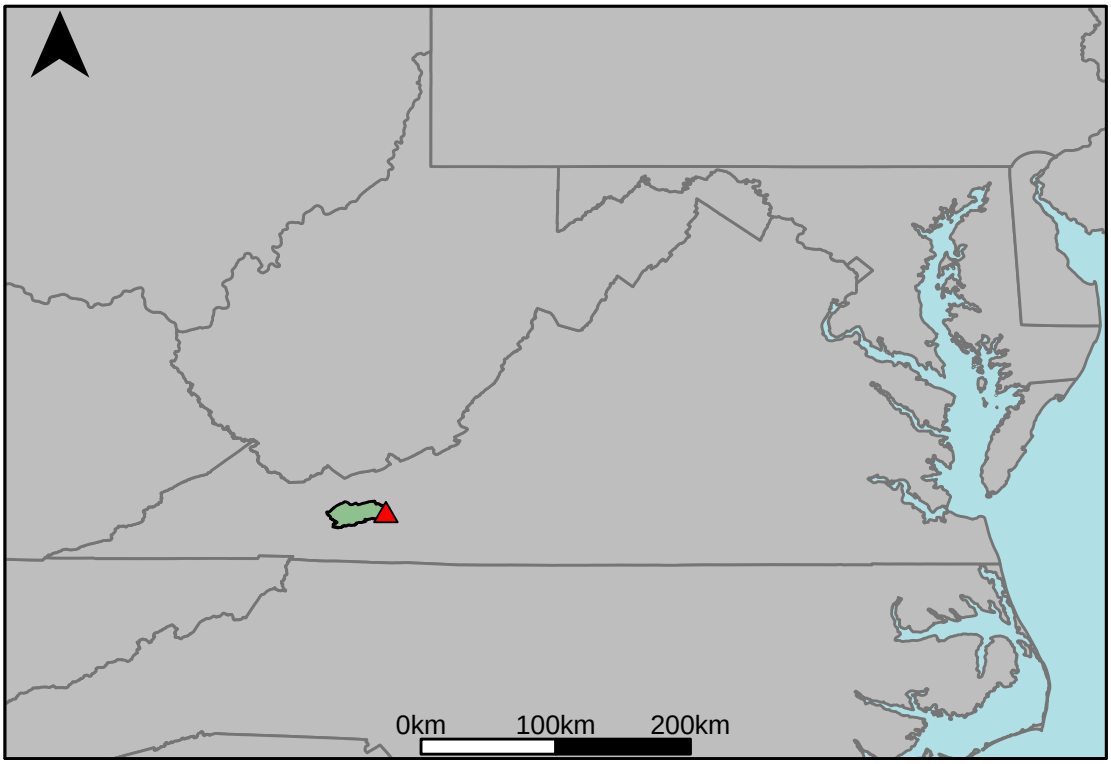
Appendix F.3: USGS Gage 03167000 vs. NR2_8600_8700



This river segment follows part of the flow of the Reed Creek, a tributary of the New River. The gage is located in Wythe County, VA (Lat 3656'20", Long 8053'15") approximately 19 miles north of Galax, VA. Drainage area is 258 sq. miles. This gage started taking data in 1908 and is still taking data, but there is a gap from 1916-09-30 to 1991-09-29. For this reason, analysis was carried out from 1991-10-01 to 2005-09-30. There are no known anthropogenic alterations to the area that would affect flow. The average daily discharge error between the model and gage data for the 20 year timespan was -5.15%, with 32.7% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	72.6	47.9	-34
Feb. Low Flow	81.5	55.3	-32.1
Mar. Low Flow	89.5	76.6	-14.4
Apr. Low Flow	102	138	35.3
May Low Flow	190	241	26.8
Jun. Low Flow	234	311	32.9
Jul. Low Flow	226	237	4.87
Aug. Low Flow	152	189	24.3
Sep. Low Flow	128	152	18.8
Oct. Low Flow	99.8	104	4.21
Nov. Low Flow	85.1	79.9	-6.11
Dec. Low Flow	76	53.4	-29.7

