

REPORT OF CHIEF ENGINEER
HUDSON RIVER - BLACK RIVER REGULATING DISTRICT
BOARD MEETING
FEBRUARY 12, 2019 – MAYFIELD

HUDSON RIVER AREA - JANUARY SUMMARY

Reservoir Operation

Great Sacandaga Lake

The January average daily release from the Sacandaga Reservoir (Great Sacandaga Lake) was approximately 3,870 cubic feet per second (cfs). The Upper Hudson / Sacandaga River Offer of Settlement target elevation for January 31 is 750.93 feet (ft). The release of water from Great Sacandaga Lake was consistent with the Upper Hudson/Sacandaga River Offer of Settlement.

Table 1.0 - *Great Sacandaga Lake Elevation and Release*

Date	Daily Average Elevation (ft,NGVD) ⁽⁴⁾	Deviation (ft) (1)		Release (cfs)	
		From Average	From Offer of Settlement	Conklingville Dam	E.J. West (2) Hydro Plant
Dec. 31	765.56	+11.51	+13.03	0	2,350
Jan. 31	763.5 (e)	+12.6 (e)	+12.6 (e)	0	4,000 (e)

- Notes: (1) Difference between current reservoir elevation and historic average or Level 3
(2) Release established by Regulating District
(3) "(e)" represents estimated value
(4) "NGVD" is National Geodetic Vertical Datum

Indian Lake Reservoir

The January average daily release from Indian Lake was approximately 470 cfs.

Table 2.0 - *Indian Lake Reservoir Elevation and Release*

Date	Daily Average Elevation (1) (ft, NGVD)	Deviation (ft)		Release (cfs)
		From Average	From Target	
Dec. 31	1644.60	+1.30	+3.85	494
Jan. 31	1642.2 (e)	+0.3 (e)	+2.8 (e)	451 (e)

- Notes: (1) Local datum = NGVD elevation + 1617.91ft; spillway crest = 1651.29ft (33.38ft)
(2) "(e)" represents estimated value

HUDSON RIVER AREA - JANUARY SUMMARY- continued

River Flow

Hudson River flow, downstream of the confluence with the Sacandaga River, was approximately 8,450 cfs on January 28 and approximately 3,400 cfs above the historic average flow.

Table 3.0 - *Sacandaga, Indian, and Hudson River Flow*

River	Monthly Average Flow (cfs)	Historic Average Flow (2) (cfs)
Sacandaga at Hope	1,780 (e)	895
Sacandaga at Stewarts Bridge	3,870 (e)	2,860
Indian at Indian Lake Dam	472 (e)	365
Hudson at Hadley (1)	3,440 (e)	2,340

Notes: (1) Above confluence with Sacandaga River
(2) Based on USGS records
(3) "(e)" represents estimated value

Precipitation

Monthly total precipitation measured 142%, 168%, and 180% historic average at Indian Lake, Mayfield, and Conklingville, respectively, as of January 27

Table 4.0 - *Hudson River Basin Precipitation - as of January 27*

Station	Monthly Total (inch)	Historic Average (inch)
Indian Lake	4.00	2.81
Mayfield	5.69	3.39
Conklingville	5.99	3.33

HUDSON RIVER AREA - JANUARY SUMMARY- continued

Operation Overview

Precipitation during the month of January was above average in the Great Sacandaga Lake watershed and above average in the Indian Lake watershed. The monthly inflow to Great Sacandaga Lake and Indian Lake reservoir was approximately 160% and 110% of historic average, respectively. Monthly release of water from Great Sacandaga Lake and Indian Lake measured 135% and 129% of historic average, respectively.

Great Sacandaga Lake Operation

Great Sacandaga Lake operation summary report for the period January 1, 2019 through January 28, 2019 is attached. This report includes projected and forecast values for dates after January 28, 2019.

Hudson River Area Staff Activities

Staff completed routine maintenance and operations activities during the month.

A summary of District staff activities and work projects at the dam facilities is attached in the Administrator's Report.

BLACK RIVER AREA – JANUARY SUMMARY

Reservoir Operations

Stillwater Reservoir

The January average daily release from Stillwater Reservoir was approximately 600 cfs. The maximum discharge for the month was 600 cfs.

Table 1.0 - *Stillwater Reservoir Elevation and Release*

Date	Daily Average Elevation (ft, NGVD)	Deviation from Average Elevation (ft) (1)	Release (cfs)
Dec. 31	1671.38	+0.90	600
Jan. 31	1670.0 (e)	+0.8 (e)	600 (e)

Notes: (1) Difference between current reservoir elevation and historic average
 (2) "(e)" represents estimated value

Sixth Lake Reservoir

The January average daily release from Sixth Lake Reservoir was approximately 60 cfs.

