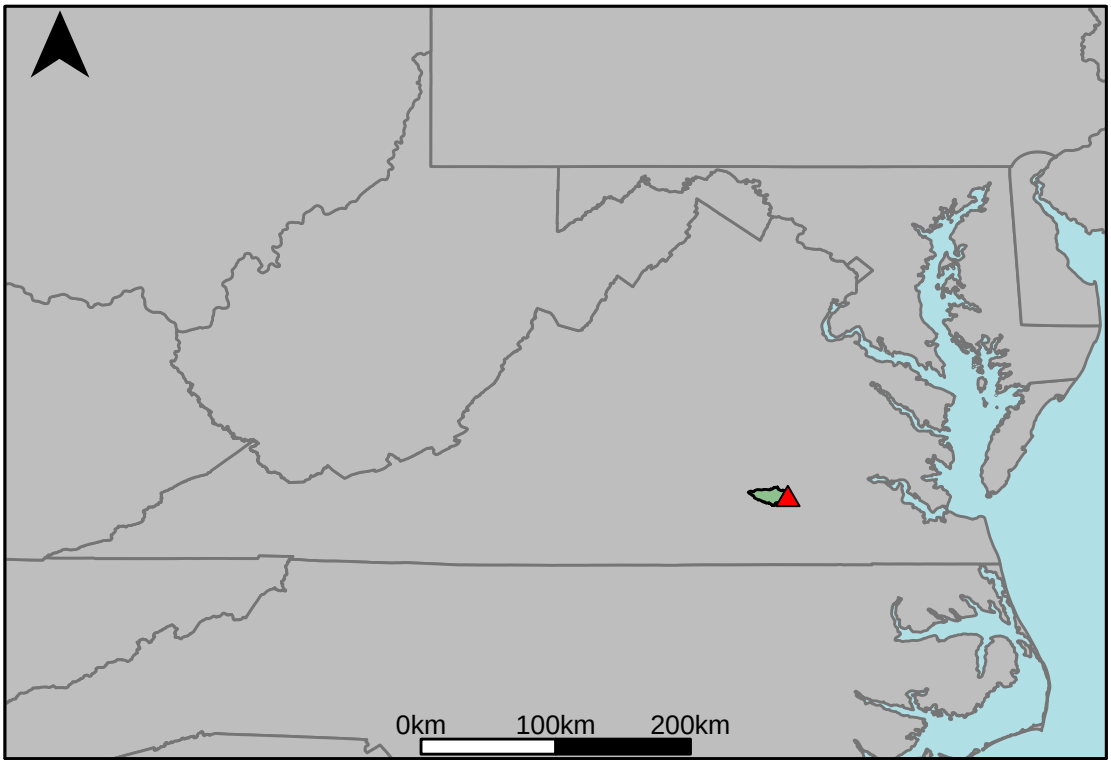
# Appendix G.2: USGS Gage 02046000 vs. MN2_7720_7830




This river segment follows part of the flow of the Stony Creek, a tributary of the Meherrin River. The gage is located in Dinwiddie County, VA (Lat 3704'01", Long 7736'10") approximately 15 miles southwest of Petersburg, VA. Drainage area is 113 sq. miles. This gage started taking data in 1946 and is still taking data. A few times a year there is a small increase in flow due to a release from a large pond just upstream of the gage. The average daily discharge error between the model and gage data for the 20 year timespan was 0.96%, with 53.8% of its rolling three month time spans above 20% error.

**Table 1: Monthly Low Flows**

| | USGS Gage | Model | Pct. Error |
|---|---|---|---|
| Jan. Low Flow | 3 | 4.89 | 63 |
| Feb. Low Flow | 14 | 16.3 | 16.4 |
| Mar. Low Flow | 22 | 20.9 | -5 |
| Apr. Low Flow | 34 | 36.3 | 6.76 |
| May Low Flow | 66 | 64.8 | -1.82 |
| Jun. Low Flow | 68 | 57.9 | -14.9 |
| Jul. Low Flow | 46 | 35.1 | -23.7 |
| Aug. Low Flow | 23 | 21.7 | -5.65 |
| Sep. Low Flow | 10 | 11.5 | 15 |
| Oct. Low Flow | 4.5 | 5.35 | 18.9 |
| Nov. Low Flow | 2.8 | 6.51 | 133 |
| Dec. Low Flow | 1.4 | 5.17 | 269 |