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	272	286	5.15
Jan. Mean Flow	324	333	2.78
Feb. Mean Flow	463	513	10.8
Mar. Mean Flow	509	539	5.89
Apr. Mean Flow	405	442	9.14
May Mean Flow	334	332	-0.6
Jun. Mean Flow	268	291	8.58
Jul. Mean Flow	192	198	3.12
Aug. Mean Flow	152	164	7.89
Sep. Mean Flow	124	163	31.5
Oct. Mean Flow	104	106	1.92
Nov. Mean Flow	171	158	-7.6
Dec. Mean Flow	236	215	-8.9

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	134	113	-15.7
Feb. High Flow	235	184	-21.7
Mar. High Flow	730	321	-56
Apr. High Flow	1140	1320	15.8
May High Flow	1600	1260	-21.2
Jun. High Flow	1560	1920	23.1
Jul. High Flow	980	1090	11.2
Aug. High Flow	795	578	-27.3
Sep. High Flow	469	489	4.26
Oct. High Flow	222	229	3.15
Nov. High Flow	160	161	0.62
Dec. High Flow	166	144	-13.3

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	40.8	15	-63.2
Med. 1 Day Min	68	37.6	-44.7
Min. 3 Day Min	44.1	15.2	-65.5
Med. 3 Day Min	69	38.5	-44.2
Min. 7 Day Min	46.8	15.9	-66
Med. 7 Day Min	69.4	39.5	-43.1
Min. 30 Day Min	56.9	18.5	-67.5
Med. 30 Day Min	76.2	50.3	-34
Min. 90 Day Min	66.5	28.4	-57.3
Med. 90 Day Min	100	76.3	-23.7
7Q10	51.6	19.2	-62.8
Year of 90-Day Min. Flow	1999	1999	0
Drought Year Mean	143	157	9.79
Mean Baseflow	160	181	13.1

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	7620	8280	8.66
Med. 1 Day Max	2850	4140	45.3
Max. 3 Day Max	3880	4670	20.4
Med. 3 Day Max	2130	2720	27.7
Max. 7 Day Max	2190	2660	21.5
Med. 7 Day Max	1420	1590	12
Max. 30 Day Max	1120	1410	25.9
Med. 30 Day Max	706	690	-2.27
Max. 90 Day Max	767	937	22.2
Med. 90 Day Max	513	501	-2.34

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	54	21.5	-60.2
5% Non-Exceedance	66.9	34.5	-48.4
50% Non-Exceedance	165	181	9.7
95% Non-Exceedance	797	786	-1.38
99% Non-Exceedance	1680	2040	21.4
Sept. 10% Non-Exceedance	36.4	61.1	67.9