Table 2.0 - *Sixth Lake Reservoir Elevation and Release*

Date	Elevation (1) (ft, NGVD)	Deviation from Average Elevation (2) (ft)	Release (cfs)
Dec. 31	1780.93	-1.57	123
Jan. 31	1780.2 (e)	-1.8 (e)	65 (e)

Notes: (1) Local datum = USGS datum
 (2) Difference between current reservoir elevation and historic average.
 (3) "(e)" represents estimated value

Old Forge Reservoir

The January average daily release from Old Forge Reservoir was approximately 150 cfs.

Table 3.0 - *Old Forge Reservoir Elevation and Release*

Date	Elevation (1) (ft, NGVD)	Deviation from Average Elevation (2) (ft)	Release (cfs)
Dec. 31	1704.07	-0.33	245
Jan. 31	1703.7 (e)	-0.3 (e)	145 (e)

Notes: (1) Local Datum = USGS elevation
 (2) Difference between current reservoir elevation and historic average.
 (3) "(e)" represents estimated value

BLACK RIVER AREA - JANUARY SUMMARY - continued

River Flow

The average daily Black River flow, as measured at the Watertown gauge, was approximately 8,750 cfs on January 28.

Table 4.0 - *Moose, Independence, Beaver, and Black River Flow*

River	Monthly Average Flow (cfs)	Historic Average Flow (1) (cfs)
Moose at McKeever	2,303 (e)	812
Beaver at Croghan	370 (e)	699
Black at Watertown	5,650 (e)	4,270

Notes: (1) Based on USGS records
(2) "(e)" represents estimated value
(3) Stage and flow affected by ice in river

Precipitation

Monthly total precipitation measured 126%, 132%, 137% of historic average at Stillwater, Old Forge, and Sixth Lake, respectively, as of January 28.

Table 5.0 - *Black River Basin Precipitation - as of January 28*

Station	Monthly Total (inch)	Historic Average (inch)
Stillwater	4.71	3.74
Old Forge	5.70	4.32
Sixth Lake	4.82	3.52

BLACK RIVER AREA - JANUARY SUMMARY - continued

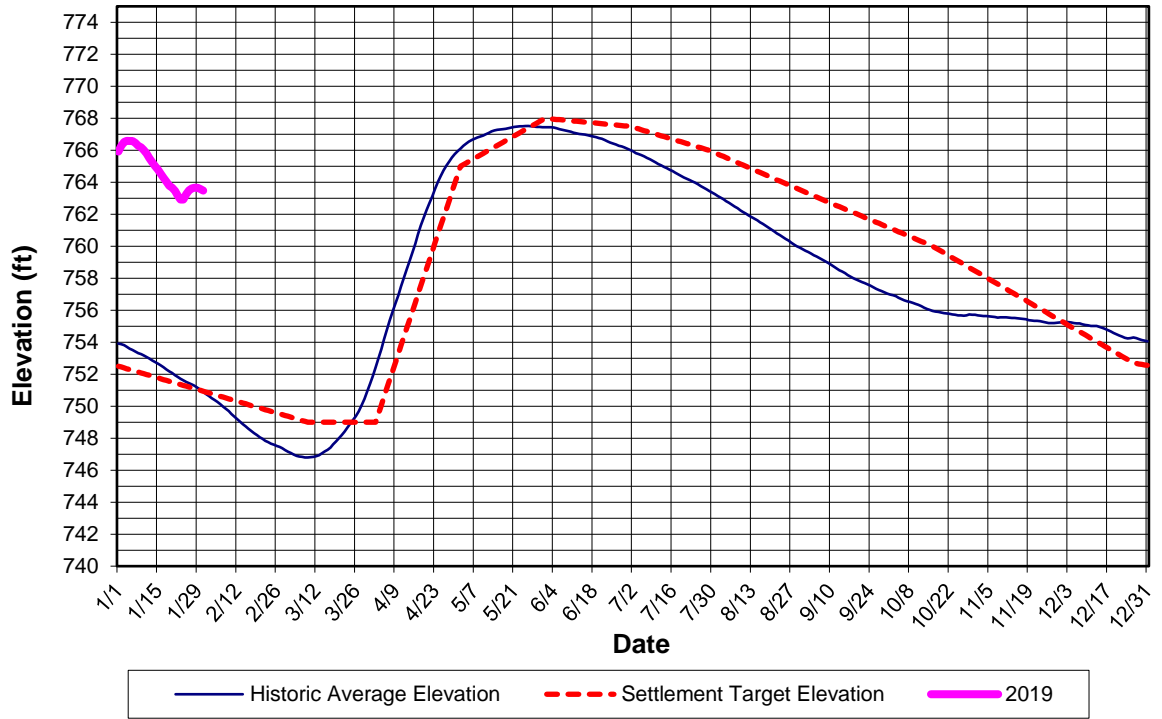
Operation Overview

Precipitation in the month of January was above average at Stillwater and above average at Sixth Lake and Old Forge Reservoir. The monthly inflow to Stillwater Reservoir was approximately 108% of historic average. The inflow to Sixth Lake and Old Forge Reservoir totaled 0.14 and 0.33 billion cubic feet, respectively, in January. Release of water from Stillwater Reservoir averaged 124% of historic discharge.