**Table 2: Monthly Average Flows**

| | USGS Gage | Model | Pct. Error |
|---|---|---|---|
| Overall Mean Flow | 104 | 103 | -0.96 |
| Jan. Mean Flow | 140 | 143 | 2.14 |
| Feb. Mean Flow | 167 | 172 | 2.99 |
| Mar. Mean Flow | 210 | 216 | 2.86 |
| Apr. Mean Flow | 167 | 146 | -12.6 |
| May Mean Flow | 111 | 89.4 | -19.5 |
| Jun. Mean Flow | 63.1 | 46.5 | -26.3 |
| Jul. Mean Flow | 36.7 | 32.2 | -12.3 |
| Aug. Mean Flow | 52.4 | 67.4 | 28.6 |
| Sep. Mean Flow | 81.6 | 105 | 28.7 |
| Oct. Mean Flow | 49 | 49.1 | 0.2 |
| Nov. Mean Flow | 79.6 | 76.1 | -4.4 |
| Dec. Mean Flow | 93.2 | 97.9 | 5.04 |

**Table 3: Monthly High Flows**

| | USGS Gage | Model | Pct. Error |
|---|---|---|---|
| Jan. High Flow | 55 | 74.9 | 36.2 |
| Feb. High Flow | 153 | 158 | 3.27 |
| Mar. High Flow | 227 | 203 | -10.6 |
| Apr. High Flow | 530 | 345 | -34.9 |
| May High Flow | 595 | 406 | -31.8 |
| Jun. High Flow | 770 | 1090 | 41.6 |
| Jul. High Flow | 558 | 364 | -34.8 |
| Aug. High Flow | 292 | 238 | -18.5 |
| Sep. High Flow | 170 | 54.1 | -68.2 |
| Oct. High Flow | 86 | 57.3 | -33.4 |
| Nov. High Flow | 52 | 64.6 | 24.2 |
| Dec. High Flow | 26 | 67.1 | 158 |

**Table 4: Period Low Flows**

| | USGS Gage | Model | Pct. Error |
|---|---|---|---|
| Min. 1 Day Min | 0.00 | 3.00e-02 | Inf |
| Med. 1 Day Min | 8.90e-01 | 1.53 | 7.19e+01 |
| Min. 3 Day Min | 0.00 | 3.00e-02 | 8.83e+13 |
| Med. 3 Day Min | 9.30e-01 | 1.80 | 9.35e+01 |
| Min. 7 Day Min | 3.00e-02 | 4.00e-02 | 4.30e+01 |
| Med. 7 Day Min | 1.08 | 2.43 | 1.25e+02 |
| Min. 30 Day Min | 3.50e-01 | 4.70e-01 | 3.58e+01 |
| Med. 30 Day Min | 2.25 | 5.36 | 1.38e+02 |
| Min. 90 Day Min | 1.94 | 5.13 | 1.64e+02 |
| Med. 90 Day Min | 1.89e+01 | 1.90e+01 | 5.30e-01 |
| 7Q10 | 1.50e-01 | 3.80e-01 | 1.48e+02 |
| Year of 90-Day Min. Flow | 2.00e+03 | 2.00e+03 | 0.00 |
| Drought Year Mean | 1.55e+01 | 2.73e+01 | 7.61e+01 |
| Mean Baseflow | 3.74e+01 | 4.02e+01 | 7.49 |

**Table 5: Period High Flows**

| | USGS Gage | Model | Pct. Error |
|---|---|---|---|
| Max. 1 Day Max | 8400 | 13100 | 56 |
| Med. 1 Day Max | 1970 | 2500 | 26.9 |
| Max. 3 Day Max | 4220 | 4820 | 14.2 |
| Med. 3 Day Max | 1390 | 1230 | -11.5 |
| Max. 7 Day Max | 2110 | 2330 | 10.4 |
| Med. 7 Day Max | 737 | 706 | -4.21 |
| Max. 30 Day Max | 832 | 715 | -14.1 |
| Med. 30 Day Max | 346 | 330 | -4.62 |
| Max. 90 Day Max | 527 | 449 | -14.8 |
| Med. 90 Day Max | 224 | 210 | -6.25 |

**Table 6: Non-Exceedance Flows**

| | USGS Gage | Model | Pct. Error |
|---|---|---|---|
| 1% Non-Exceedance | 0.47 | 1.14 | 143 |
| 5% Non-Exceedance | 1.7 | 3.91 | 130 |
| 50% Non-Exceedance | 45 | 44.2 | -1.78 |
| 95% Non-Exceedance | 365 | 317 | -13.2 |
| 99% Non-Exceedance | 996 | 983 | -1.31 |
| Sept. 10% Non-Exceedance | 3.65 | 0.95 | -74 |

