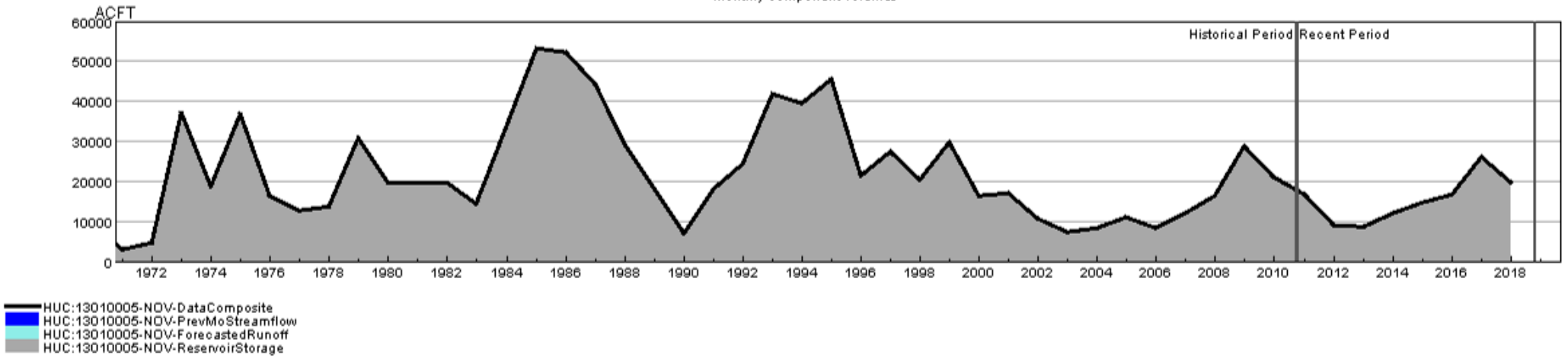

## HUC 13010004 (Saguache) SWSI Values - NOV

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



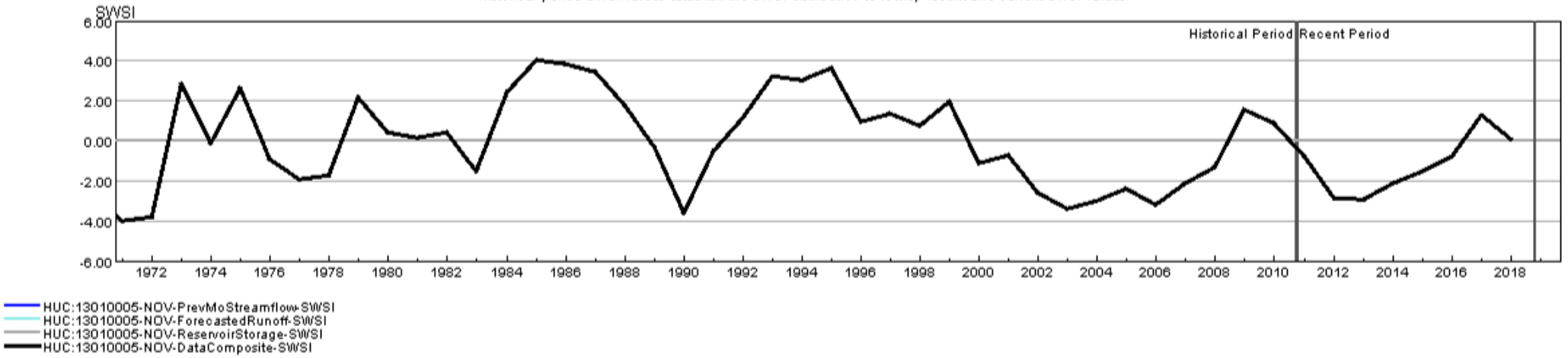
## HUC 13010005 (Conejos) Surface Water Supply - NOV

Monthly component volumes



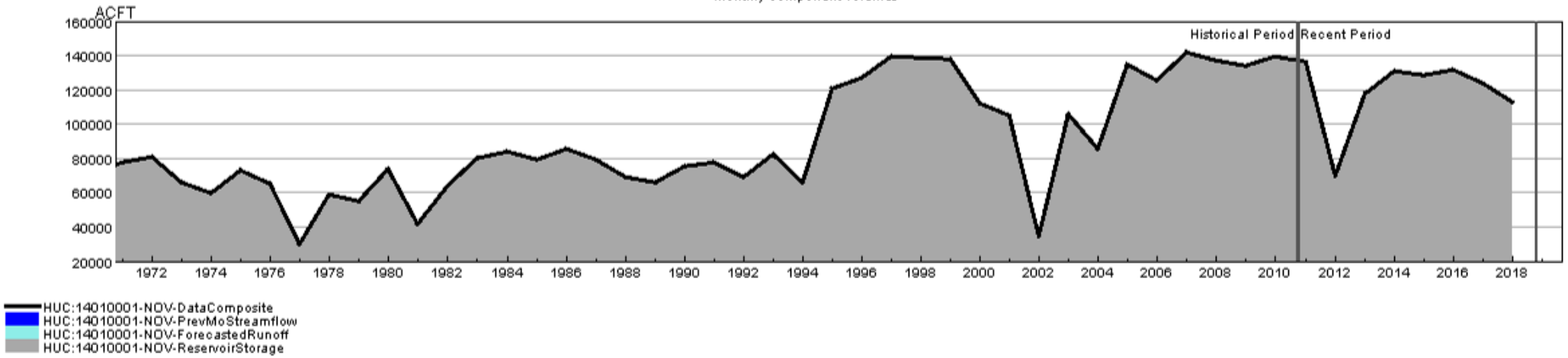

## HUC 13010005 (Conejos) SWSI Values - NOV

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



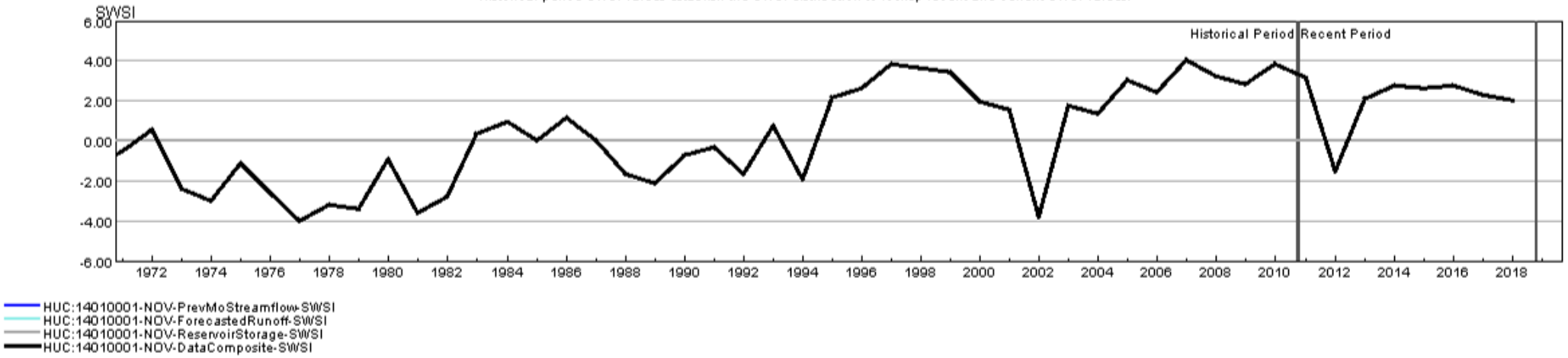
## HUC 14010001 (Colorado Headwaters) Surface Water Supply - NOV

Monthly component volumes



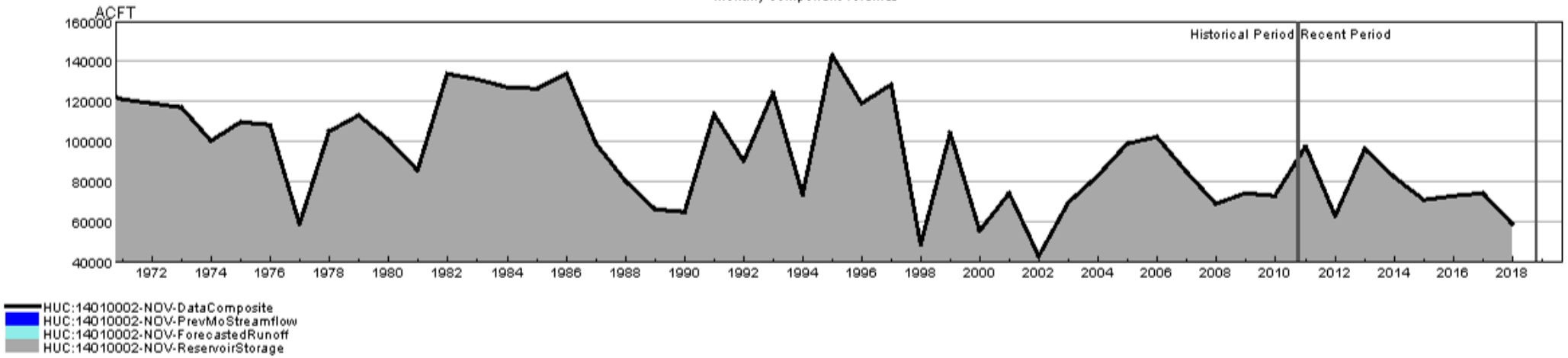

## HUC 14010001 (Colorado Headwaters) SWSI Values - NOV

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



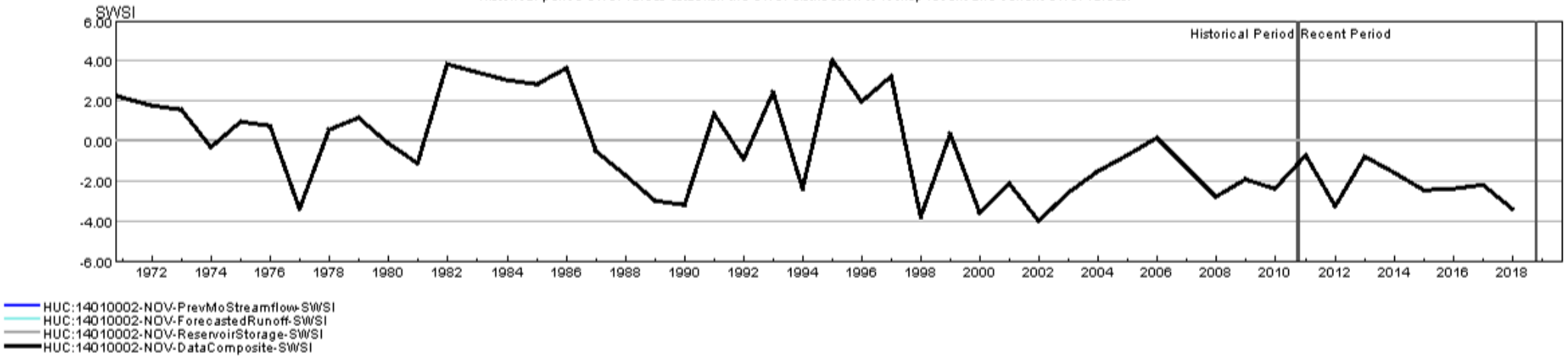
## HUC 14010002 (Blue) Surface Water Supply - NOV