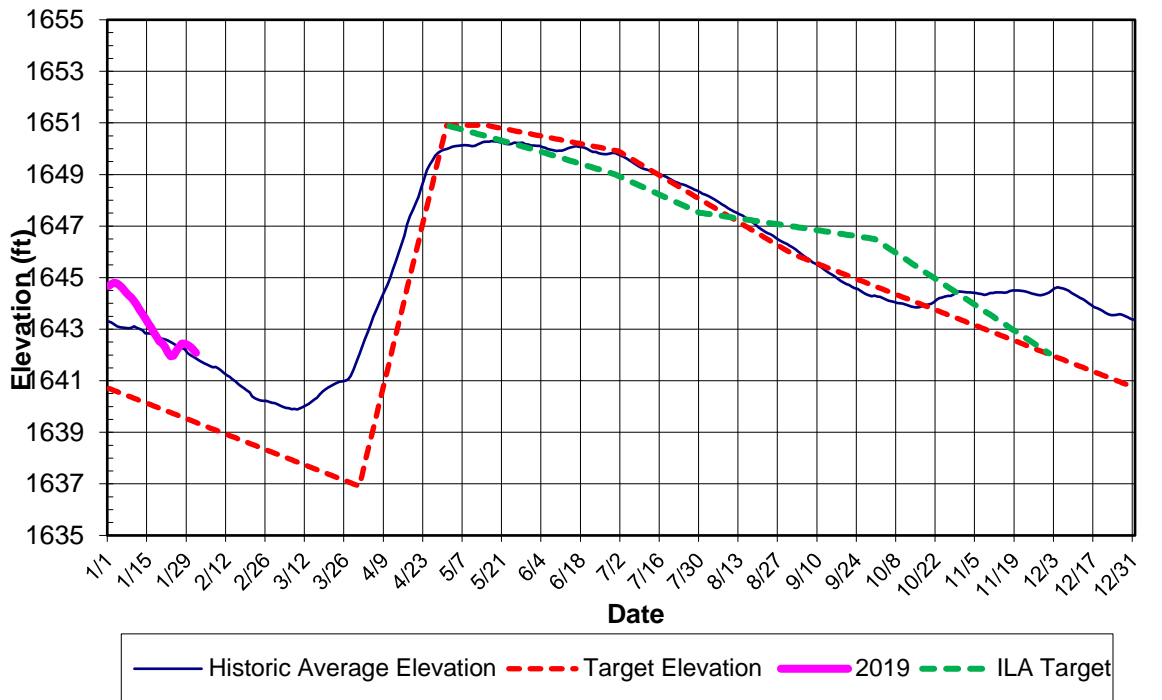
Black River Area Staff Activities

A summary of District staff activities and work projects at the dam facilities is attached in the Administrator's Report.

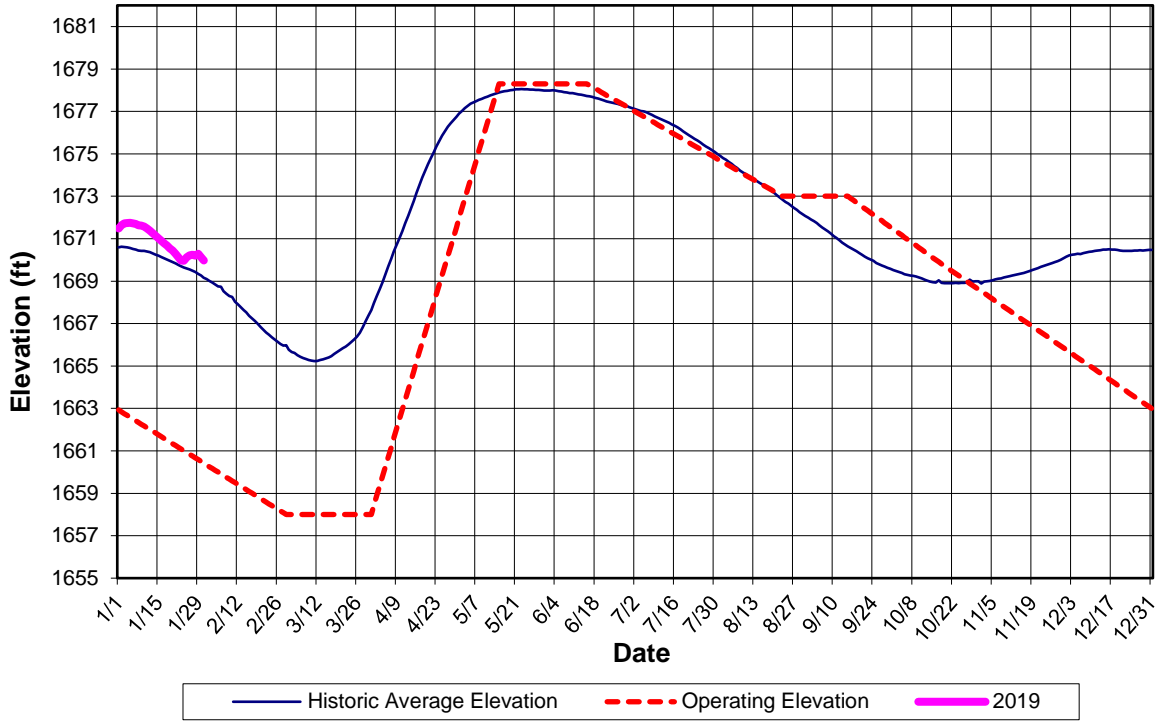
Great Sacandaga Lake 2019 Reservoir Elevation