**Fig. 1: Hydrograph**

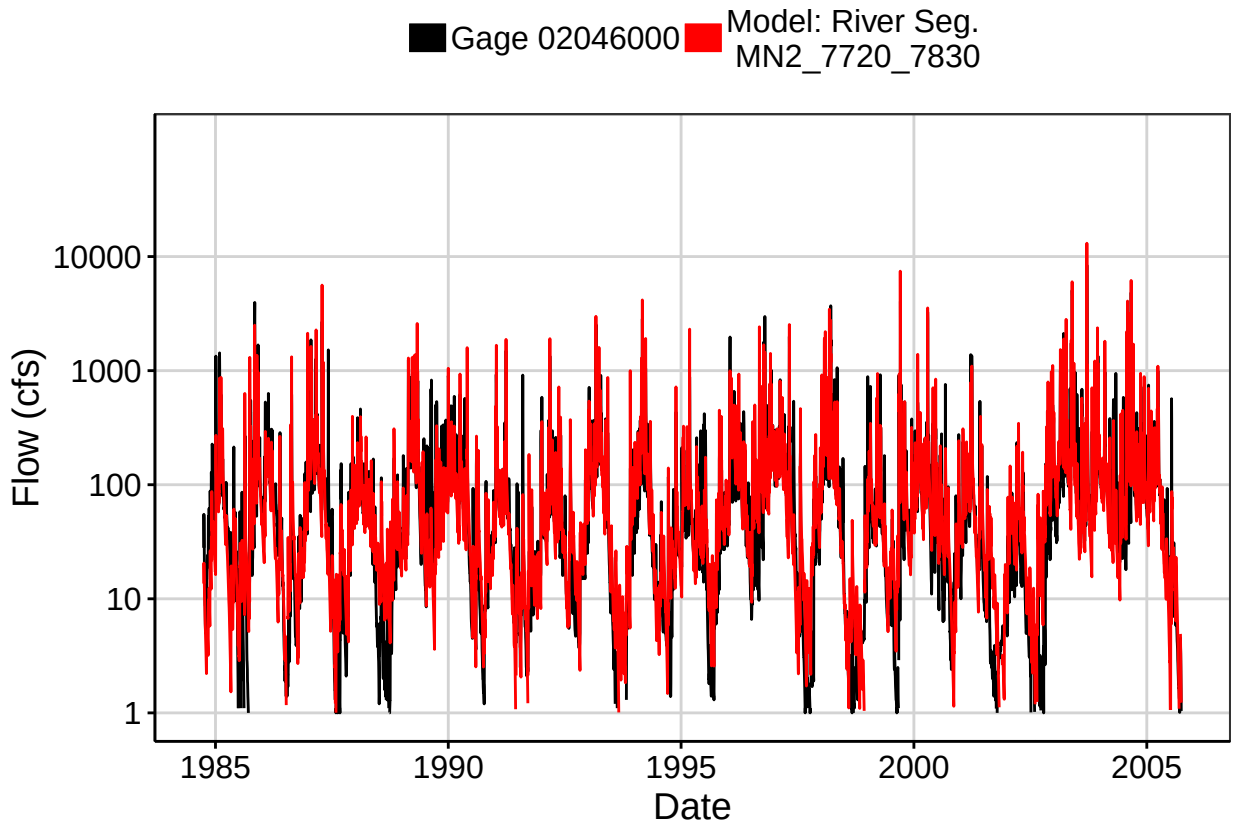


**Fig. 2: Zoomed Hydrograph**