Monthly component volumes



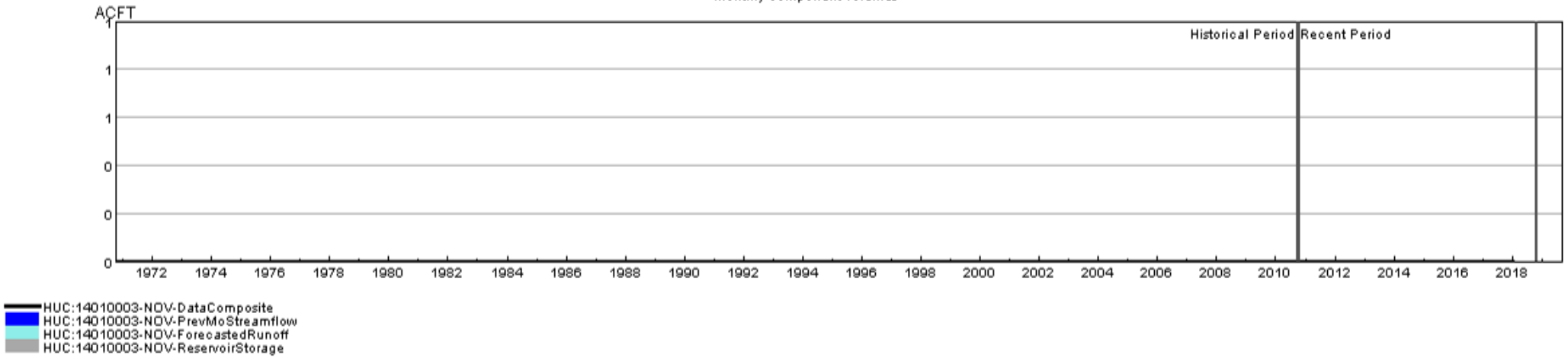

## HUC 14010002 (Blue) SWSI Values - NOV

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



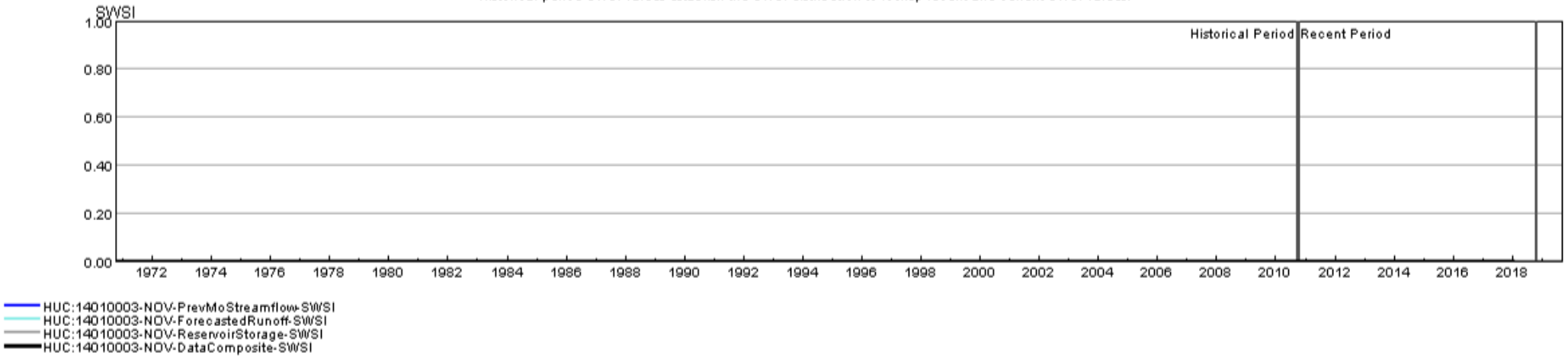
# HUC 14010003 (Eagle) Surface Water Supply - NOV

Monthly component volumes



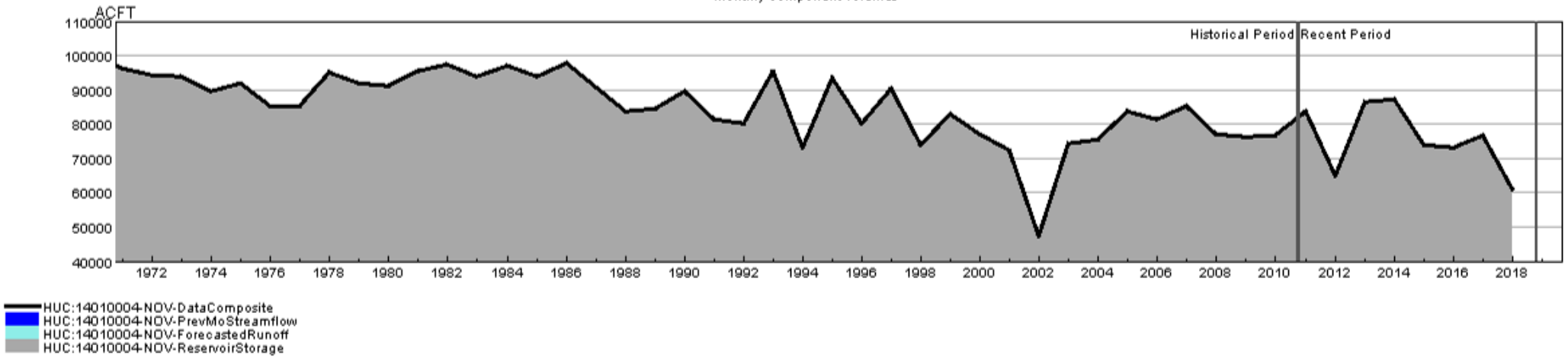

# HUC 14010003 (Eagle) SWSI Values - NOV

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



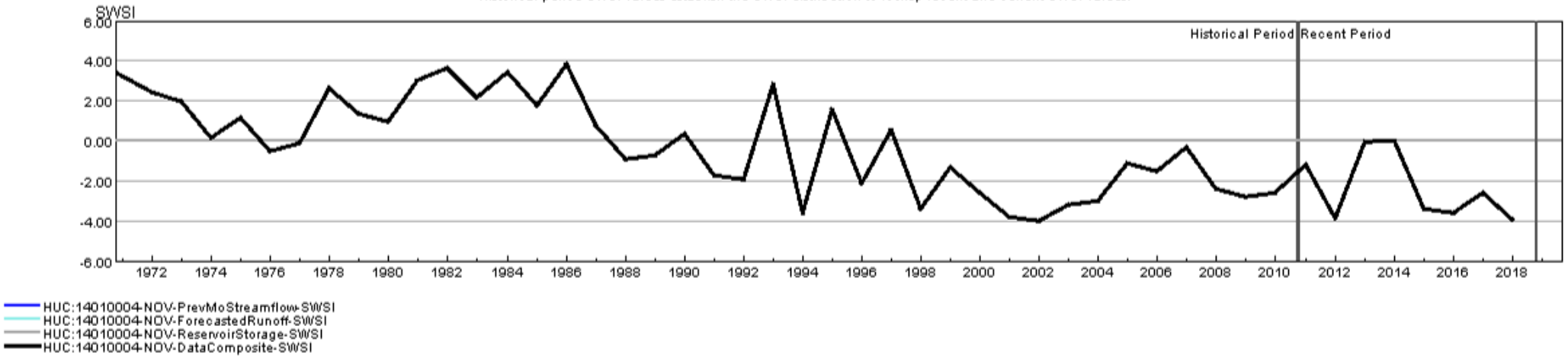
## HUC 14010004 (Roaring Fork) Surface Water Supply - NOV

