

Water-Data Report 2009

## 01358000 HUDSON RIVER AT GREEN ISLAND, NY

Upper Hudson Basin  
Hudson-Hoosic Subbasin

LOCATION.--Lat 42°45'08", long 73°41'22" referenced to North American Datum of 1927, Albany County, NY, Hydrologic Unit 02020003, on right bank at Green Island, just upstream from Troy lock and dam, and 0.5 mi downstream from 5th branch Mohawk River.

DRAINAGE AREA.--8,090 mi<sup>2</sup>, approximately (including that above site of former auxiliary gage).

### **SURFACE-WATER RECORDS**

PERIOD OF RECORD.--February 1946 to current year (October 1997 to September 2000, discharges only for days when inflatable rubber dam was considered to have been collapsed; see REMARKS).

GAGE.--Water-stage recorder. Datum of gage is 0.31 ft below NGVD of 1929 (Corps of Engineers benchmark). From July 1, 1946 to Mar. 12, 1962 auxiliary water-stage recorder on bypass channel at datum 10.59 ft higher. Power transducer on each turbine in powerplant. Since Oct. 1, 2008, auxiliary acoustic velocity meter about 1,600 ft upstream from base gage.

COOPERATION.--Information on turbine operation provided by Green Island Power Authority.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Records include flow over spillway, flow through lock, and flow through powerplant. Powerplant, located on the right bank just downstream from gage, was inoperative from Nov. 20, 1960 to Feb. 23, 1971. An inflatable rubber dam was installed on the spillway during August 1991. August 1991 through September 1997, and since October 2000, estimated water-discharge data based on records for Hudson River above Lock 1 near Waterford (01335754) and Mohawk River at Cohoes (01357500) due to inflatable rubber dam. October 1997 to September 2000, discharges only for days when inflatable rubber dam was considered to have been collapsed. Satellite gage-height and power transducer telemeter readings at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181,000 ft<sup>3</sup>/s, Dec. 31, 1948, gage height, 27.05 ft, from floodmark in gage well; minimum discharge not determined; minimum gage height, 13.68 ft, July 6, 1981, when pool was lowered for inspection of flashboards.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 19, 1936, reached a stage of 29.48 ft at gage on opposite bank, from information by Corps of Engineers (discharge, 215,000 ft<sup>3</sup>/s). Flood of Mar. 28, 1913, prior to construction of Sacandaga Reservoir and Troy lock and dam, reached a stage about 0.2 ft higher upstream from former dam near same site. Downstream from dams, flood in 1913 was about 3.3 ft higher than flood in 1936, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 77,100 ft<sup>3</sup>/s, Mar. 10, gage height, 21.26 ft; maximum gage height, 21.34 ft, Mar. 9; minimum discharge not determined; minimum gage height, 15.22 ft, Sept. 11.

## 01358000 HUDSON RIVER AT GREEN ISLAND, NY—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009**  
**DAILY MEAN VALUES**

[e, estimated]