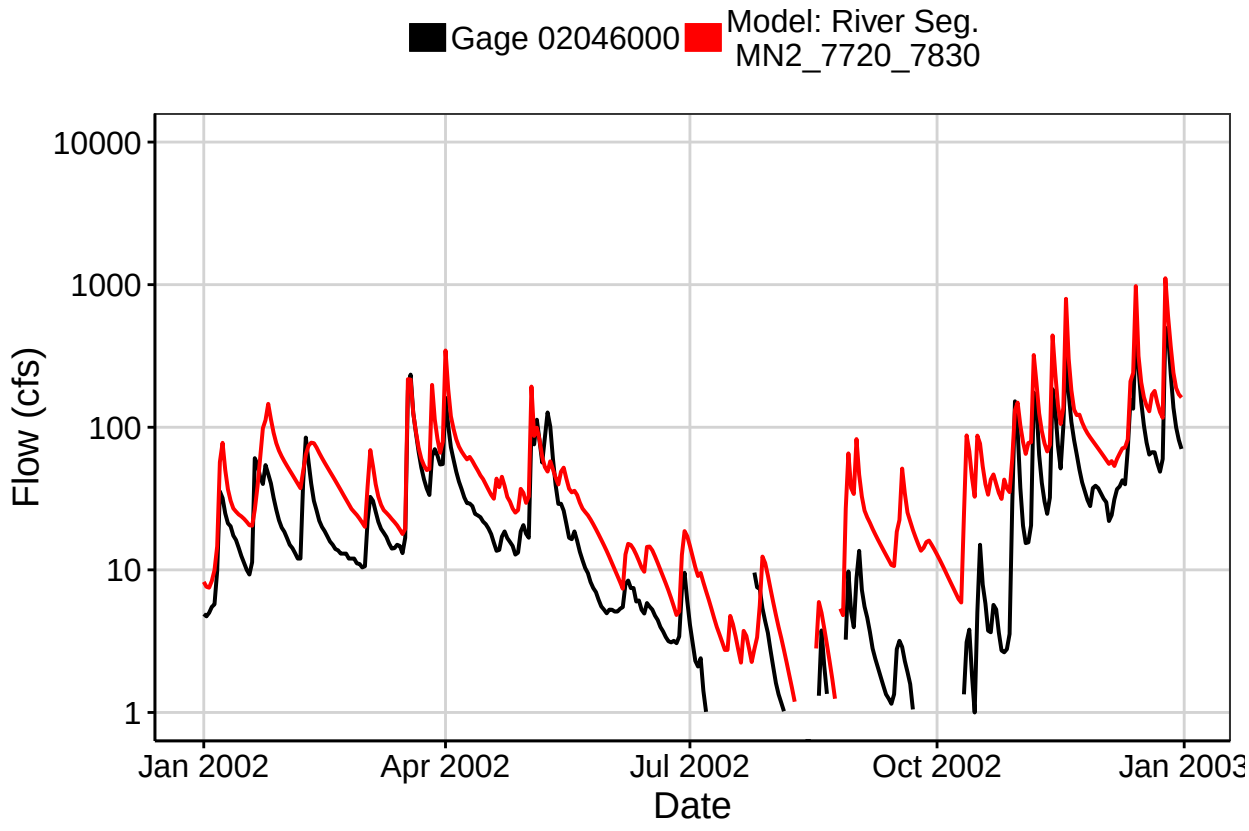


**Fig. 3: Flow Exceedance**

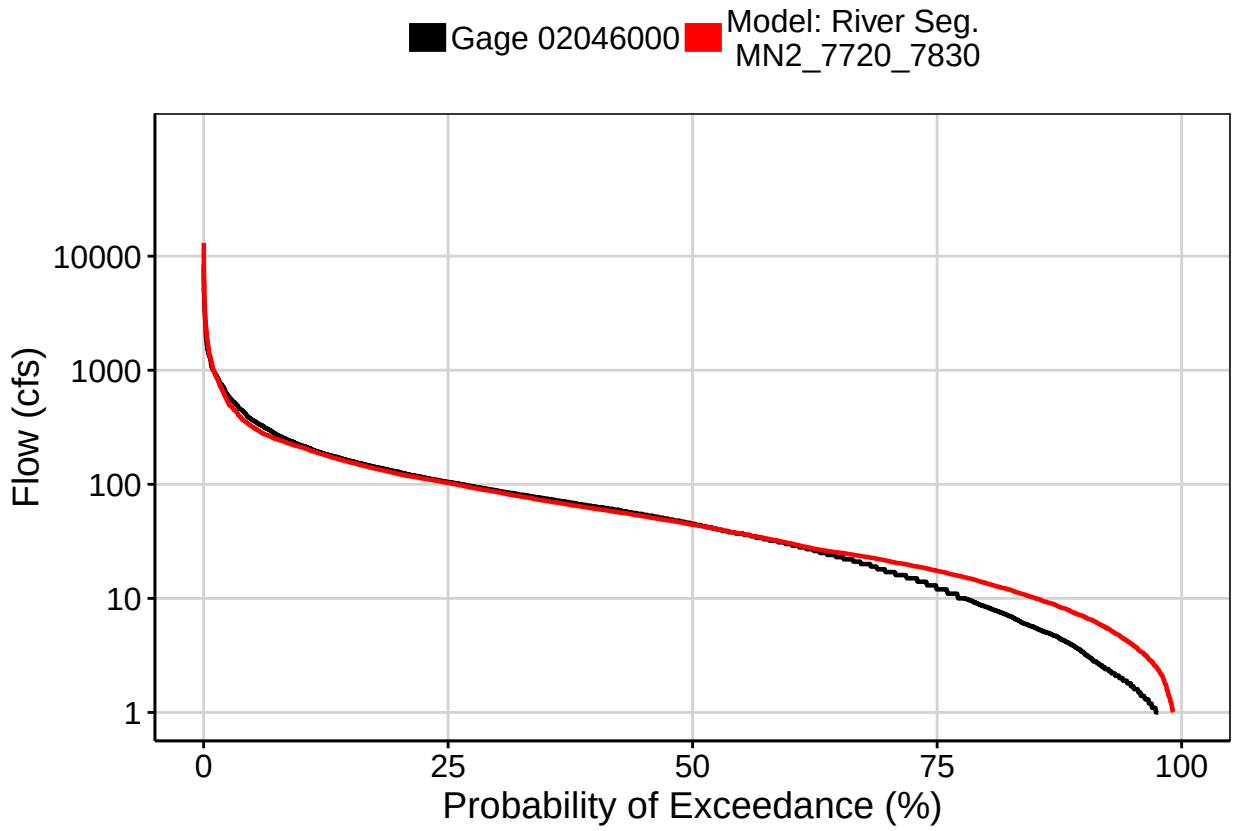