Monthly component volumes



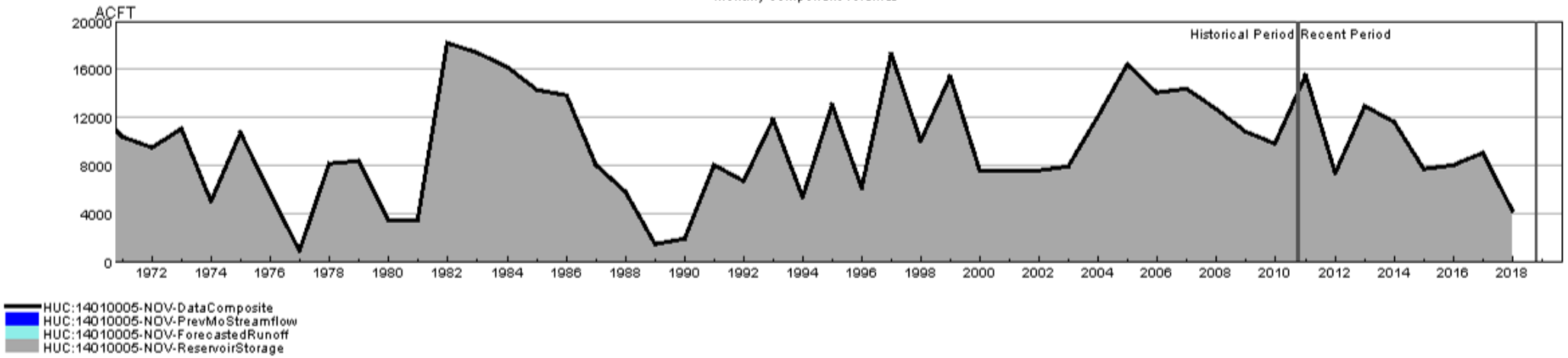

## HUC 14010004 (Roaring Fork) SWSI Values - NOV

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



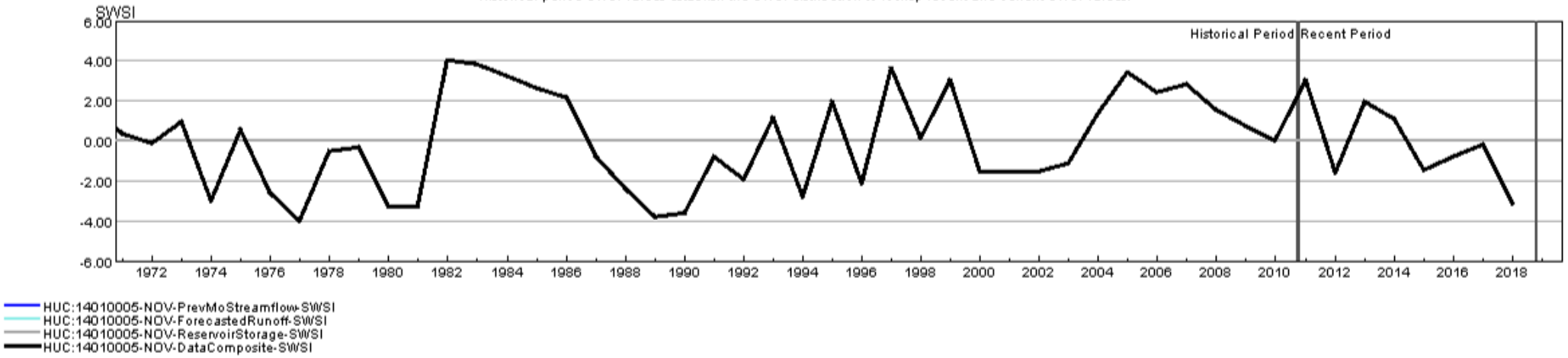
## HUC 14010005 (Colorado Headwaters-Plateau) Surface Water Supply - NOV

Monthly component volumes



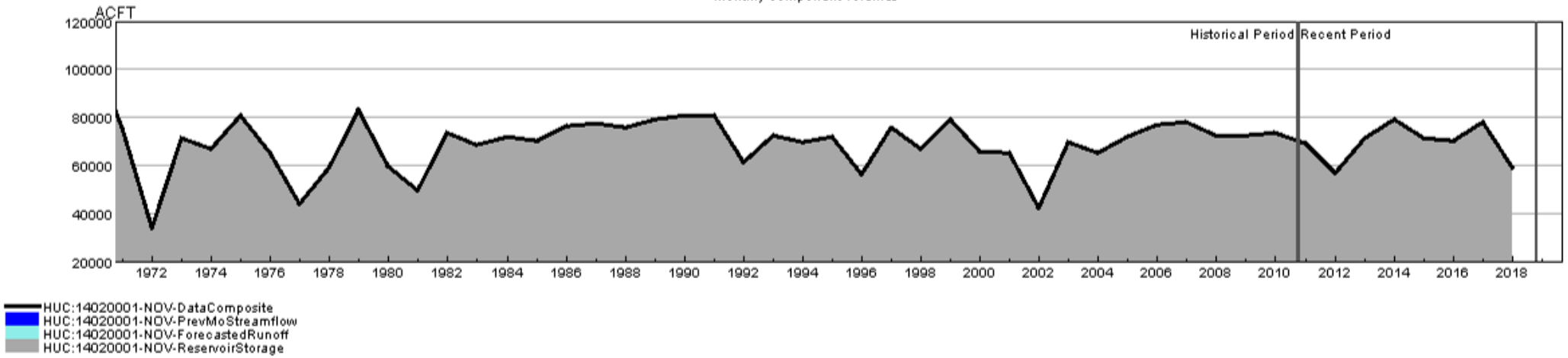

## HUC 14010005 (Colorado Headwaters-Plateau) SWSI Values - NOV

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



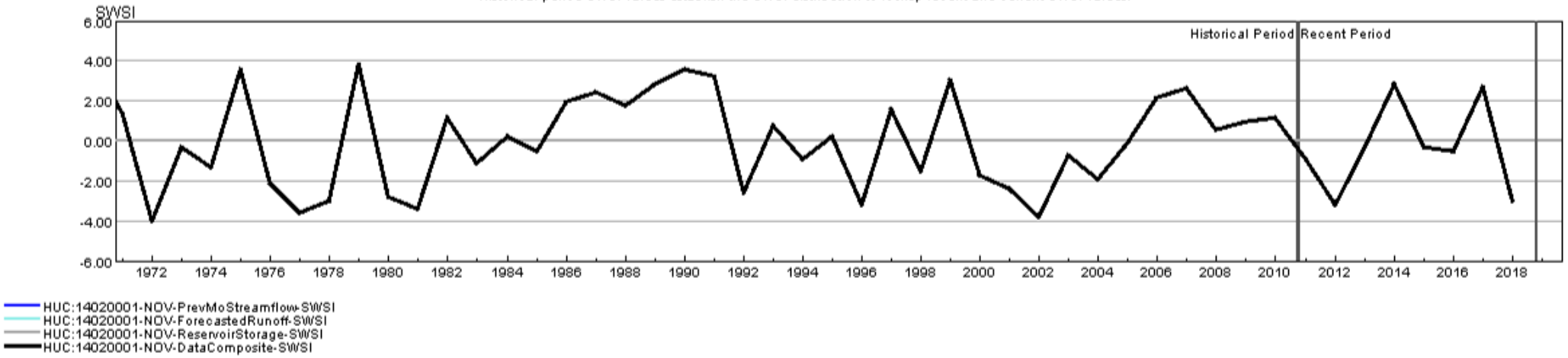
# HUC 14020001 (East-Taylor) Surface Water Supply - NOV

Monthly component volumes



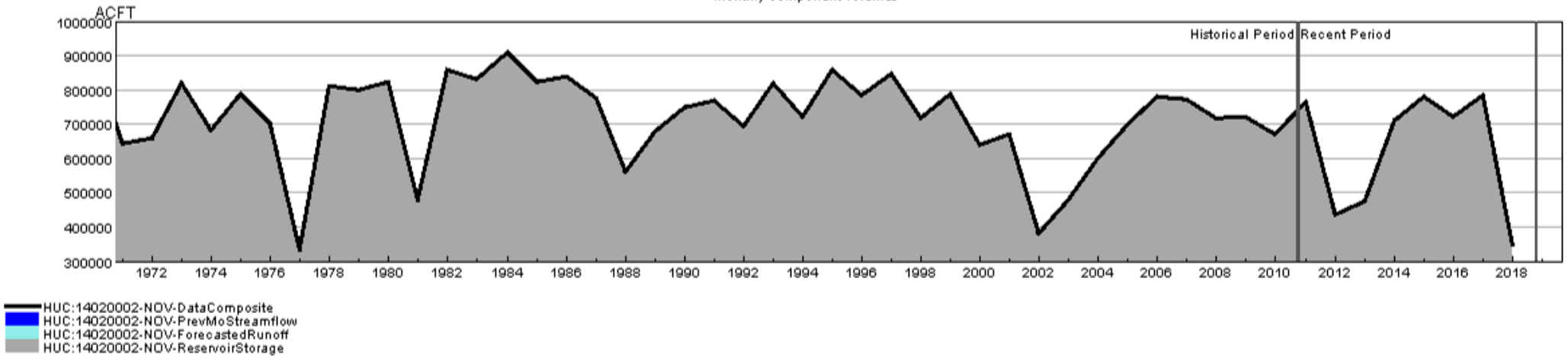

# HUC 14020001 (East-Taylor) SWSI Values - NOV

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



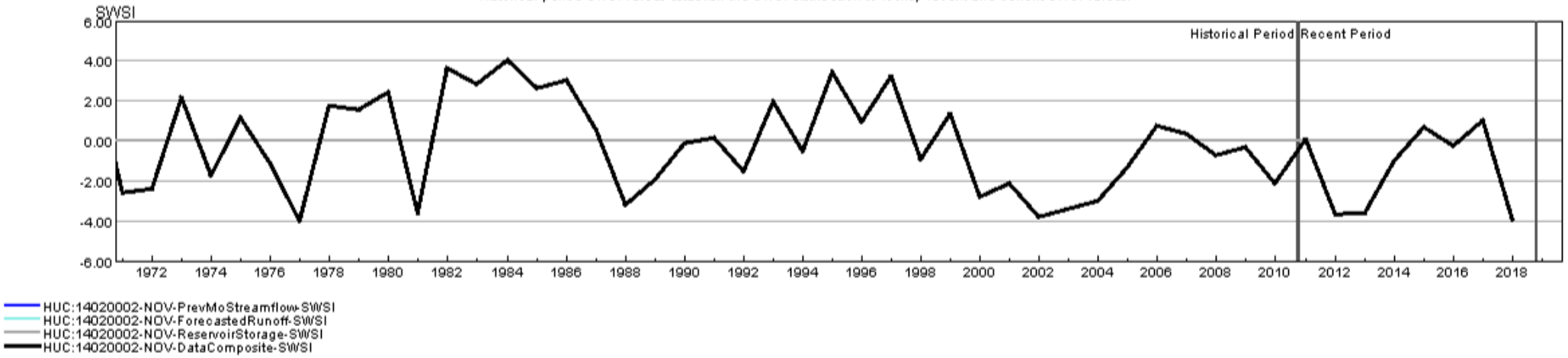
## HUC 14020002 (Upper Gunnison) Surface Water Supply - NOV

