# COLORADO
# WATER SUPPLY CONDITIONS UPDATE

FROM THE OFFICE OF THE STATE ENGINEER: COLORADO DIVISION OF WATER RESOURCES
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October 1, 2016

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 new SWSI analysis based on the components shown below, which vary depending on the time of year. The new 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. 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 new DNR SWSI was published. The results are summarized within this monthly report and additional information, maps & data are available at: http://water.state.co.us/DWRDocs/Reports/Pages/SWSIReport.aspx. This document also contains reports about regional conditions prepared by each DWR Division Office.

The SWSI calculation for the fall season (October 1 to December 1) is based on reservoir storage at the end of last month, in this case September 30. Any action relying on the SWSI values from the fall season should only be used with the consideration that they are based on reservoir storage levels only. The statewide SWSI values for September (October 1) range from a low of -0.1 in the Gunnison Basin a high of 3.6 in the Yampa-White Basin. The following SWSI values were computed for each of the seven major basins for October 1, 2016. The results for each HUC are summarized on the following pages.

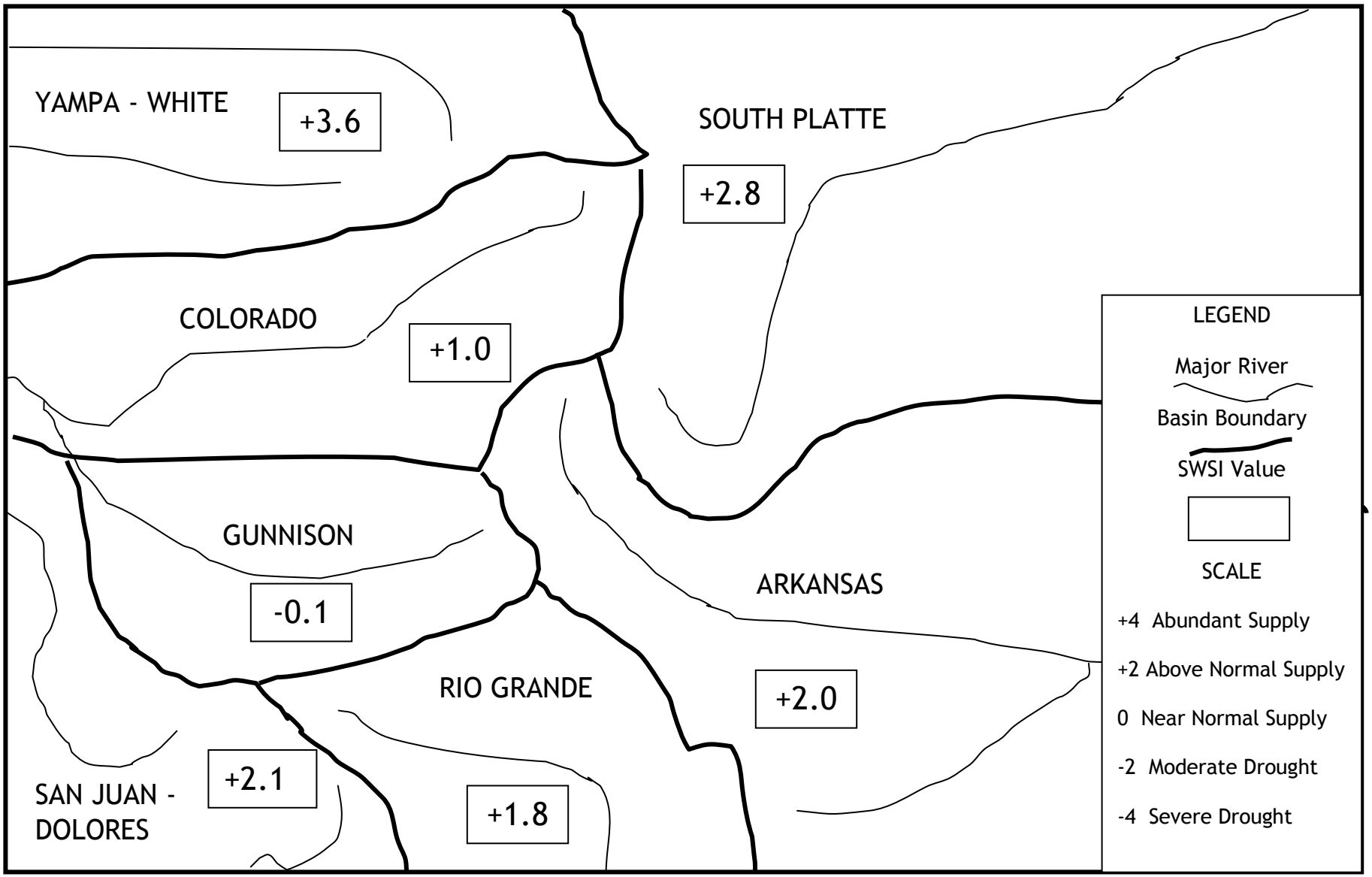
| Basin | October 1 SWSI | Change from Previous Month* | Change from Previous Year |
|---|---|---|---|
| Arkansas | 2.0 | 0.0 | -0.8 |
| Colorado | 1.0 | 1.2 | -0.1 |
| Gunnison | -0.1 | -0.7 | -2.9 |
| Rio Grande | 1.8 | 0.6 | 0.3 |
| San Juan-Dolores | 2.1 | -0.1 | 0.5 |
| South Platte | 2.8 | 0.6 | -0.2 |
| Yampa-White | 3.6 | 4.0 | -0.4 |

*Last month, the SWSI calculation also considered streamflow conditions.

SWSI Scale

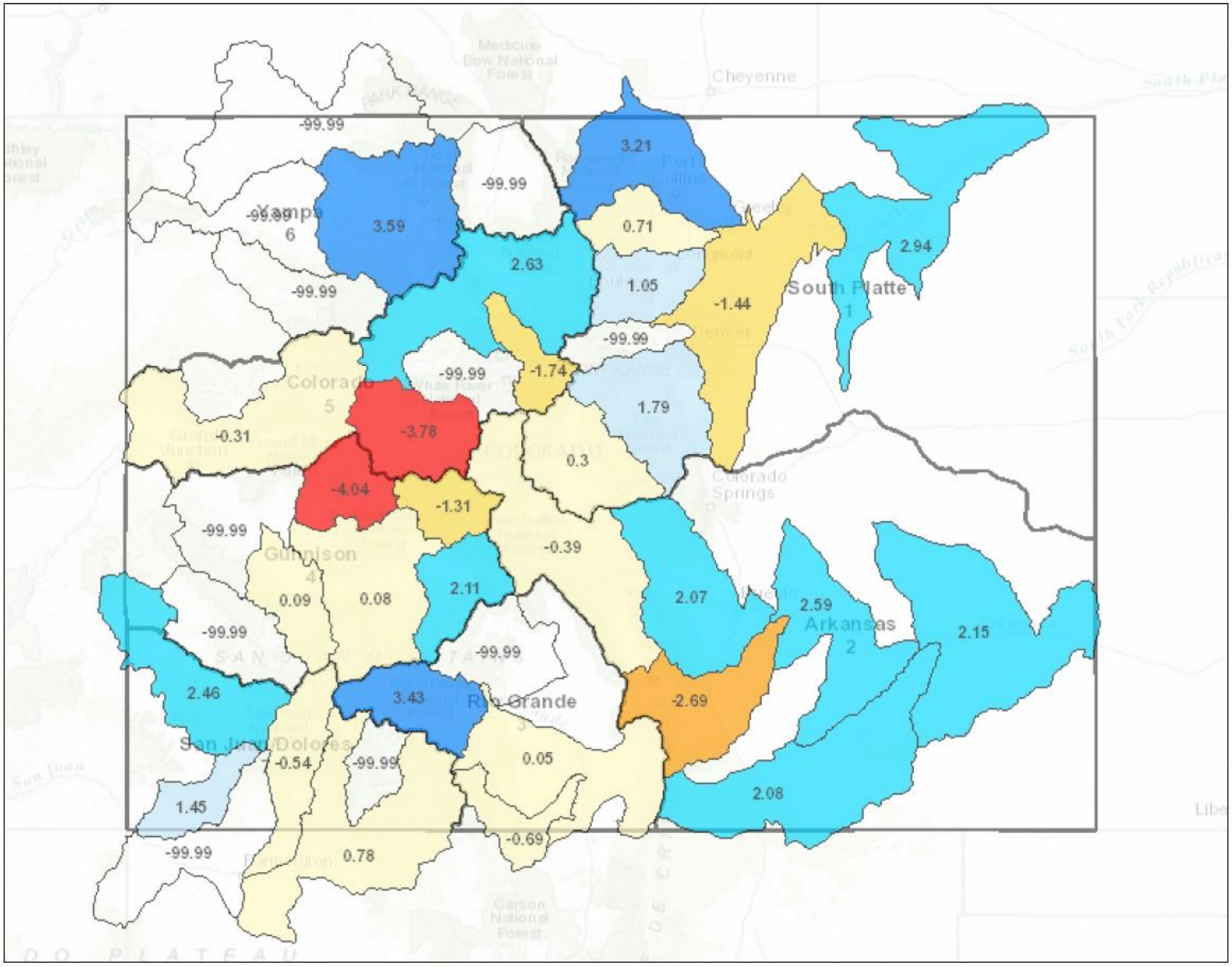
| -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| Severe Drought | | Moderate Drought | | Near Normal Supply | | Above Normal Supply | | Abundant Supply |

**SURFACE WATER SUPPLY INDEX FOR COLORADO BY MAJOR RIVER BASIN**




**October 1, 2016**

# SURFACE WATER SUPPLY INDEX FOR COLORADO BY HUC




**Legend**

SWSI - Current Report

- SWSI Not Applicable (-99.99)
- Extremely Dry (-3.0 - -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)
- Division
- Citations

**Location**


**Notes**

113.39 0 56.7 113.39 Miles

1: 3,592,220

*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: 10/19/2016 11:06:12 AM

**October 1, 2016**

**October 1, 2016 SWSI Values by HUC and Non Exceedance Probabilities (NEP)**

| Basin | HUC ID | HUC Name | SWSI | Reservoir Storage NEP | Total Vol (AF) |
|---|---|---|---|---|---|
| Arkansas | 11020001 | Arkansas Headwaters | -0.4 | 45 | 199,000 |
| | 11020002 | Upper Arkansas | 2.1 | 75 | 183,700 |
| | 11020005 | Upper Arkansas-Lake Meredith | 2.6 | 81 | 34,600 |
| | 11020006 | Huerfano River | -2.7 | 18 | 0 |
| | 11020009 | Upper Arkansas-John Martin Reservoir | 2.2 | 76 | 143,500 |
| | 11020010 | Purgatoire River | 2.1 | 75 | 21,800 |
| Colorado | 14010001 | Colorado Headwaters | 2.6 | 82 | 135,000 |
| | 14010002 | Blue River | -1.7 | 29 | 101,600 |
| | 14010003 | Eagle River | | | |
| | 14010004 | Roaring Fork | -3.8 | 5 | 77,800 |
| | 14010005 | Colorado Headwaters-Plateau | -0.3 | 46 | 8,800 |
| Gunnison | 14020001 | East-Taylor | -1.3 | 34 | 71,000 |
| | 14020002 | Upper Gunnison | 0.1 | 51 | 781,100 |
| | 14020003 | Tomichi Creek | 2.1 | 75 | 500 |
| | 14020004 | North Fork Gunnison | -4.0 | 1 | 325 |
| | 14020005 | Lower Gunnison | | | |
| | 14020006 | Uncompahgre River | 0.1 | 51 | 59,600 |
| | 14030003 | San Miguel | | | |
| Rio Grande | 13010001 | Rio Grande Headwaters | 3.4 | 91 | 42,400 |
| | 13010002 | Alamosa-Trinchera | 0.1 | 51 | 5,427 |
| | 13010004 | Saguache Creek | | | |
| | 13010005 | Conejos River | -0.7 | 42 | 18,900 |
| San Juan-Dolores | 14030002 | Upper Dolores | 2.5 | 80 | 318,500 |
| | 14080101 | Upper San Juan | 0.8 | 59 | 71,300 |
| | 14080102 | Piedra River | | | |
| | 14080104 | Animas River | -0.5 | 43 | 18,300 |
| | 14080105 | Middle San Juan | | 50 | 166 |
| | 14080107 | Mancos River | 1.5 | 67 | 5,300 |
| South Platte | 10190001 | South Platte Headwaters | 0.3 | 54 | 149,600 |
| | 10190002 | Upper South Platte | 1.8 | 72 | 307,500 |
| | 10190003 | Middle South Platte-Cherry Creek | -1.4 | 33 | 48,000 |
| | 10190004 | Clear Creek | | | |
| | 10190005 | St. Vrain River | 1.1 | 63 | 56,800 |
| | 10190006 | Big Thompson River | 0.7 | 59 | 511,300 |
| | 10190007 | Cache La Poudre | 3.2 | 89 | 143,400 |
| | 10190012 | Middle South Platte-Sterling | 2.9 | 85 | 82,300 |
| Yampa-White | 10180001 | North Platte Headwaters | | | |
| | 14050001 | Upper Yampa | 3.6 | 93 | 39,200 |
| | 14050002 | Lower Yampa | | | |
| | 14050003 | Little Snake | | | |
| | 14050005 | Upper White | | | |

NEP is non exceedance percentage for total reservoir storage in HUC. Some HUCs do not have any reservoirs considered in the SWSI and do not have a SWSI for the October through December period. Total Vol is the volume of reservoir storage in the HUC. NEP is calculated compared to the volume of active storage historically occurring this month during the period 1970-2010. The following table lists each component considered in each HUC.

**October 1, 2016 SWSI Component Information By HUC**

| HUC ID | HUC Name | Component Name | Component Volume (AF) | Component NEP for Month |
|---|---|---|---|---|
| 11020001 | Arkansas Headwaters | CLEAR CREEK RESERVOIR | 6,100 | 55 |
| | | TURQUOISE LAKE | 110,800 | 49 |
| | | TWIN LAKES RESERVOIR | 39,900 | 28 |
| | | HOMESTAKE RESERVOIR | 42,200 | 86 |
| 11020002 | Upper Arkansas | PUEBLO RESERVOIR | 183,700 | 75 |
| | | MEREDITH RESERVOIR | 27,500 | 70 |
| | | LAKE HENRY | 7,100 | 99 |
| 11020006 | Huerfano River | CUCHARAS RESERVOIR* | 0 | 18 |
| 11020009 | Upper Arkansas-John Martin Reservoir | ADOBE CREEK RESERVOIR | 35,100 | 80 |
| | | JOHN MARTIN RESERVOIR | 108,400 | 75 |
| 11020010 | Purgatoire River | TRINIDAD LAKE | 21,800 | 75 |
| 14010001 | Colorado Headwaters | WILLIAMS FORK RESERVOIR | 81,600 | 65 |
| | | WOLFORD MOUNTAIN RESERVOIR | 53,400 | 85 |
| 14010002 | Blue River | GREEN MOUNTAIN RESERVOIR | 101,600 | 29 |
| 14010004 | Roaring Fork | RUEDI RESERVOIR | 77,800 | 5 |
| 14010005 | Colorado Headwaters-Plateau | VEGA RESERVOIR | 8,800 | 46 |
| 14020001 | East-Taylor | TAYLOR PARK RESERVOIR | 71,000 | 34 |
| 14020002 | Upper Gunnison | BLUE MESA RESERVOIR | 665,100 | 51 |
| | | MORROW POINT RESERVOIR | 109,000 | 11 |
| | | FRUITLAND RESERVOIR | 400 | 62 |
| | | CRAWFORD RESERVOIR | 4,600 | 44 |
| | | SILVER JACK RESERVOIR | 2,000 | 16 |
| 14020003 | Tomichi Creek | VOUGA RESERVOIR NEAR DOYLEVILLE | 500 | 75 |
| 14020004 | North Fork Gunnison | PAONIA RESERVOIR | 325 | 1 |
| 14020006 | Uncompahgre River | RIDGEWAY RESERVOIR | 59,600 | 51 |
| 13010001 | Rio Grande Headwaters | RIO GRANDE RESERVOIR | 19,400 | 82 |
| | | SANTA MARIA RESERVOIR | 7,900 | 61 |
| | | CONTINENTAL RESERVOIR | 15,100 | 99 |
| 13010002 | Alamosa-Trinchera | TERRACE RESERVOIR | 2,900 | 49 |
| | | MOUNTAIN HOME | 2,527 | 55 |
| 13010005 | Conejos River | PLATORO RESERVOIR | 18,900 | 42 |
| 14030002 | Upper Dolores | GROUNDHOG RESERVOIR | 17,900 | 99 |
| | | MCPHEE RESERVOIR | 300,600 | 76 |
| 14080101 | Upper San Juan | VALLECITO RESERVOIR | 71,300 | 59 |
| 14080104 | Animas River | LEMON RESERVOIR | 18,300 | 43 |
| 14080105 | Middle San Juan | LONG HOLLOW RESERVOIR | 166 | 50 |
| 14080107 | Mancos River | JACKSON GULCH RESERVOIR | 5,300 | 67 |
| 10190001 | South Platte Headwaters | ANTERO RESERVOIR | 13,500 | 16 |
| | | ELEVENMILE CANYON RESERVOIR | 100,200 | 92 |
| | | SPINNEY MOUNTAIN RESERVOIR | 35,900 | 56 |

| HUC ID | HUC Name | Component Name | Component Volume (AF) | Component NEP for Month |
|---|---|---|---|---|
| 10190002 | Upper South Platte | CHEESMAN LAKE | 65,900 | 56 |
| | | DILLON RESERVOIR | 241,600 | 69 |
| 10190003 | Middle South Platte-Cherry Creek | BARR LAKE | 10,300 | 41 |
| | | MILTON RESERVOIR | 3,100 | 19 |
| | | STANDLEY RESERVOIR | 33,200 | 41 |
| | | HORSECREEK RESERVOIR | 1,400 | 52 |
| 10190005 | St. Vrain River | GROSS RESERVOIR | 23,800 | 73 |
| | | MARSHALL RESERVOIR | 4,800 | 54 |
| | | BUTTONROCK (RALPH PRICE) RESERVOIR | 14,400 | 49 |
| | | TERRY RESERVOIR | 3,800 | 25 |
| | | UNION RESERVOIR | 10,000 | 53 |
| 10190006 | Big Thompson River | BOYD LAKE | 28,400 | 51 |
| | | CARTER LAKE | 57,200 | 70 |
| | | LAKE LOVELAND RESERVOIR | 4,800 | 17 |
| | | LONE TREE RESERVOIR | 0 | 1 |
| | | MARIANO RESERVOIR | 100 | 9 |
| | | LAKE GRANBY | 413,700 | 62 |
| | | WILLOW CREEK RESERVOIR | 7,100 | 28 |
| 10190007 | Cache La Poudre | BLACK HOLLOW RESERVOIR | 3,600 | 99 |
| | | CACHE LA POUDRE | 2,800 | 49 |
| | | CHAMBERS LAKE | 3,000 | 68 |
| | | COBB LAKE | 16,800 | 72 |
| | | FOSSIL CREEK RESERVOIR | 6,000 | 85 |
| | | HALLIGAN RESERVOIR | 2,400 | 84 |
| | | HORSETOOTH RESERVOIR | 107,000 | 92 |
| | | WINDSOR RESERVOIR | 1,800 | 27 |
| 10190012 | Middle South Platte-Sterling | EMPIRE RESERVOIR | 4,900 | 34 |
| | | JACKSON LAKE RESERVOIR | 19,000 | 89 |
| | | JULESBURG RESERVOIR | 8,900 | 70 |
| | | POINT OF ROCKS RESERVOIR | 11,100 | 68 |
| | | PREWITT RESERVOIR | 14,300 | 71 |
| | | RIVERSIDE RESERVOIR | 24,100 | 99 |
| 14050001 | Upper Yampa | STAGECOACH RESERVOIR NR OAK CREEK | 34,800 | 99 |
| | | YAMCOLO RESERVOIR | 4,400 | 67 |

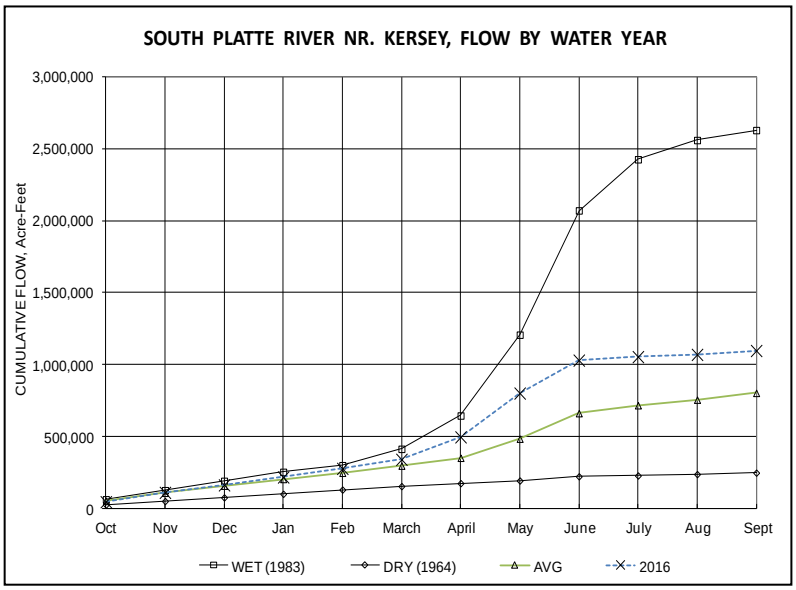
NEP is non exceedance percentage (percentile) for volume of the component compared to this month during the historical period 1970-2010.
*Empty, filling restriction

## Basinwide Conditions Assessment

The SWSI value for the month was +2.8. September 2016 proved to be a hot and dry month in northeast Colorado. Temperatures over the entire area were above normal for the month with some areas like Morgan and Elbert Counties having well above normal temperatures. Precipitation did show more variation than temperature in that it was below normal over most of the area with only a few spots near normal. The exception was Kit Carson County where much of the county received well above normal precipitation, primarily due to severe thunderstorms.

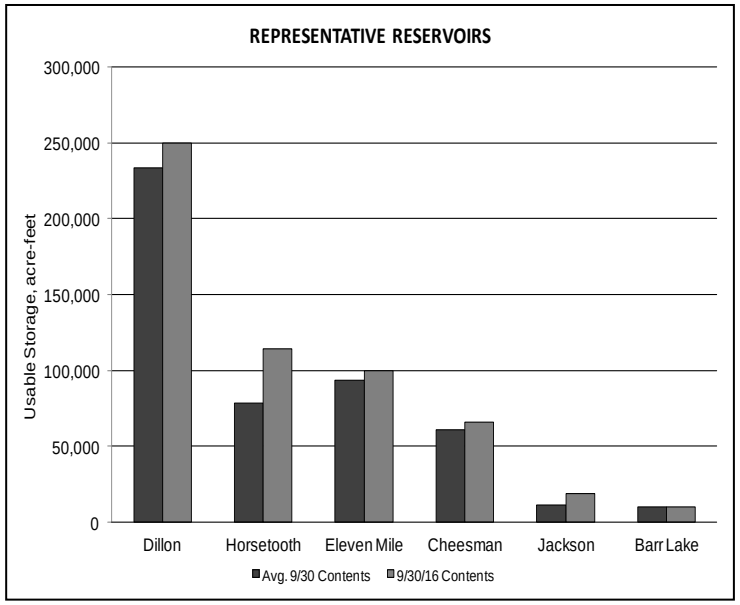
In a bit of slightly good news, the area within the USDA Drought Monitor "Abnormally Dry (D0)" area in northeast Colorado did not expand in September. However, the area covered by the next drought rating, D1 "Moderate Drought", did expand from just the northern Front Range to include areas northeast and east of the Denver metro area. The D0 area still includes the entire Front Range down to almost Colorado Springs and extending east along the Palmer divide as well as including virtually all of the mountain area.