**Fig. 4: Baseflow**

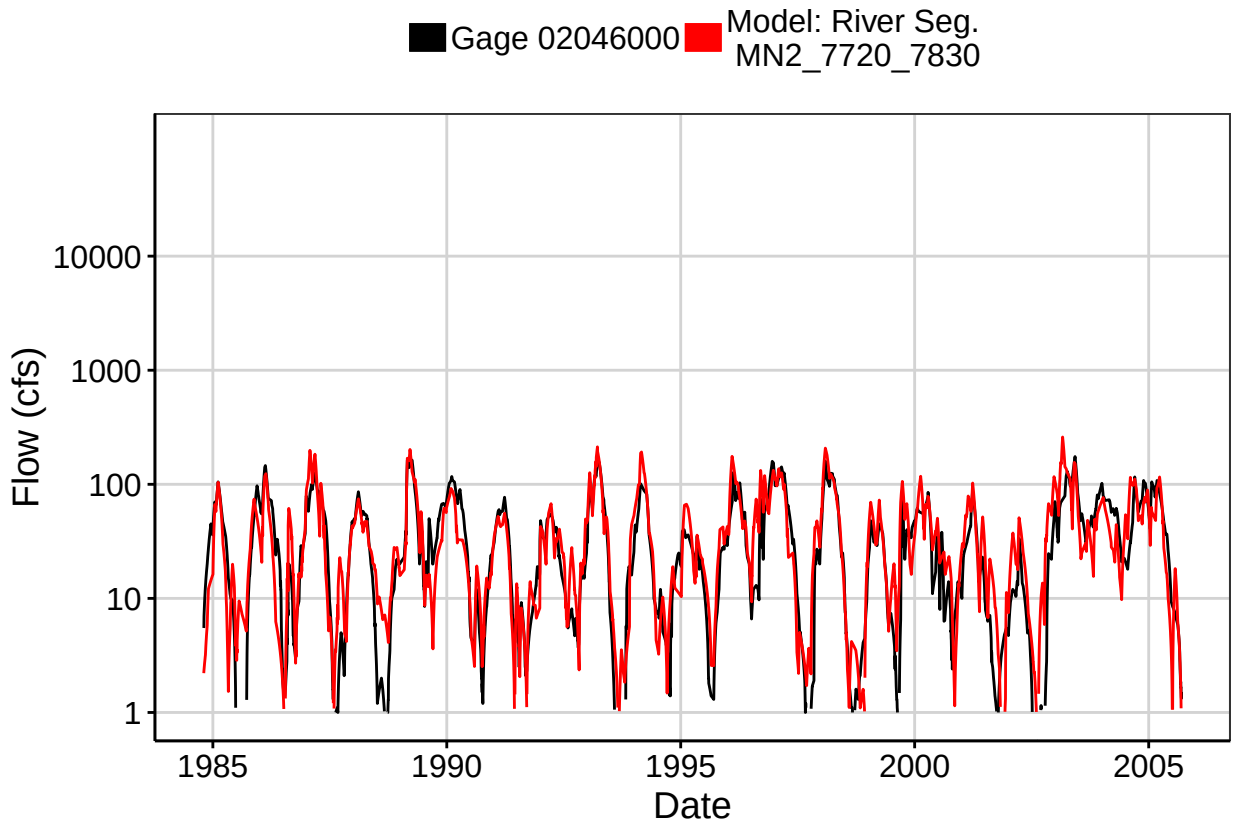


**Fig. 5: Combined Baseflow**