Monthly component volumes



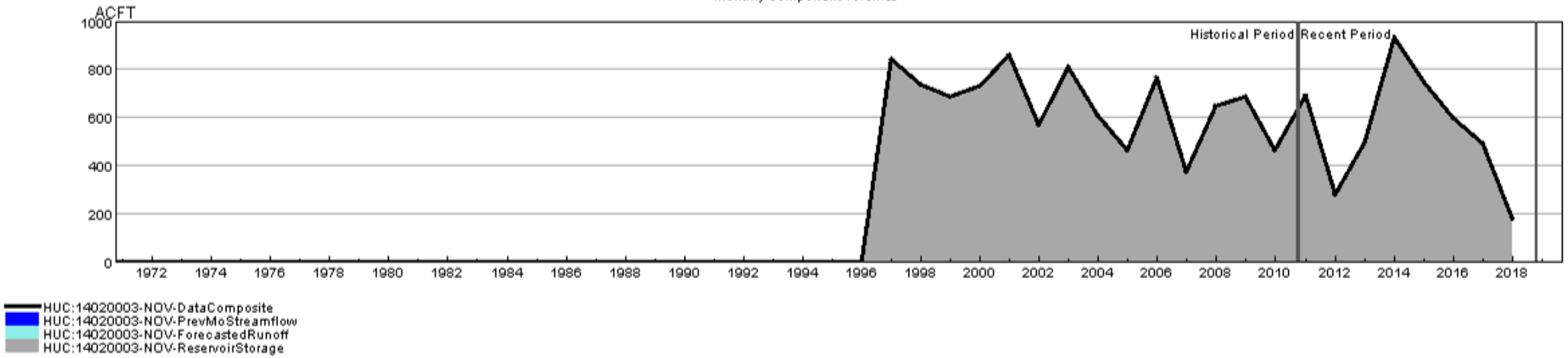

## HUC 14020002 (Upper Gunnison) SWSI Values - NOV

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



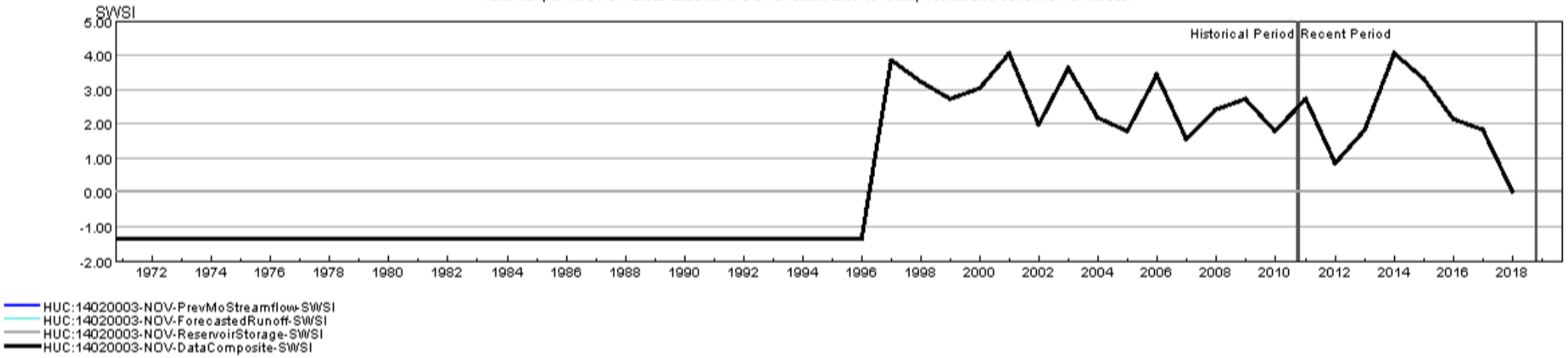
## HUC 14020003 (Tomichi) Surface Water Supply - NOV

Monthly component volumes



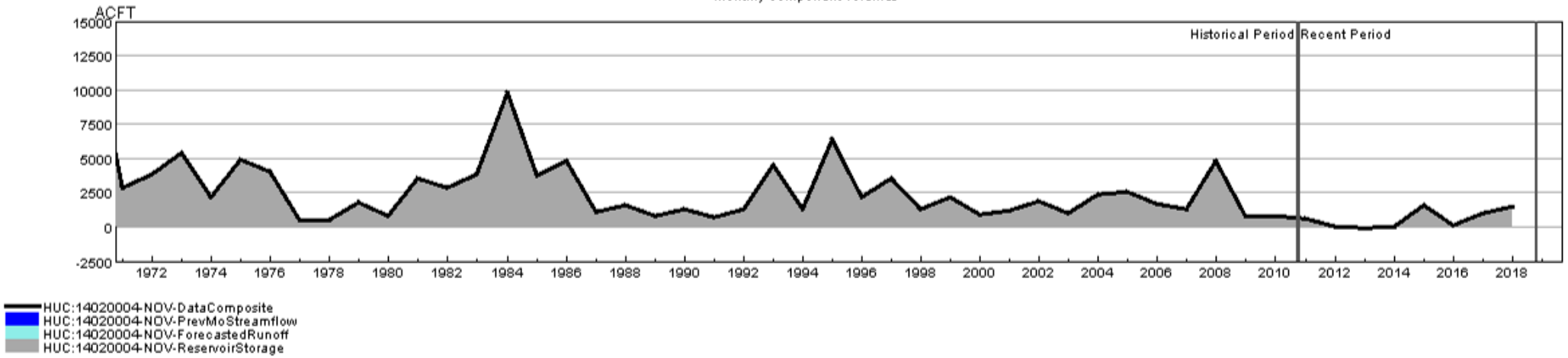

## HUC 14020003 (Tomichi) SWSI Values - NOV

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



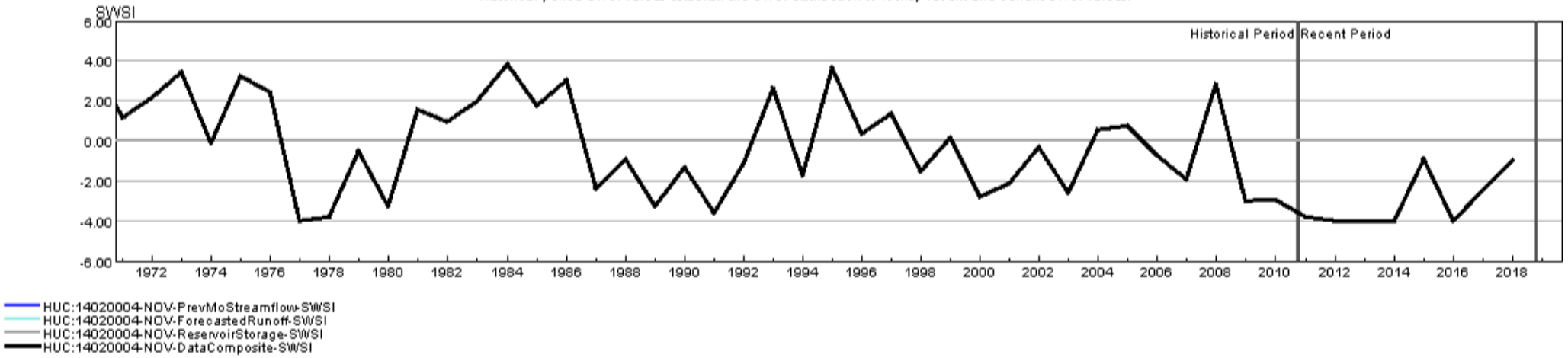
## HUC 14020004 (North Fork Gunnison) Surface Water Supply - NOV

Monthly component volumes



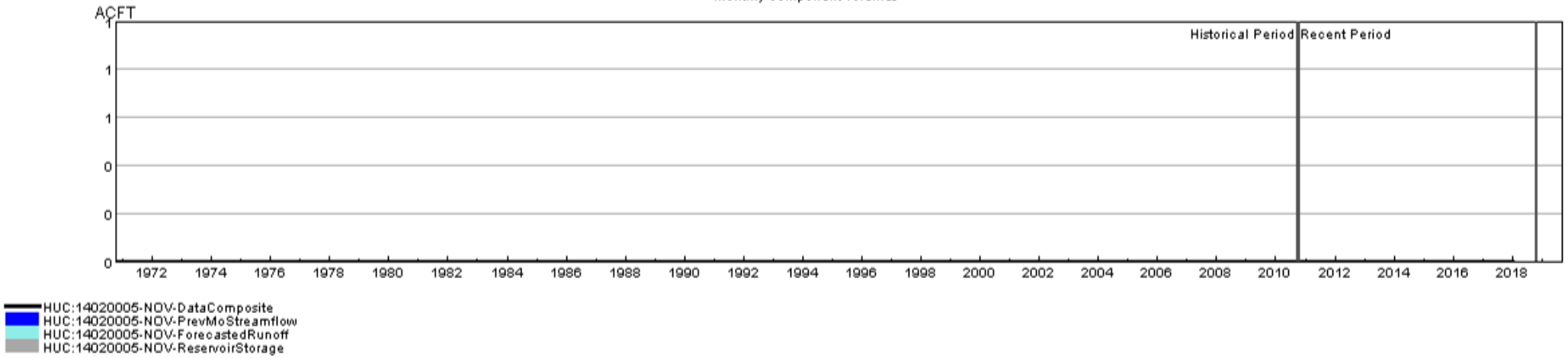

## HUC 14020004 (North Fork Gunnison) SWSI Values - NOV

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



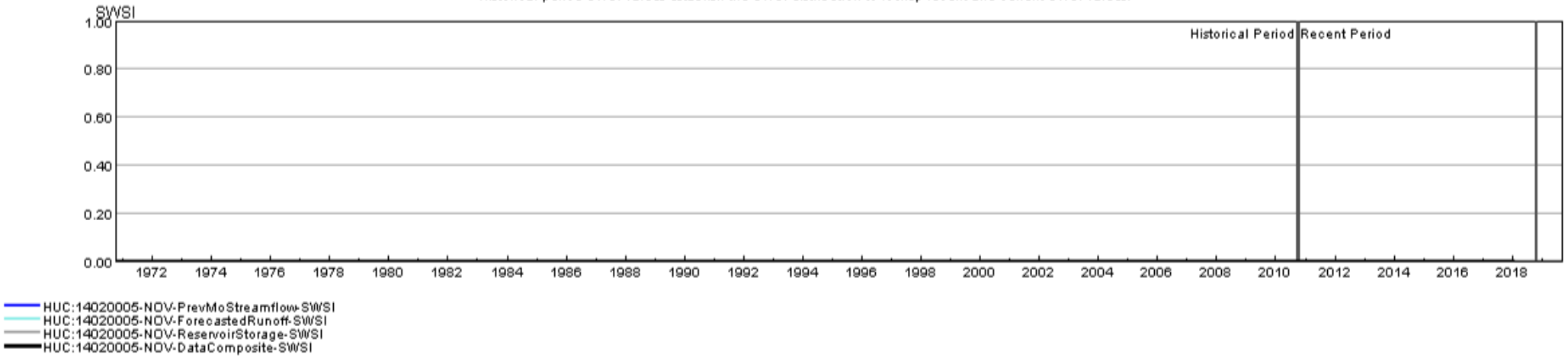
# HUC 14020005 (Lower Gunnison) Surface Water Supply - NOV