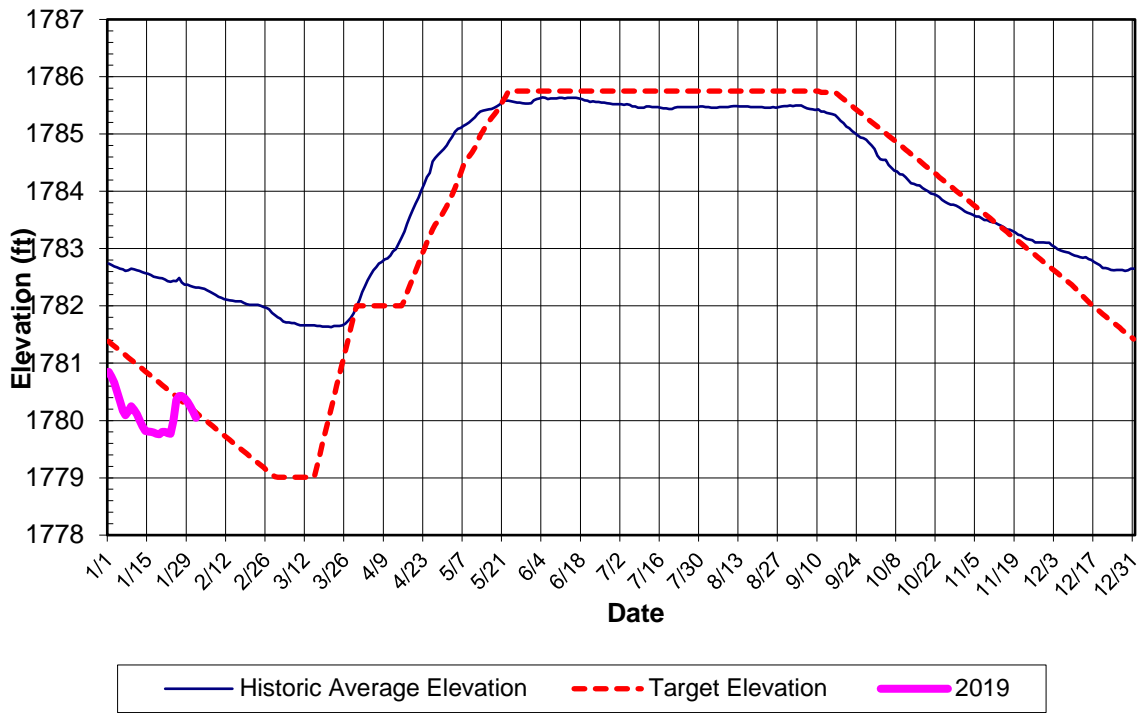
Indian Lake 2019 Reservoir Elevation



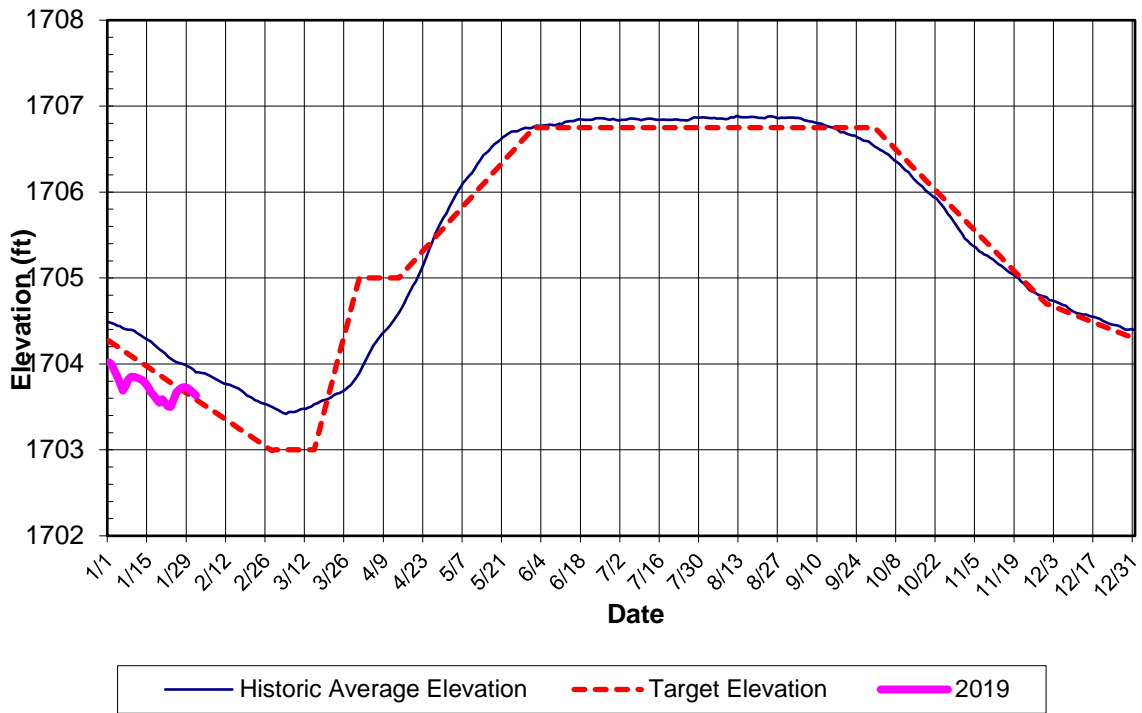
Stillwater Reservoir 2019 Reservoir Elevation