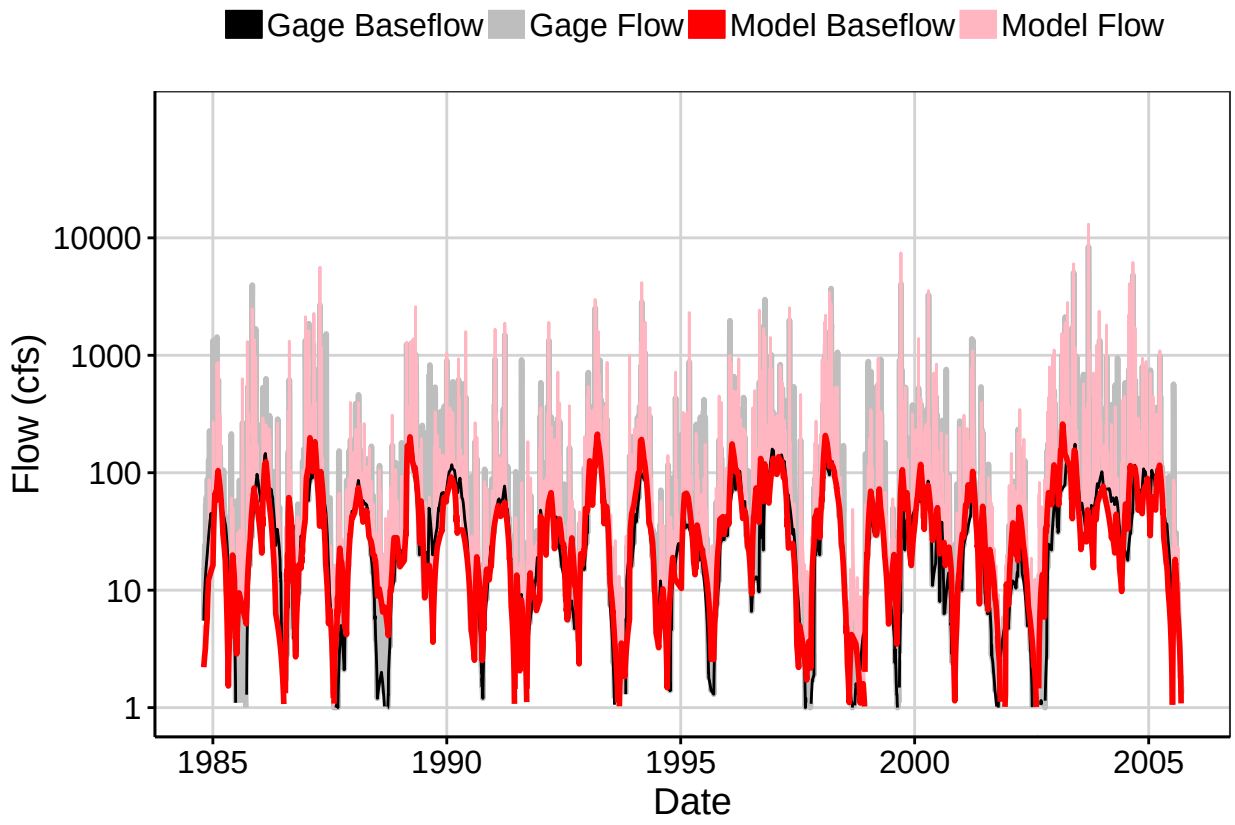


**Fig. 6: Largest Error Segment**

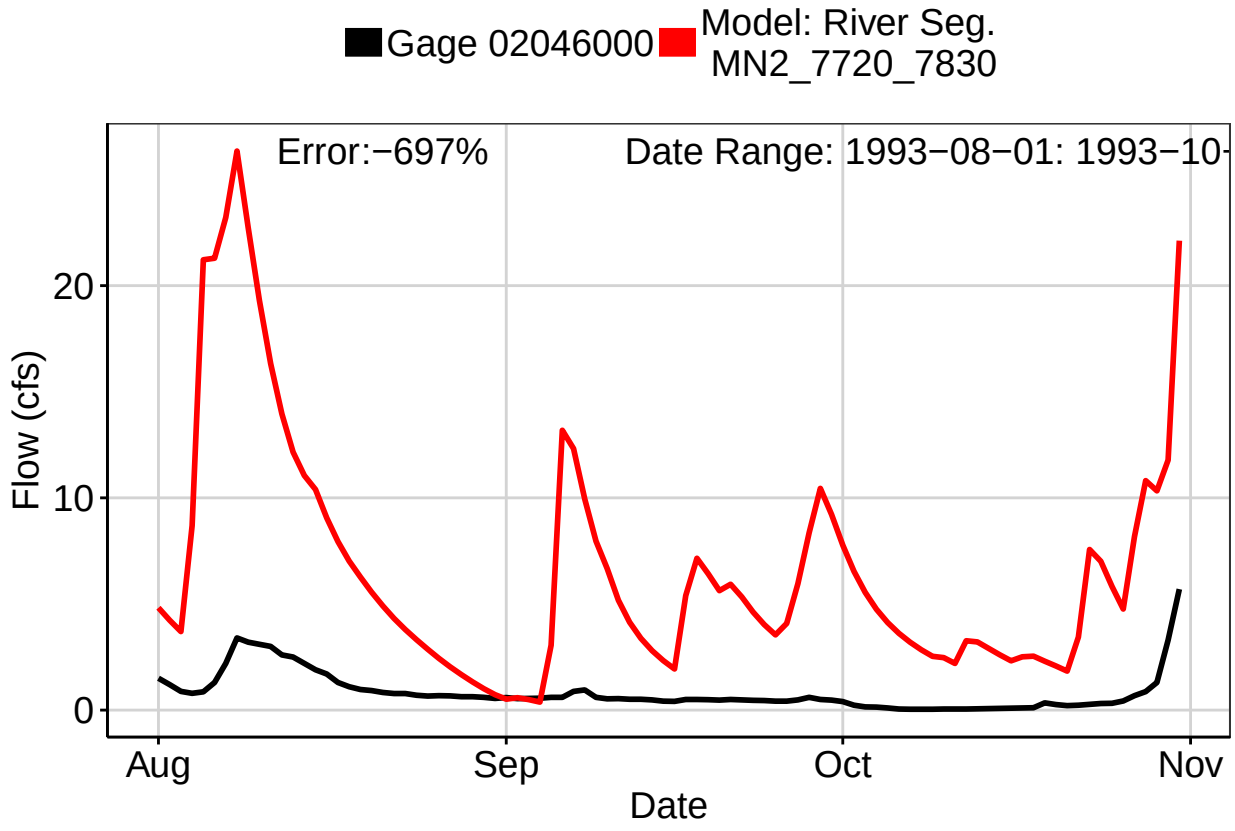