During September the flow in the South Platte River at both the Kersey and Julesburg index gages continued the new trend of below average flows that began in July. The overall September mean flow at the Kersey gage was 450 cfs or approximately 83% of the period of record mean flow of 539 cfs. The overall September mean flow at the Julesburg gage was about 154 cfs or approximately 54% of the period of record mean flow of 284 cfs.



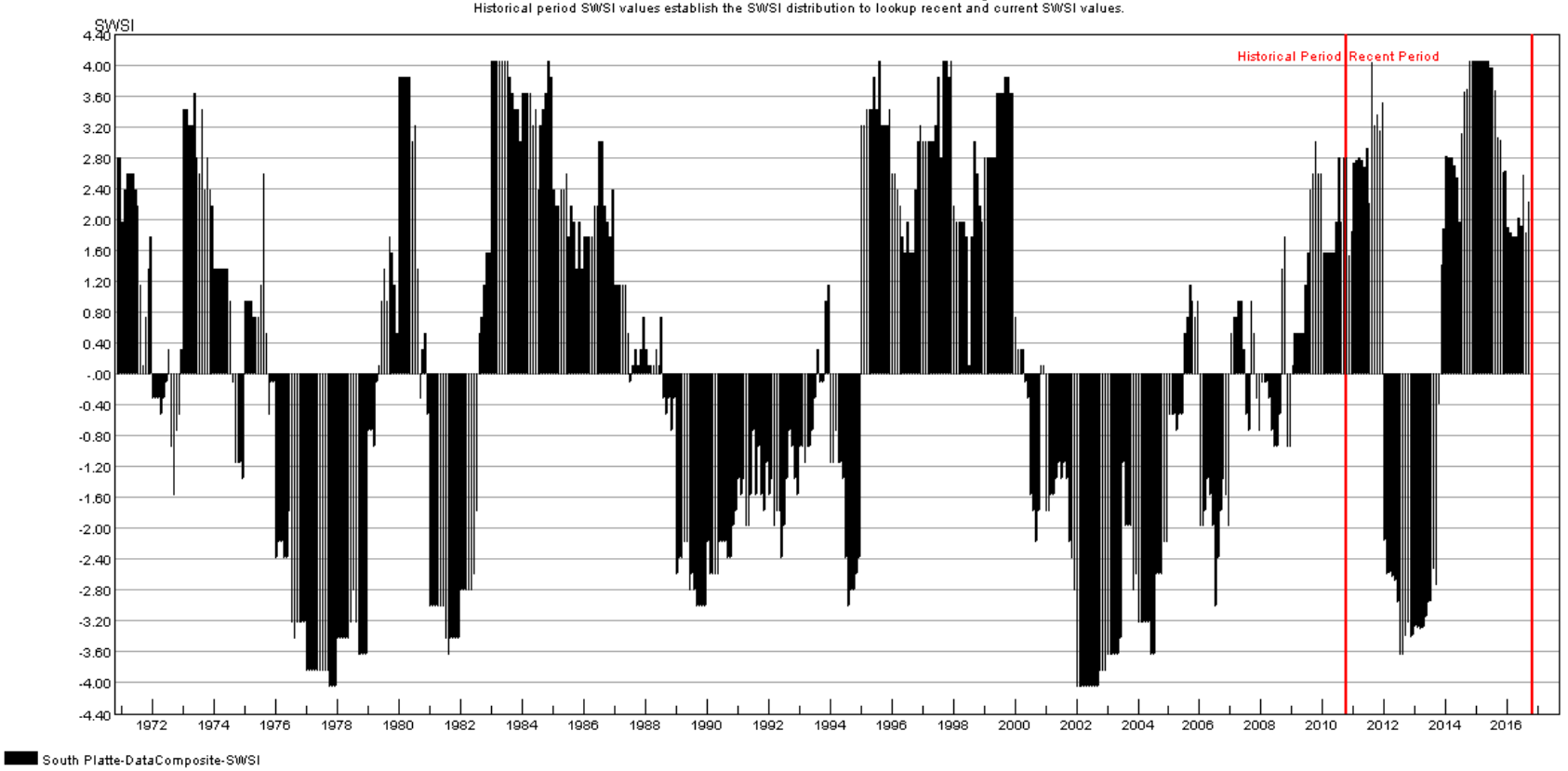

Due to decreased demand as crop irrigation requirements went down more than anything else, the call situation on the South Platte system improved in September. The South Platte Compact call went off on September 4th and did not come back on, though the South Platte system above about Ft. Morgan remained under call the rest of the month. Also, virtually all the major South Platte tributaries were internally controlled (under an internal call senior to the South Platte mainstem call) the entire month.

Storage was still used extensively in September, even with the decreasing demand. This was due to both the low stream flows and the need of some reservoir operators to lower the reservoir storage levels to facilitate previously planned infrastructure maintenance activities. The end of September storage was still at about 57% of capacity, which is ahead of the long term end of September average of 51% of capacity.



# South Platte Basin SWSI History

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



Basinwide Conditions Assessment

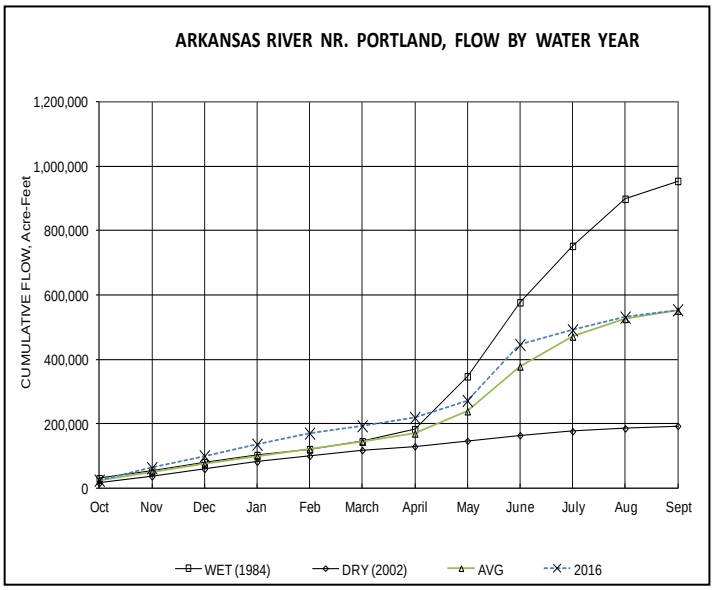
The SWSI value for the month was +2.0.

Outlook

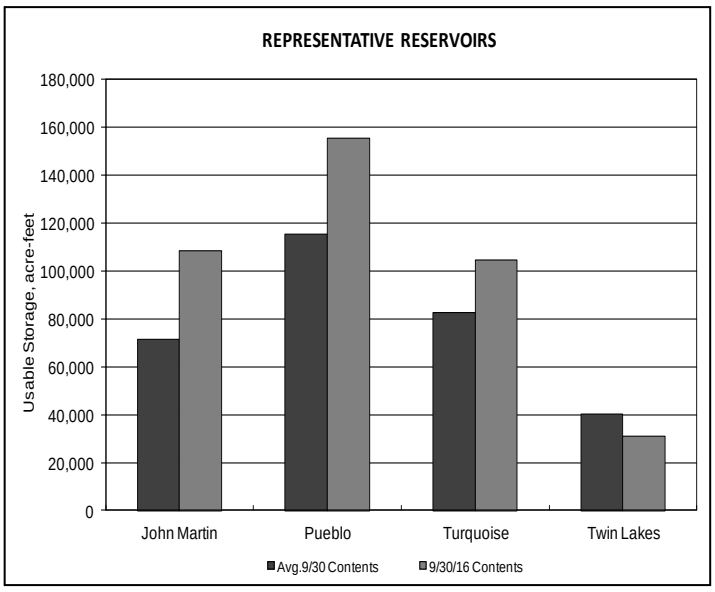
River calls during September ranged from the Amity Canal 2/21/1887 call during the first part of the month to a senior call of 12/3/1884 Catlin Canal for the last two thirds of the month. Conditions have been much drier during the latter part of the irrigation season as compared to the earlier months.

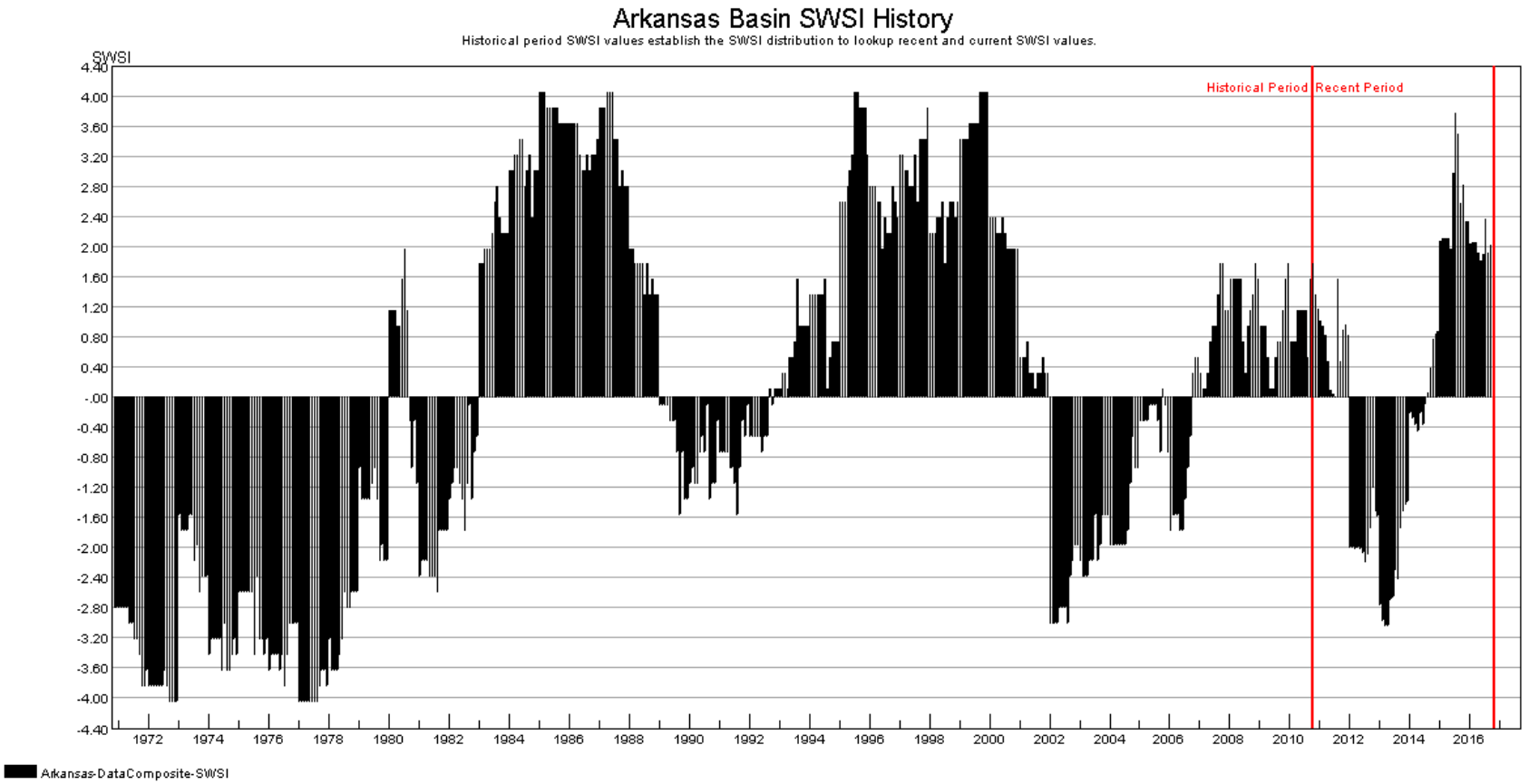
Administrative/Management Concerns

Representatives from Colorado and Kansas on the Special Engineering Committee, including State Engineer Dick Wolfe and CWCB Director James Eklund as well as Kansas Chief Engineer David Barfield and Arkansas River Compact Administration Representative (ARCA) Randy Hayzlett, have participated in a series of meetings and phone conference calls in an attempt to resolve some issues related to John Martin Reservoir and Compact compliance. These discussions seek to resolve some issues raised by Kansas about the water court decrees received by Lower Arkansas Water Management Association (LAWMA) and their administration as well as administration of John Martin Reservoir under the 1980 Operating Agreement. Additionally, Colorado Parks and Wildlife (supported by LAWMA) is seeking to obtain ARCA approval to use consumable water from the Highland Canal water rights on the Purgatoire River as a source of supply for the Permanent Pool in John Martin Reservoir to sustain that fishery and recreational pool at a more viable level.




Members of the Interim Water Committee of the Colorado Legislature toured the Arkansas River Basin on September 12th and 13th as part of a fact finding effort.




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
Recent Period
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
Arkansas-DataComposite-SWSI

## Basinwide Conditions Assessment

The SWSI value for the month was +1.8. Flow at the gaging station Rio Grande near Del Norte averaged 451 cfs (88% of normal). The Conejos River near Mogote had a mean flow of 177 cfs (118% of normal). Streamflow in the southern part of the San Luis Valley was generally below average during September as rainfall on the mountains and plains was scarce after rainstorms early in the month. The Conejos River had above-average flow due only to storage releases from Platoro Reservoir for irrigation demand. Streamflow in the northern part of the Valley continues to benefit from a snowpack last winter and timely recent rainfall.

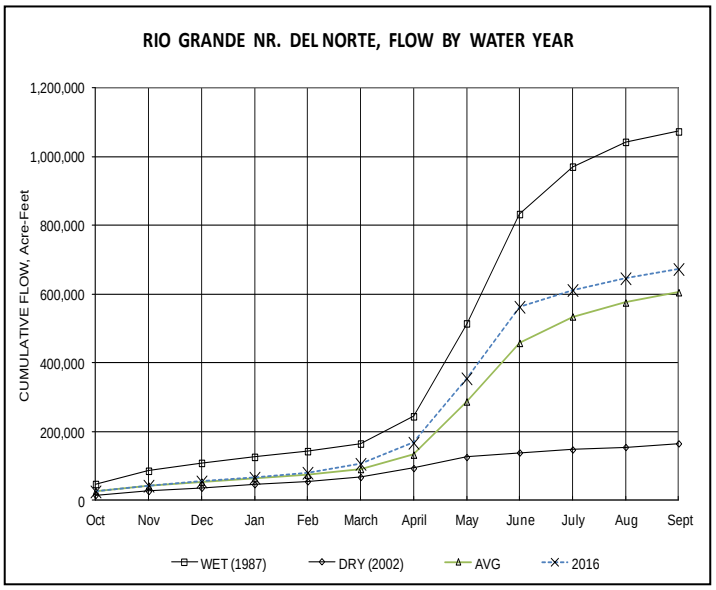
## Outlook

September in the upper Rio Grande drainage had warmer and drier conditions when compared to long-term records. Year to date precipitation remains slightly above normal for the San Luis Valley. NOAA weather forecasts for the next month and beyond call for near normal precipitation and warmer than normal temperatures.

## Administrative/Management Concerns

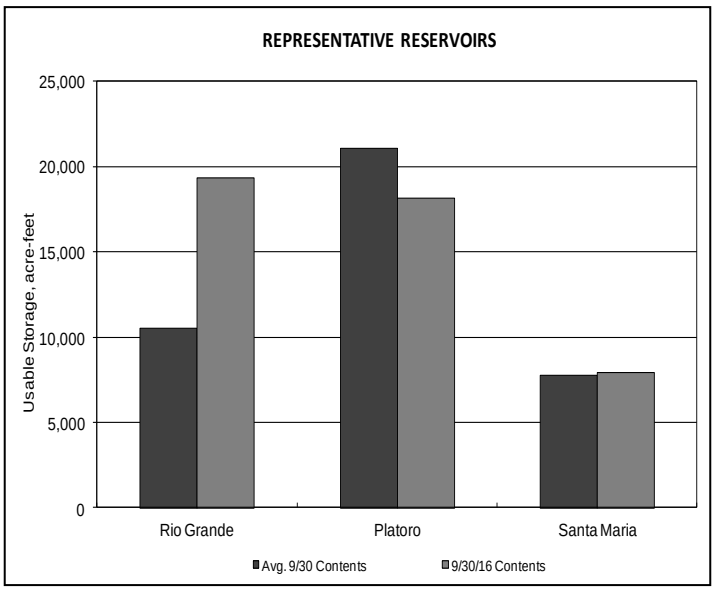
On September 23, 2015 the State Engineer filed the long-awaited "Rules Governing the Withdrawal of Groundwater in Water Division No. 3". A year later, the State Engineer is in the midst of negotiations with opposers to the case. An 8-week trial has been scheduled in front of Water Judge Swift for January and February, 2018.

Groundwater use rules are necessary to prevent injury to vested water rights, set sustainability standards for the stressed aquifers, and eliminate well impacts on compliance with the Rio Grande Compact. These Rules also seek to establish criteria for the beginning and end of the irrigation season in Water Division No. 3 for all irrigation water rights. By previous SEO policy, the Rio Grande, its tributaries, and the other areas of the San Luis Valley have a presumptive November 1st shut-off date and April 1st start-up date for decreed irrigation rights. The Rules seek to formalize this policy



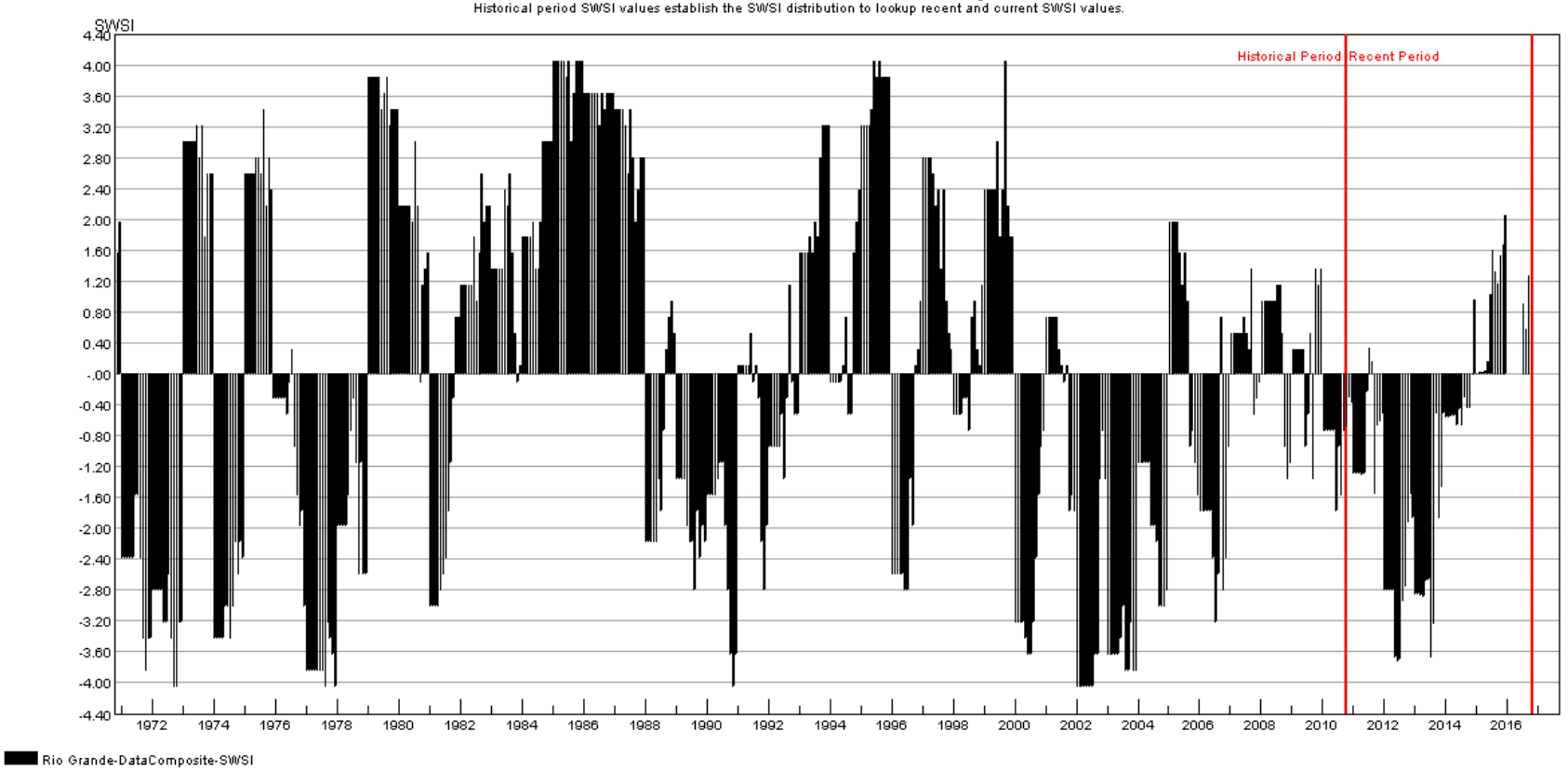

## Public Use Impact

The streamflow and weather conditions at the close of the 2016 irrigation season have not had a detrimental impact on harvest. This year, the barley matured early, the potatoes matured late, and the alfalfa had good yield but a poor crop price.



# 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 -0.1. Precipitation during September was well below average basin-wide, with many areas receiving between 50-70% of average and some receiving 30-50% of average. High elevations in the Gunnison basin were generally the driest during September. Temperatures across the basin were average in the low elevation areas and 1-3 degrees above average in the high elevation areas during the month.

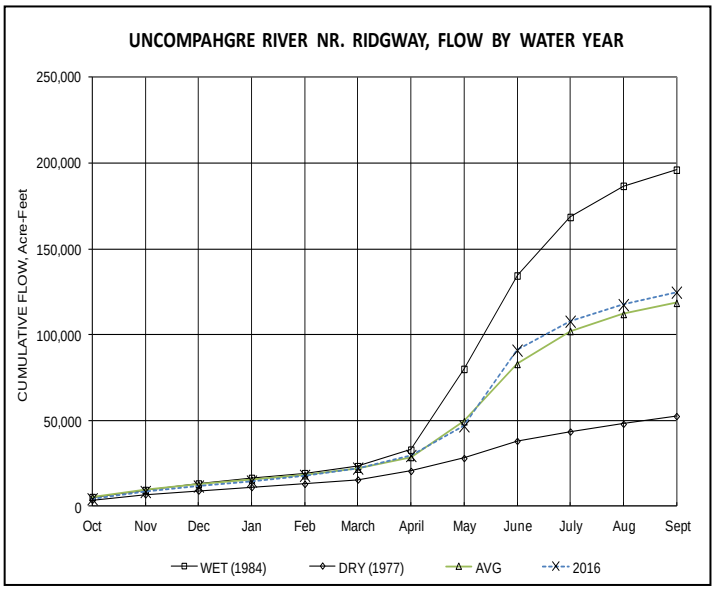
Outlook

The National Weather Service 90-day climate forecast has not changed, and indicates that higher than average temperatures are expected during the October to December period in the Gunnison basin while there are equal chances of below or above average precipitation during that same period.