Sixth Lake 2019 Reservoir Elevation



Old Forge 2019 Reservoir Elevation



REPORT OF CHIEF ENGINEER
HUDSON RIVER - BLACK RIVER REGULATING DISTRICT
BOARD MEETING
JANUARY 15, 2019 – MAYFIELD

HUDSON RIVER AREA - DECEMBER SUMMARY

Reservoir Operation

Great Sacandaga Lake

The December average daily release from the Sacandaga Reservoir (Great Sacandaga Lake) was approximately 2,940 cubic feet per second (cfs). The Upper Hudson / Sacandaga River Offer of Settlement target elevation for December 31 is 752.53 feet (ft). The release of water from Great Sacandaga Lake was consistent with the Upper Hudson/Sacandaga River Offer of Settlement.

Table 1.0 - *Great Sacandaga Lake Elevation and Release*

Date	Daily Average Elevation (ft,NGVD) ⁽⁴⁾	Deviation (ft) (1)		Release (cfs)	
		From Average	From Offer of Settlement	Conklingville Dam	E.J. West (2) Hydro Plant
Nov. 30	762.30	+7.04	+7.03	0	4,040
Dec. 31	764.3 (e)	+10.2 (e)	+11.8 (e)	0	3,300 (e)

- Notes: (1) Difference between current reservoir elevation and historic average or Level 3
(2) Release established by Regulating District
(3) "(e)" represents estimated value
(4) "NGVD" is National Geodetic Vertical Datum

Indian Lake Reservoir

The December average daily release from Indian Lake was approximately 487 cfs.

Table 2.0 - *Indian Lake Reservoir Elevation and Release*

Date	Daily Average Elevation (1) (ft, NGVD)	Deviation (ft)		Release (cfs)
		From Average	From Target	
Nov. 30	1644.88	+0.58	+2.81	499
Dec. 31	1644.2 (e)	+0.9 (e)	+3.5 (e)	491 (e)

- Notes: (1) Local datum = NGVD elevation + 1617.91ft; spillway crest = 1651.29ft (33.38ft)
(2) "(e)" represents estimated value

HUDSON RIVER AREA - DECEMBER SUMMARY- continued

River Flow

Hudson River flow, downstream of the confluence with the Sacandaga River, was approximately 5,970 cfs on December 19 and approximately 870 cfs above the historic average flow.

Table 3.0 - *Sacandaga, Indian, and Hudson River Flow*

River	Monthly Average Flow (cfs)	Historic Average Flow (2) (cfs)
Sacandaga at Hope	2,780 (e)	1,080
Sacandaga at Stewarts Bridge	2,940 (e)	2,600
Indian at Indian Lake Dam	487 (e)	282
Hudson at Hadley (1)	5,200 (e)	2,700

Notes: (1) Above confluence with Sacandaga River
 (2) Based on USGS records
 (3) "(e)" represents estimated value
 (4) Gauge unavailable due to ice

Precipitation

Monthly total precipitation measured 61%, 33%, and 41% historic average at Indian Lake, Mayfield, and Conklingville, respectively, as of December 19

Table 4.0 - *Hudson River Basin Precipitation - as of December 19*

Station	Monthly Total (inch)	Historic Average (inch)
Indian Lake	1.87	3.08
Mayfield	1.29	3.93
Conklingville	1.54	3.73

HUDSON RIVER AREA - DECEMBER SUMMARY- continued

Operation Overview

Precipitation during the month of December was below normal in the Great Sacandaga Lake watershed and the Indian Lake watershed. The monthly inflow to Great Sacandaga Lake and Indian Lake reservoir was approximately 167% and 135% of historic average, respectively. Monthly release of water from Great Sacandaga Lake and Indian Lake measured 112% and 126% of historic average, respectively.