**Fig. 7: Second Largest Error Segment**

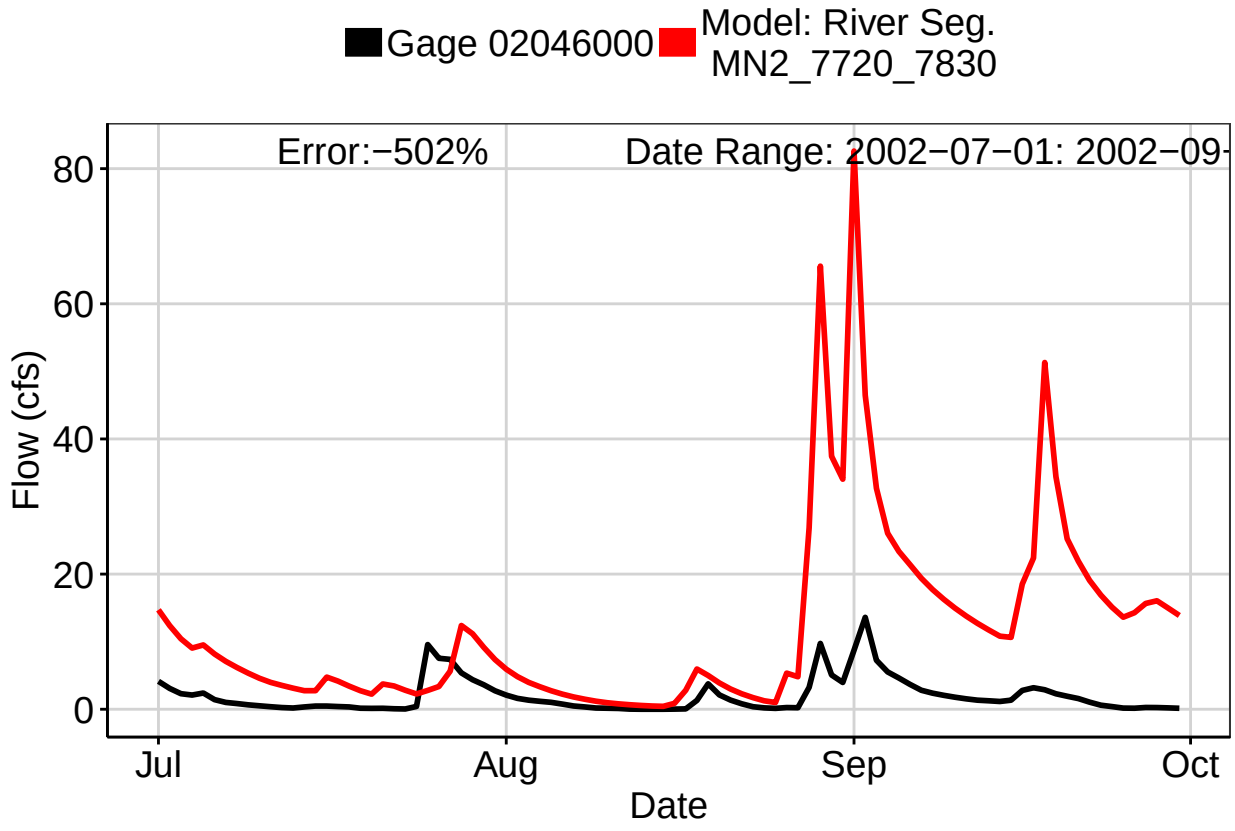