Administrative/Management Concerns

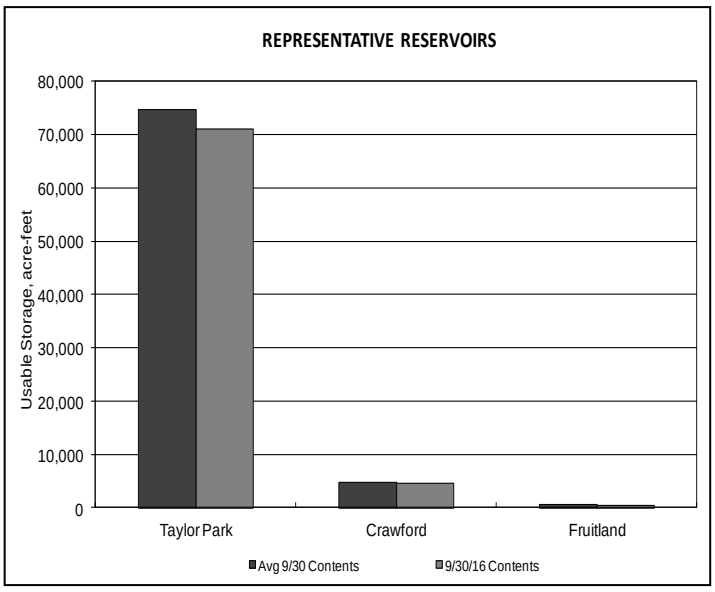
Gunnison Tunnel (GT) demand exceeded natural inflow to the Aspinall Unit for all but 3 days in September. During that time the GT continued to divert an average of 1,000 cfs, which resulted in the use of 14,029 acre-feet of Taylor Park 2nd fill storage to supplement natural inflows to satisfy the Uncompahgre Valley Water Users Association (UVWUA) demand in September. It isn't unusual for a significant amount of storage to be used during September, however, in years like 2014 when the basin receives more high elevation precipitation that boosts streamflows into the Aspinall Unit, they use significantly less storage to satisfy their demand (only 9,900 acre-feet was used in 2014).

At the end of September, the water surface elevation in Blue Mesa Reservoir was at 8 feet above the target to prevent icing impacts upstream. The UVWUA began reducing Taylor Park releases to essentially match inflows at 100 cfs on September 30th because they reached their target winter storage volume of just over 70,0000 acre-feet.




The instream flow (ISF) on the Slate River went on call September 19th, but fluctuated between being satisfied and short due to small snowstorms and the end of Aspen leaf season. Interestingly, high elevation streams in the Gunnison basin typically see a boost once all the trees lose their leaves because of a reduction in consumptive use. Administration of the ISF involves the administration of augmentation plans, many of which have storage in Meridian Lake (Long Lake), which is located above Meridian Lake Park Reservoir (MLPR), which was drained this year for outlet repairs. As a result, administration required coordination with the owner of MLPR to get flows to the Slate River.

Four reservoir outlet lining projects that required draining of Eggleston, McKoon, Bonita, and Marcott Reservoirs on the Grand Mesa, were completed in September and early October. Their owners and the water commissioners are breathing a sigh of relief because they can begin filling prior to winter, which makes delivering and administering water easier in that system.

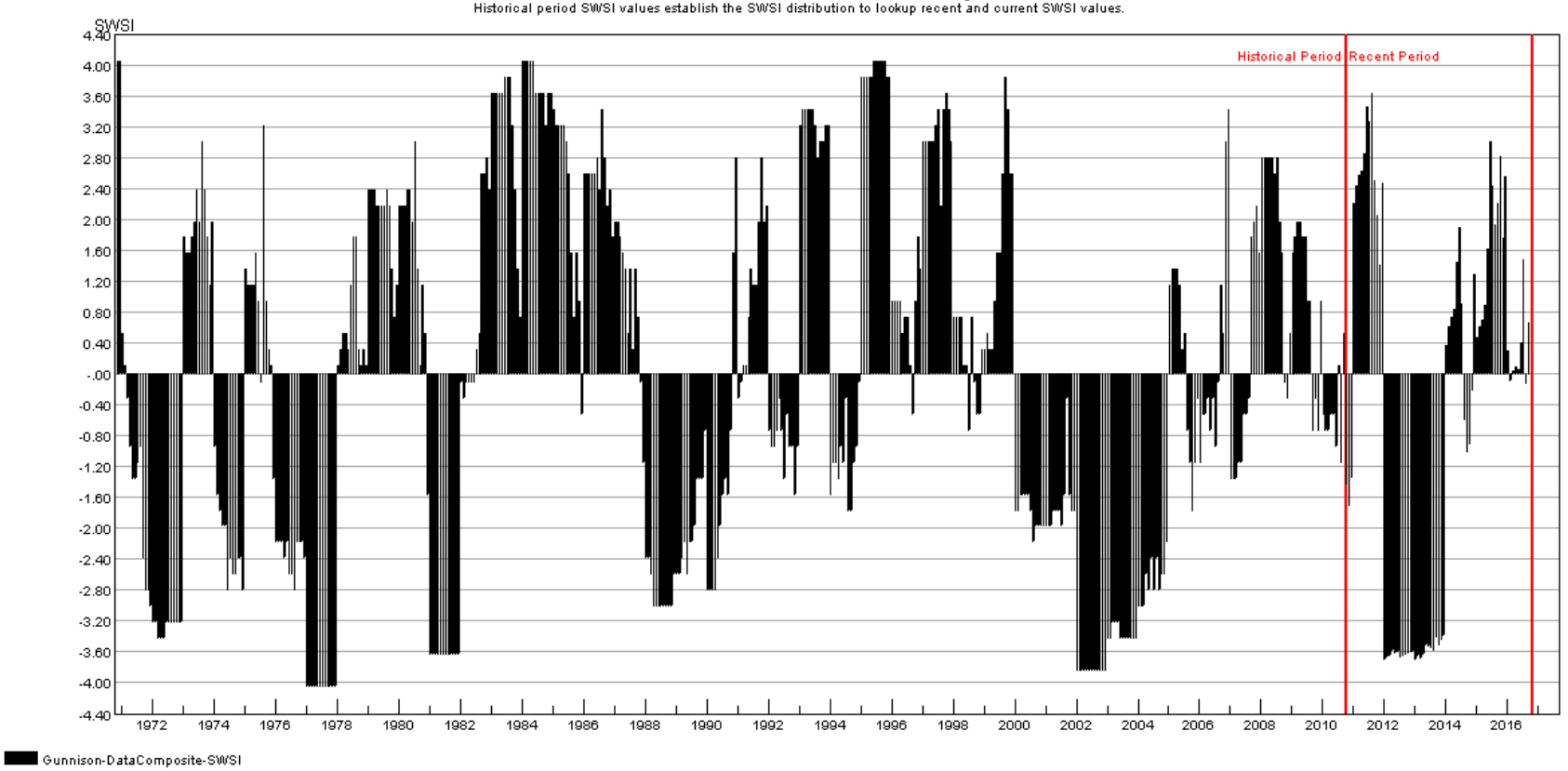



Public Use Impacts

Of the four Grand Mesa reservoirs that were drained for outlet lining, Eggleston was a popular fishing destination so next year fisherman should be excited to have a full reservoir in the spring again.

# Gunnison Basin SWSI History

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

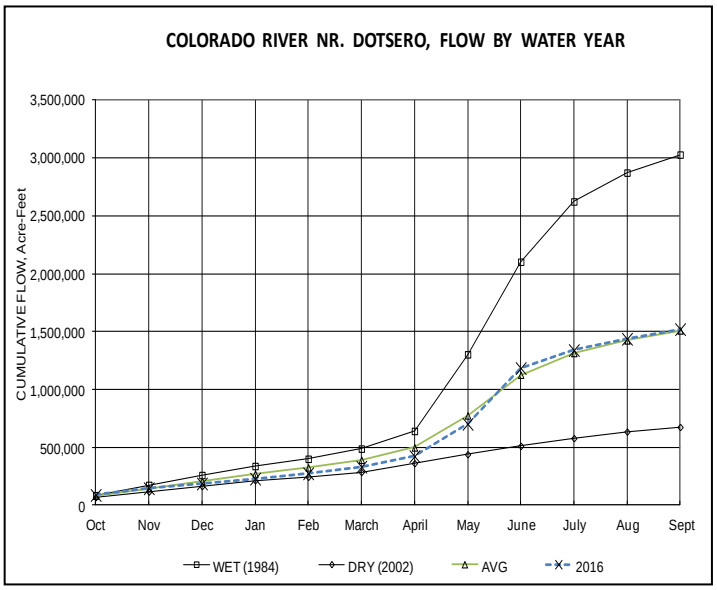


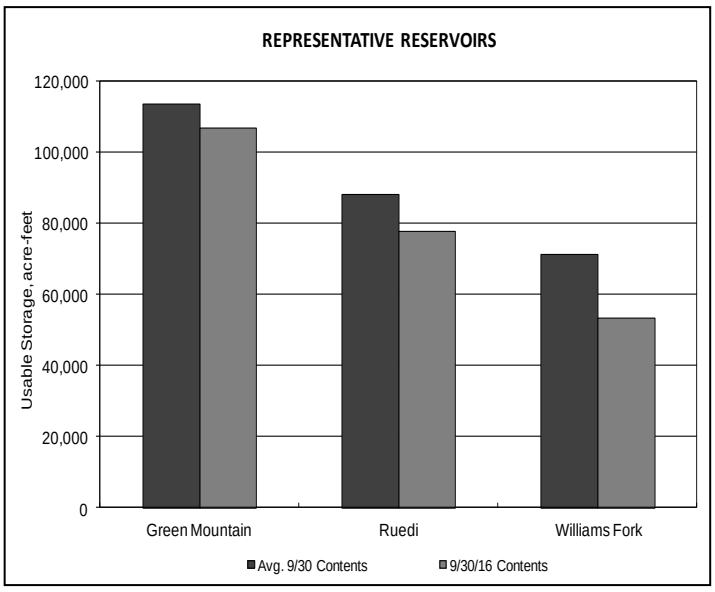
Basinwide Conditions Assessment
The SWSI value for the month was 1.0.

Outlook
Colorado River flows continue to maintain an average flow with tributary flows running slightly below average throughout October. Below average precipitation with above average temperature is forecast for western Colorado through October.

Administrative/Management Concerns
As of October 13, the call on the Colorado River main stem is the Shoshone Hydro Power Right for 1250 cfs. Grand Valley Irrigation diversions (Government Highline/Orchard Mesa Irrigation, Grand Valley Irrigation canals) continue at or near full capacity. Green Mountain is releasing to pass inflows, release contract water, CB-T replacement water and HUP water. Wolford Mountain is releasing inflows and contract water and is targeting 10' down from full by winter. Ruedi Reservoir is ramping down to winter flows and has exhausted their pool of fish recovery water.

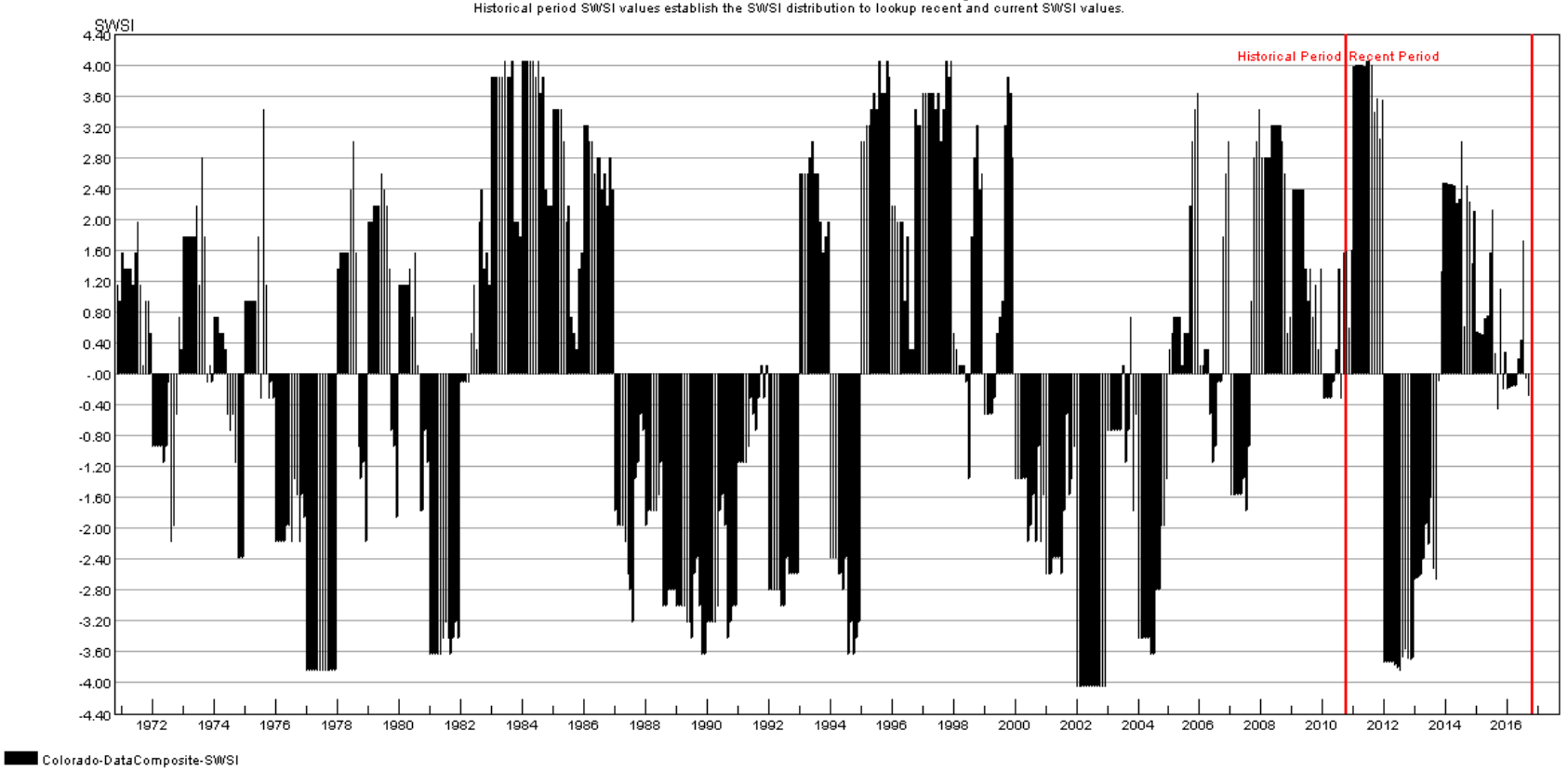
Public Use Impacts
Aspen City Council votes to file a diligence application in water court to maintain water rights for two dams contemplated in 1965. One dam would be on Maroon Creek within view of the Maroon Bells and the other dam would be on Castle Creek below Ashcroft. The Forest Service is likely to file a statement of opposition based on the fact that the reservoirs would inundate portions of the Maroon Bells-Snowmass Wilderness Area.



# Colorado Basin SWSI History

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



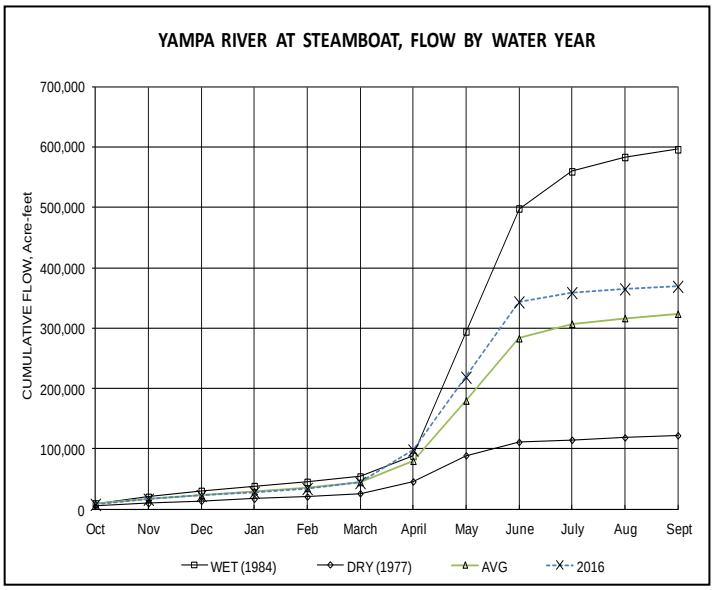
Basinwide Conditions Assessment

The SWSI value for the month was 3.6. This SWSI value suggests a strong water supply, but it only considers storage amounts in the Upper Yampa watershed as shown on pages 4 and 6 of this report. September precipitation was well below 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 52% of average for the combined 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 September was 95%.

Gages in Division 6 are currently being shut down for winter. Most gages will be closed by the end of October. The gages above Lake Catamount (YAMABVCO) and the Williams Fork River (WMFKMHCO) will remain open through the winter.

Outlook

As of September 30th Fish Creek Reservoir was storing approximately 3,113 AF, 75% of capacity. The capacity of Fish Creek Reservoir is 4,167 AF. Yamcolo Reservoir was storing 4,400 AF at the end of September 2016. The capacity of Yamcolo Reservoir is 8,700 AF. On September 30th, 2016, Stagecoach Reservoir was storing 34,800 AF which is 105% of capacity. On September 30th, Elkhead Creek Reservoir was 97% full and storing 24,062.




Water stored in Fish Creek Reservoir is used primarily for municipal purposes, Water stored in Yamcolo Reservoir is used for irrigation purposes. Elkhead Creek Reservoir is used 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.

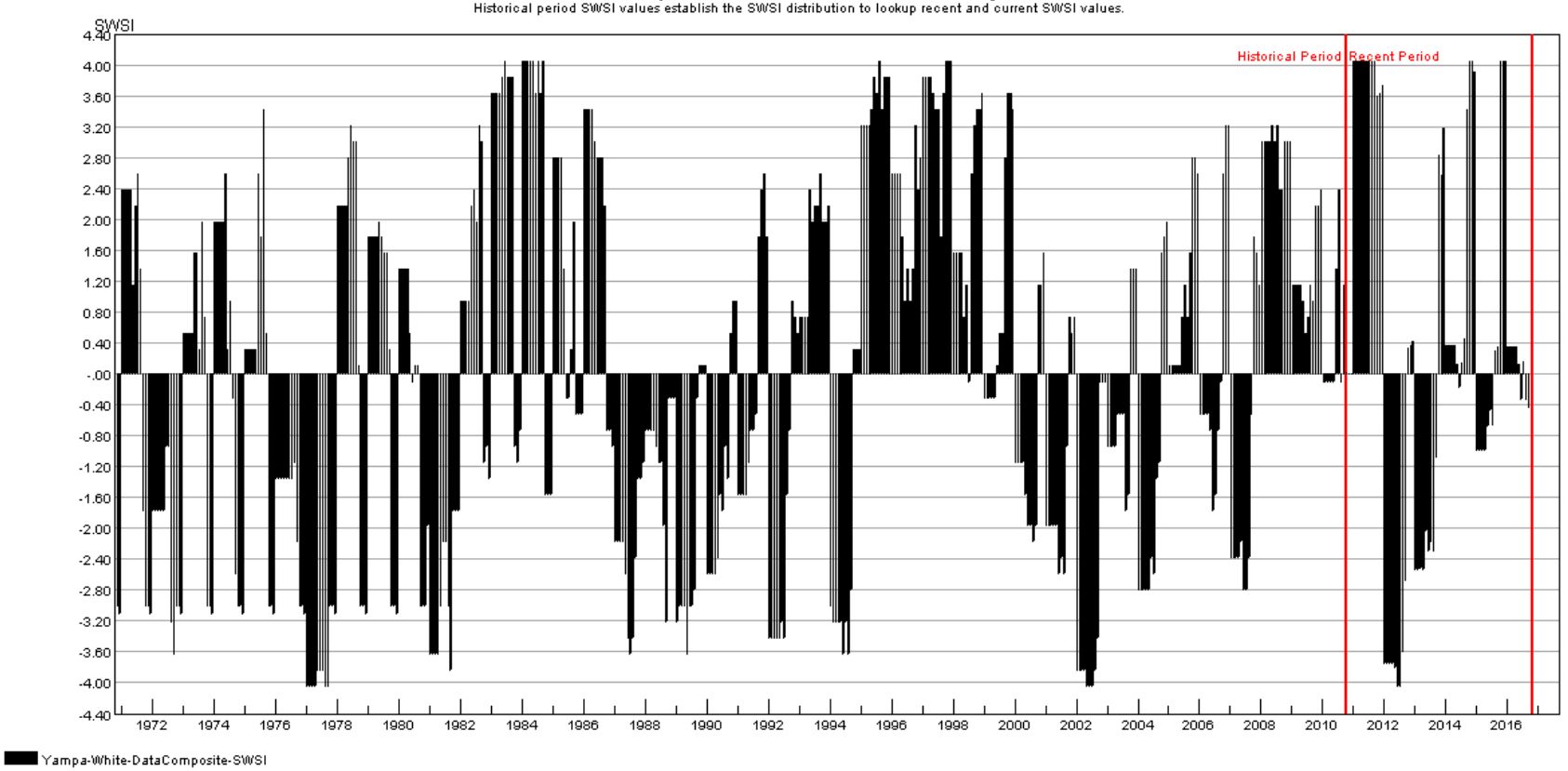
Public Use Impacts

At Steamboat Lake State all boat ramps, the marina and the swim beach are now closed. Fishing is reported as slow mid afternoon but early morning and later evening have been more productive. Larger fish are being caught now that it's cooling down.

At Stagecoach Reservoir State Park the north/marina boat ramp is open through October 31st. All other boat ramps are closed. The swim beach is closed. For details on fishing, please visit the Stagecoach Park conditions site at www.cpw@state .gov.us.

# Yampa-White Basin SWSI History

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

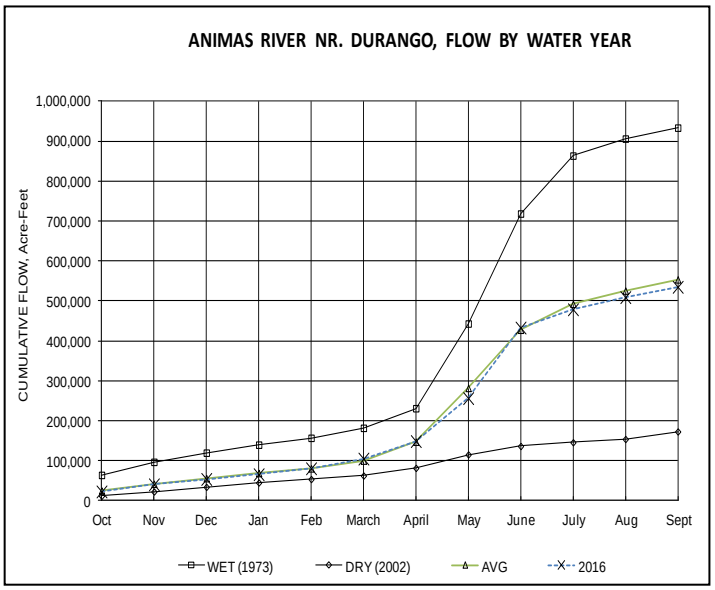


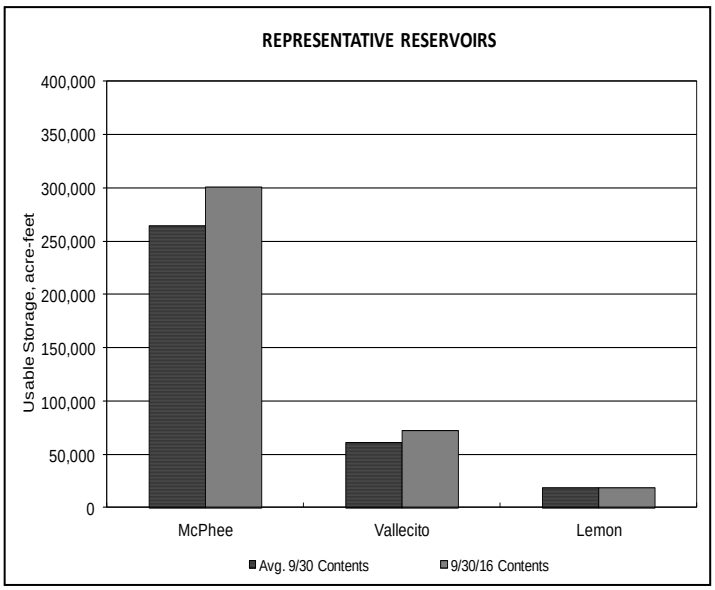
Basinwide Conditions Assessment

The SWSI value for the month was +2.1. Flow at the Animas River at Durango averaged 416 cfs (91% of average). The flow at the Dolores River at Dolores averaged 139 cfs (77% of average). The La Plata River at Hesperus averaged 6 cfs (32% of average). Precipitation in Durango was 1.58 inches for the month, 64% of the 30-year average of 2.45 inches. Precipitation was the 73rd highest amount recorded in September, in Durango, out of 122 years of record. Precipitation to date in Durango, for the water year, is 21.43 inches, 110% of the 30-year average of 19.44 inches. End of last month precipitation to date, for the water year was 114% of average. The average high and low temperatures for the month of September in Durango were 78o and 43o. In comparison, the 30-year average high and low for the month is 77o and 45o. At the end of the month Vallecito Reservoir contained 72,064 acre-feet compared to its average content of 57,985 acre-feet (124% of average). McPhee Reservoir was up to 301,019 acre-feet compared to its average content of 267,860 (112% of average), while Lemon Reservoir was up to 18,520 acre-feet as compared to its average content of 18,727 acre-feet (99% of average).