Great Sacandaga Lake Operation

Great Sacandaga Lake operation summary report for the period December 1, 2018 through December 25, 2018 is attached. This report includes projected and forecast values for dates after December 25, 2018.

Hudson River Area Staff Activities

Staff completed routine maintenance and operations activities during the month.

A summary of District staff activities and work projects at the dam facilities is attached in the Administrator's Report.

BLACK RIVER AREA – DECEMBER SUMMARY

Reservoir Operations

Stillwater Reservoir

The December average daily release from Stillwater Reservoir was approximately 540 cfs. The maximum discharge for the month was 600 cfs.

Table 1.0 - *Stillwater Reservoir Elevation and Release*

Date	Daily Average Elevation (ft, NGVD)	Deviation from Average Elevation (ft) (1)	Release (cfs)
Nov. 30	1670.34	+0.26	500
Dec. 31	1670.7 (e)	+0.3 (e)	600 (e)

Notes: (1) Difference between current reservoir elevation and historic average
 (2) "(e)" represents estimated value

Sixth Lake Reservoir

The December average daily release from Sixth Lake Reservoir was approximately 80 cfs.

Table 2.0 - *Sixth Lake Reservoir Elevation and Release*

Date	Elevation (1) (ft, NGVD)	Deviation from Average Elevation (2) (ft)	Release (cfs)
Nov. 30	1781.96	-1.23	98
Dec. 31	1780.6 (e)	-1.9 (e)	120 (e)

Notes: (1) Local datum = USGS datum
 (2) Difference between current reservoir elevation and historic average.
 (3) "(e)" represents estimated value

Old Forge Reservoir

The December average daily release from Old Forge Reservoir was approximately 184 cfs.

Table 3.0 - *Old Forge Reservoir Elevation and Release*

Date	Elevation (1) (ft, NGVD)	Deviation from Average Elevation (2) (ft)	Release (cfs)
Nov. 30	1704.74	-0.04	235
Dec. 31	1704.0 (e)	-0.5 (e)	243 (e)

Notes: (1) Local Datum = USGS elevation
 (2) Difference between current reservoir elevation and historic average.
 (3) "(e)" represents estimated value

BLACK RIVER AREA - DECEMBER SUMMARY - continued

River Flow

The average daily Black River flow, as measured at the Watertown gauge, was approximately 7,260 cfs on December 25.

Table 4.0 - *Moose, Independence, Beaver, and Black River Flow*

River	Monthly Average Flow (cfs)	Historic Average Flow (1) (cfs)
Moose at McKeever	1,345 (e)	817
Beaver at Croghan	940 (e)	661
Black at Watertown	7,260 (e)	4,640

Notes: ⁽¹⁾ Based on USGS records
⁽²⁾ "(e)" represents estimated value
⁽³⁾ Stage and flow affected by ice in river

Precipitation

Monthly total precipitation measured 81%, 70%, 73% of historic average at Stillwater, Old Forge, and Sixth Lake, respectively, as of December 25.

Table 5.0 - *Black River Basin Precipitation - as of December 25*

Station	Monthly Total (inch)	Historic Average (inch)
Stillwater	2.38	4.04
Old Forge	2.53	4.43
Sixth Lake	1.94	3.72