| Day          | Oct     | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     |
|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1            | e6,760  | 24,200  | 19,800  | e22,700 | e11,700 | 21,200  | 33,200  | e11,200 | 15,000  | 21,400  | 37,400  | 14,800  |
| 2            | e6,840  | 21,600  | 23,800  | e22,100 | e11,200 | 19,000  | 30,000  | 13,000  | 15,100  | 23,100  | 25,300  | 14,200  |
| 3            | e6,430  | 20,400  | 21,200  | e21,600 | e10,400 | 16,600  | 28,300  | 15,300  | 15,500  | 21,500  | 31,700  | 13,300  |
| 4            | e6,590  | 18,000  | 19,300  | e20,100 | e11,500 | 15,700  | 38,700  | 16,300  | 13,700  | 18,200  | 20,900  | 11,200  |
| 5            | e6,200  | e17,400 | 17,200  | e19,100 | e10,900 | 14,500  | 49,100  | 13,400  | 13,300  | 14,100  | 18,600  | 8,960   |
| 6            | e5,670  | e16,300 | 14,800  | e19,800 | e11,100 | 14,300  | 42,000  | 12,500  | 9,840   | 14,700  | 16,900  | 9,760   |
| 7            | e6,530  | e16,700 | 13,100  | e18,600 | e10,400 | 15,800  | 36,500  | 13,200  | 9,000   | 13,600  | 14,600  | 9,550   |
| 8            | e6,050  | e17,000 | 12,100  | e18,400 | e10,100 | 34,100  | 31,900  | 14,600  | 7,010   | 15,500  | 14,100  | 10,000  |
| 9            | e6,620  | e17,800 | 11,100  | e19,100 | e10,800 | 65,300  | 26,800  | 15,000  | 9,530   | 12,400  | 12,400  | 8,540   |
| 10           | e6,610  | e18,100 | 13,900  | e17,500 | e11,600 | 63,000  | 23,600  | 18,100  | 9,340   | 10,600  | 11,800  | 8,680   |
| 11           | e6,170  | e15,500 | 26,100  | e15,000 | e9,950  | 52,400  | 22,400  | 15,600  | 7,460   | 8,080   | 11,500  | 5,670   |
| 12           | e6,380  | e13,400 | 38,200  | e15,000 | e11,400 | 56,800  | 20,100  | 14,800  | 11,100  | 10,800  | 11,200  | 5,640   |
| 13           | e5,700  | 13,900  | 42,300  | e16,400 | e17,600 | 38,900  | 20,200  | 14,300  | 16,400  | 12,900  | 11,900  | 6,160   |
| 14           | e5,610  | 14,100  | 29,900  | e14,900 | e23,300 | 31,100  | 18,400  | 11,200  | 16,600  | 12,100  | 11,800  | 6,890   |
| 15           | e5,350  | 16,100  | 27,200  | e13,700 | e20,000 | 28,000  | 17,200  | 10,900  | 15,500  | 11,400  | 8,630   | 6,680   |
| 16           | e6,100  | 21,200  | 40,000  | e12,400 | e16,700 | 26,300  | 17,300  | 10,800  | 14,400  | 9,840   | 7,640   | 5,720   |
| 17           | e9,440  | 25,200  | 38,800  | e11,500 | e13,900 | 25,500  | 17,500  | 20,800  | 12,200  | 9,570   | 8,020   | 5,860   |
| 18           | e8,570  | 22,100  | 33,400  | e11,800 | e12,600 | 26,500  | 16,700  | 26,200  | 16,900  | 10,200  | 7,220   | 4,890   |
| 19           | e5,310  | 17,400  | e27,400 | e11,800 | e12,100 | 31,600  | 16,400  | 23,100  | 32,400  | 10,500  | 7,860   | 6,040   |
| 20           | e6,870  | 16,400  | e21,800 | e12,200 | e11,300 | 35,400  | 17,000  | 16,500  | 29,800  | 10,300  | 6,960   | 5,170   |
| 21           | e6,380  | 17,600  | e20,600 | e12,500 | e10,600 | 29,600  | 15,100  | 13,200  | 25,500  | 10,200  | 7,030   | 5,270   |
| 22           | e6,360  | 15,200  | e18,800 | e12,200 | e10,600 | 26,000  | 15,100  | 14,400  | 28,000  | 8,870   | 9,740   | e4,800  |
| 23           | e6,250  | 13,100  | e19,000 | e12,200 | e10,200 | 23,600  | 15,100  | 13,400  | 20,800  | 8,260   | 15,000  | e5,230  |
| 24           | e6,850  | 13,800  | e18,200 | e12,000 | e9,250  | 22,400  | 14,900  | 13,000  | 18,500  | 8,070   | 13,700  | e5,180  |
| 25           | 9,970   | 16,600  | e26,600 | e11,800 | e8,920  | 18,800  | 15,400  | 11,800  | 15,800  | e7,620  | 12,000  | 5,430   |
| 26           | 29,600  | 19,100  | e34,200 | e11,400 | e8,640  | 20,700  | 14,900  | 11,000  | 17,300  | e7,310  | 8,360   | 5,030   |
| 27           | 25,500  | 16,000  | e31,400 | e11,400 | e9,470  | e20,300 | 14,000  | 15,600  | 16,900  | e7,240  | 10,000  | 6,480   |
| 28           | 30,800  | 16,500  | e41,700 | e11,300 | e8,930  | e20,600 | 15,500  | 20,900  | 16,900  | e8,080  | 10,600  | 10,800  |
| 29           | 38,100  | 17,700  | e50,300 | e11,200 | ---     | e24,400 | 15,200  | 20,400  | 15,400  | 7,190   | 15,400  | 12,800  |
| 30           | 26,800  | 17,700  | e40,000 | e11,400 | ---     | e35,100 | 14,000  | 21,900  | 14,800  | 22,200  | 22,300  | 11,400  |
| 31           | 20,200  | ---     | e32,600 | e11,300 | ---     | 36,800  | ---     | 18,700  | ---     | 29,400  | 16,100  | ---     |
| <b>Total</b> | 336,610 | 526,100 | 824,800 | 462,400 | 335,160 | 910,300 | 672,500 | 481,100 | 479,980 | 395,230 | 436,660 | 240,130 |
| <b>Mean</b>  | 10,860  | 17,540  | 26,610  | 14,920  | 11,970  | 29,360  | 22,420  | 15,520  | 16,000  | 12,750  | 14,090  | 8,004   |
| <b>Max</b>   | 38,100  | 25,200  | 50,300  | 22,700  | 23,300  | 65,300  | 49,100  | 26,200  | 32,400  | 29,400  | 37,400  | 14,800  |
| <b>Min</b>   | 5,310   | 13,100  | 11,100  | 11,200  | 8,640   | 14,300  | 14,000  | 10,800  | 7,010   | 7,190   | 6,960   | 4,800   |