Monthly component volumes



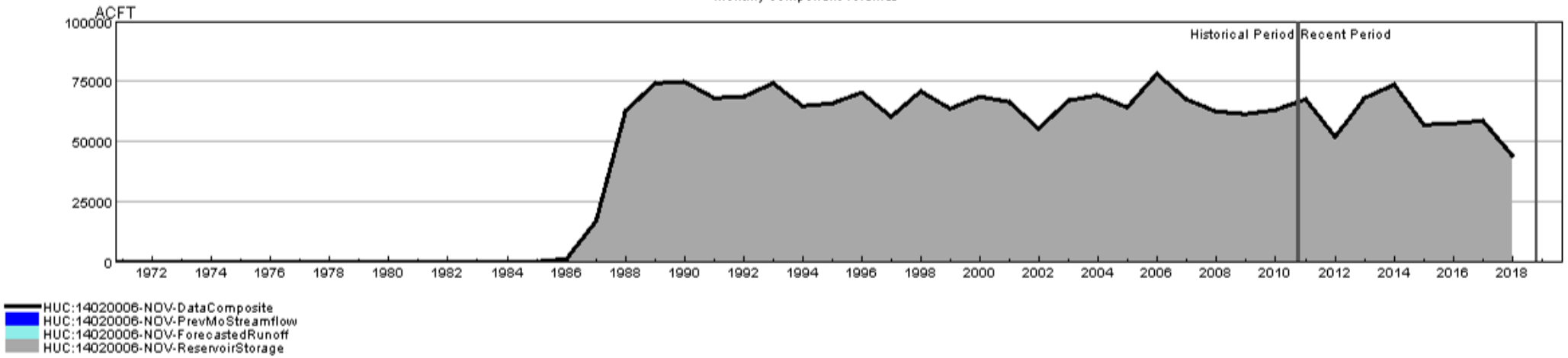

# HUC 14020005 (Lower Gunnison) SWSI Values - NOV

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



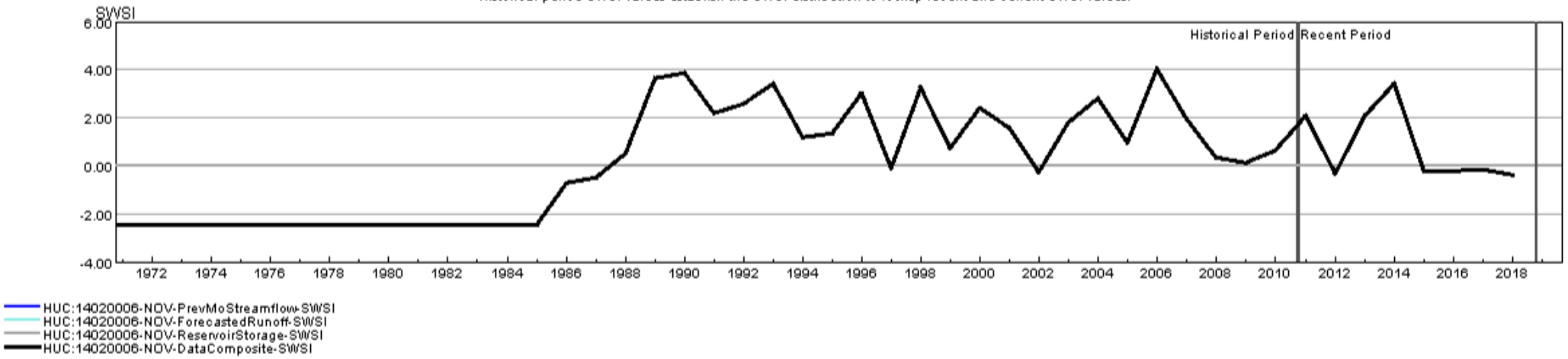
## HUC 14020006 (Uncompahgre) Surface Water Supply - NOV

Monthly component volumes



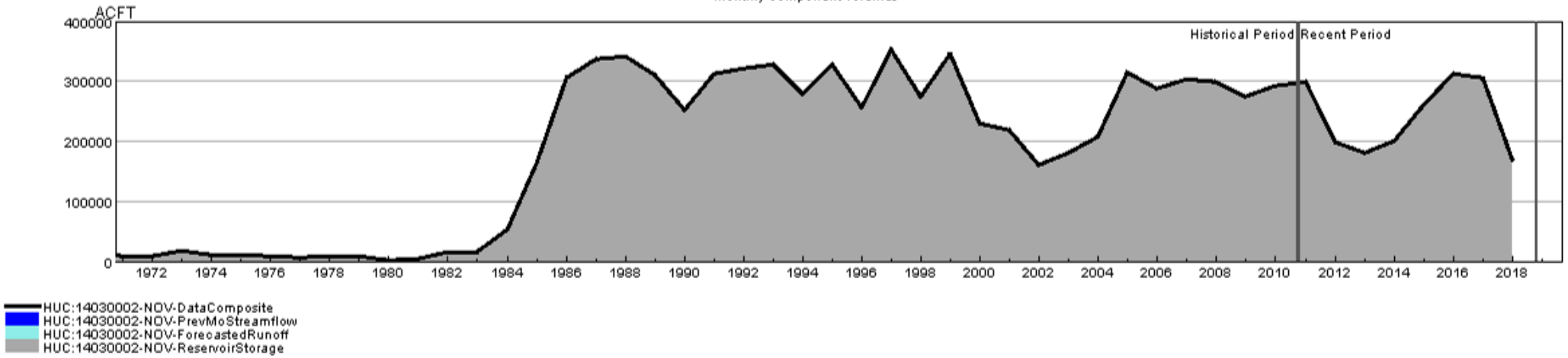

## HUC 14020006 (Uncompahgre) SWSI Values - NOV

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



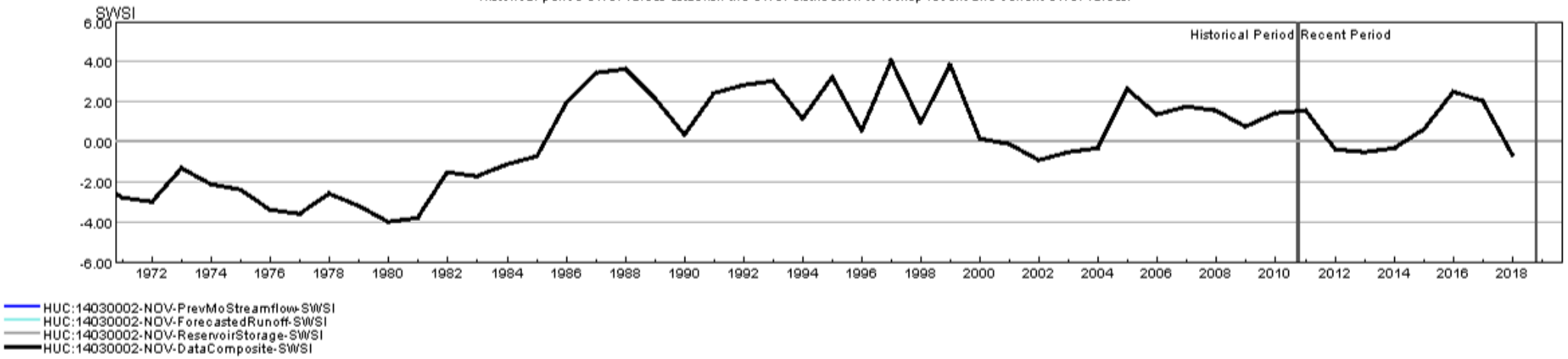
## HUC 14030002 (Upper Dolores) Surface Water Supply - NOV