BLACK RIVER AREA - DECEMBER SUMMARY - continued

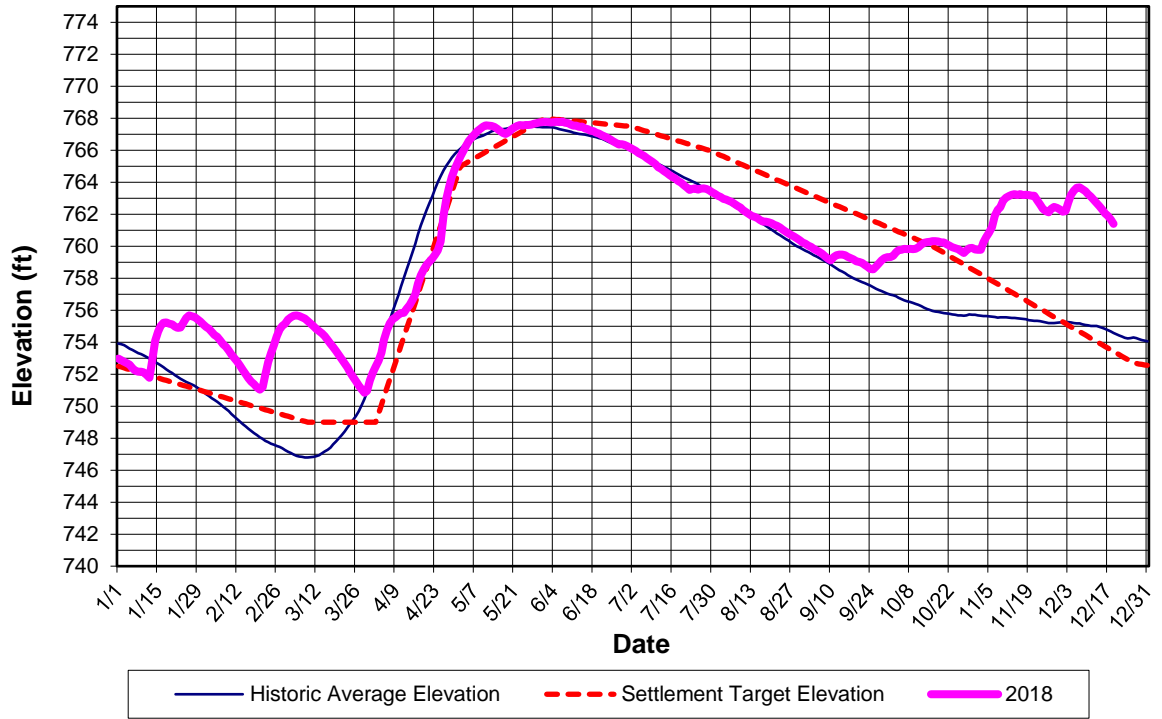
Operation Overview

Precipitation in the month of December was below average at Stillwater and below average at Sixth Lake and Old Forge Reservoir. The monthly inflow to Stillwater Reservoir was approximately 123% of historic average. The inflow to Sixth Lake and Old Forge Reservoir totaled 0.18 and 0.39 billion cubic feet, respectively, in December. Release of water from Stillwater Reservoir averaged 121% of historic discharge.

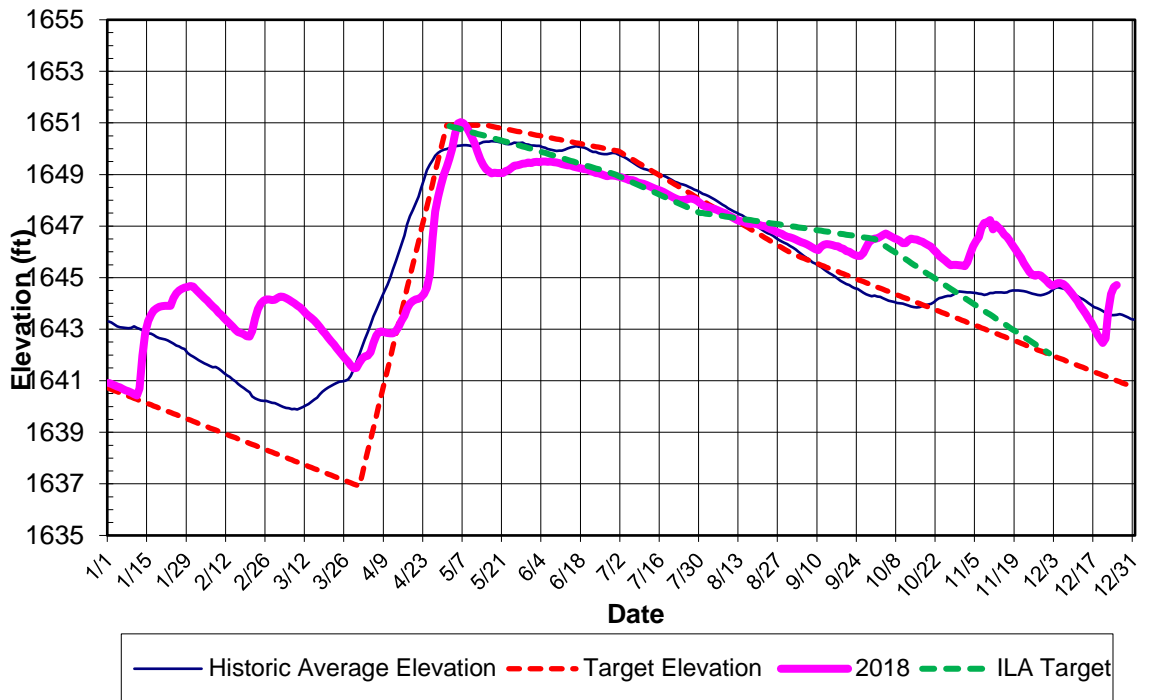
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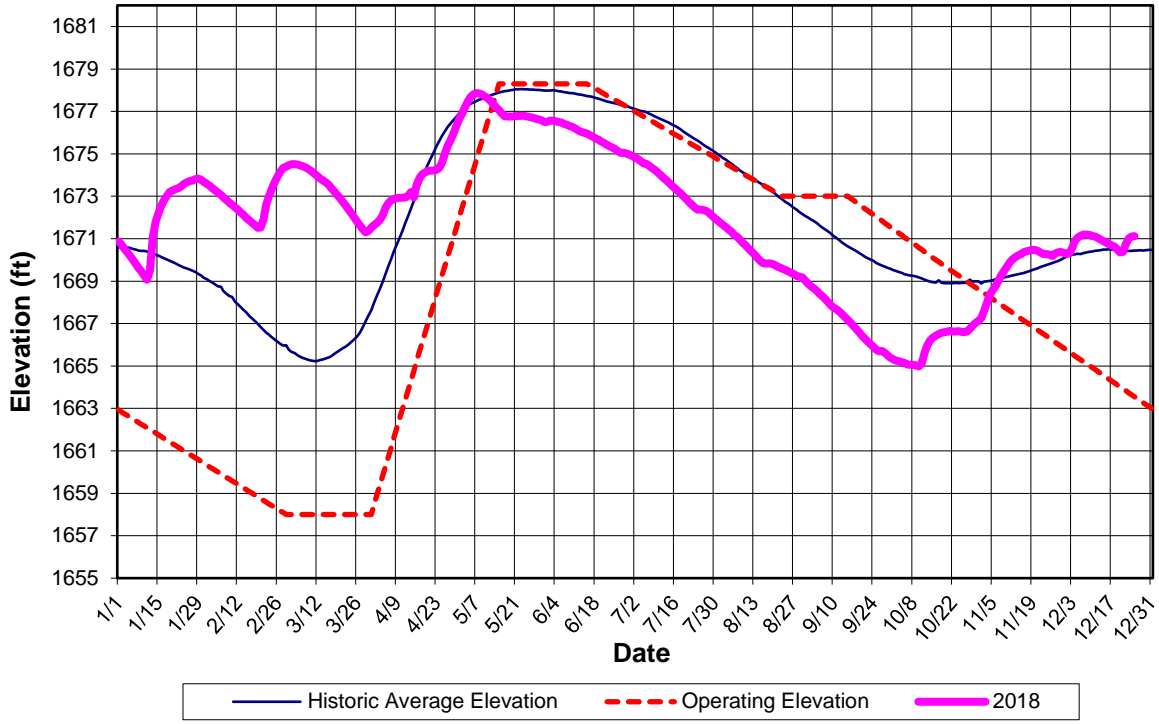
Great Sacandaga Lake 2018 Reservoir Elevation



