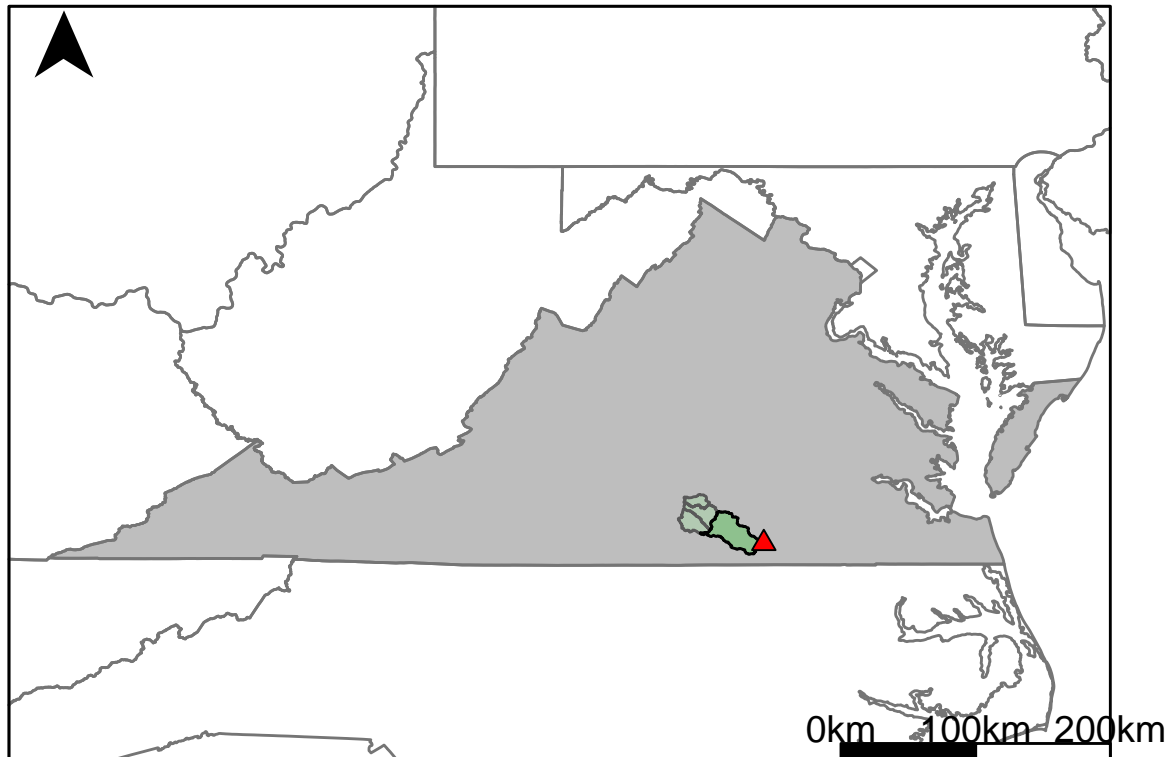


Appendix E.2: USGS Gage 02051500 vs. MN3_8190_8260



This river segment follows part of the flow of the Meherrin River. The gage is located in Brunswick County, VA (Lat 36°43'0", Long 77°49'55") approximately 16 miles west of Emporia, VA. Drainage area is 552 sq. miles. This gage started taking data in 1929 and is still taking data. There are no known anthropogenic alterations in this area that would affect the flow conditions. The average daily discharge error between the model and gage data for the 20 year timespan was 1.57%, with 45.8% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	56	51.7	7.68
Feb. Low Flow	124	95.4	23.1
Mar. Low Flow	153	136	11.1
Apr. Low Flow	212	226	-6.6
May Low Flow	349	334	4.3
Jun. Low Flow	336	304	9.52
Jul. Low Flow	283	219	22.6
Aug. Low Flow	152	134	11.8
Sep. Low Flow	99	89	10.1
Oct. Low Flow	56	61.4	-9.64
Nov. Low Flow	52	47.8	8.08
Dec. Low Flow	48	51.6	-7.5