Fig. 1: Hydrograph

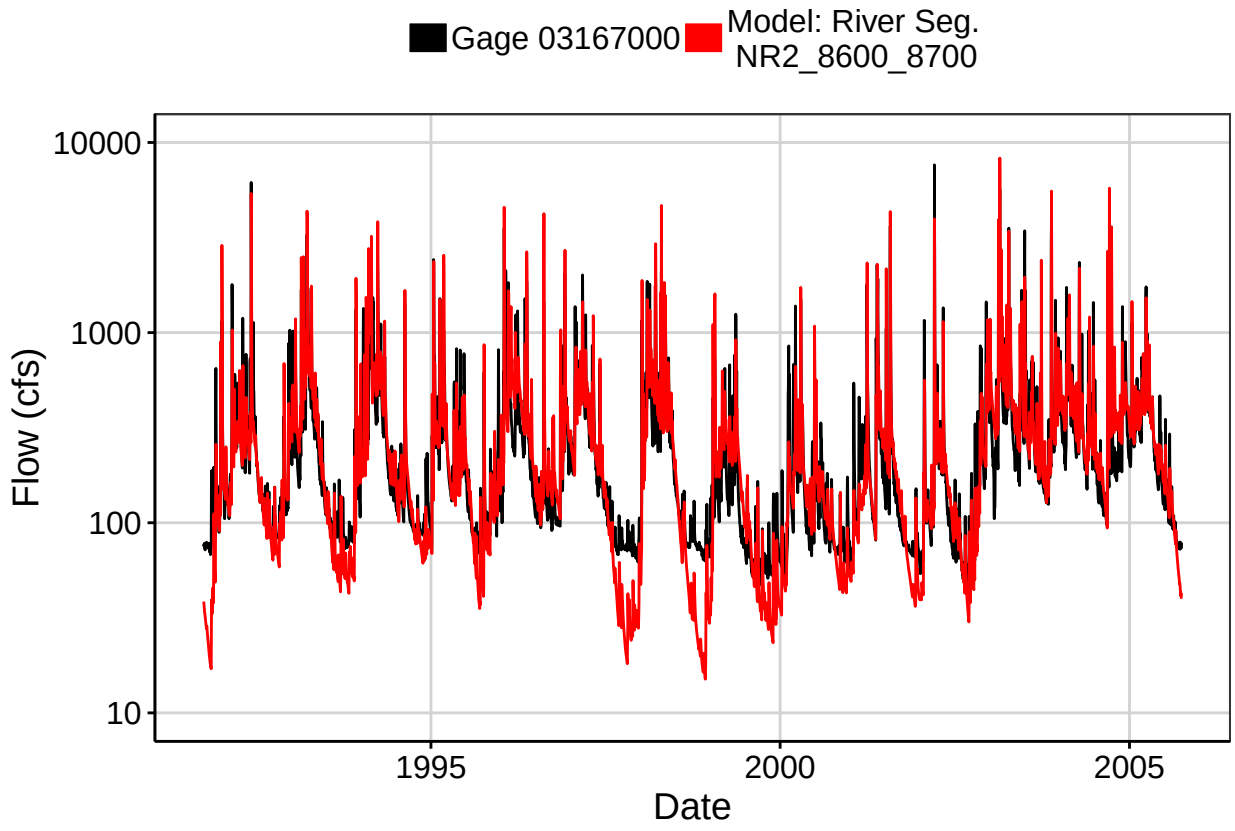


Fig. 2: Zoomed Hydrograph