**Fig. 8: Third Largest Error Segment**

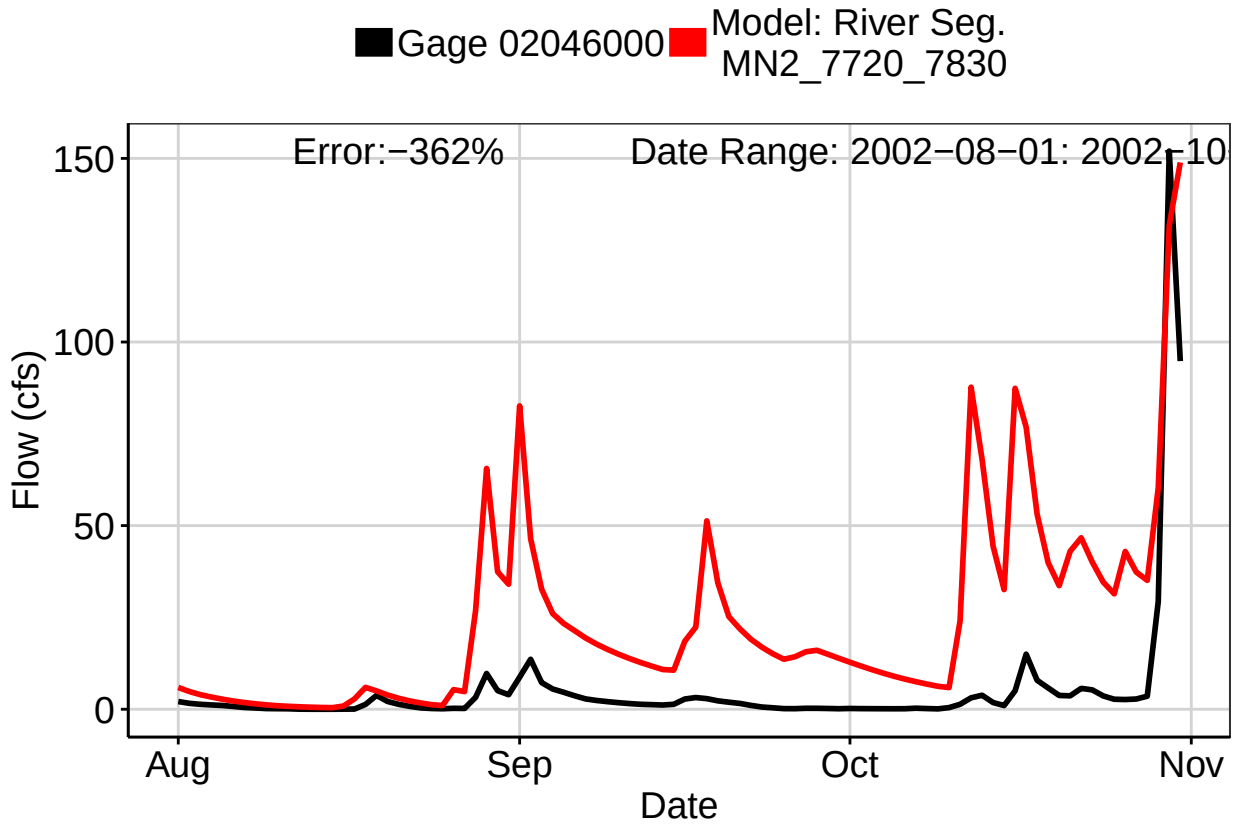


**Fig. 9: Residuals Plot**