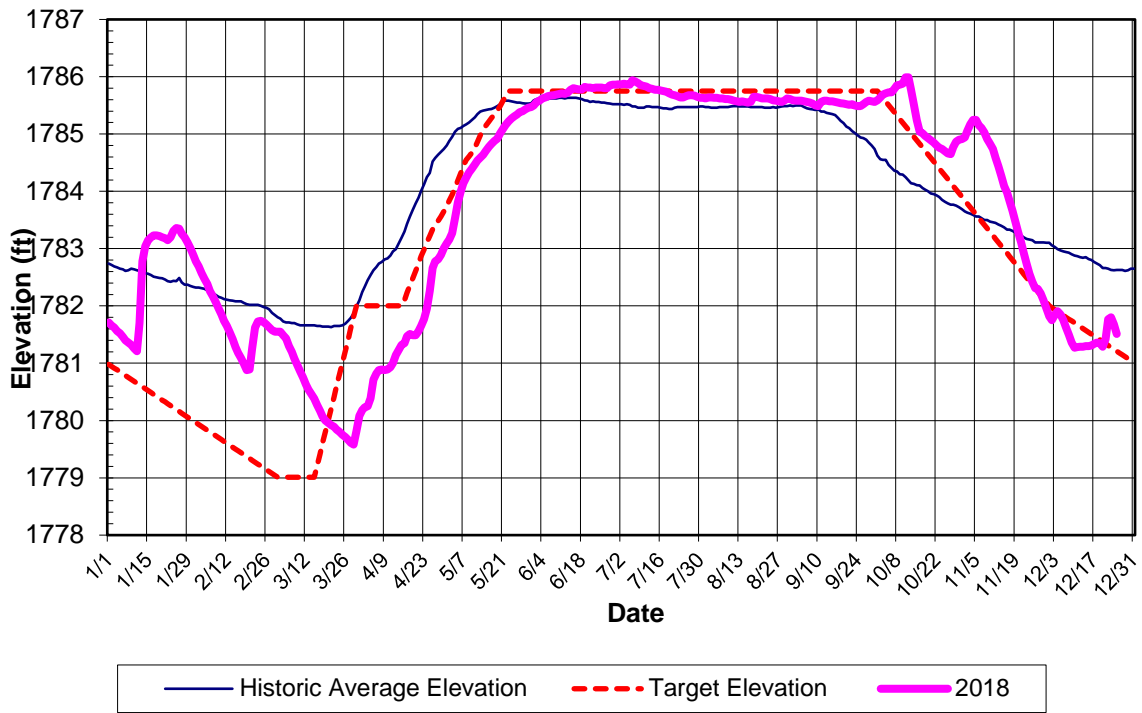
Indian Lake 2018 Reservoir Elevation



Stillwater Reservoir 2018 Reservoir Elevation



Sixth Lake 2018 Reservoir Elevation



Old Forge 2018 Reservoir Elevation