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	511	503	1.57
Jan. Mean Flow	708	663	6.36
Feb. Mean Flow	786	839	-6.74
Mar. Mean Flow	1030	1050	-1.94
Apr. Mean Flow	771	771	0
May Mean Flow	500	450	10
Jun. Mean Flow	335	302	9.85
Jul. Mean Flow	207	175	15.5
Aug. Mean Flow	235	237	-0.85
Sep. Mean Flow	437	464	-6.18
Oct. Mean Flow	216	264	-22.2
Nov. Mean Flow	450	385	14.4
Dec. Mean Flow	477	458	3.98

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	551	314	43
Feb. High Flow	1220	1100	9.84
Mar. High Flow	1870	1150	38.5
Apr. High Flow	2890	1680	41.9
May High Flow	2980	1530	48.7
Jun. High Flow	3370	2660	21.1
Jul. High Flow	3330	2520	24.3
Aug. High Flow	1260	695	44.8
Sep. High Flow	592	265	55.2
Oct. High Flow	465	314	32.5
Nov. High Flow	609	437	28.2
Dec. High Flow	274	311	-13.5

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	2.19	8.26	-277
Med. 1 Day Min	30	32.9	-9.67
Min. 3 Day Min	2.22	8.36	-277
Med. 3 Day Min	33	34.7	-5.15
Min. 7 Day Min	2.57	8.83	-244
Med. 7 Day Min	36.5	38.5	-5.48
Min. 30 Day Min	10.2	12	-17.6
Med. 30 Day Min	62.3	57.2	8.19
Min. 90 Day Min	23	28.6	-24.3
Med. 90 Day Min	125	91.9	26.5
7Q10	11.3	13.9	-23
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	111	503	-353
Mean Baseflow	208	233	-12

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	15400	15400	0
Med. 1 Day Max	7580	6320	16.6
Max. 3 Day Max	12300	12700	-3.25
Med. 3 Day Max	6400	5220	18.4
Max. 7 Day Max	7830	8970	-14.6
Med. 7 Day Max	3380	3410	-0.89
Max. 30 Day Max	2990	3210	-7.36
Med. 30 Day Max	1470	1410	4.08
Max. 90 Day Max	2110	2170	-2.84
Med. 90 Day Max	973	953	2.06

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	17.2	17.1	0.58
5% Non-Exceedance	39	37.9	2.82
50% Non-Exceedance	252	249	1.19
95% Non-Exceedance	1690	1700	-0.59
99% Non-Exceedance	5340	4380	18
Sept. 10% Non-Exceedance	33.2	32.6	1.81