Monthly component volumes



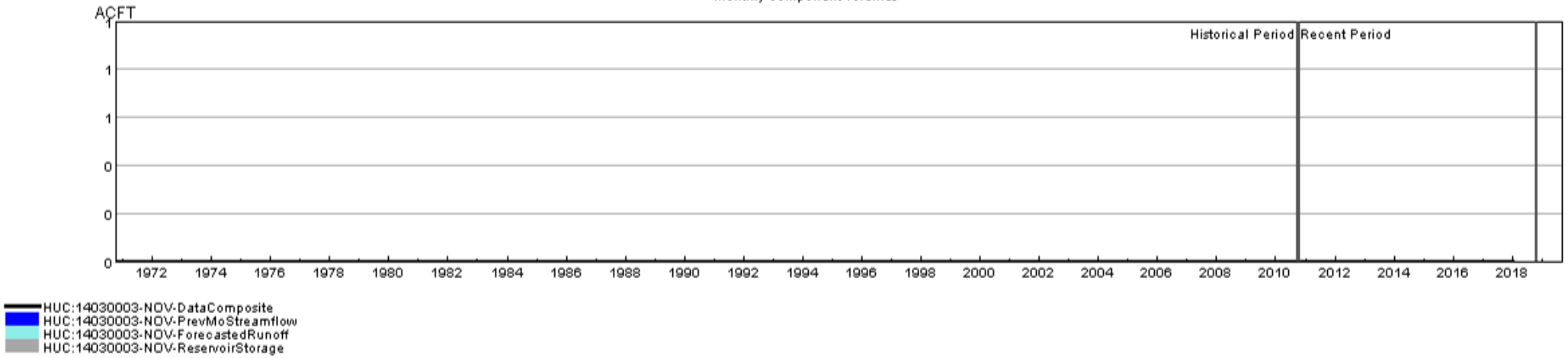

## HUC 14030002 (Upper Dolores) SWSI Values - NOV

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



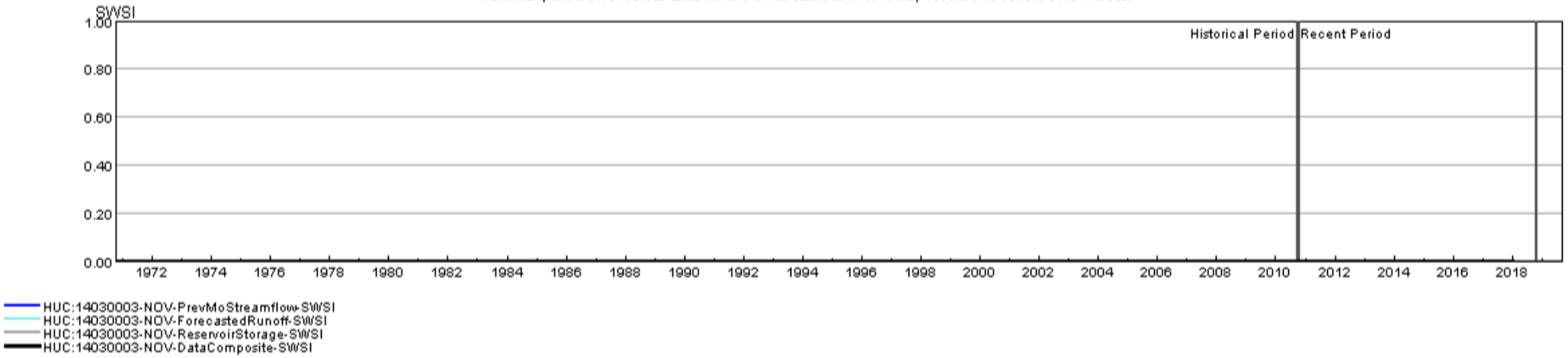
# HUC 14030003 (San Miguel) Surface Water Supply - NOV

Monthly component volumes



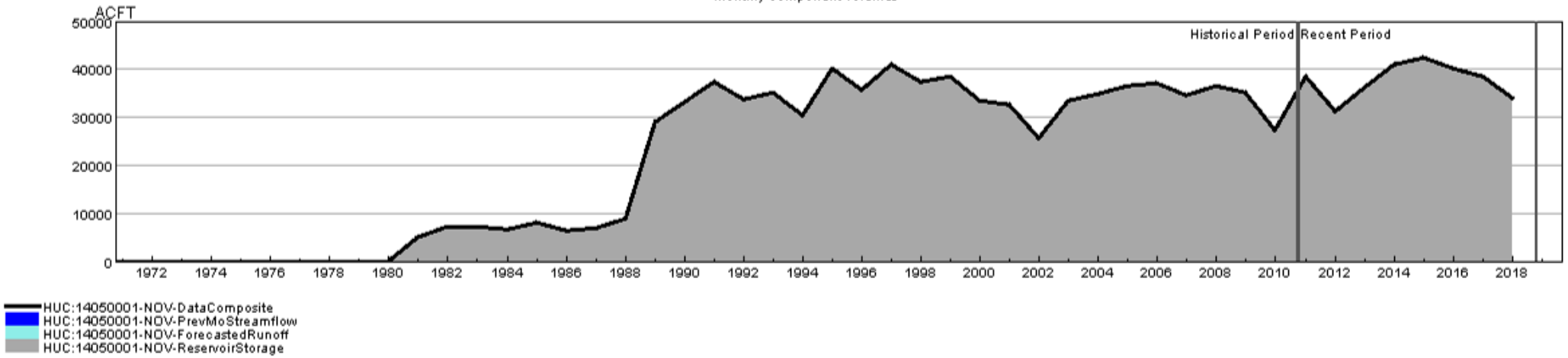

# HUC 14030003 (San Miguel) SWSI Values - NOV

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



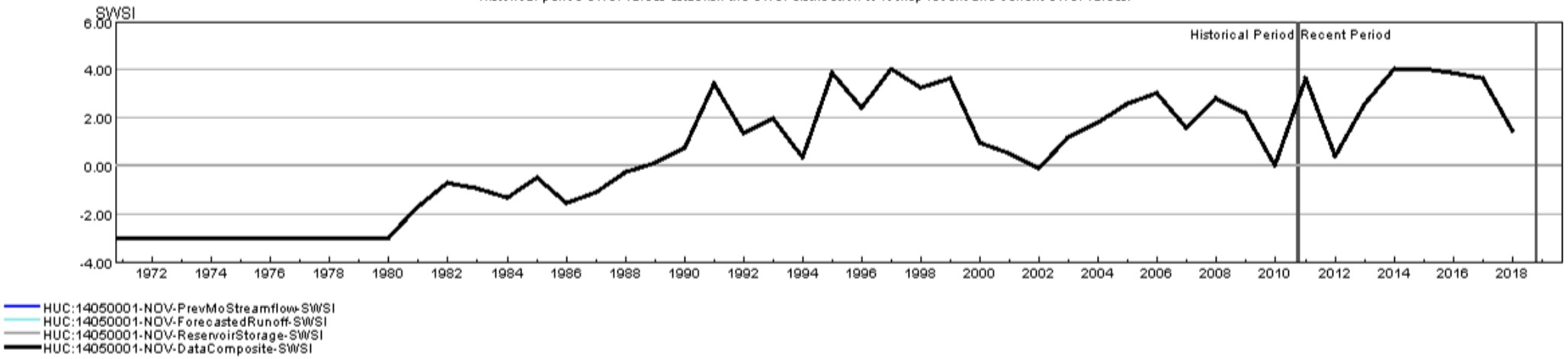
## HUC 14050001 (Upper Yampa) Surface Water Supply - NOV

Monthly component volumes



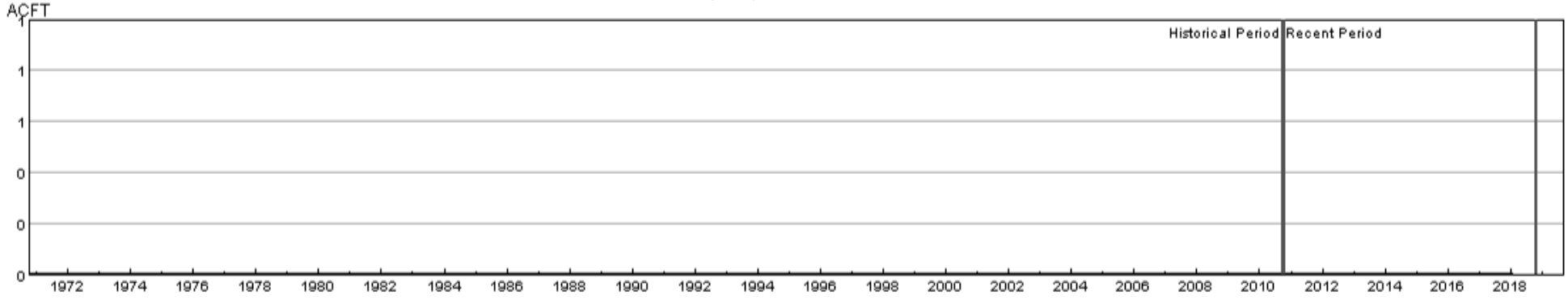

## HUC 14050001 (Upper Yampa) SWSI Values - NOV

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



# HUC 14050002 (Lower Yampa) Surface Water Supply - NOV

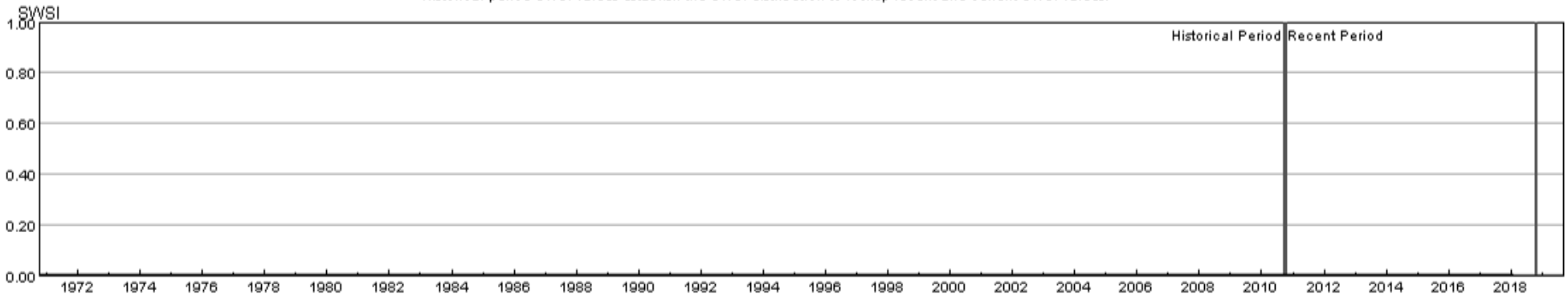
Monthly component volumes




HUC:14050002-NOV-DataComposite
HUC:14050002-NOV-PrevMoStreamflow
HUC:14050002-NOV-ForecastedRunoff
HUC:14050002-NOV-ReservoirStorage

# HUC 14050002 (Lower Yampa) SWSI Values - NOV

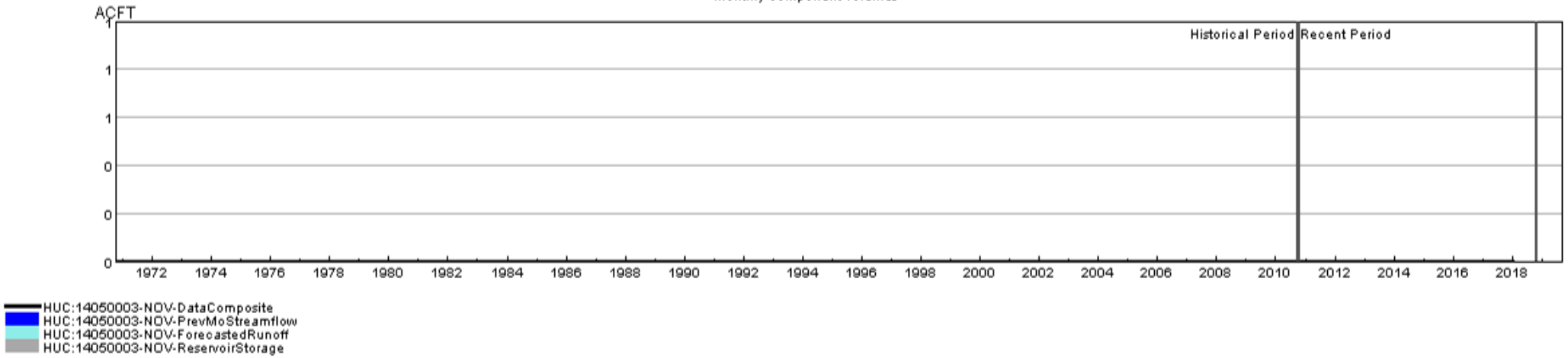
Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.