Outlook

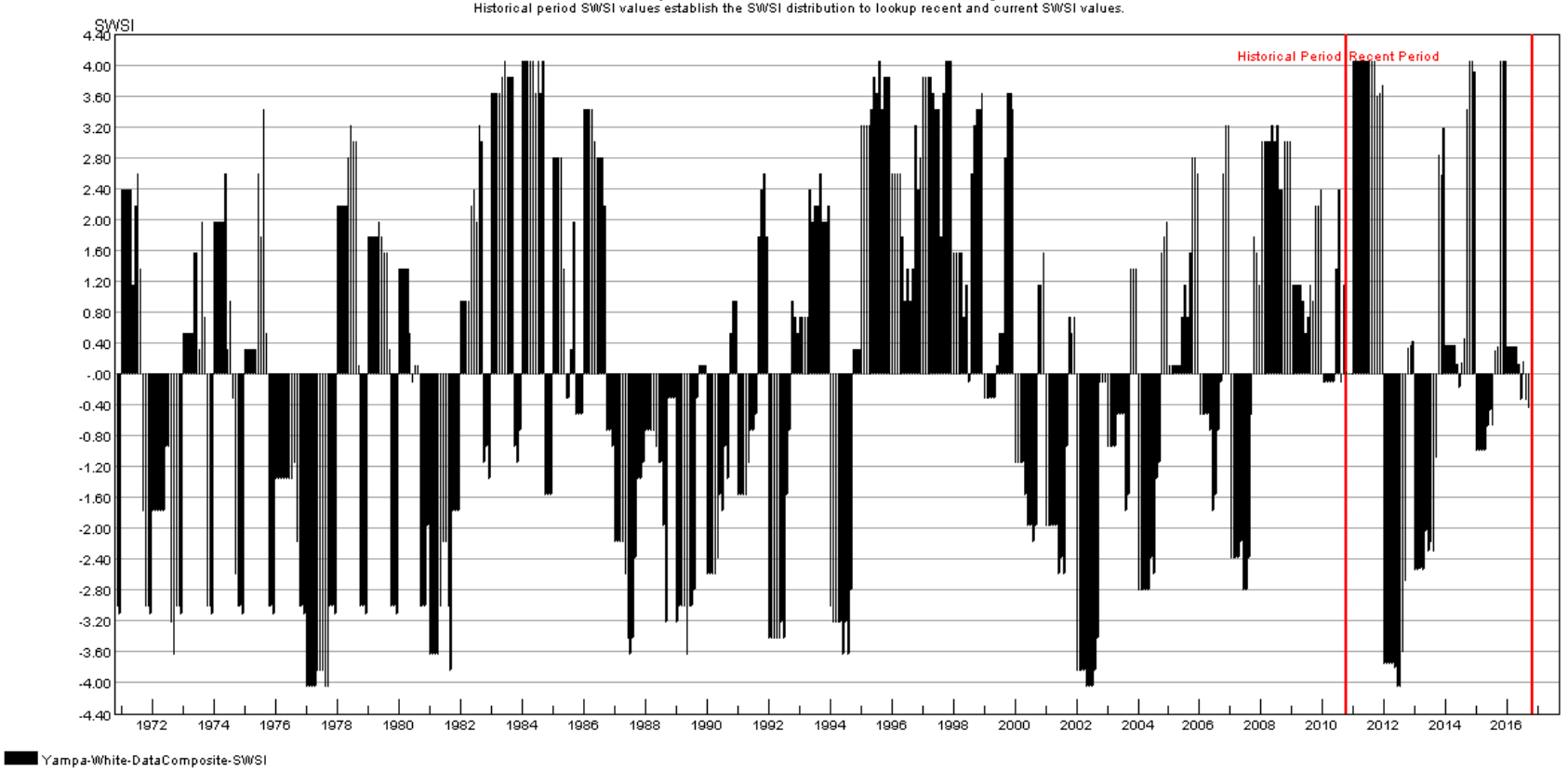
Precipitation (1.58 inches) was below average for September in Durango. There were 73 years out of 122 years of record where there was more precipitation than this year. The monsoon season continues into September but was a little lighter this year. Flows in the rivers within the basin fell to below average. There were 47 out of 106 years of record where the total flow past the Animas River at Durango stream gauge was more than this year. There were 56 out of 107 years of record where the total flow past the Dolores stream gauge was more than this year and 92 out of 100 years of record where the total flow past the La Plata River at Hesperus gauge was more than this year.



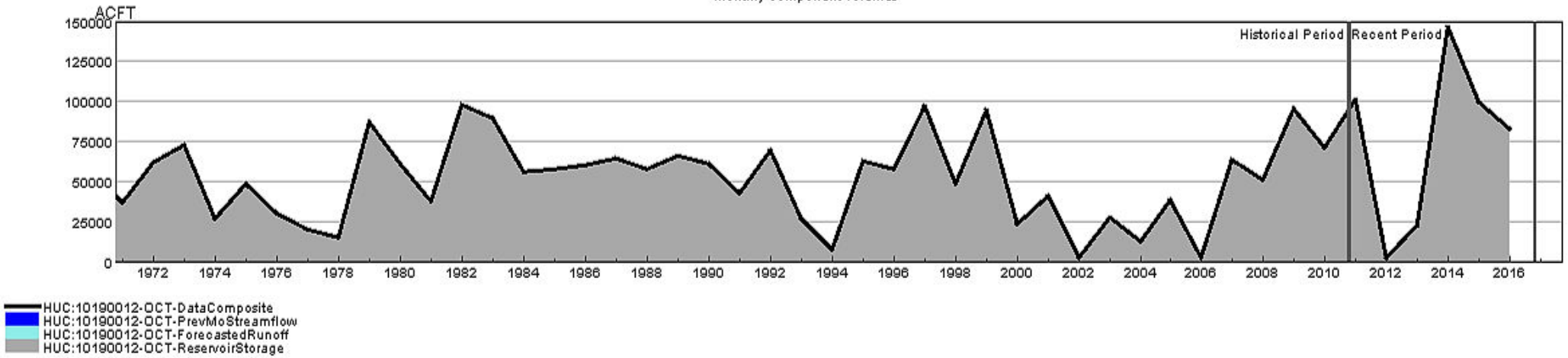
# Yampa-White Basin SWSI History

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



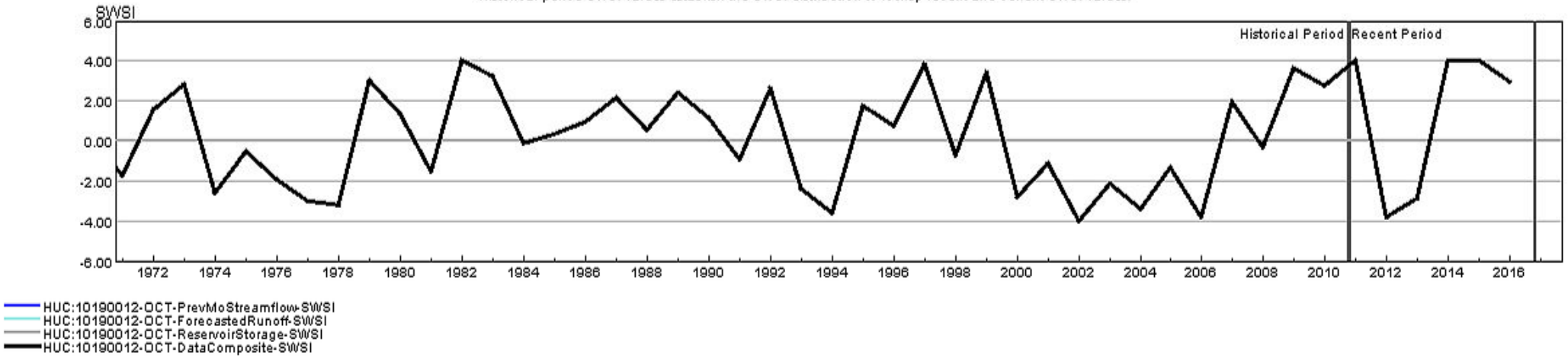
## HUC 10190012 (Middle South Platte-Sterling) Surface Water Supply - OCT

Monthly component volumes



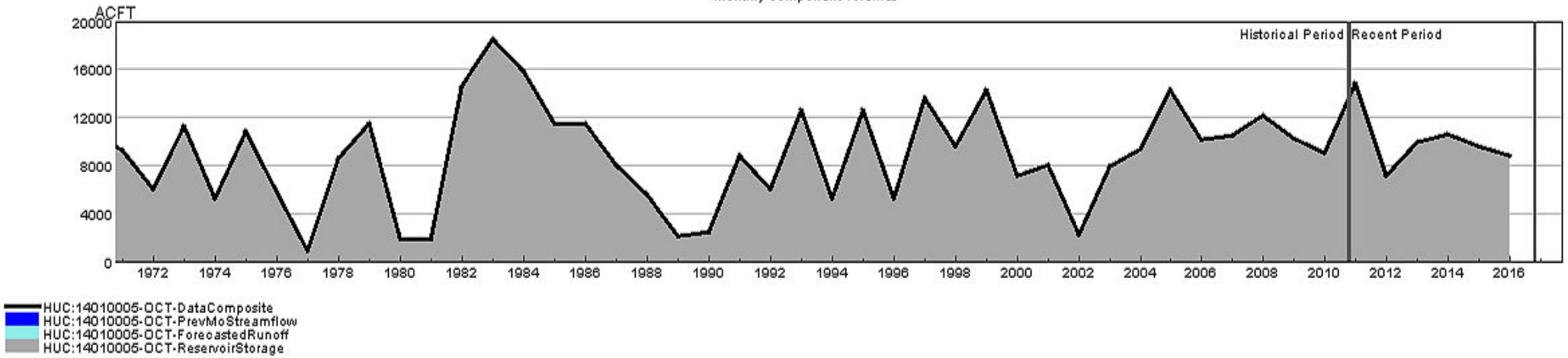

## HUC 10190012 (Middle South Platte-Sterling) SWSI Values - OCT

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



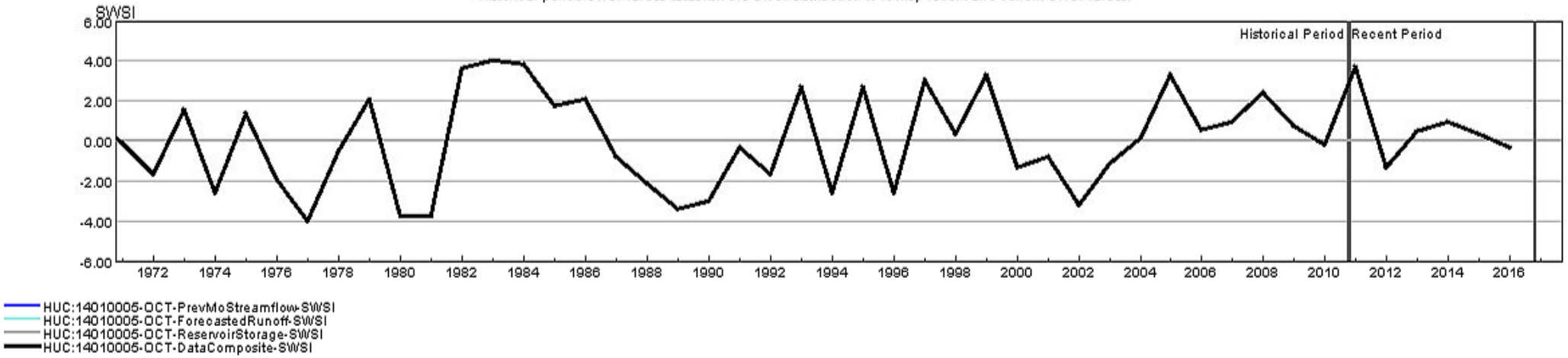
## HUC 14010005 (Colorado Headwaters-Plateau) Surface Water Supply - OCT

Monthly component volumes



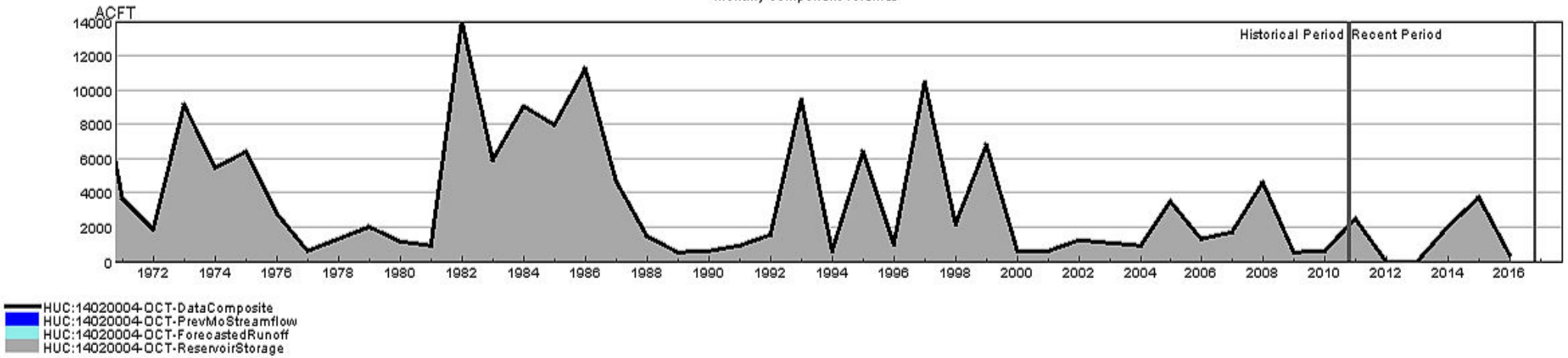

## HUC 14010005 (Colorado Headwaters-Plateau) SWSI Values - OCT

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



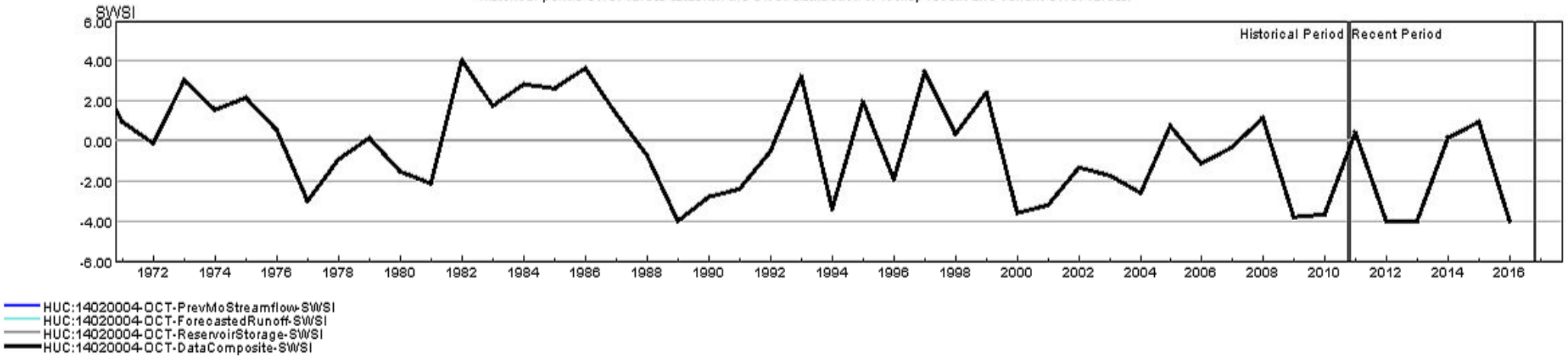
## HUC 14020004 (North Fork Gunnison) Surface Water Supply - OCT

Monthly component volumes



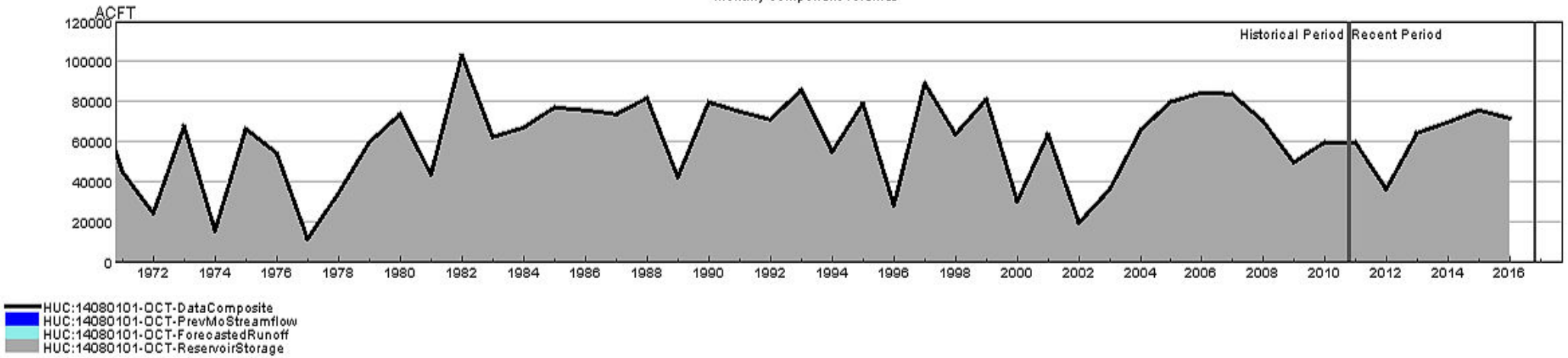

## HUC 14020004 (North Fork Gunnison) SWSI Values - OCT

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



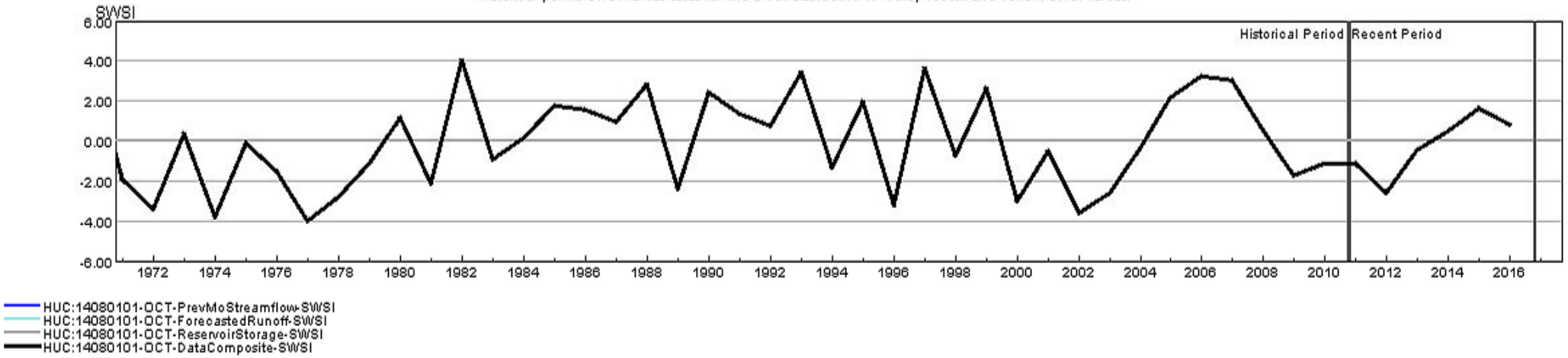
## HUC 14080101 (Upper San Juan) Surface Water Supply - OCT

Monthly component volumes



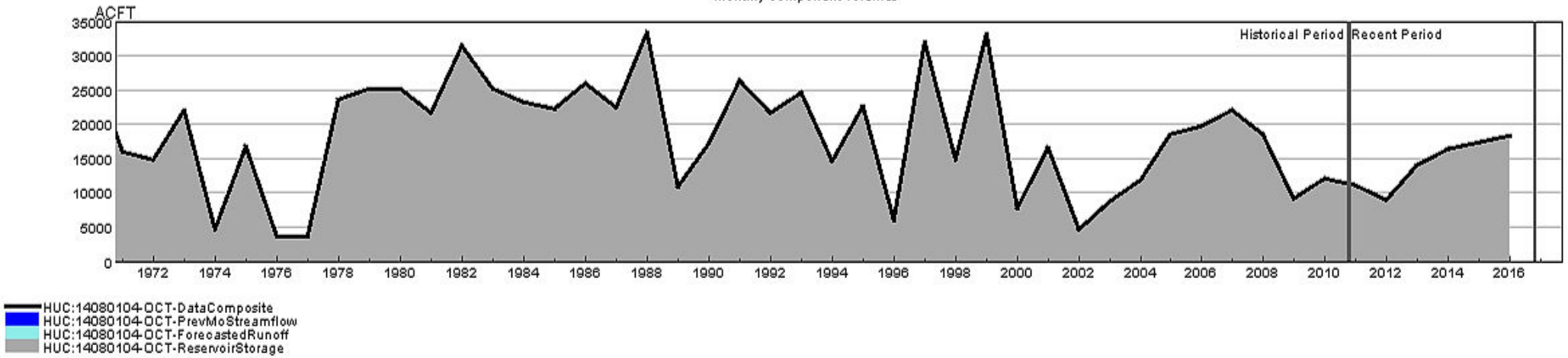

## HUC 14080101 (Upper San Juan) SWSI Values - OCT

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



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

Monthly component volumes




## HUC 14080104 (Animas) SWSI Values - OCT

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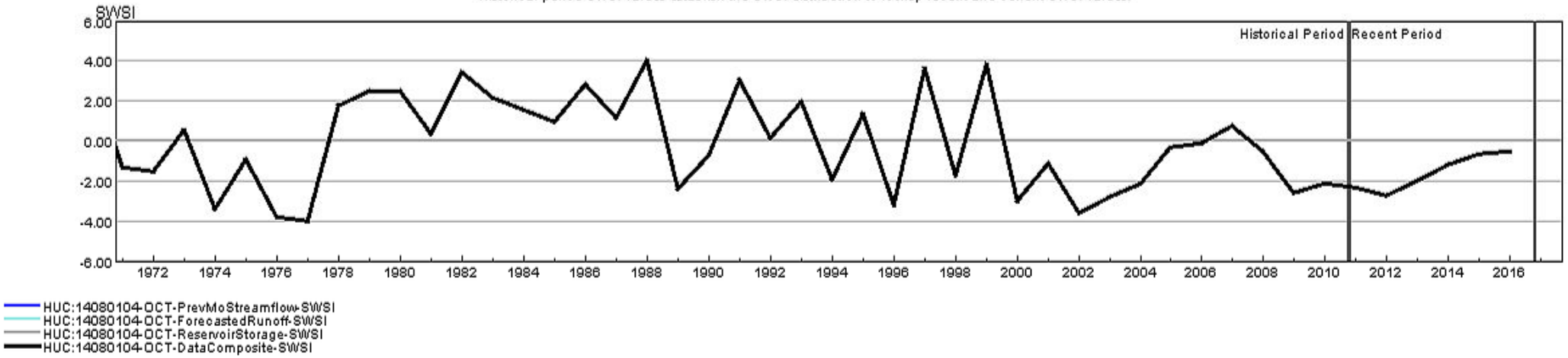
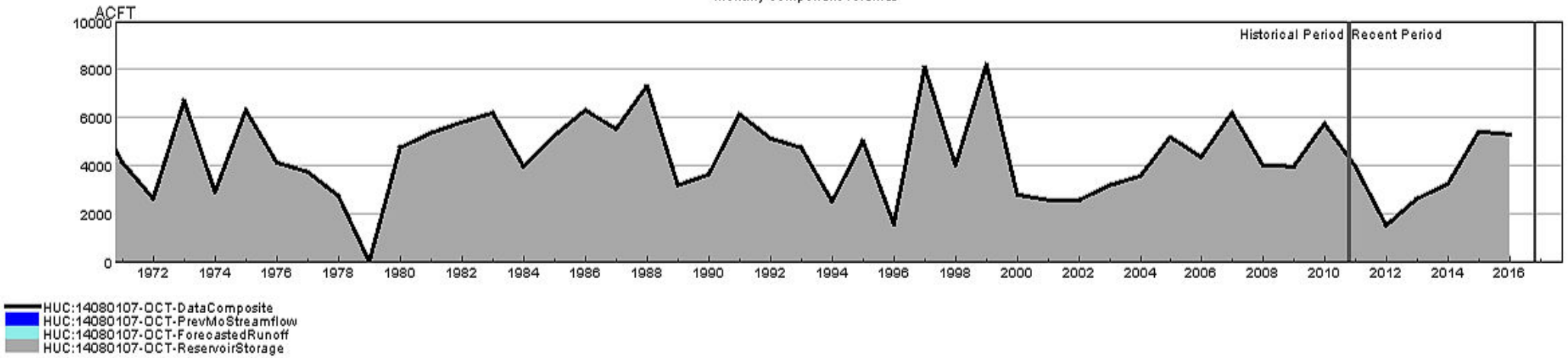