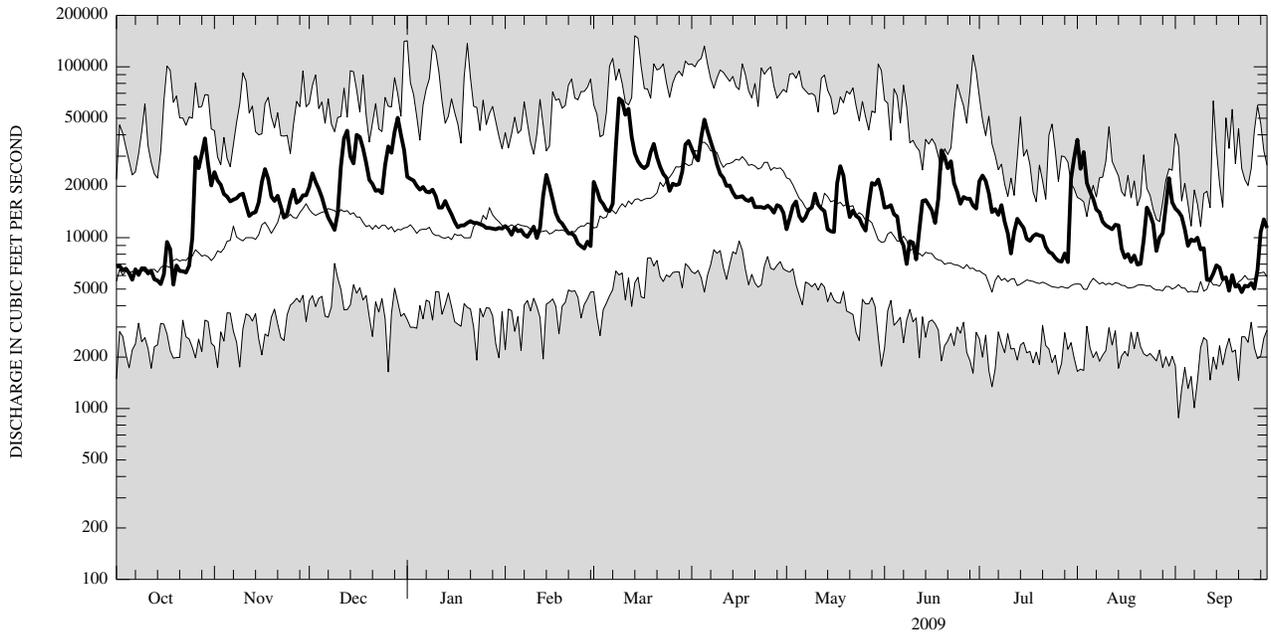
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2009, BY WATER YEAR (WY)**

|             | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Mean</b> | 9,510  | 13,820 | 15,850 | 14,240 | 14,200 | 22,390 | 31,010 | 18,800 | 10,710 | 7,198  | 6,223  | 6,560  |
| <b>Max</b>  | 30,140 | 26,790 | 34,940 | 33,970 | 31,260 | 44,240 | 61,820 | 40,520 | 31,420 | 23,780 | 14,630 | 17,030 |
| <b>(WY)</b> | (1978) | (2006) | (1997) | (1949) | (1976) | (1979) | (1993) | (1972) | (2006) | (2006) | (1976) | (1975) |
| <b>Min</b>  | 2,967  | 3,270  | 6,096  | 4,187  | 4,527  | 9,123  | 9,073  | 5,505  | 3,573  | 3,082  | 2,912  | 2,875  |
| <b>(WY)</b> | (1965) | (1965) | (1965) | (1961) | (1980) | (1965) | (1995) | (1987) | (1965) | (1965) | (1965) | (1964) |

01358000 HUDSON RIVER AT GREEN ISLAND, NY—Continued

SUMMARY STATISTICS

|                                 | Calendar Year 2008 |        | Water Year 2009 |        | Water Years 1946 - 2009 |              |
|---------------------------------|--------------------|--------|-----------------|--------|-------------------------|--------------|
| <b>Annual total</b>             | 7,018,690          |        | 6,100,970       |        |                         |              |
| <b>Annual mean</b>              | 19,180             |        | 16,710          |        | 14,210                  |              |
| <b>Highest annual mean</b>      |                    |        |                 |        | 22,100                  | 1976         |
| <b>Lowest annual mean</b>       |                    |        |                 |        | 6,386                   | 1965         |
| <b>Highest daily mean</b>       | 97,000             | Mar 9  | 65,300          | Mar 9  | 152,000                 | Mar 14, 1977 |
| <b>Lowest daily mean</b>        | 4,470              | Jul 13 | 4,800           | Sep 22 | 882                     | Sep 2, 1968  |
| <b>Annual seven-day minimum</b> | 4,940              | Jul 7  | 5,160           | Sep 20 | 2,110                   | Aug 23, 1995 |
| <b>10 percent exceeds</b>       | 40,100             |        | 29,700          |        | 29,600                  |              |
| <b>50 percent exceeds</b>       | 15,600             |        | 14,800          |        | 9,900                   |              |
| <b>90 percent exceeds</b>       | 5,600              |        | 6,850           |        | 4,370                   |              |



CURRENT WATER YEAR DAILY MEAN DISCHARGE (BOLD) WITH DAILY MEDIAN FOR PERIOD OF RECORD.  
 SHADED AREAS SHOW HIGHEST AND LOWEST DAILY MEAN FOR PERIOD OF RECORD THROUGH PREVIOUS WATER YEAR.