HUC:14050002-NOV-PrevMoStreamflow-SWSI
HUC:14050002-NOV-ForecastedRunoff-SWSI
HUC:14050002-NOV-ReservoirStorage-SWSI
HUC:14050002-NOV-DataComposite-SWSI

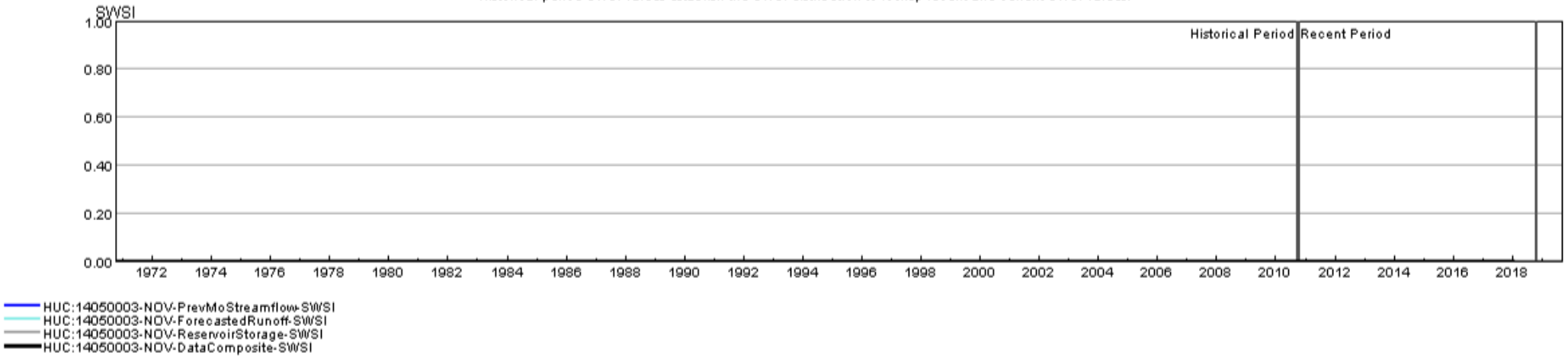
## HUC 14050003 (Little Snake) Surface Water Supply - NOV

Monthly component volumes



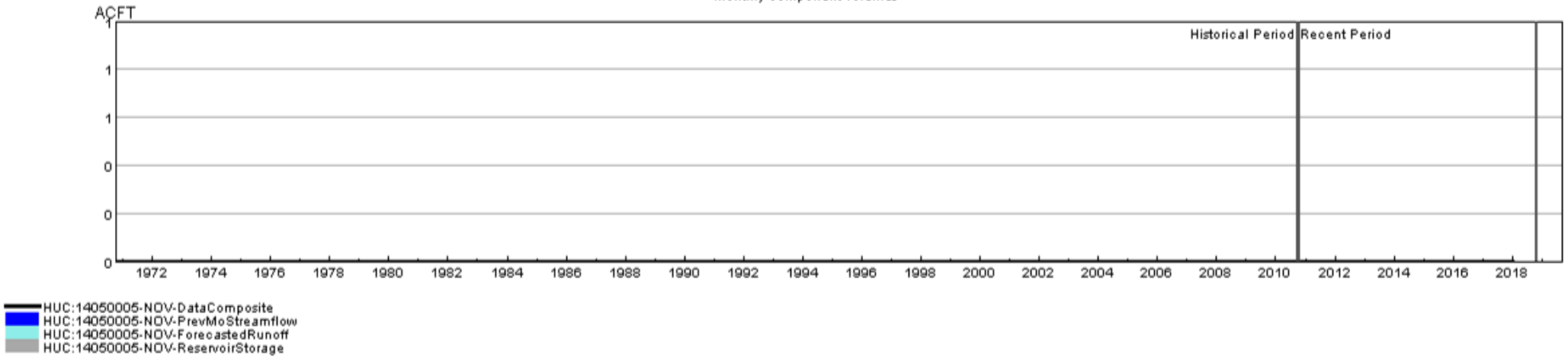

## HUC 14050003 (Little Snake) SWSI Values - NOV

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



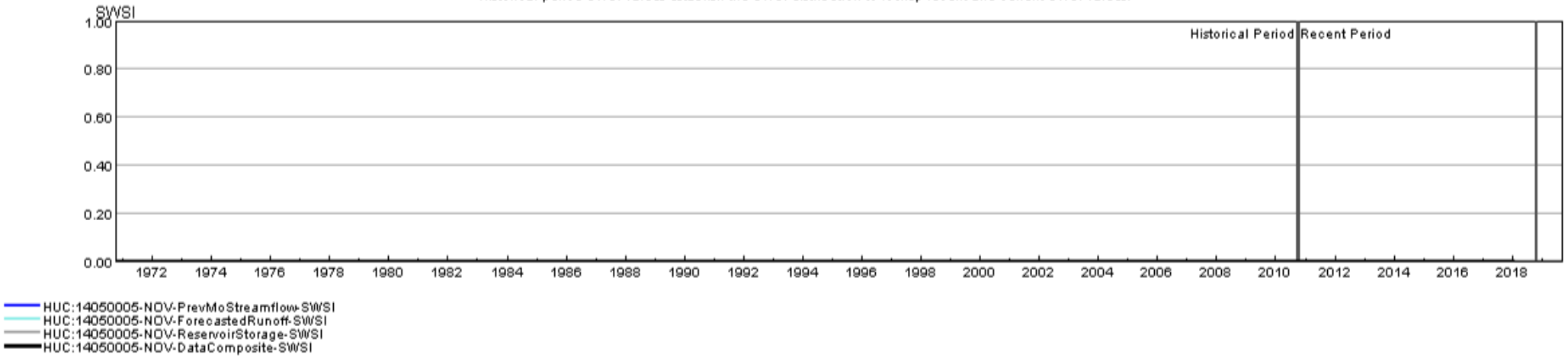
# HUC 14050005 (Upper White) Surface Water Supply - NOV

Monthly component volumes



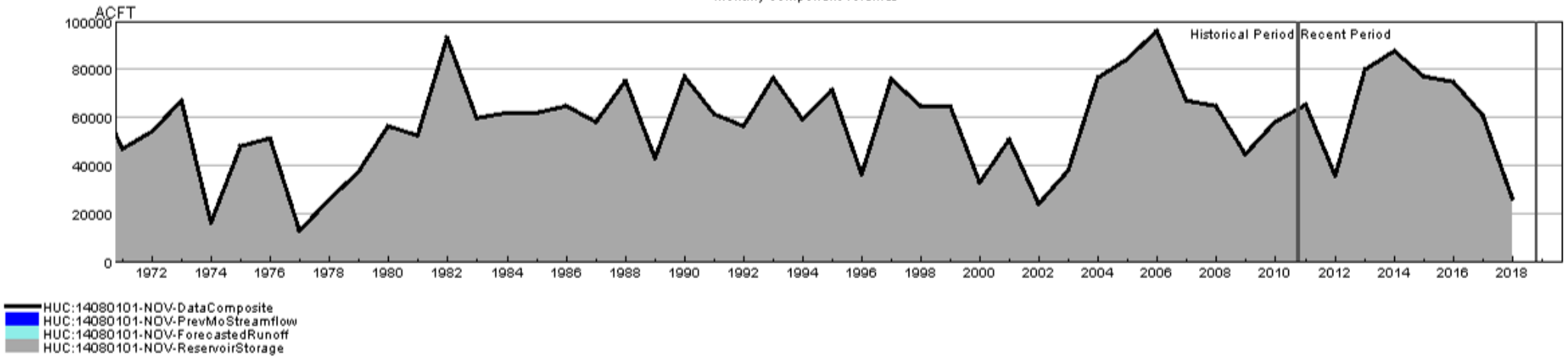

# HUC 14050005 (Upper White) SWSI Values - NOV

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



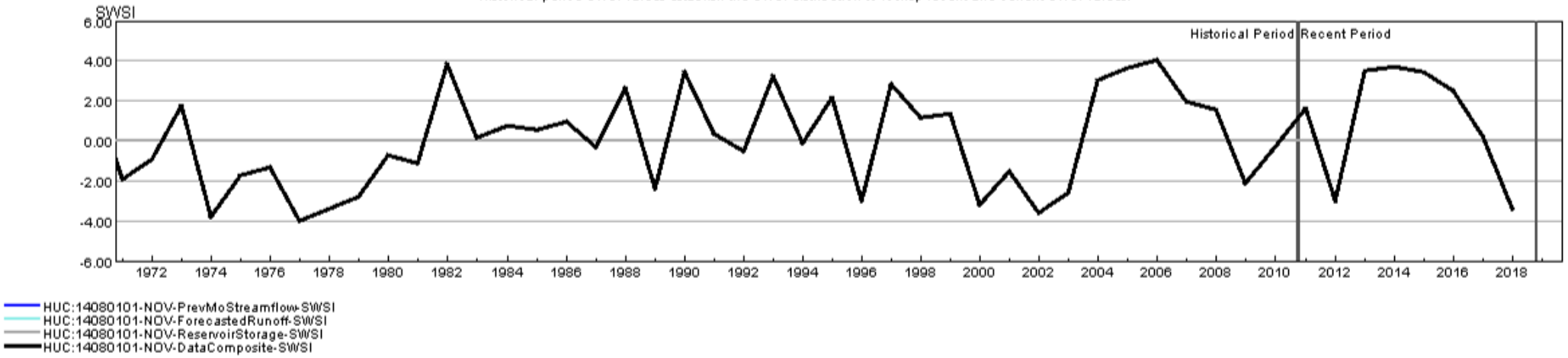
## HUC 14080101 (Upper San Juan) Surface Water Supply - NOV