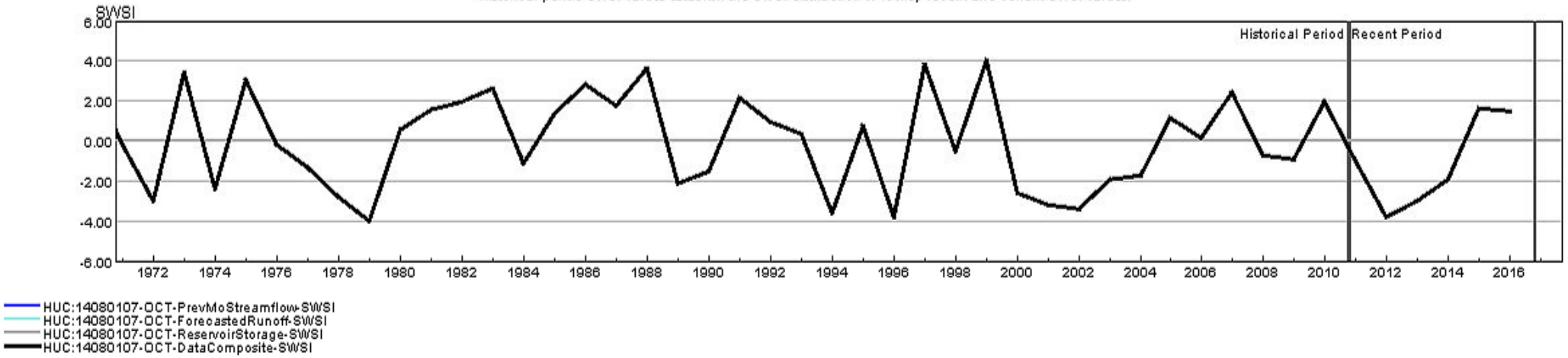
## HUC 14080107 (Mancos) Surface Water Supply - OCT

Monthly component volumes



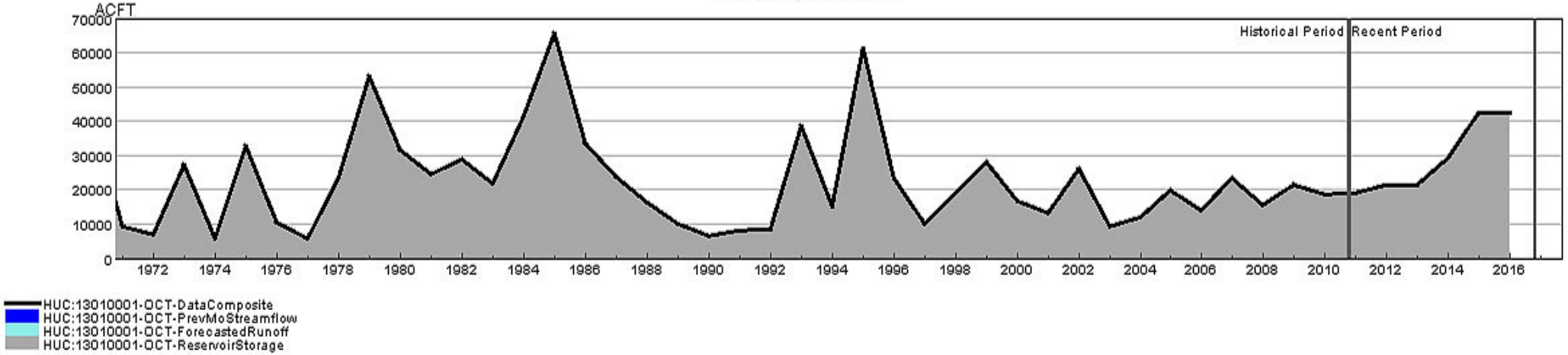

## HUC 14080107 (Mancos) SWSI Values - OCT

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



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

Monthly component volumes




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

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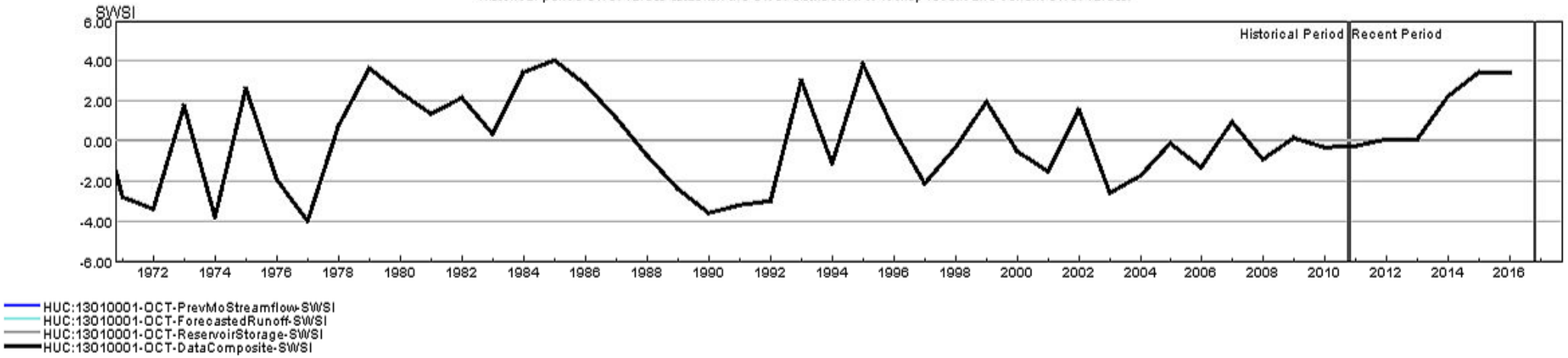
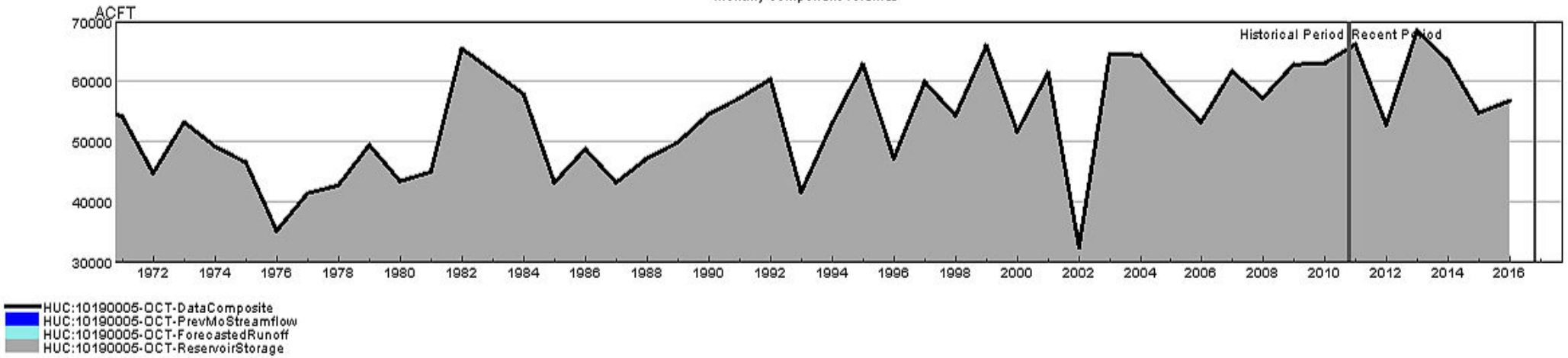


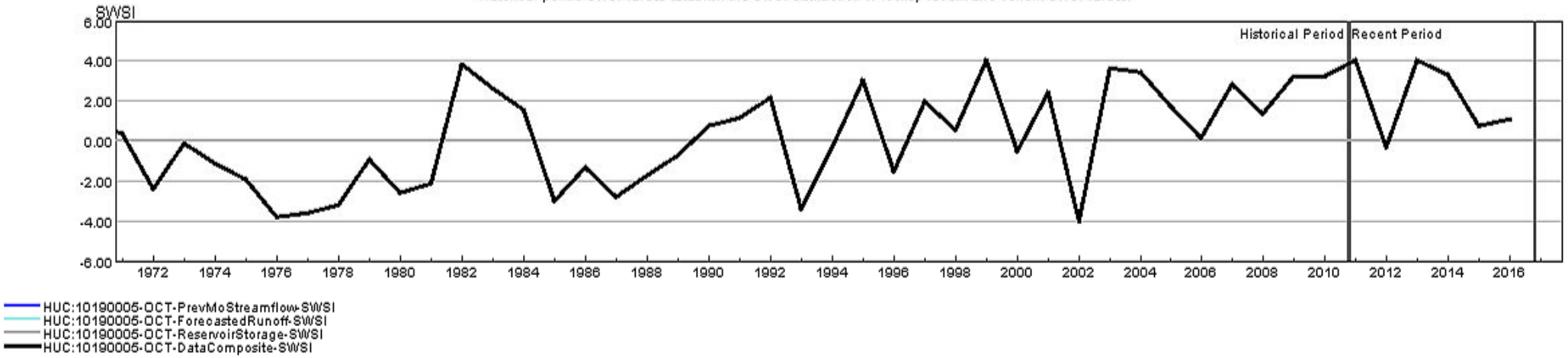
## HUC 10190005 (St. Vrain) Surface Water Supply - OCT

Monthly component volumes



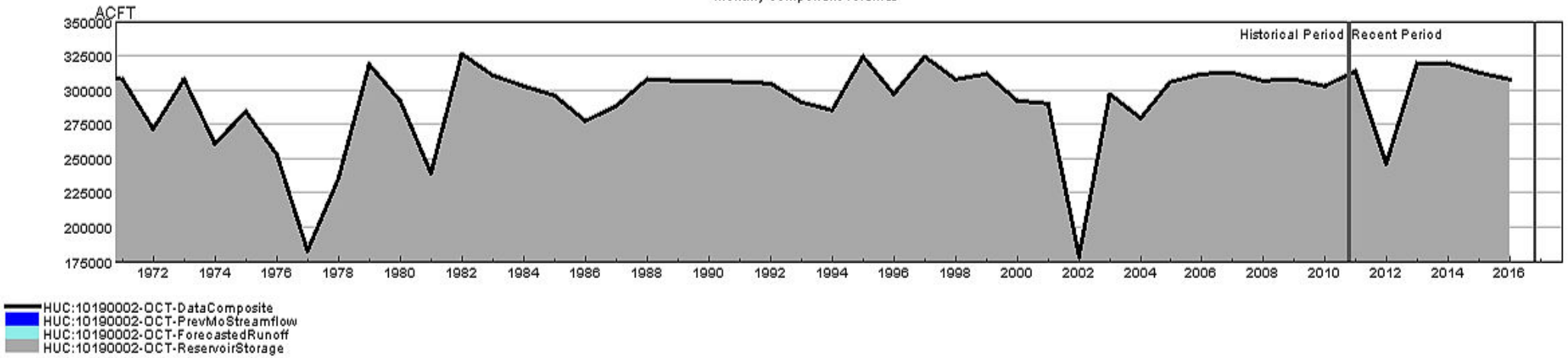

## HUC 10190005 (St. Vrain) SWSI Values - OCT

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



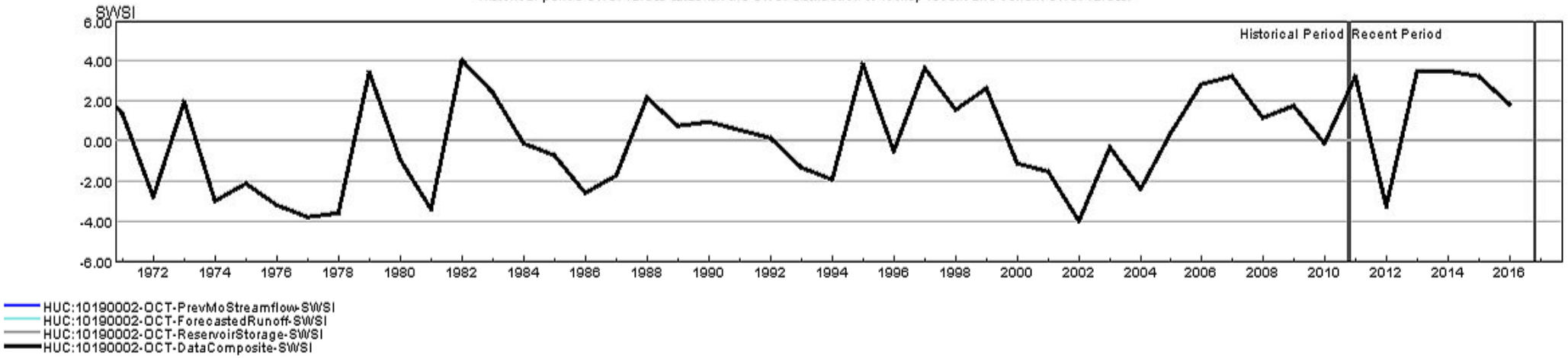
## HUC 10190002 (Upper South Platte) Surface Water Supply - OCT

Monthly component volumes



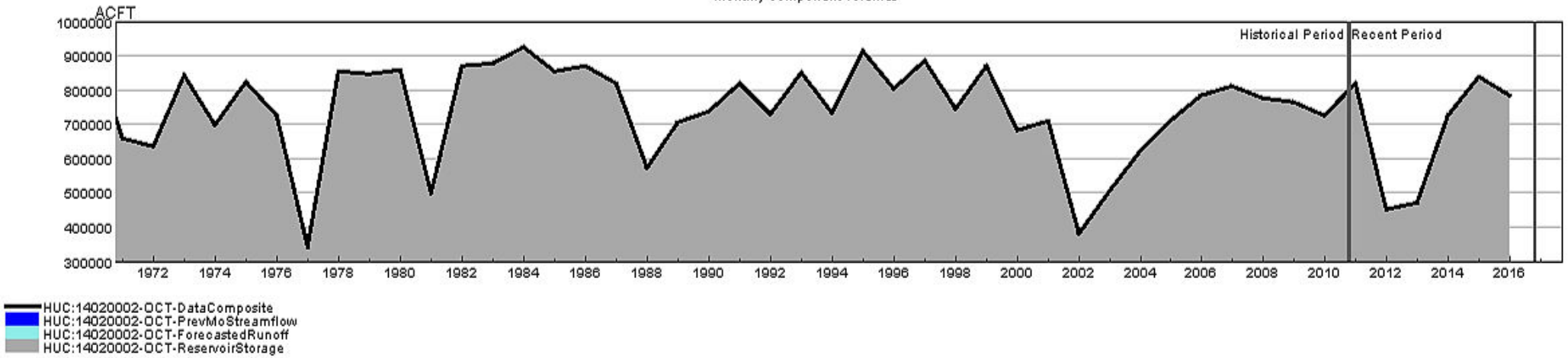

## HUC 10190002 (Upper South Platte) SWSI Values - OCT

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



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

Monthly component volumes

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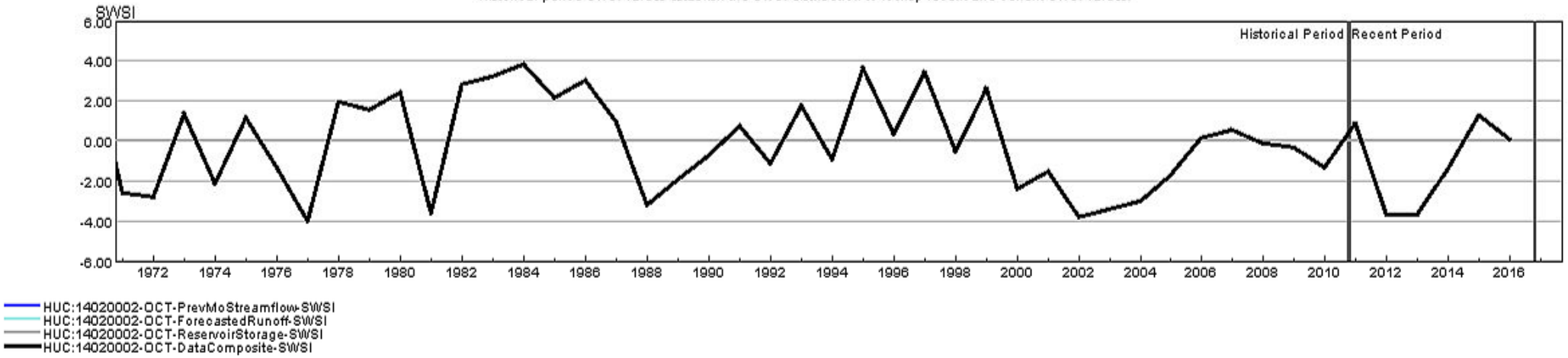
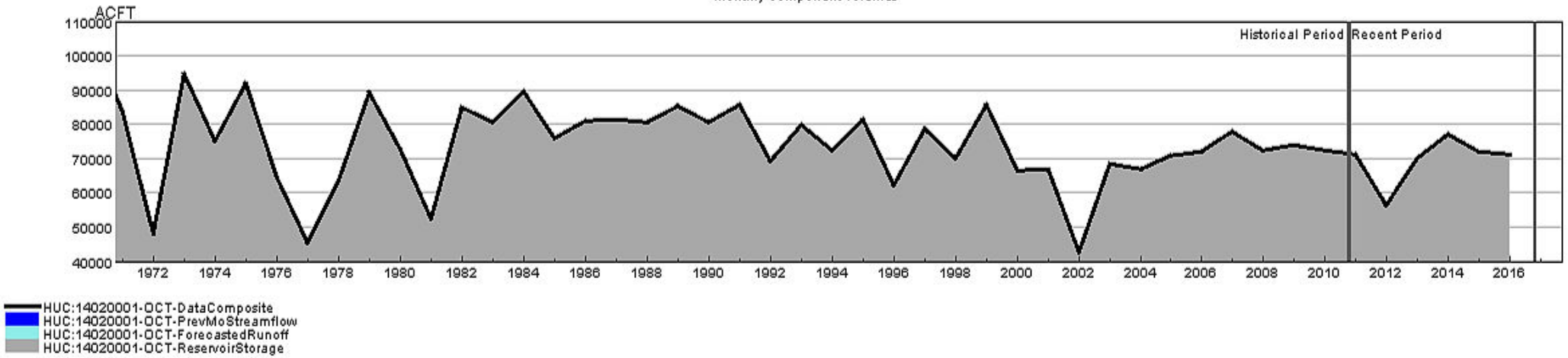


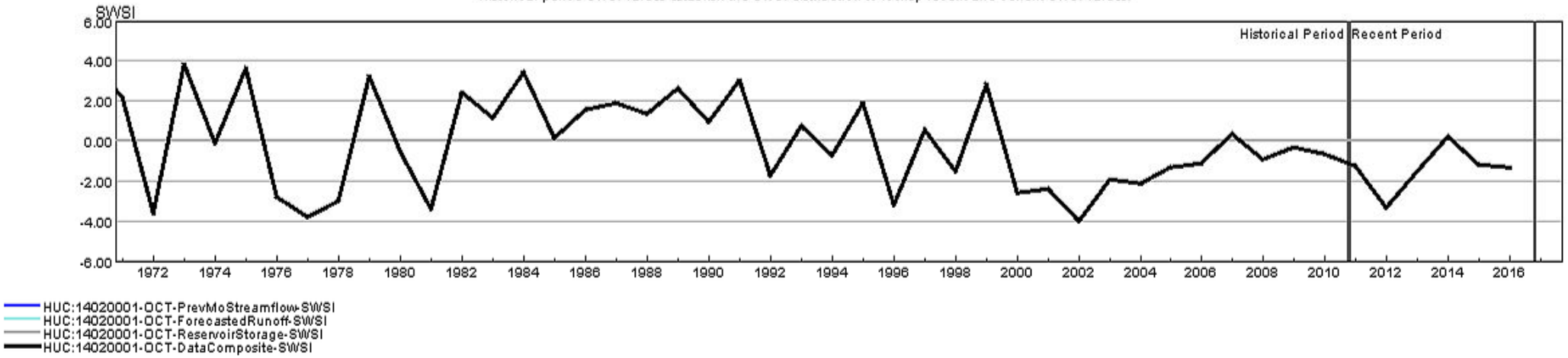
## HUC 14020001 (East-Taylor) Surface Water Supply - OCT