Fig. 1: Hydrograph

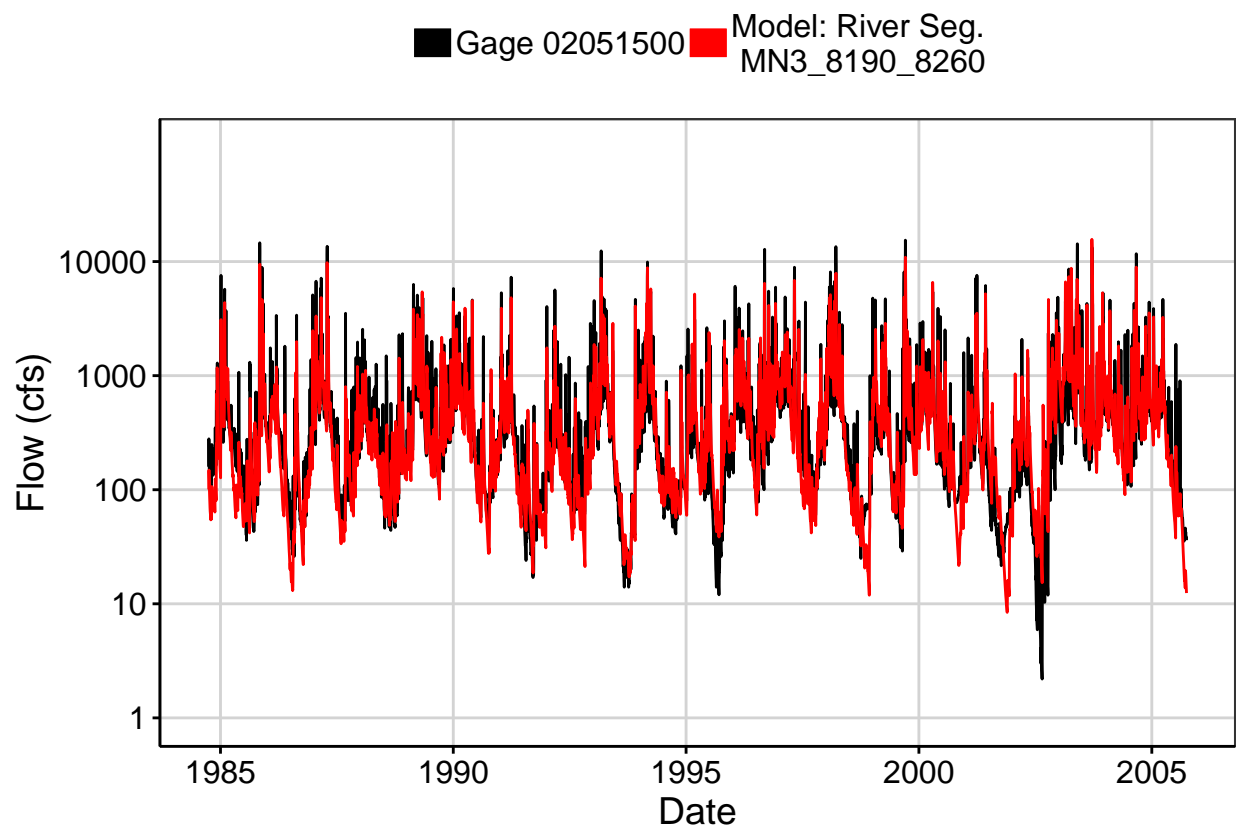


Fig. 2: Zoomed Hydrograph