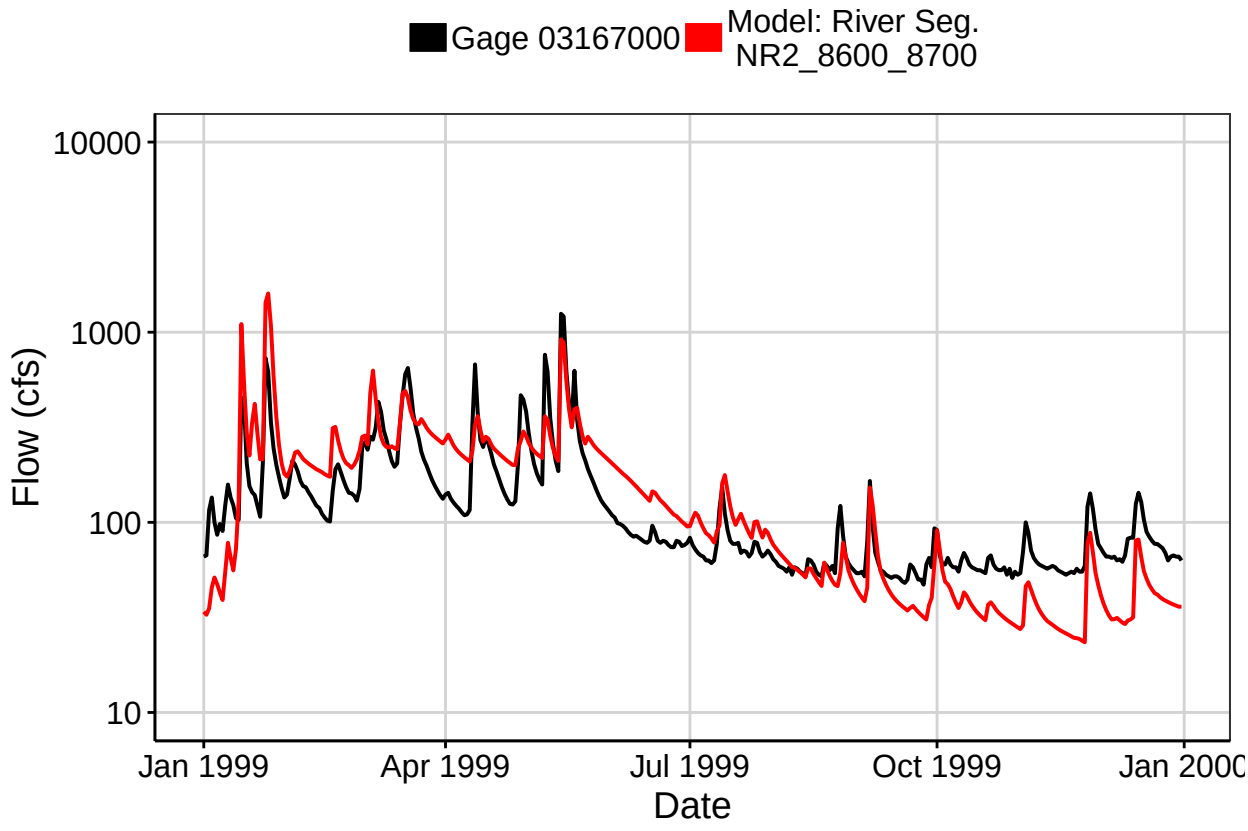


Fig. 3: Flow Exceedance

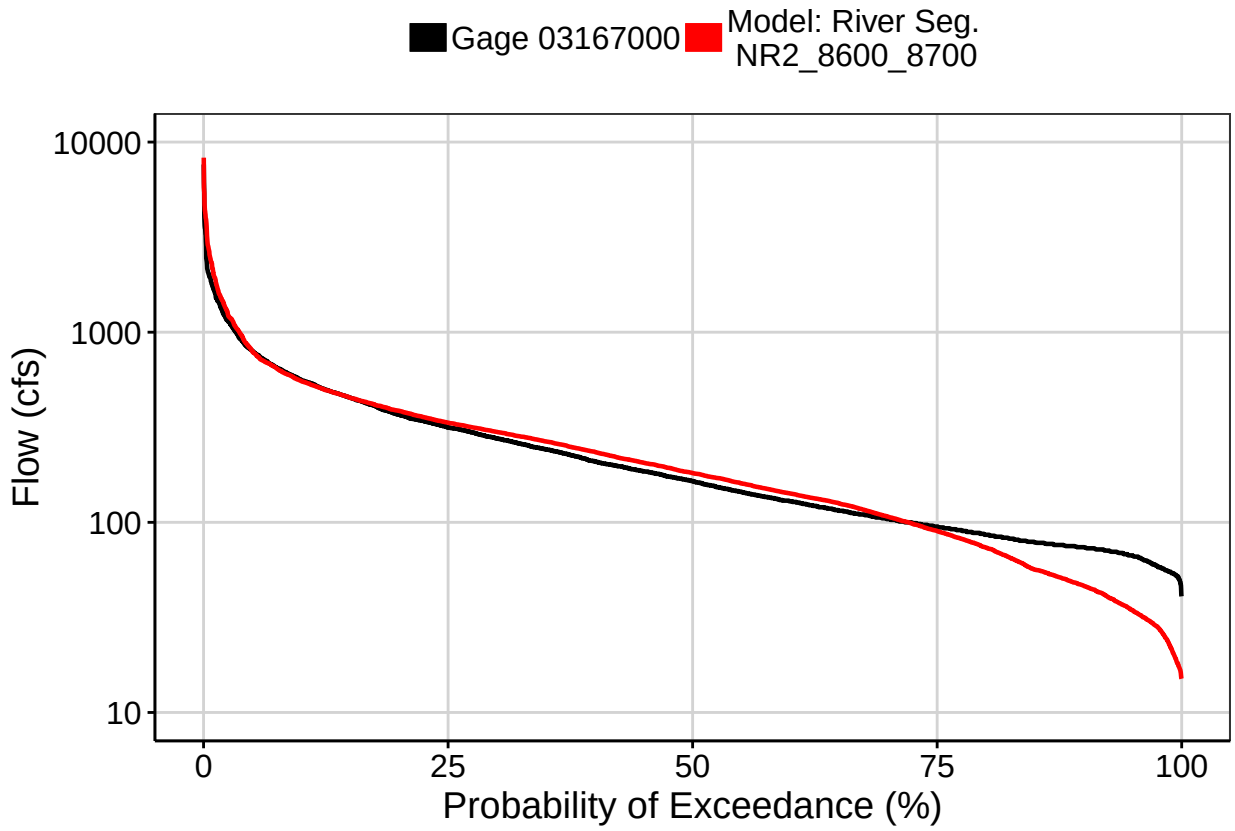