Monthly component volumes



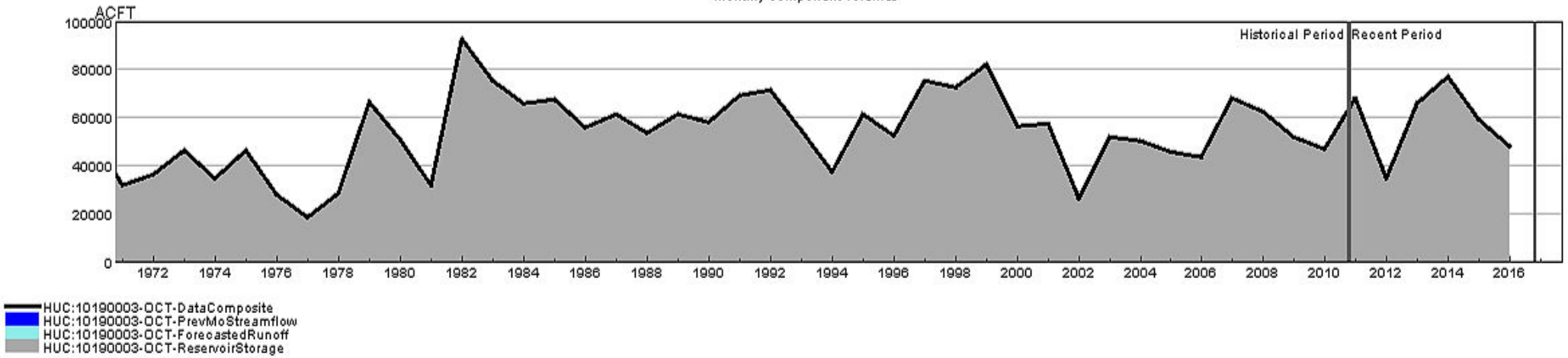

## HUC 14020001 (East-Taylor) SWSI Values - OCT

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



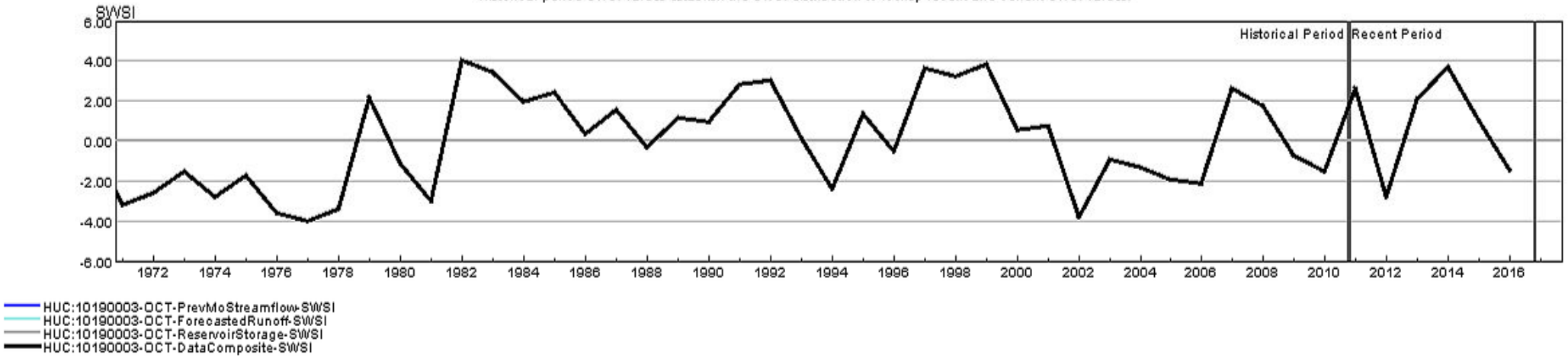
## HUC 10190003 (Middle South Platte-Cherry Creek) Surface Water Supply - OCT

Monthly component volumes



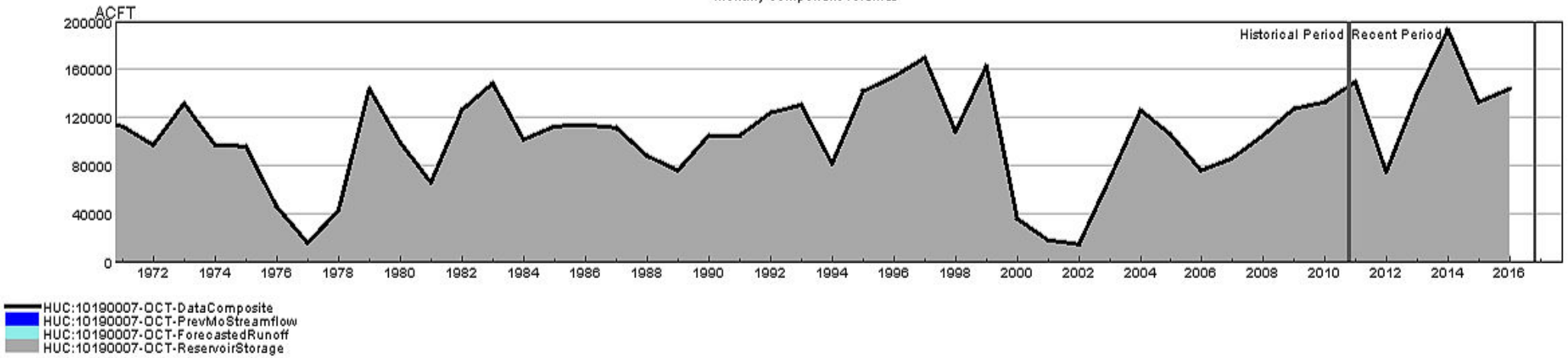

## HUC 10190003 (Middle South Platte-Cherry Creek) SWSI Values - OCT

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



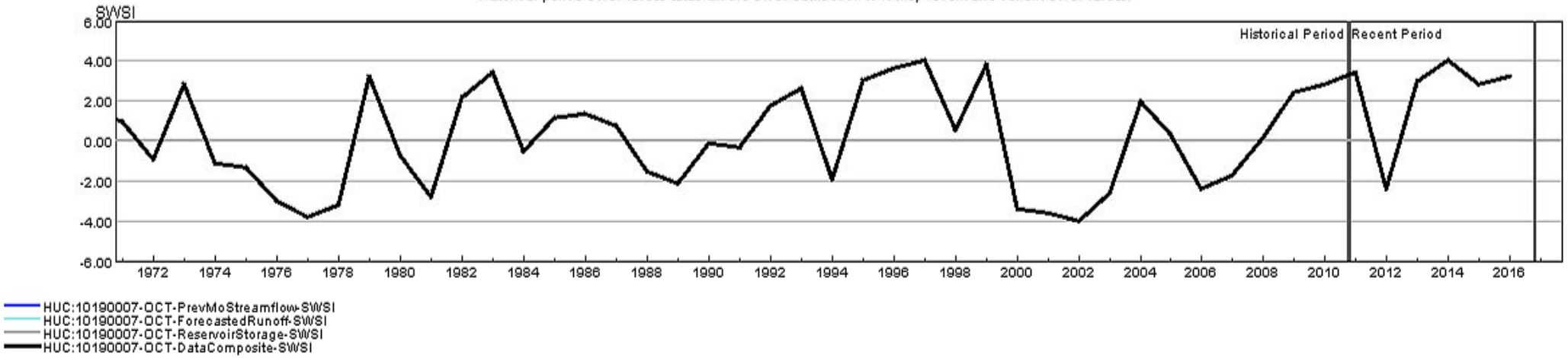
# HUC 10190007 (Cache La Poudre) Surface Water Supply - OCT

Monthly component volumes



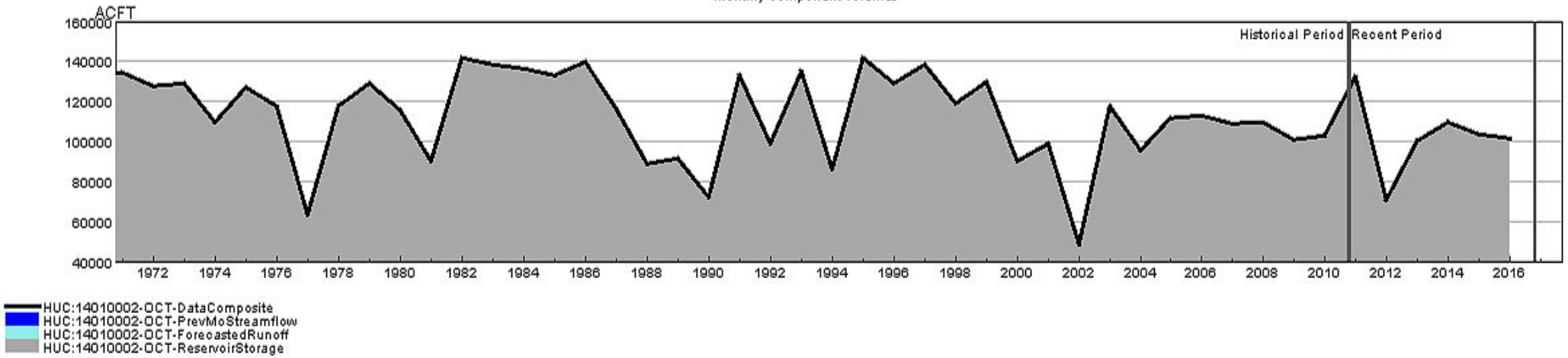

# HUC 10190007 (Cache La Poudre) SWSI Values - OCT

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



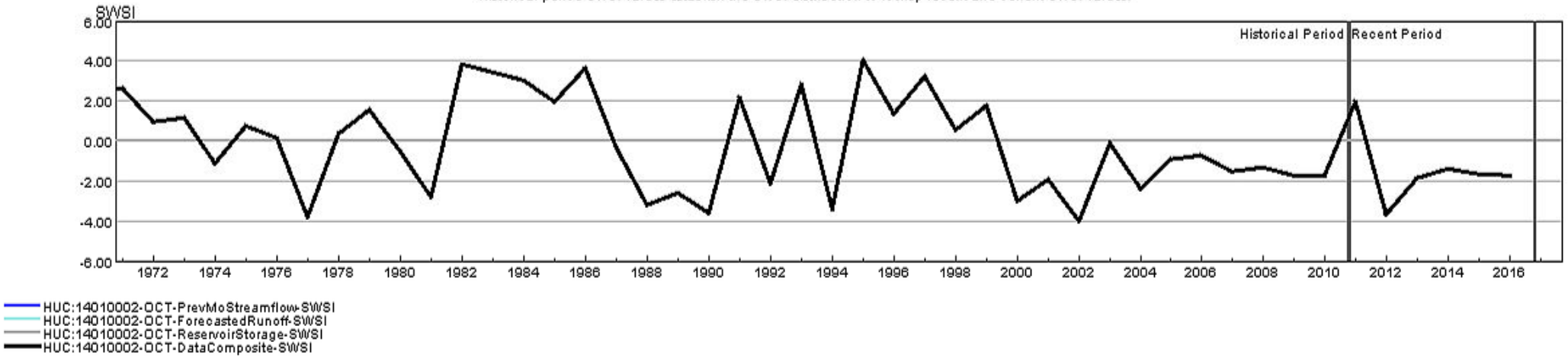
## HUC 14010002 (Blue) Surface Water Supply - OCT

Monthly component volumes



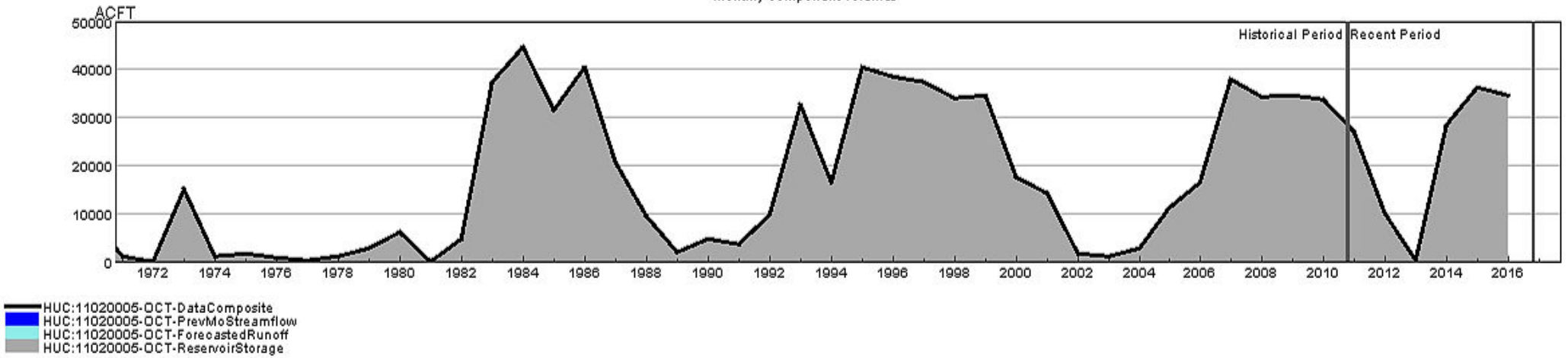

## HUC 14010002 (Blue) SWSI Values - OCT

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



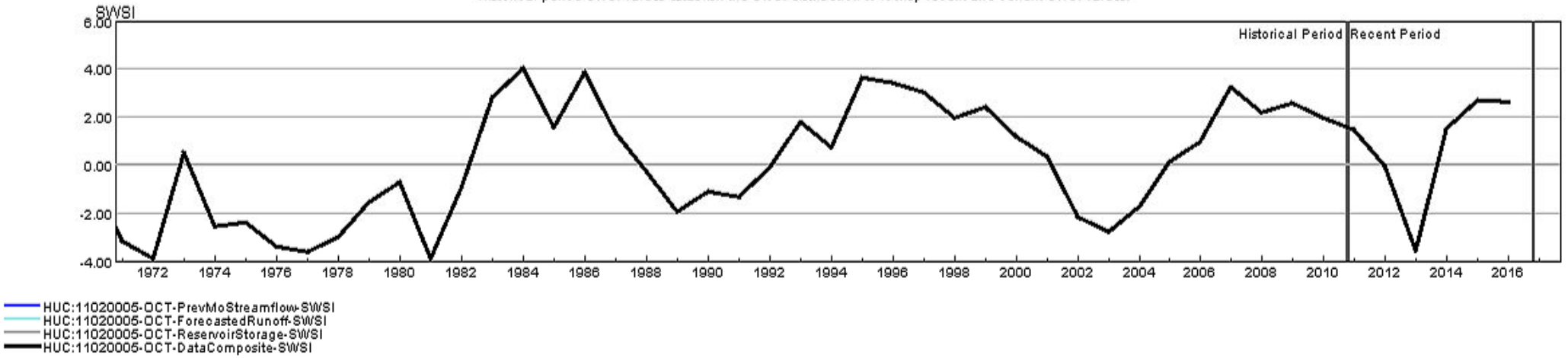
## HUC 11020005 (Upper Arkansas-Lake Meredith) Surface Water Supply - OCT

Monthly component volumes



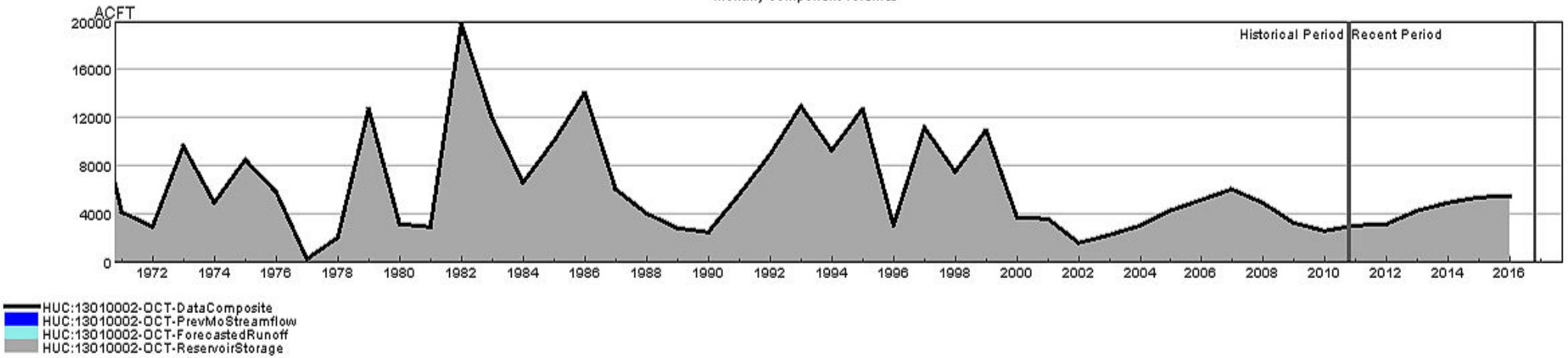

## HUC 11020005 (Upper Arkansas-Lake Meredith) SWSI Values - OCT

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



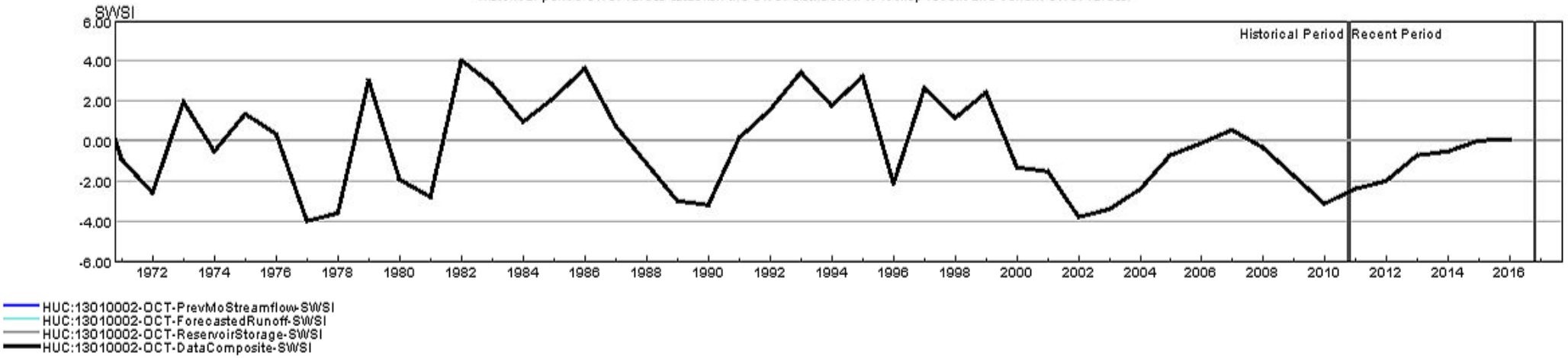
## HUC 13010002 (Alamosa-Trinchera) Surface Water Supply - OCT

Monthly component volumes



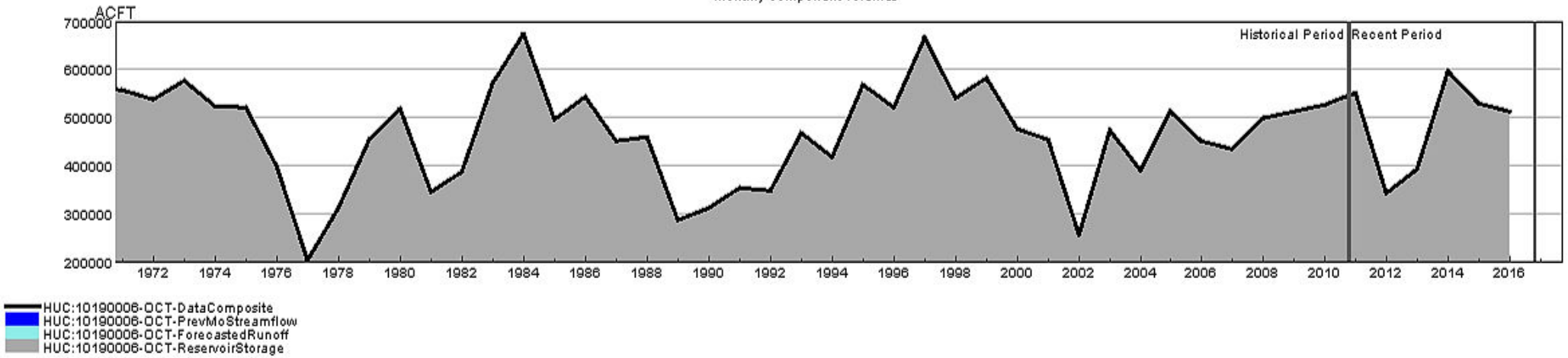

## HUC 13010002 (Alamosa-Trinchera) SWSI Values - OCT

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



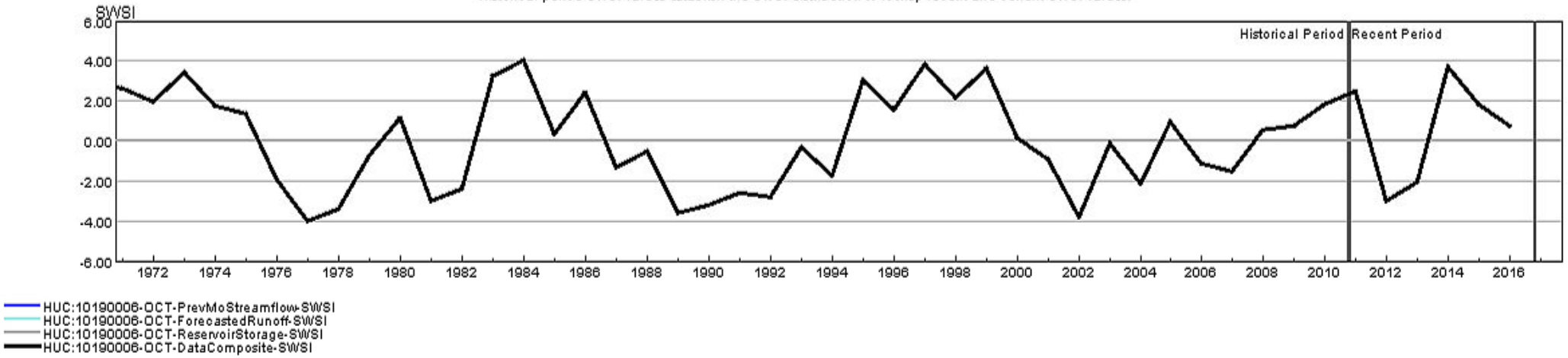
## HUC 10190006 (Big Thompson) Surface Water Supply - OCT

Monthly component volumes



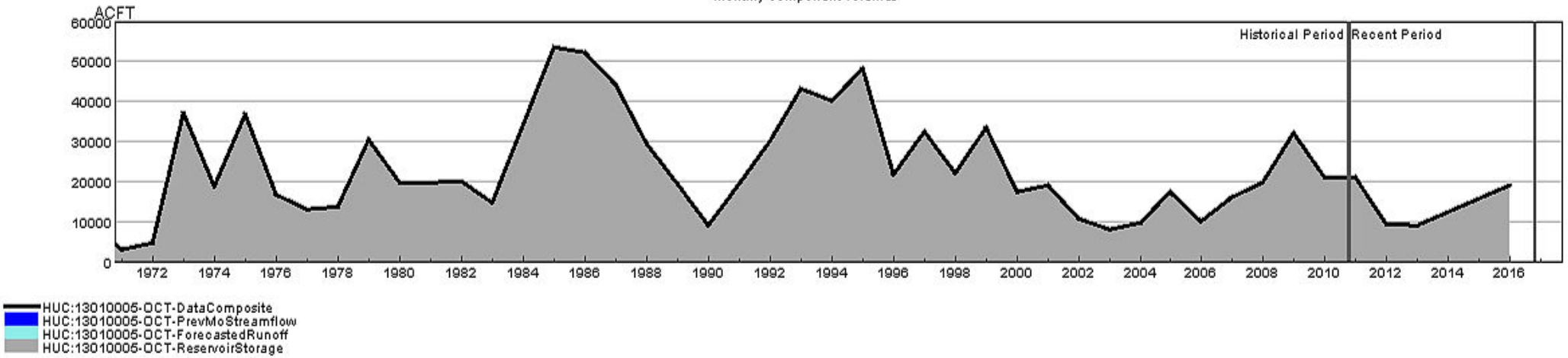

## HUC 10190006 (Big Thompson) SWSI Values - OCT

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



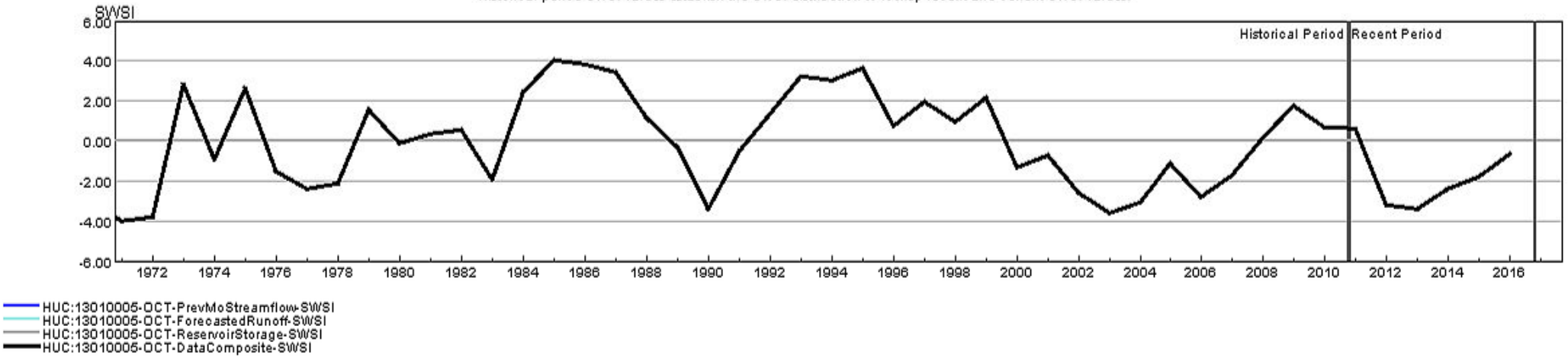
## HUC 13010005 (Conejos) Surface Water Supply - OCT