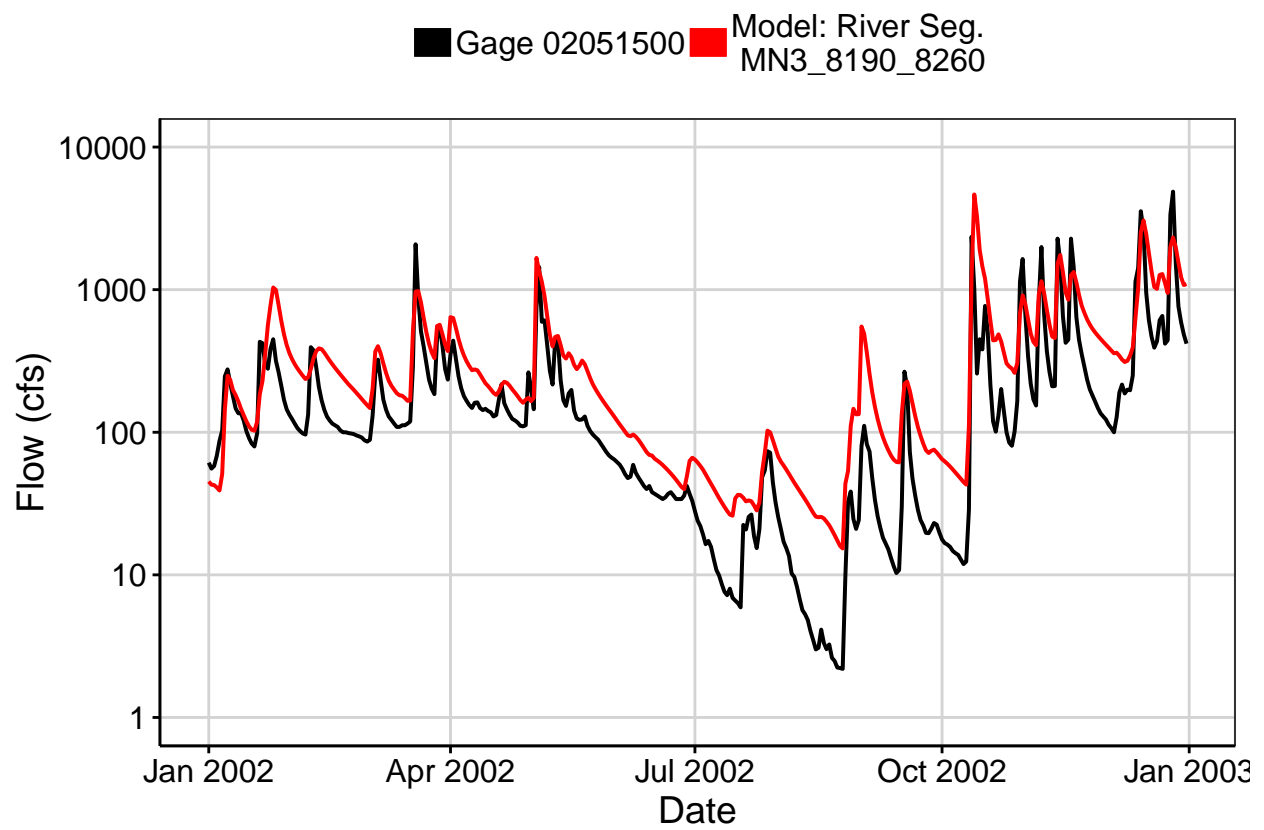


Fig. 3: Flow Exceedance

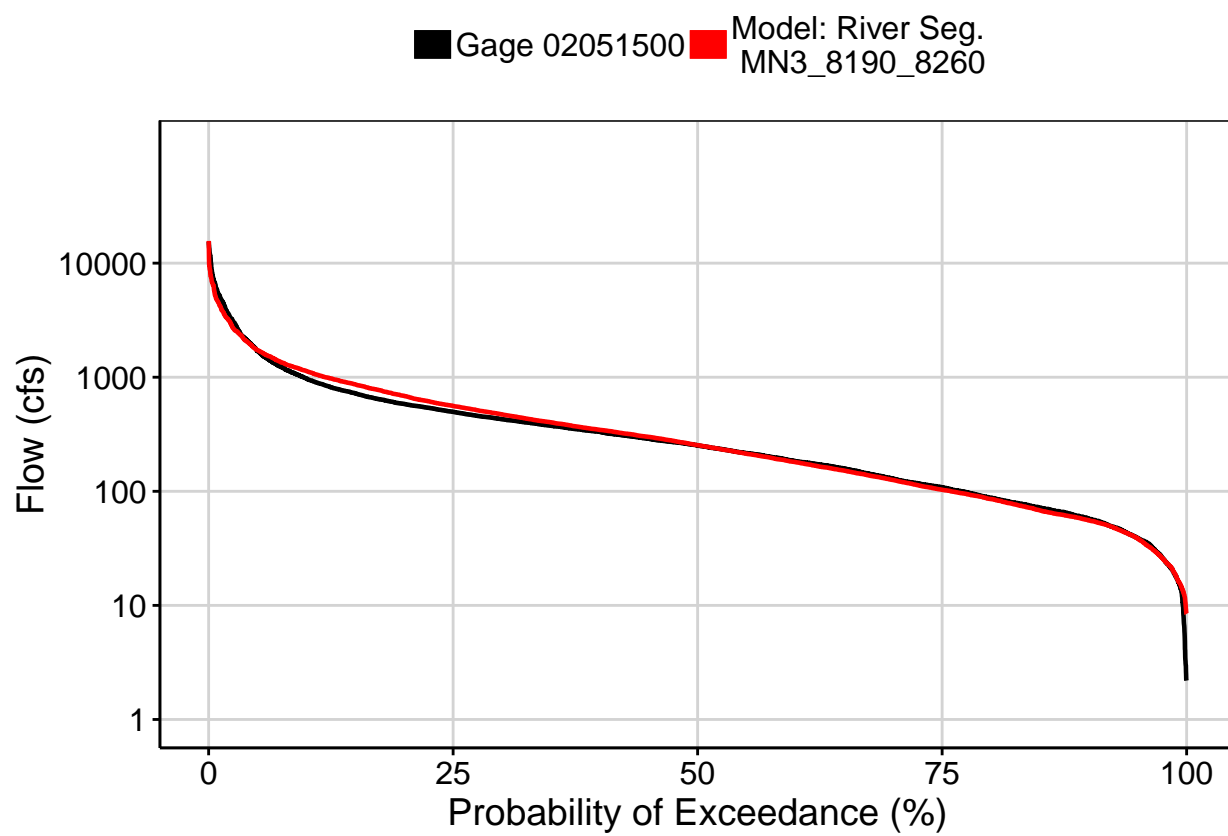