Fig. 4: Baseflow

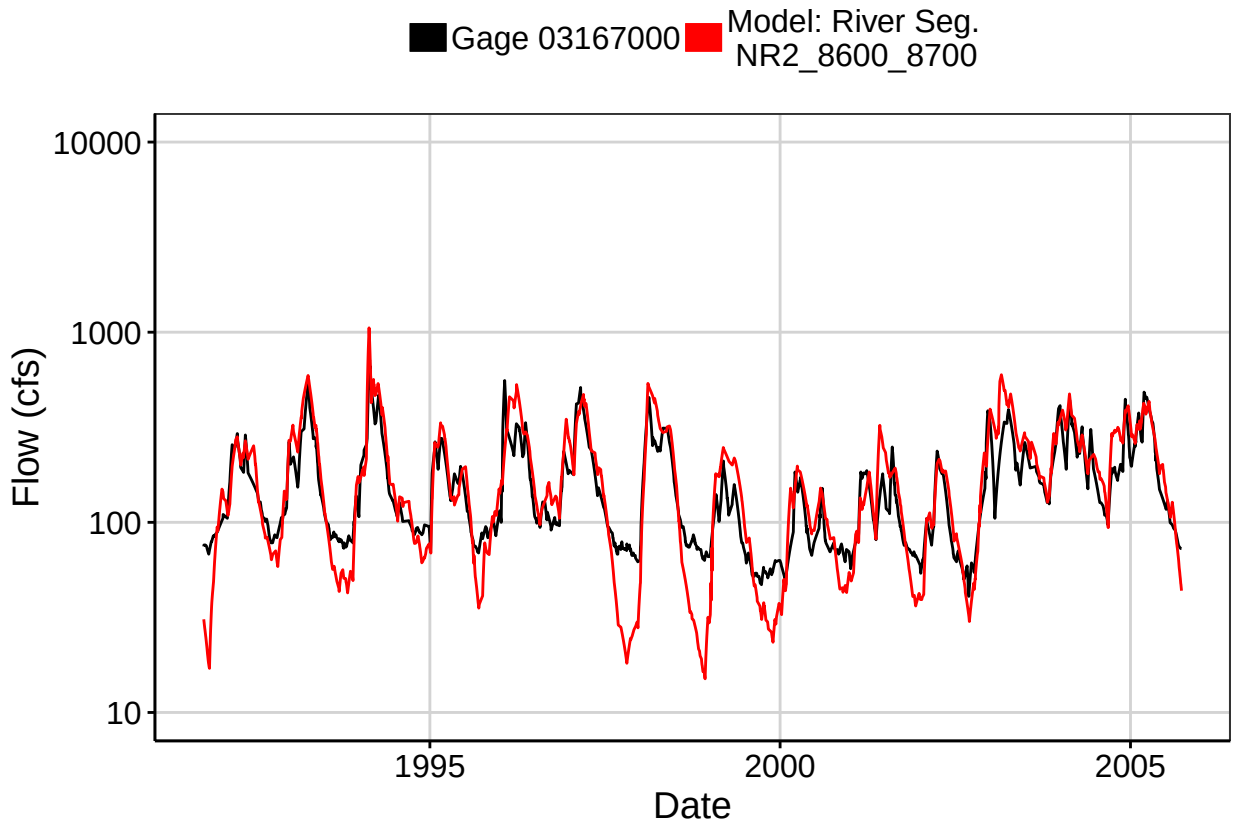


Fig. 5: Combined Baseflow