Monthly component volumes



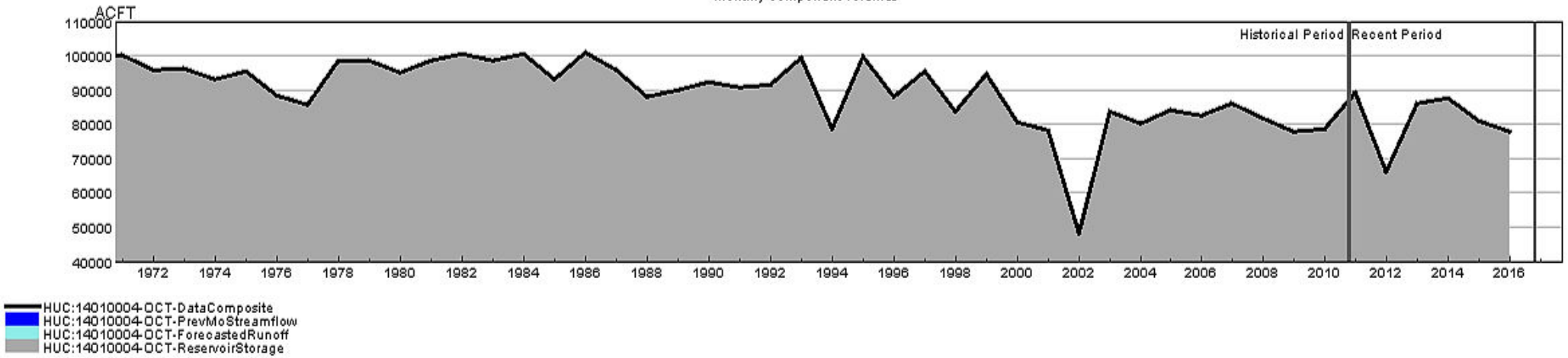

## HUC 13010005 (Conejos) SWSI Values - OCT

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



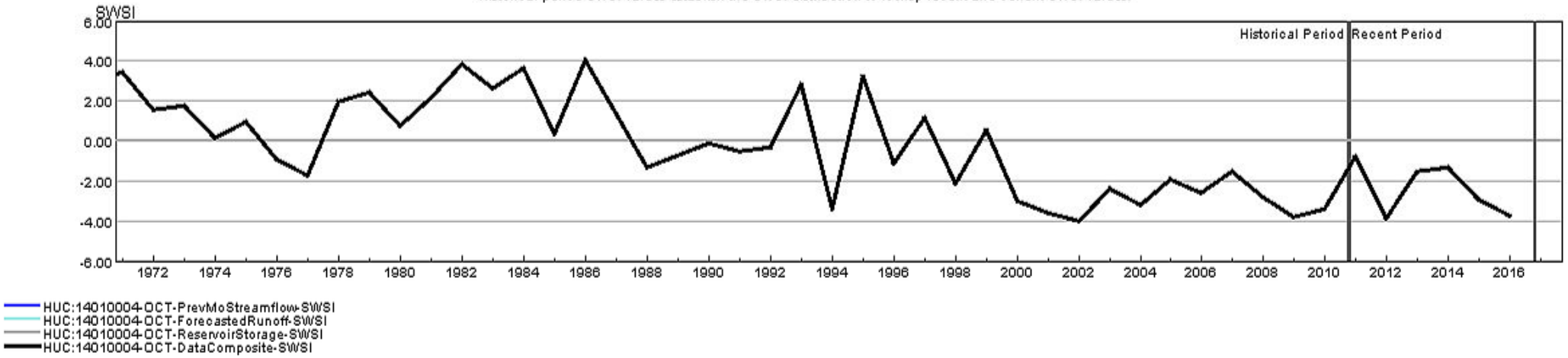
## HUC 14010004 (Roaring Fork) Surface Water Supply - OCT

Monthly component volumes



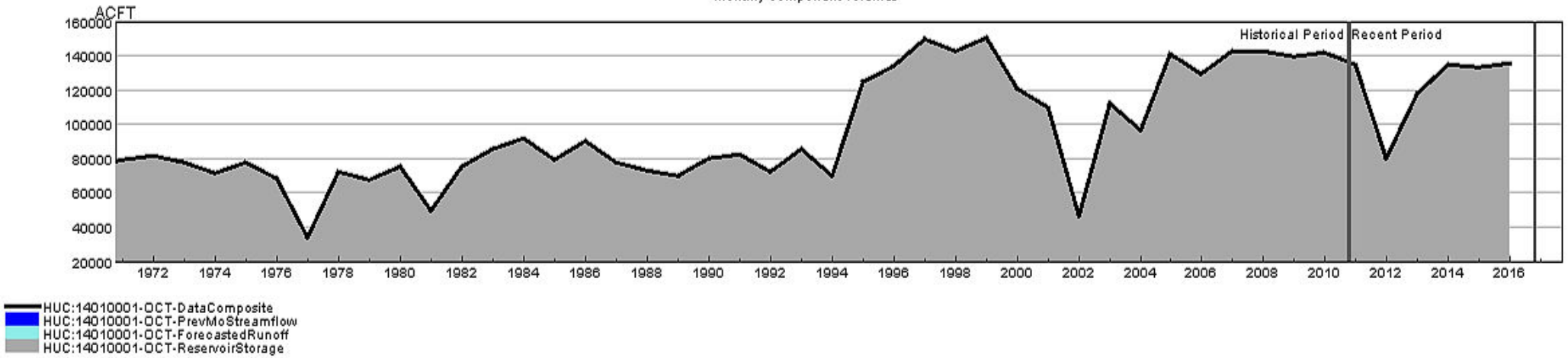

## HUC 14010004 (Roaring Fork) SWSI Values - OCT

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



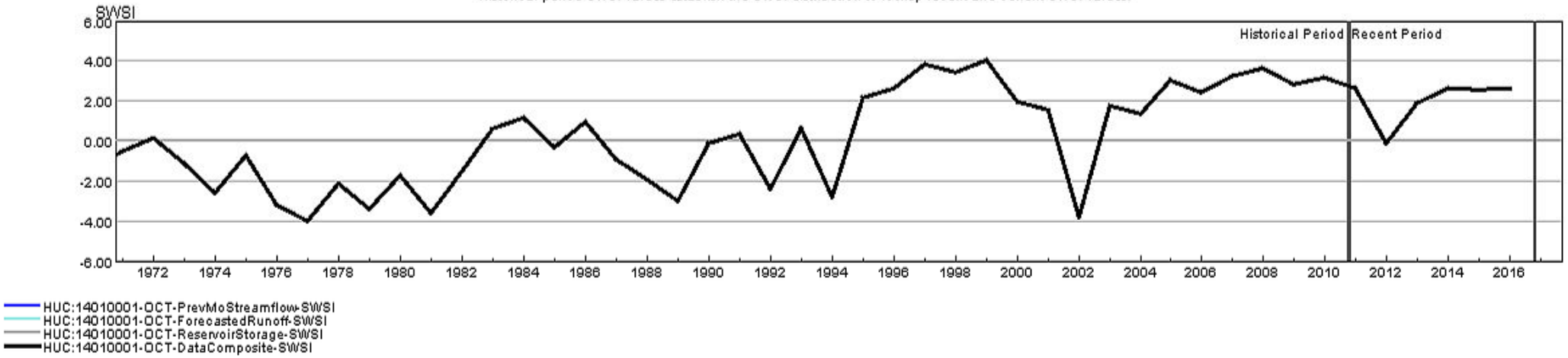
## HUC 14010001 (Colorado Headwaters) Surface Water Supply - OCT

Monthly component volumes



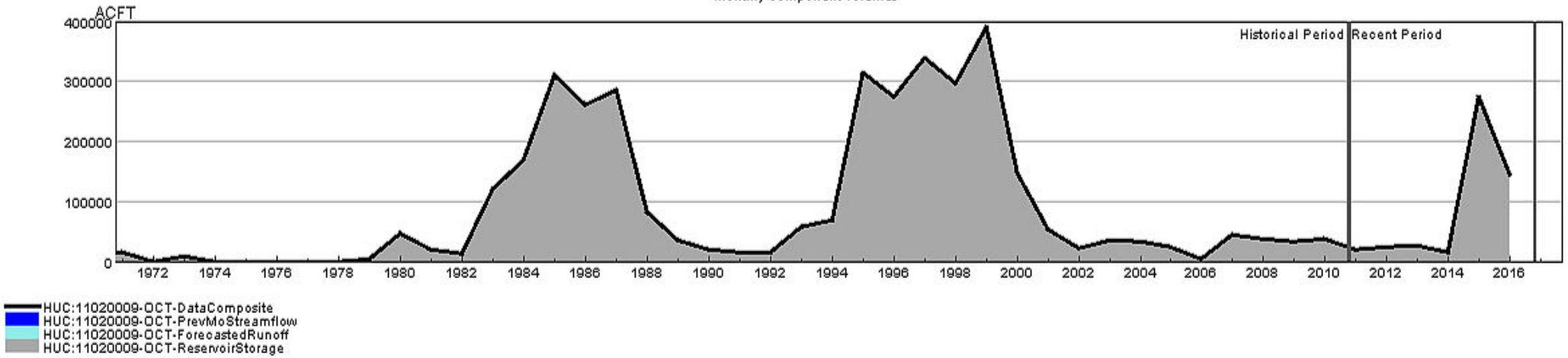

## HUC 14010001 (Colorado Headwaters) SWSI Values - OCT

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



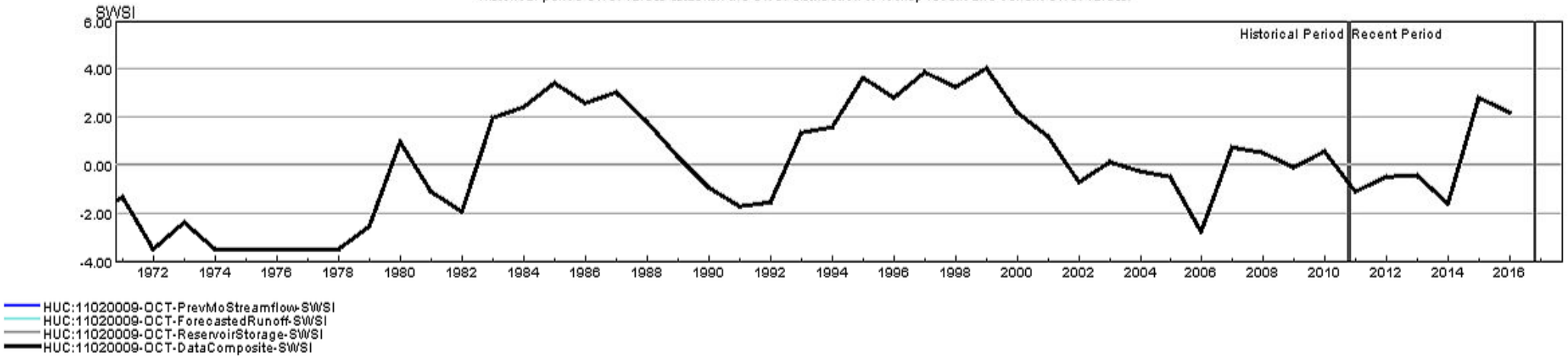
## HUC 11020009 (Upper Arkansas-John Martin Reservoir) Surface Water Supply - OCT

Monthly component volumes



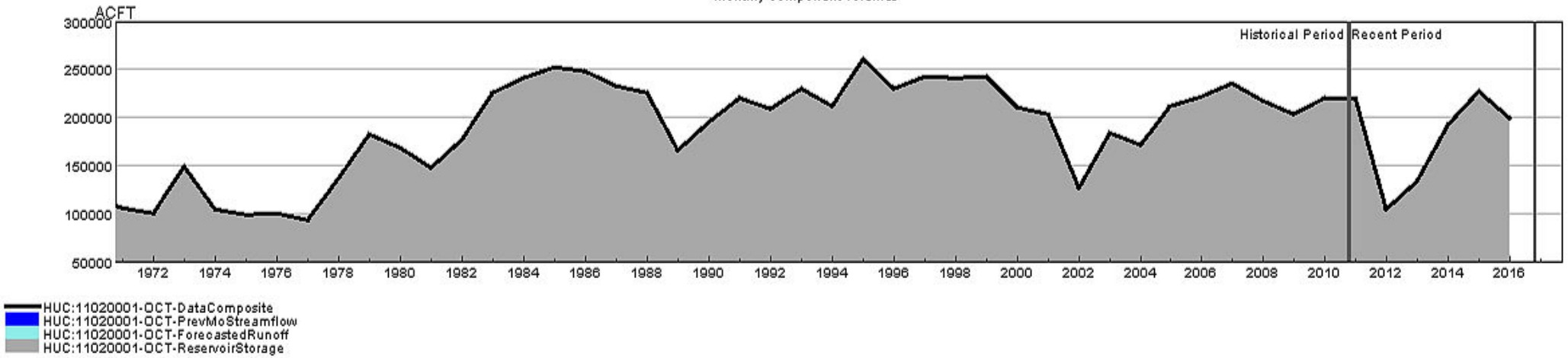

## HUC 11020009 (Upper Arkansas-John Martin Reservoir) SWSI Values - OCT

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



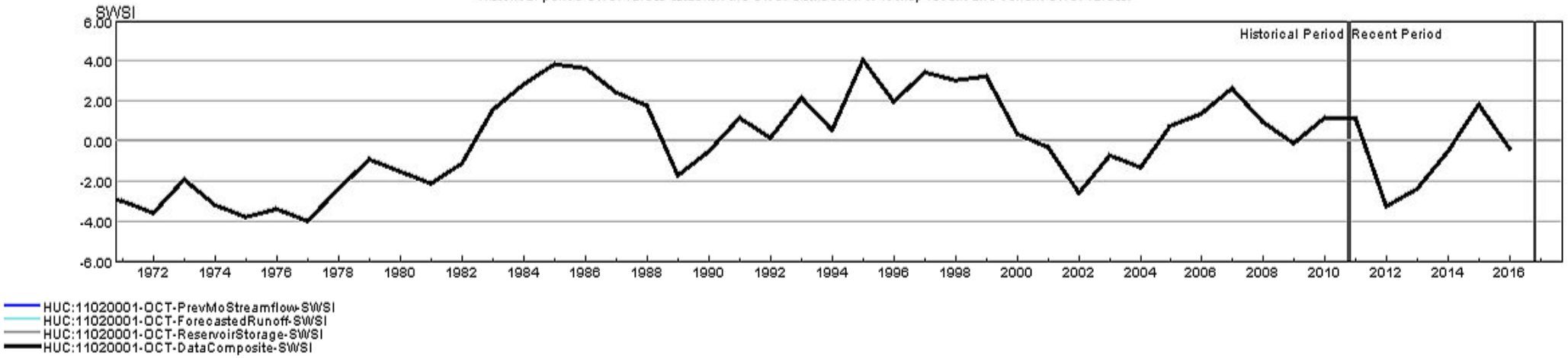
## HUC 11020001 (Arkansas Headwaters) Surface Water Supply - OCT

Monthly component volumes



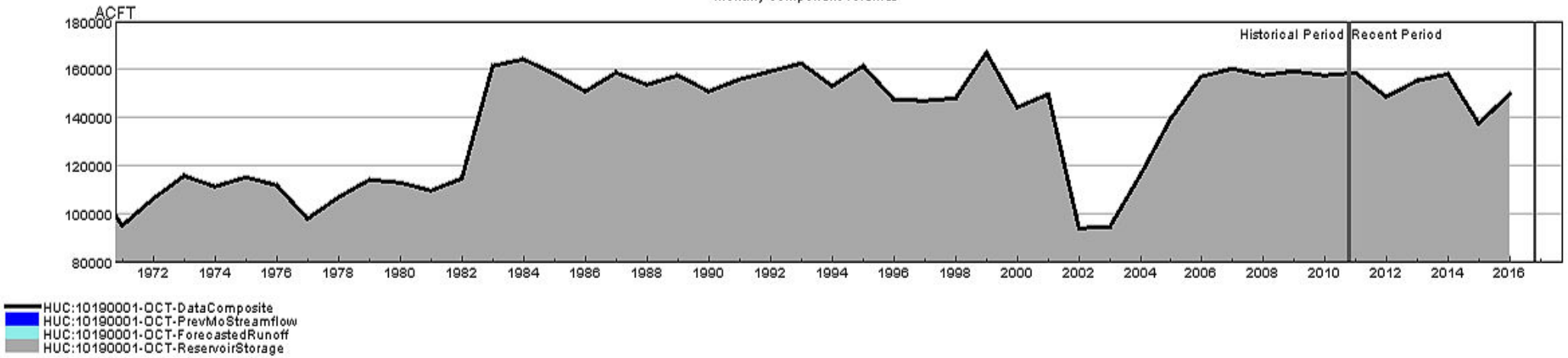

## HUC 11020001 (Arkansas Headwaters) SWSI Values - OCT

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



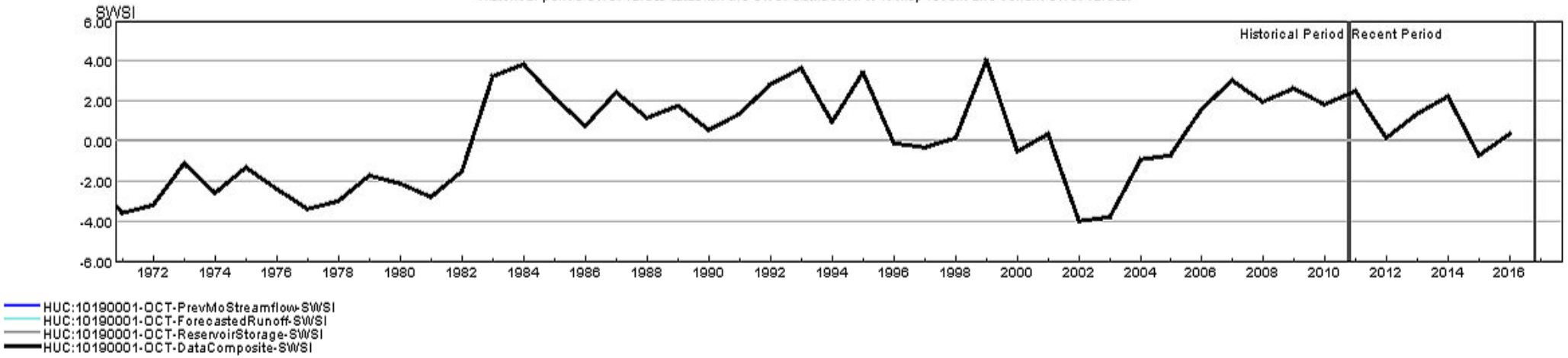
## HUC 10190001 (South Platte Headwater) Surface Water Supply - OCT

Monthly component volumes



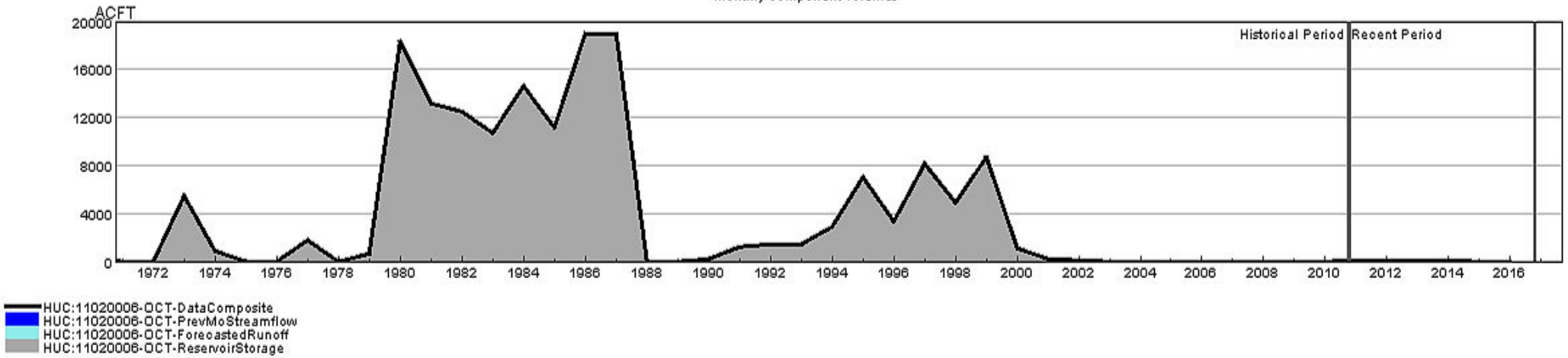

## HUC 10190001 (South Platte Headwater) SWSI Values - OCT

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



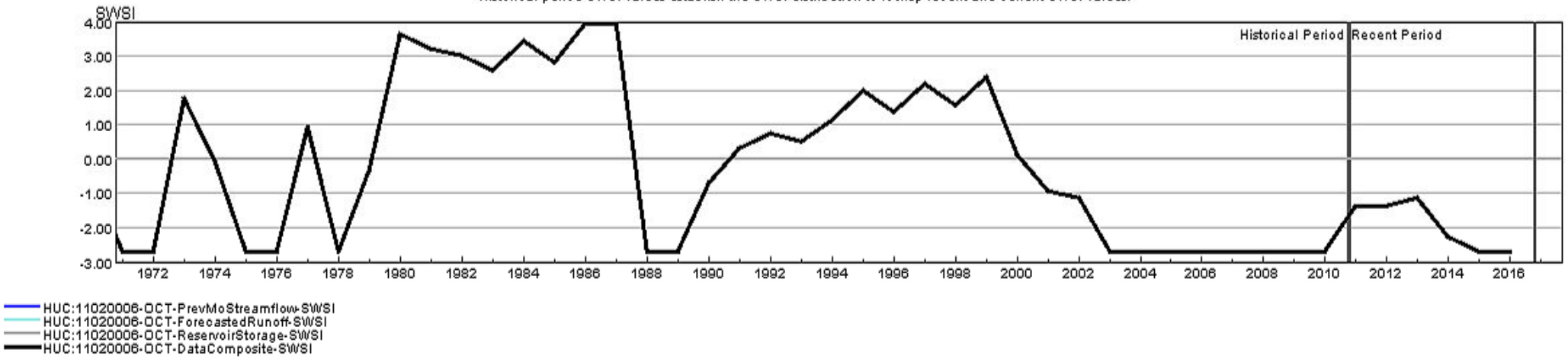
## HUC 11020006 (Huerfano) Surface Water Supply - OCT

