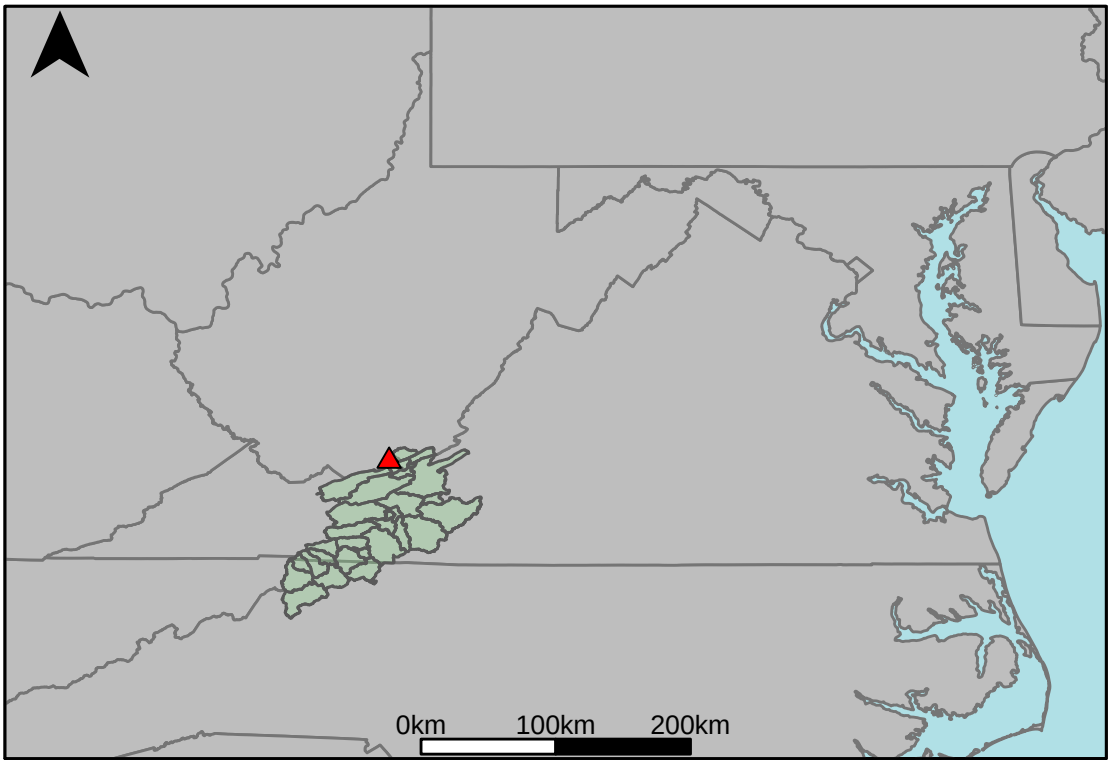
Appendix F.9: USGS Gage 03176500 vs. NR6_8051_8000



This river segment follows part of the flow of the New River. The gage is located in Giles County, VA (Lat 3722'22", Long 8051'39") approximately 23 miles northwest of Radford, VA. Drainage area is 3783 sq. miles. This gage started taking data in 1927 and is still taking data. The Claytor dam and American Electric Power Company Power Plant is 55 miles upstream which causes a diversion of water. The water is withdrawn upstream and discharged into the East River just above its confluence with the New River. The average daily discharge error between the model and gage data for the 20 year timespan was 0%, with 36.7% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	1190	1300	9.24
Feb. Low Flow	1310	1410	7.63
Mar. Low Flow	1500	2720	81.3
Apr. Low Flow	1710	3150	84.2
May Low Flow	2050	4760	132
Jun. Low Flow	2920	5030	72.3
Jul. Low Flow	2440	2870	17.6
Aug. Low Flow	2990	2160	-27.8
Sep. Low Flow	2280	2610	14.5
Oct. Low Flow	1520	3840	153
Nov. Low Flow	1310	2530	93.1
Dec. Low Flow	1250	1590	27.2

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	4980	4980	0
Jan. Mean Flow	6110	5850	-4.26
Feb. Mean Flow	7230	7090	-1.94
Mar. Mean Flow	8050	7810	-2.98
Apr. Mean Flow	7280	6210	-14.7
May Mean Flow	5980	4520	-24.4
Jun. Mean Flow	4710	4770	1.27
Jul. Mean Flow	3230	4710	45.8
Aug. Mean Flow	2960	4020	35.8
Sep. Mean Flow	3110	3410	9.65
Oct. Mean Flow	2900	3450	19
Nov. Mean Flow	4010	3730	-6.98
Dec. Mean Flow	4440	4380	-1.35