Fig. 4: Baseflow

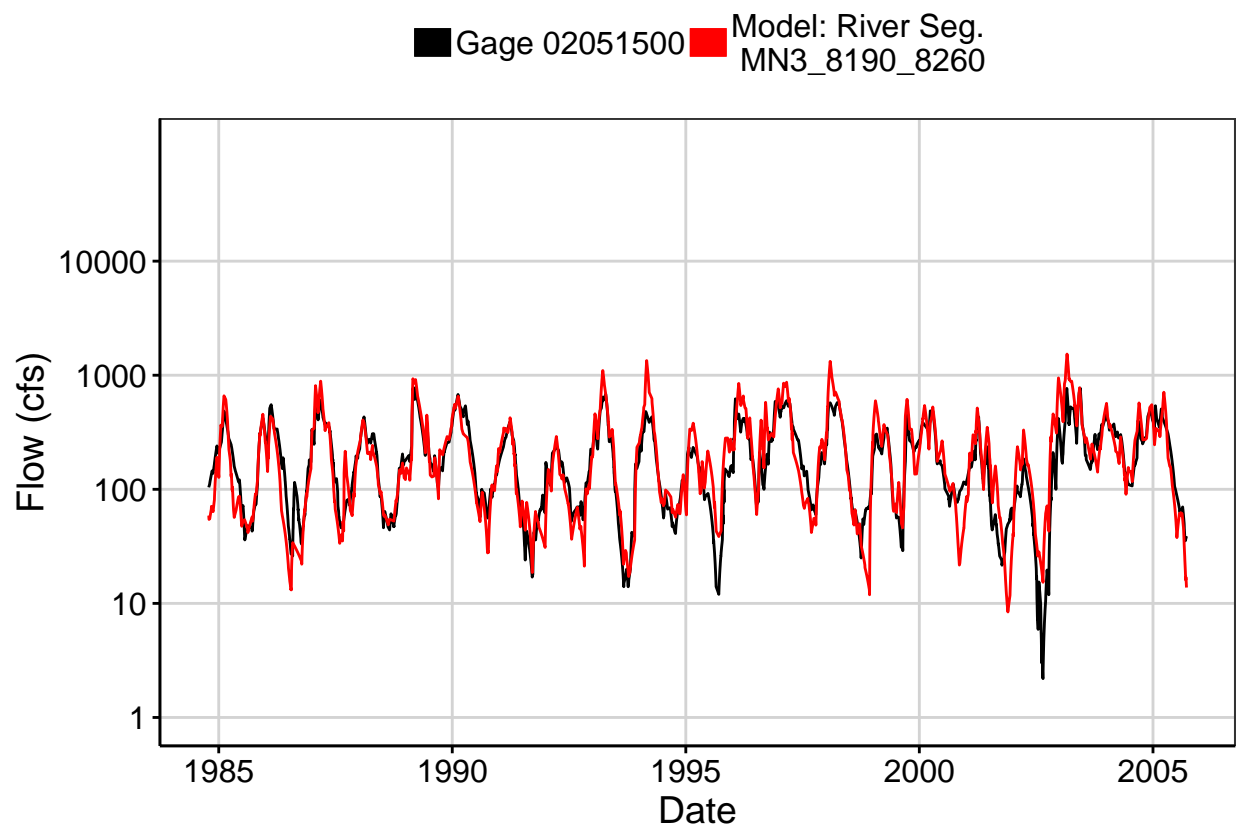


Fig. 5: Combined Baseflow