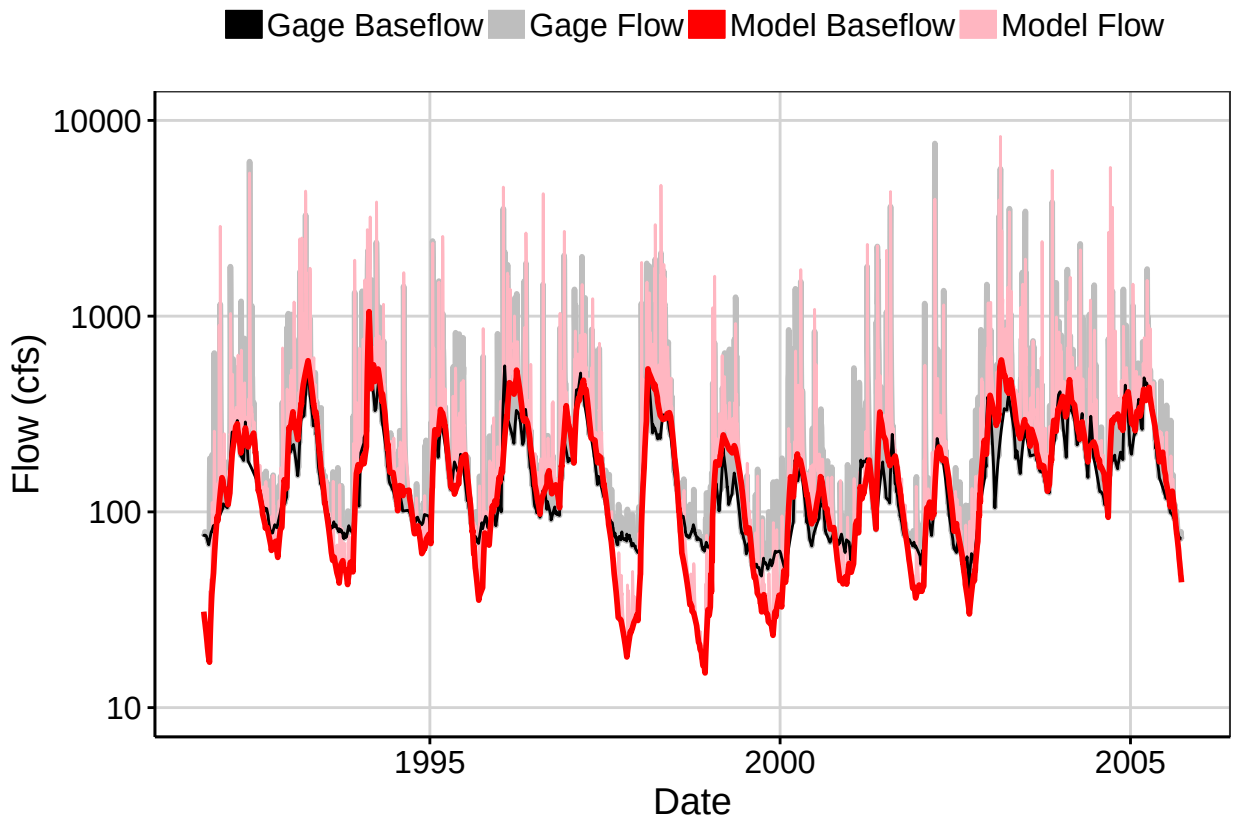


Fig. 6: Largest Error Segment

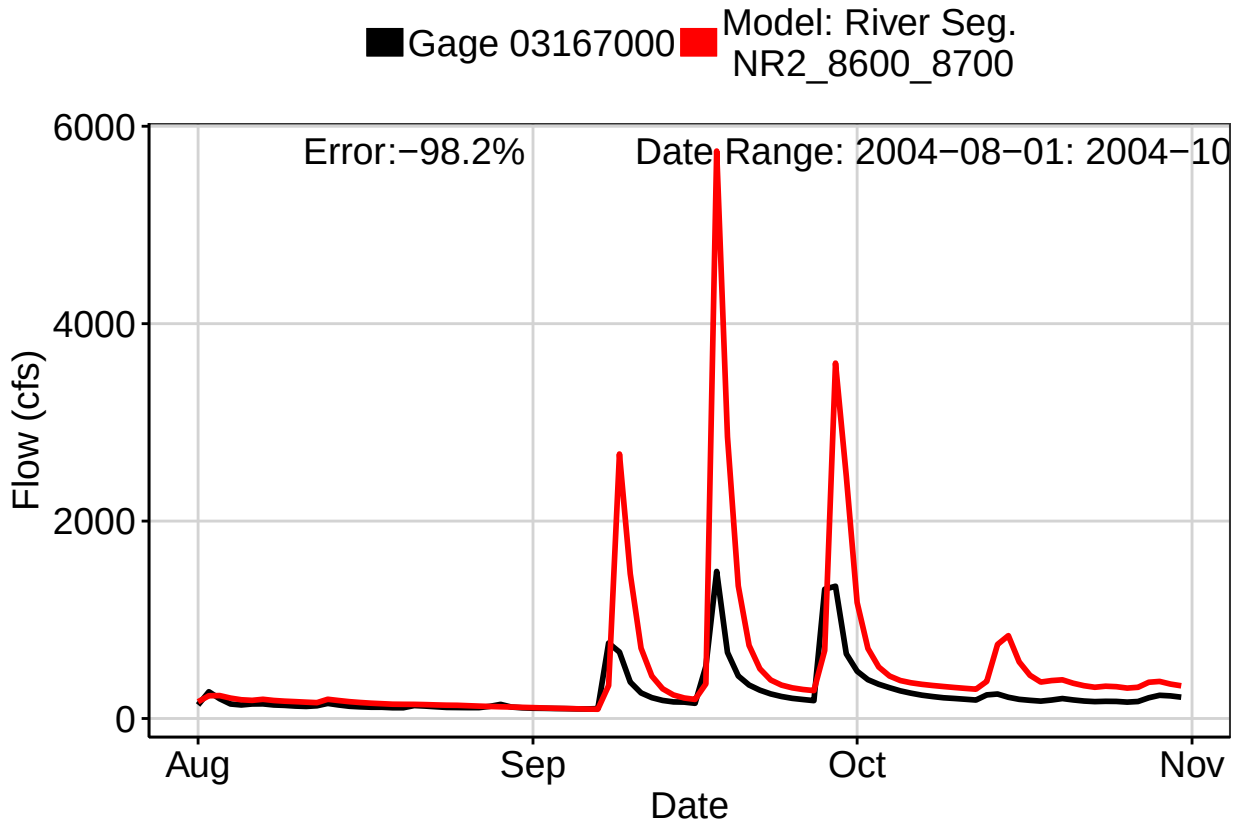