Monthly component volumes



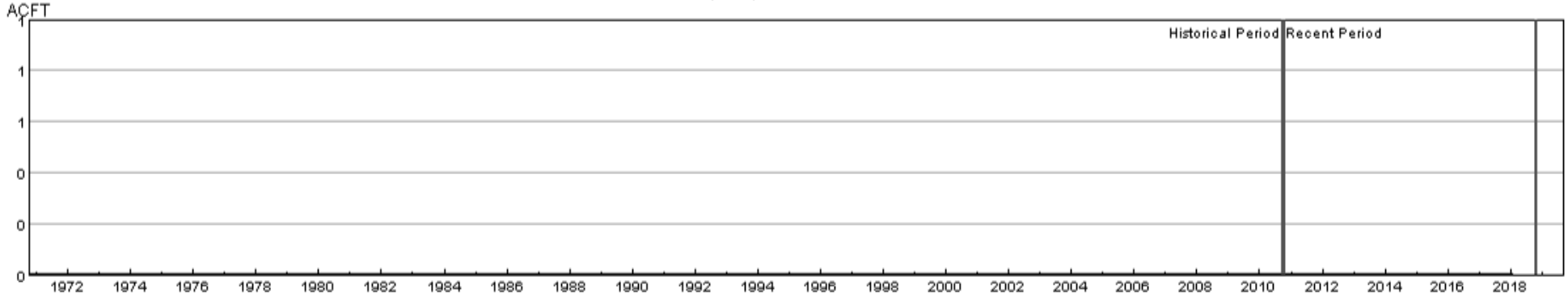

## HUC 14080101 (Upper San Juan) SWSI Values - NOV

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



# HUC 14080102 (Piedra) Surface Water Supply - NOV

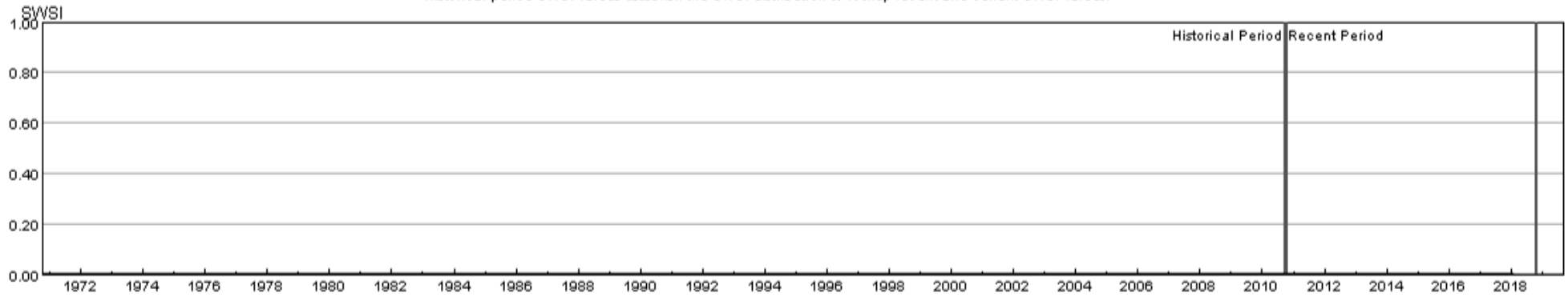
Monthly component volumes




HUC:14080102-NOV-DataComposite
HUC:14080102-NOV-PrevMoStreamflow
HUC:14080102-NOV-ForecastedRunoff
HUC:14080102-NOV-ReservoirStorage

# HUC 14080102 (Piedra) SWSI Values - NOV

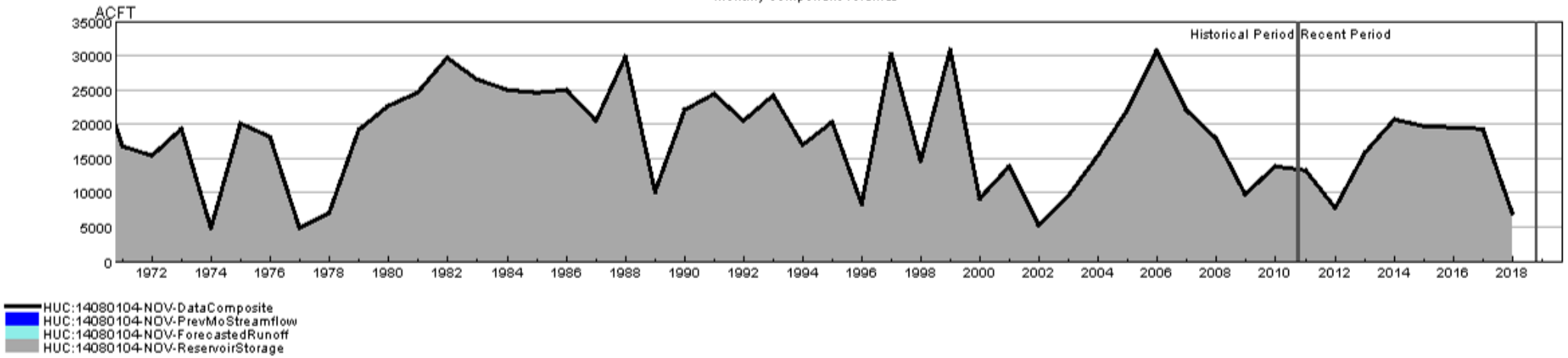
Historical period SWSI values establish the SWSI distribution to lookup recent and current SWSI values.




HUC:14080102-NOV-PrevMoStreamflow-SWSI
HUC:14080102-NOV-ForecastedRunoff-SWSI
HUC:14080102-NOV-ReservoirStorage-SWSI
HUC:14080102-NOV-DataComposite-SWSI

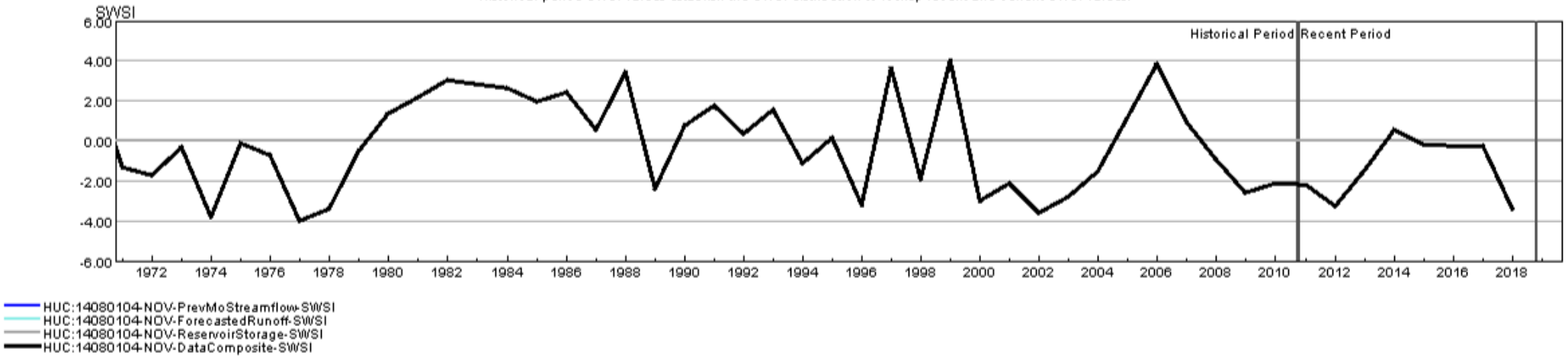
## HUC 14080104 (Animas) Surface Water Supply - NOV

Monthly component volumes



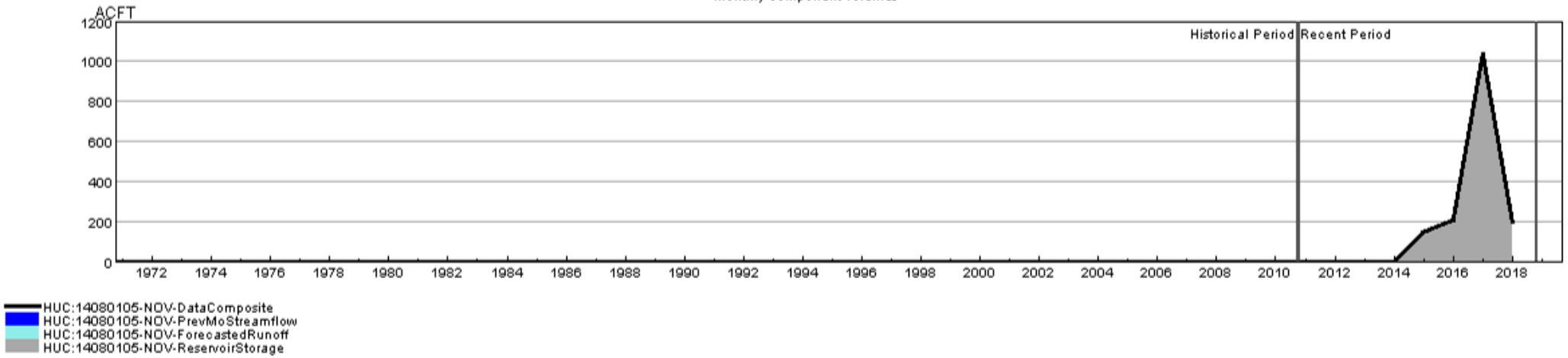

## HUC 14080104 (Animas) SWSI Values - NOV

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



## HUC 14080105 (Middle San Juan) Surface Water Supply - NOV

Monthly component volumes




## HUC 14080105 (Middle San Juan) SWSI Values - NOV

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