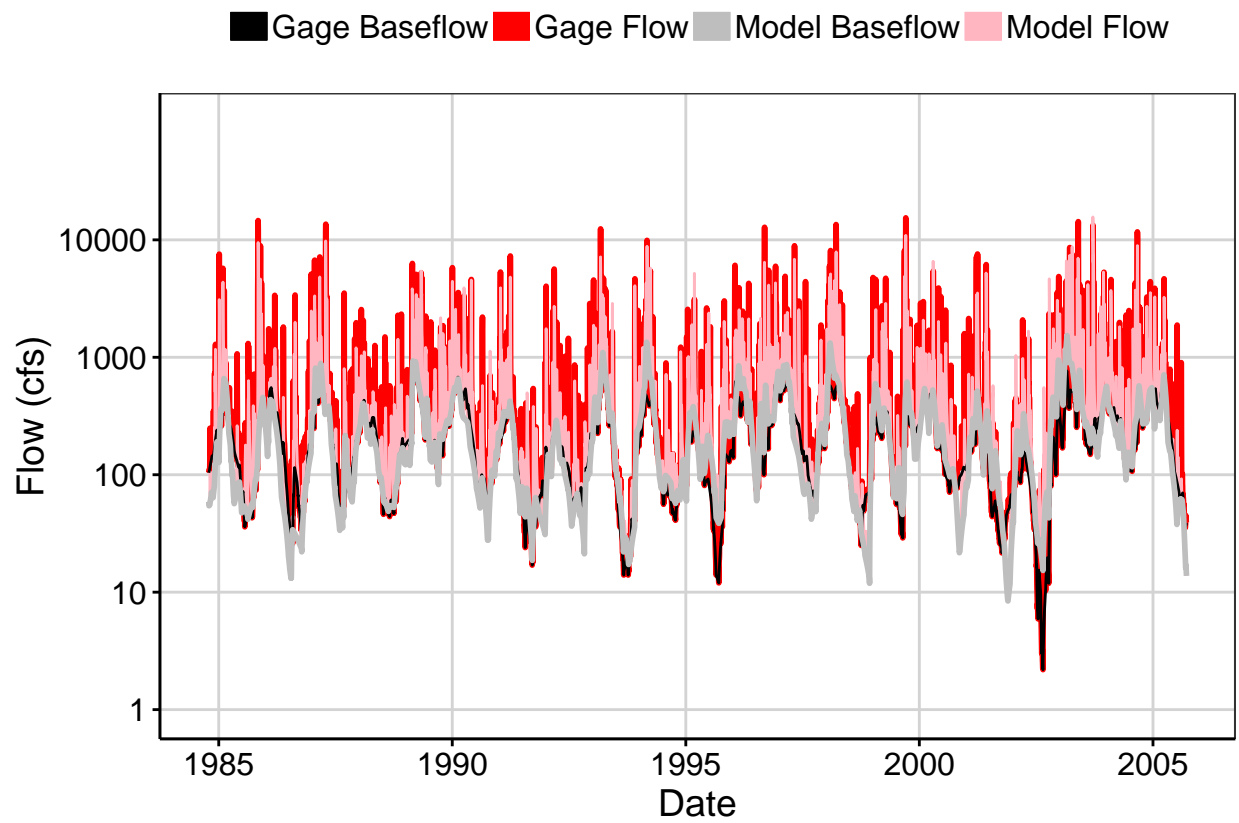


Fig. 6: Largest Error Segment

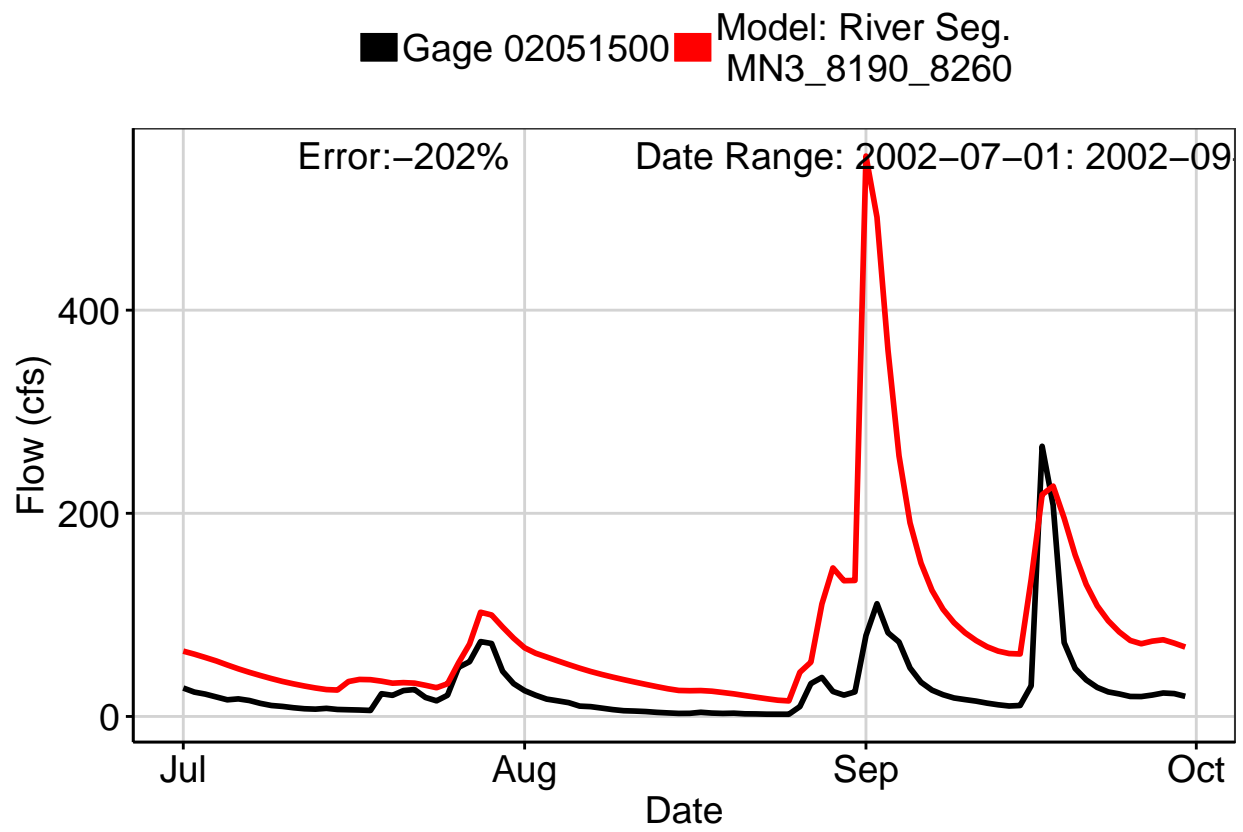