Fig. 7: Second Largest Error Segment

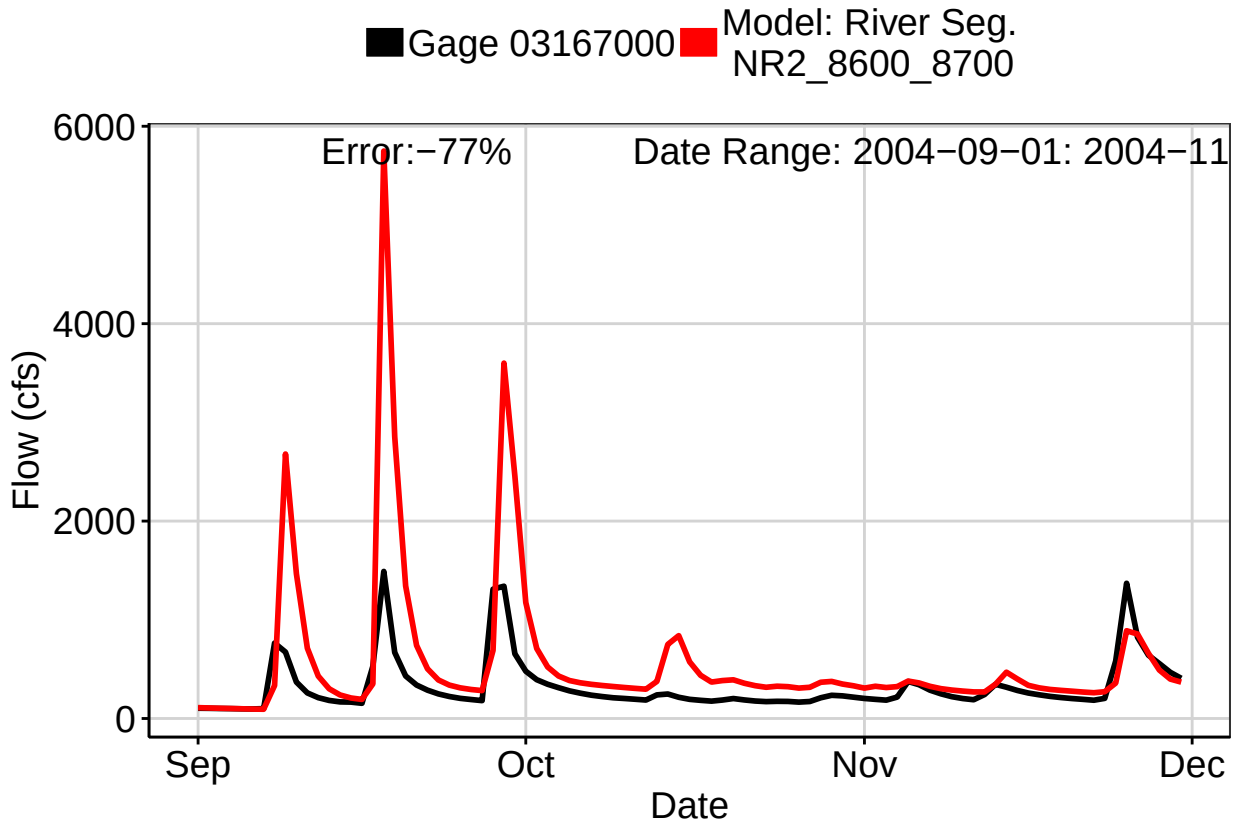