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	4800	2680	-44.2
Feb. High Flow	7460	3130	-58
Mar. High Flow	8320	5720	-31.2
Apr. High Flow	13000	12200	-6.15
May High Flow	13700	10200	-25.5
Jun. High Flow	17600	11700	-33.5
Jul. High Flow	14600	8700	-40.4
Aug. High Flow	12400	9490	-23.5
Sep. High Flow	7530	6550	-13
Oct. High Flow	5620	5480	-2.49
Nov. High Flow	5500	4920	-10.5
Dec. High Flow	4630	3290	-28.9

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	557	891	60
Med. 1 Day Min	1130	1060	-6.19
Min. 3 Day Min	618	891	44.2
Med. 3 Day Min	1180	1070	-9.32
Min. 7 Day Min	646	893	38.2
Med. 7 Day Min	1250	1120	-10.4
Min. 30 Day Min	947	913	-3.59
Med. 30 Day Min	1540	1350	-12.3
Min. 90 Day Min	1280	1150	-10.2
Med. 90 Day Min	2240	2350	4.91
7Q10	852	923	8.33
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	2510	2520	0.4
Mean Baseflow	2560	3880	51.6

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	89400	41000	-54.1
Med. 1 Day Max	40000	23200	-42
Max. 3 Day Max	58600	34600	-41
Med. 3 Day Max	29500	20200	-31.5
Max. 7 Day Max	39100	27000	-30.9
Med. 7 Day Max	20100	16800	-16.4
Max. 30 Day Max	21100	19100	-9.48
Med. 30 Day Max	11300	11700	3.54
Max. 90 Day Max	14300	14100	-1.4
Med. 90 Day Max	8850	8160	-7.8

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	954	970	1.68
5% Non-Exceedance	1210	1210	0
50% Non-Exceedance	3480	3910	12.4
95% Non-Exceedance	13200	12900	-2.27
99% Non-Exceedance	25200	19500	-22.6
Sept. 10% Non-Exceedance	1240	1100	-11.3