Fig. 7: Second Largest Error Segment

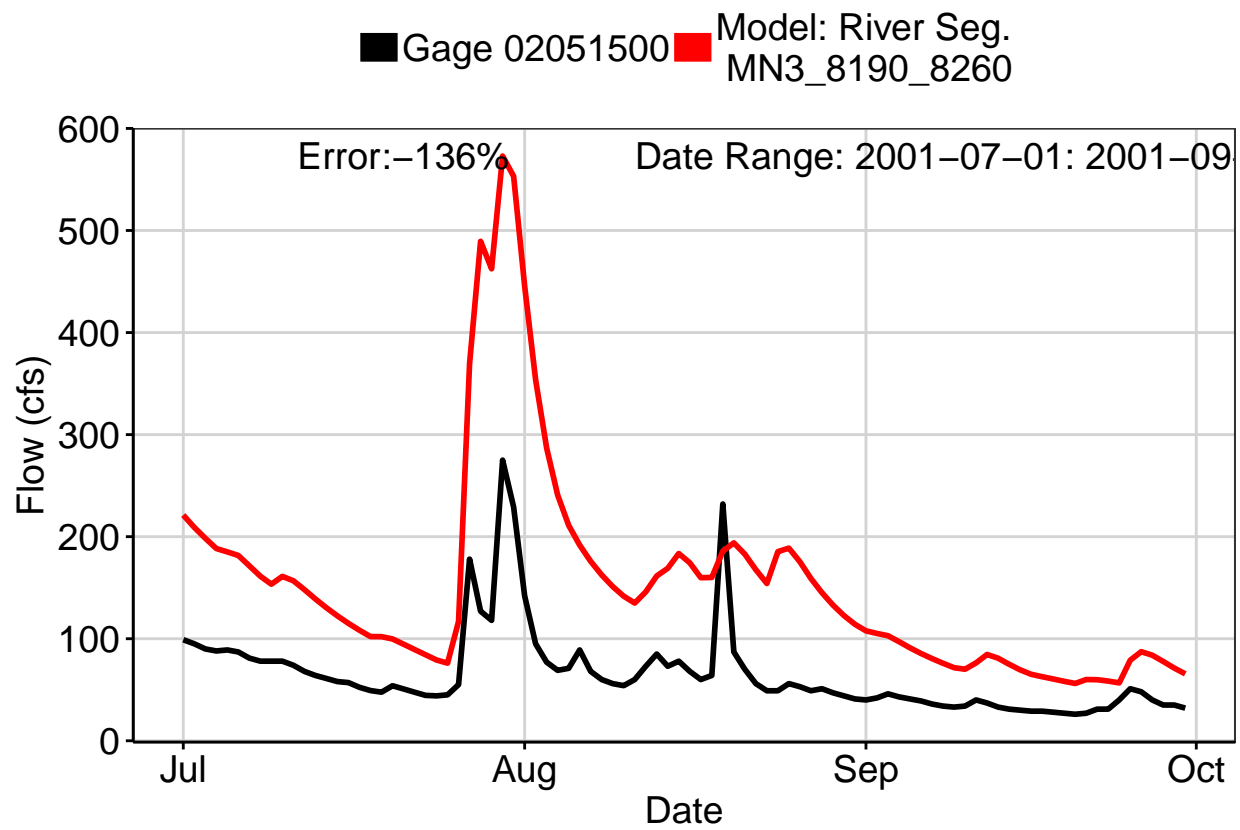