Fig. 8: Third Largest Error Segment

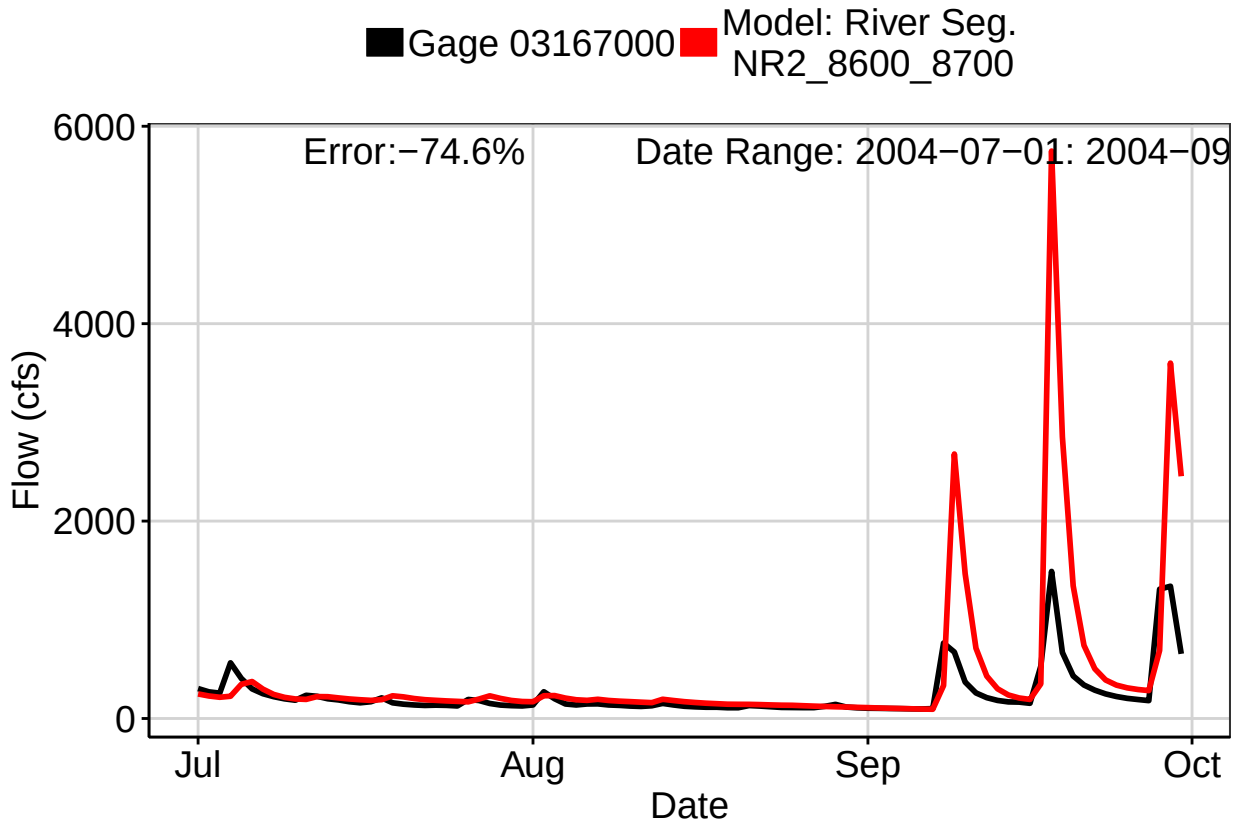


Fig. 9: Residuals Plot