Monthly component volumes



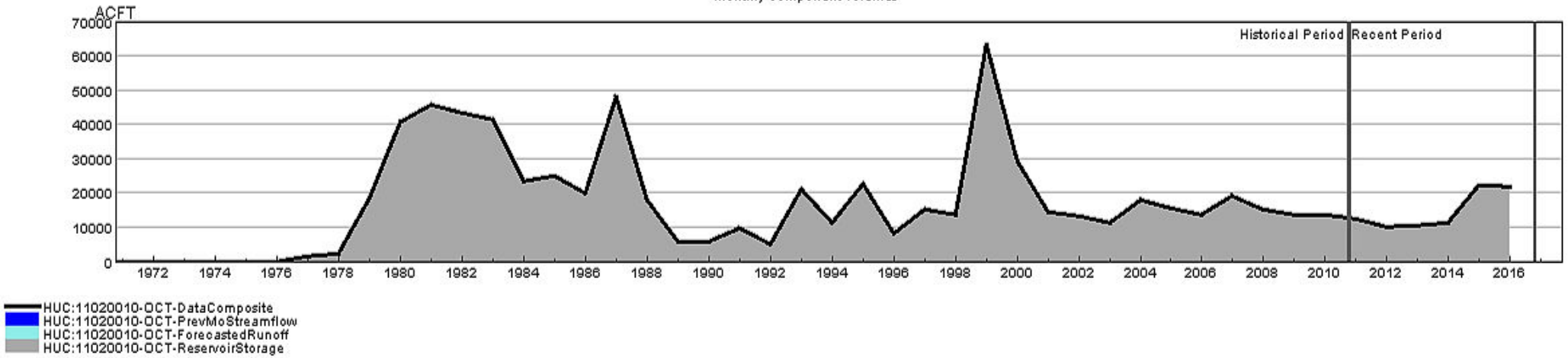

## HUC 11020006 (Huerfano) SWSI Values - OCT

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



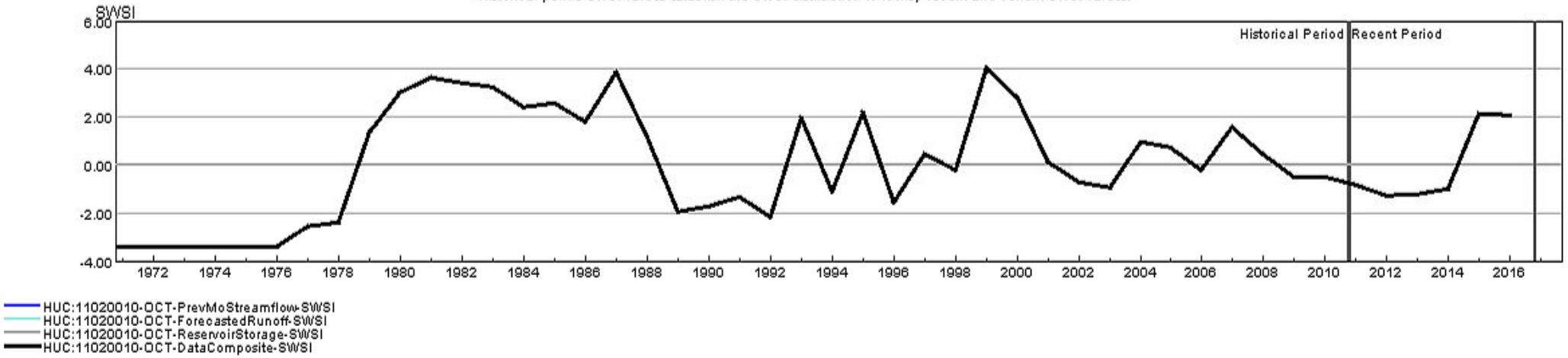
## HUC 11020010 (Purgatoire) Surface Water Supply - OCT

Monthly component volumes



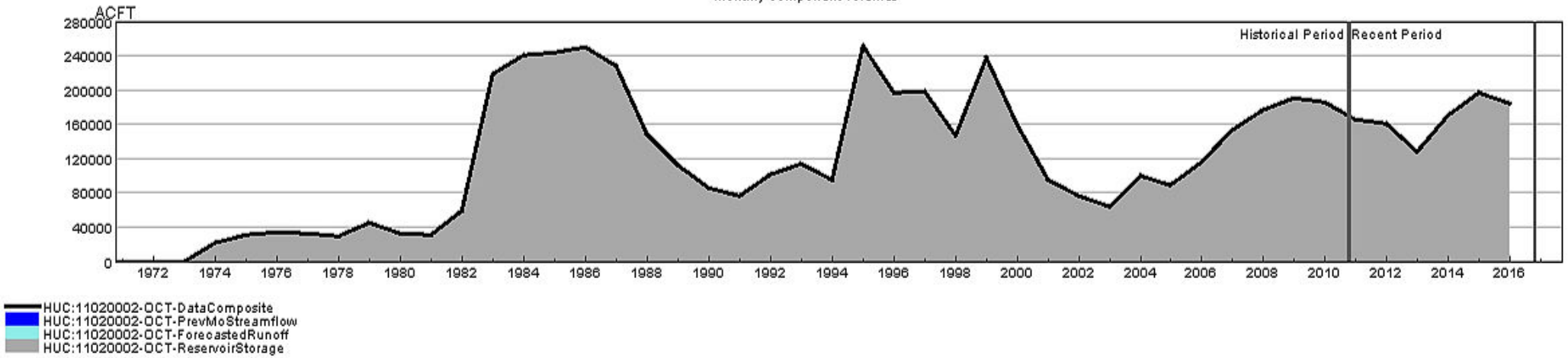

## HUC 11020010 (Purgatoire) SWSI Values - OCT

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



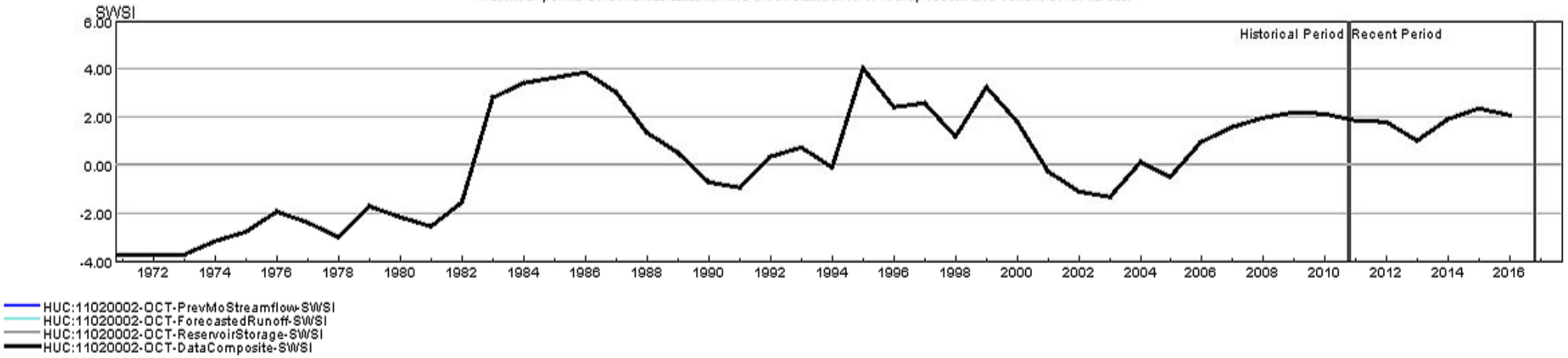
## HUC 11020002 (Upper Arkansas) Surface Water Supply - OCT

Monthly component volumes



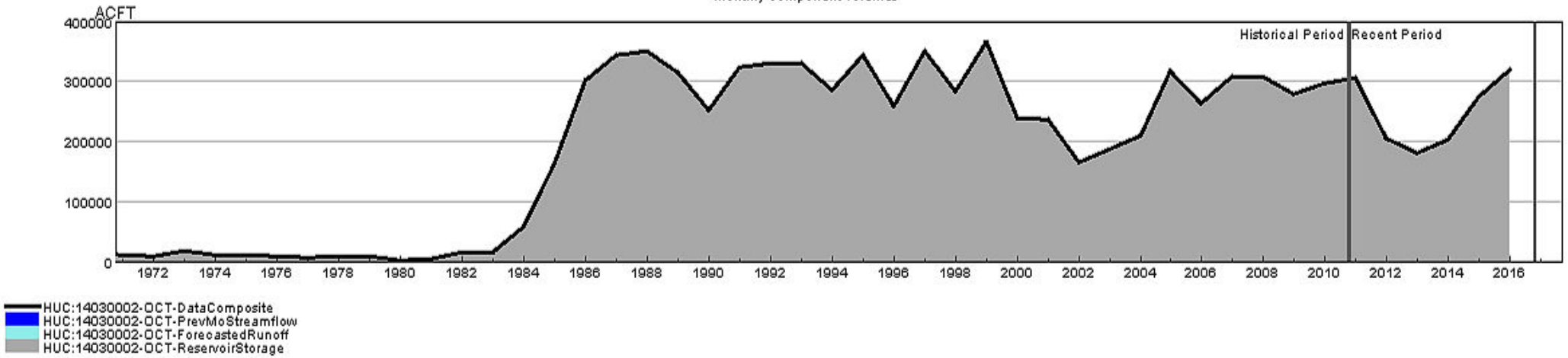

## HUC 11020002 (Upper Arkansas) SWSI Values - OCT

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



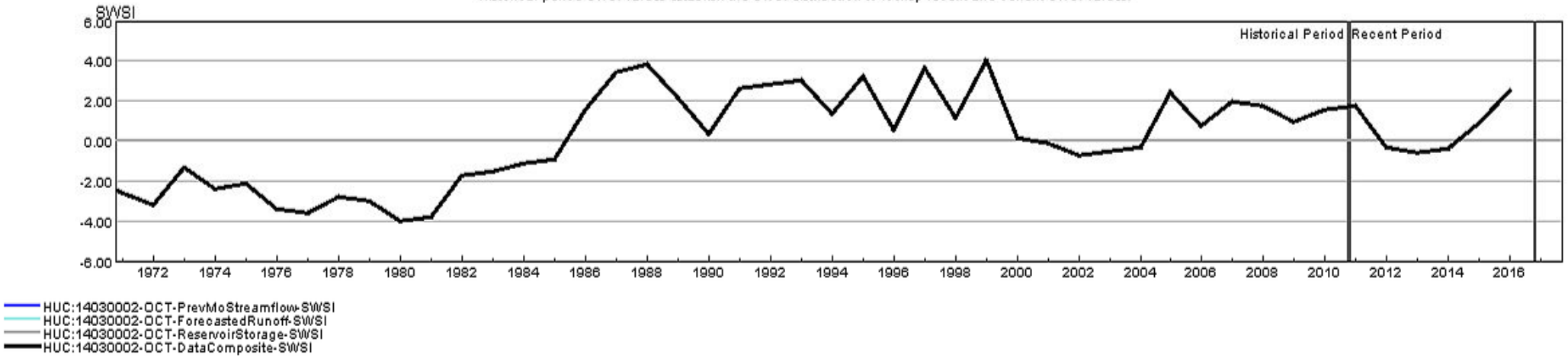
## HUC 14030002 (Upper Dolores) Surface Water Supply - OCT

Monthly component volumes



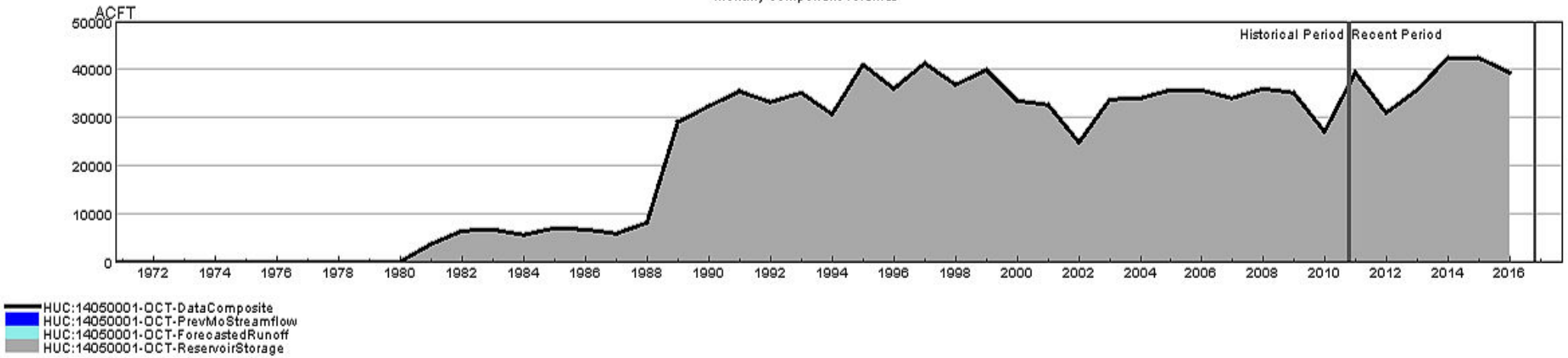

## HUC 14030002 (Upper Dolores) SWSI Values - OCT

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



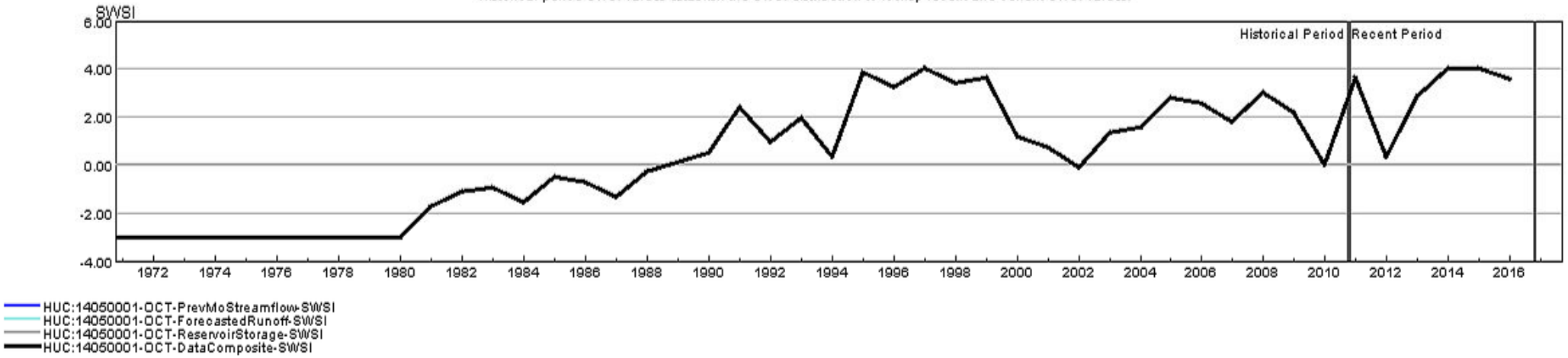
# HUC 14050001 (Upper Yampa) Surface Water Supply - OCT

Monthly component volumes



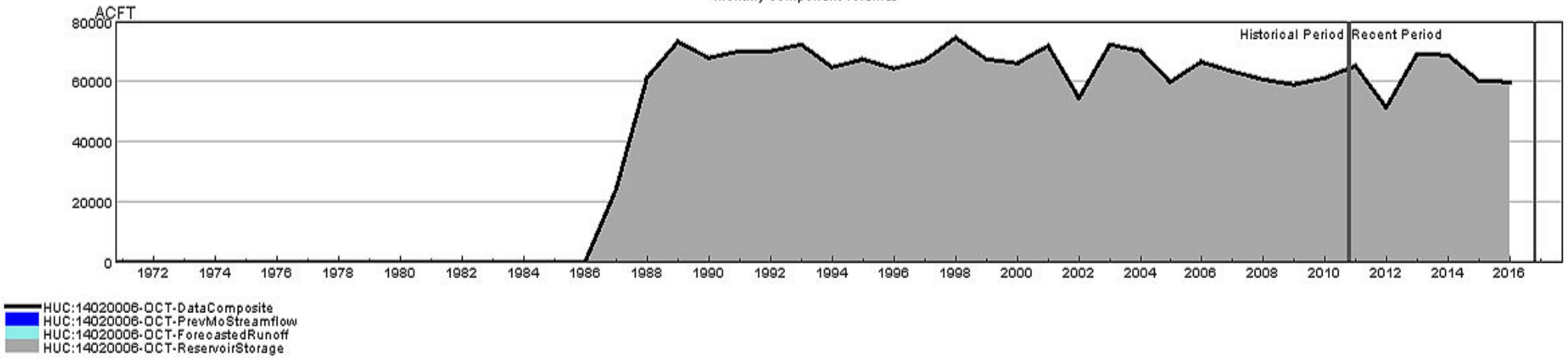

# HUC 14050001 (Upper Yampa) SWSI Values - OCT

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



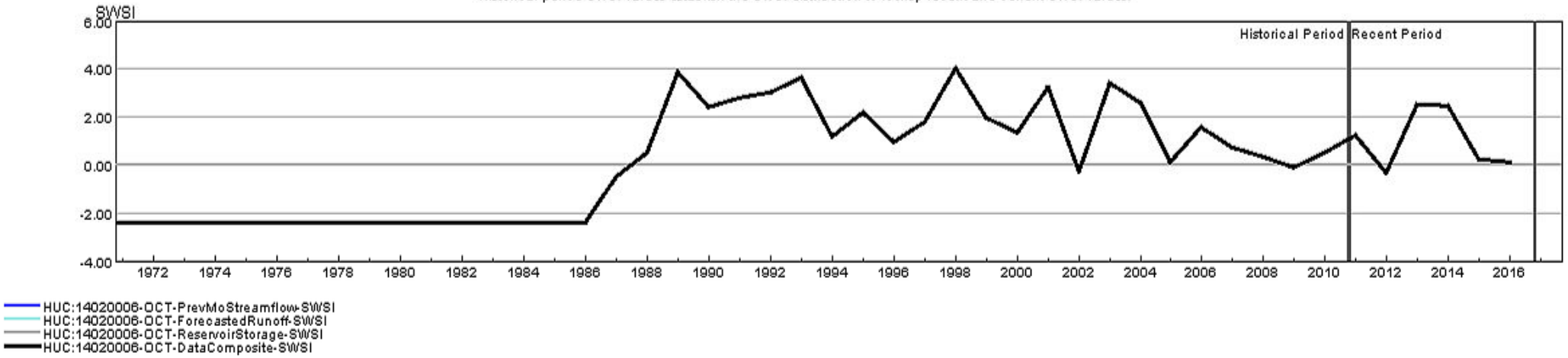
## HUC 14020006 (Uncompahgre) Surface Water Supply - OCT

Monthly component volumes



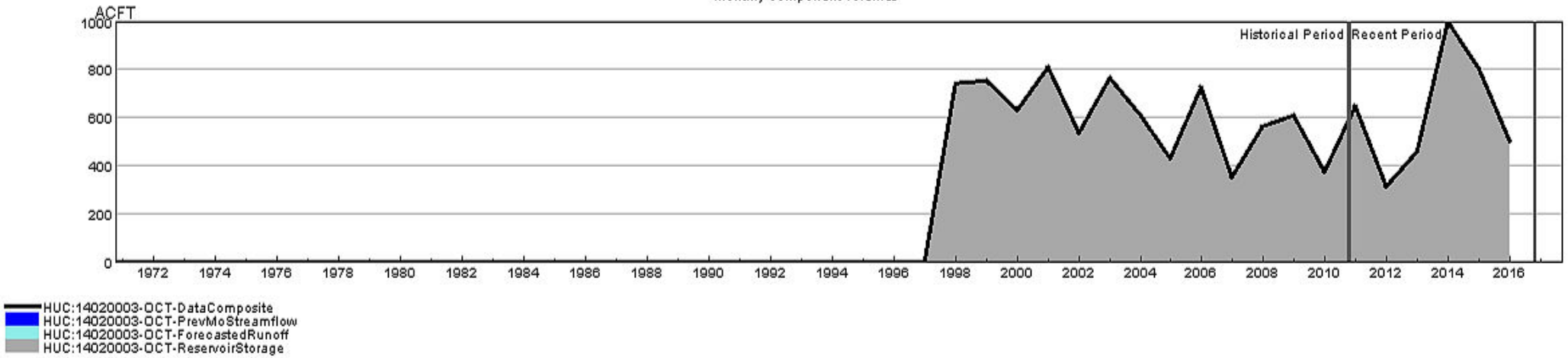

## HUC 14020006 (Uncompahgre) SWSI Values - OCT

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



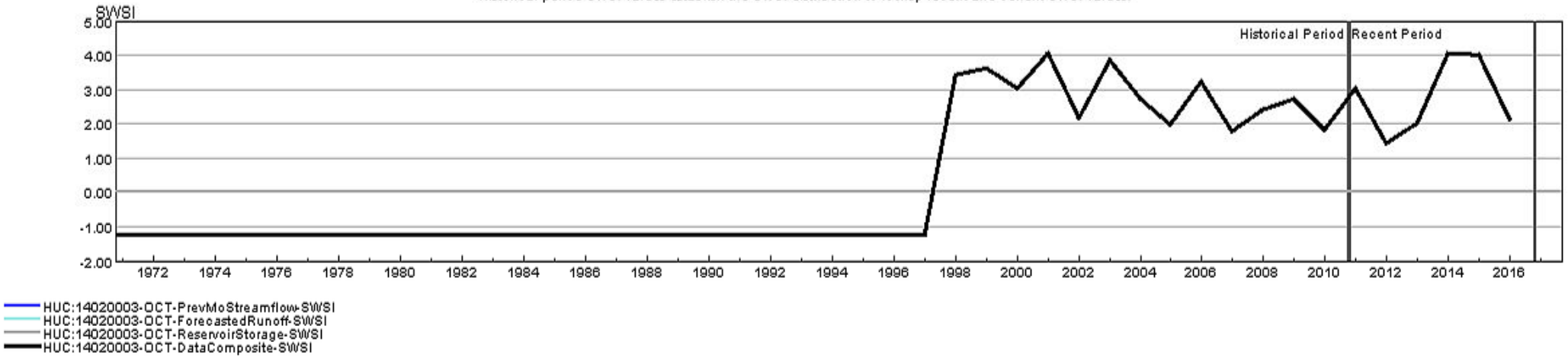
## HUC 14020003 (Tomichi) Surface Water Supply - OCT

Monthly component volumes



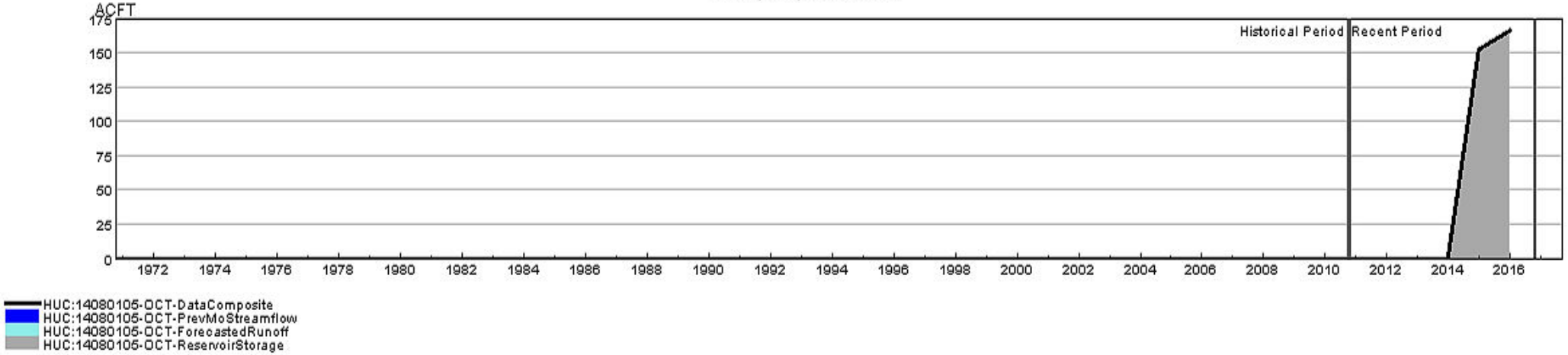

## HUC 14020003 (Tomichi) SWSI Values - OCT

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



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

Monthly component volumes




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

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