Fig. 8: Third Largest Error Segment

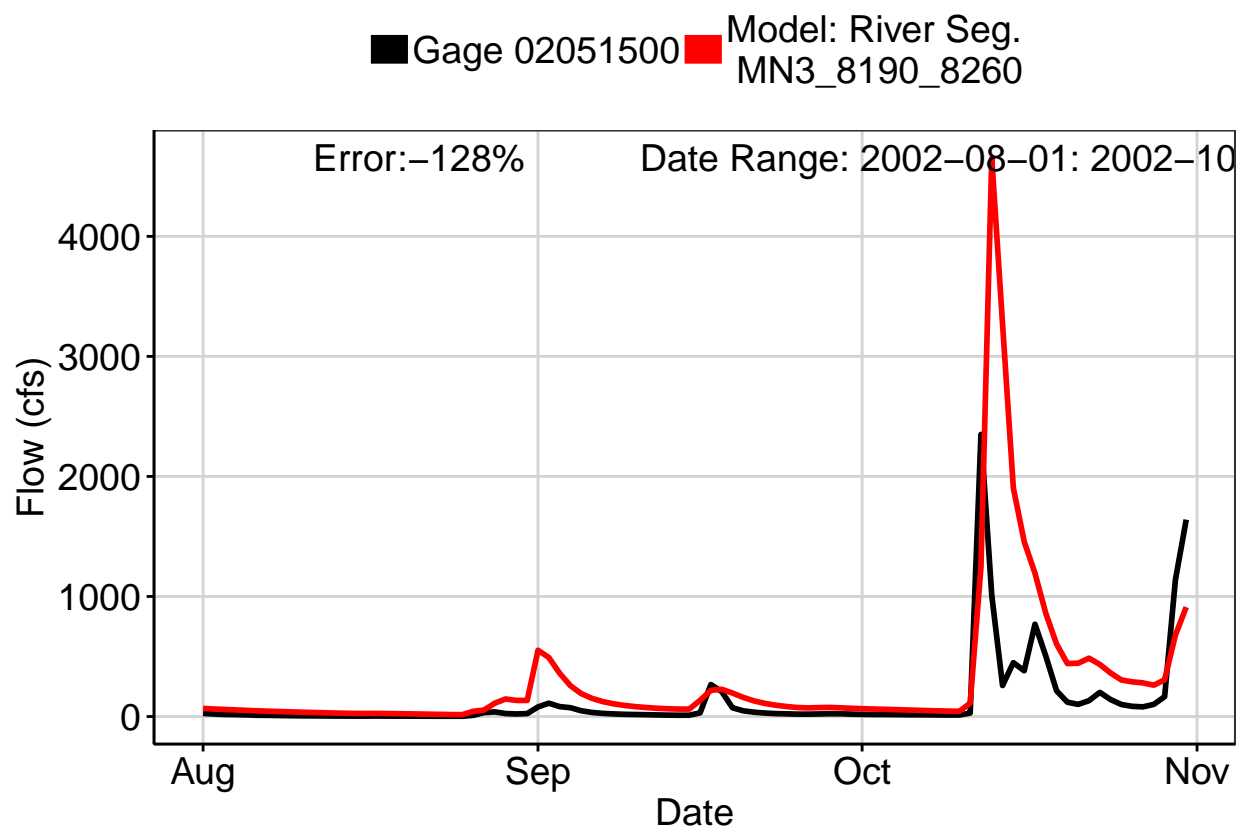


Fig. 9: Residuals Plot