Fig. 1: Hydrograph

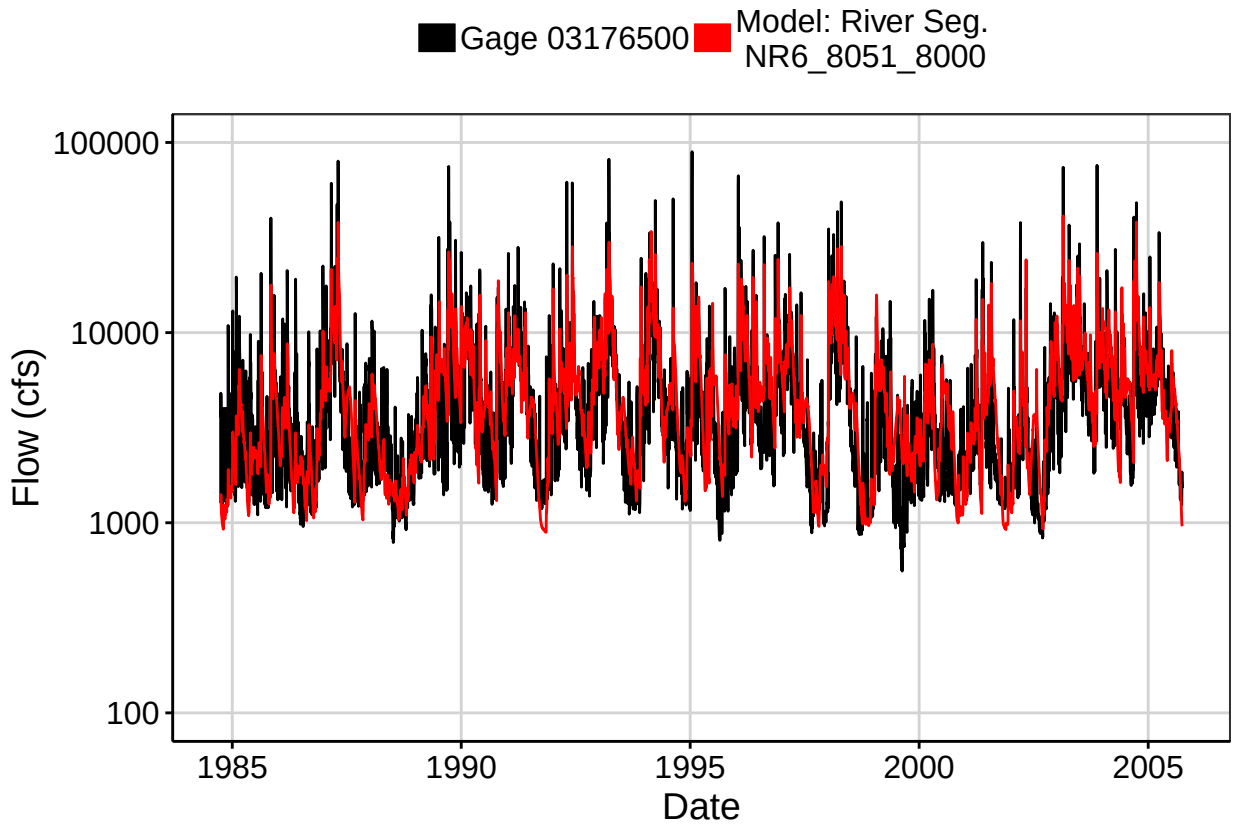


Fig. 2: Zoomed Hydrograph

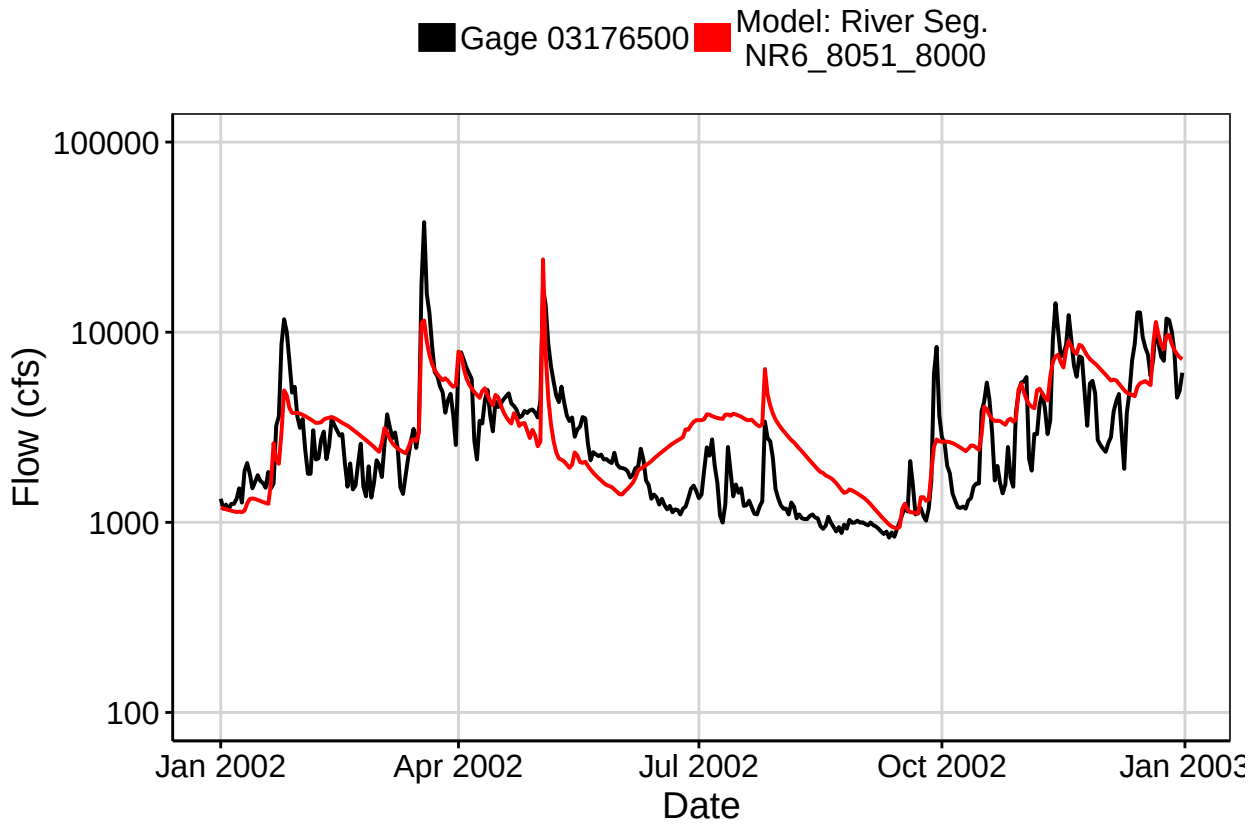


Fig. 3: Flow Exceedance

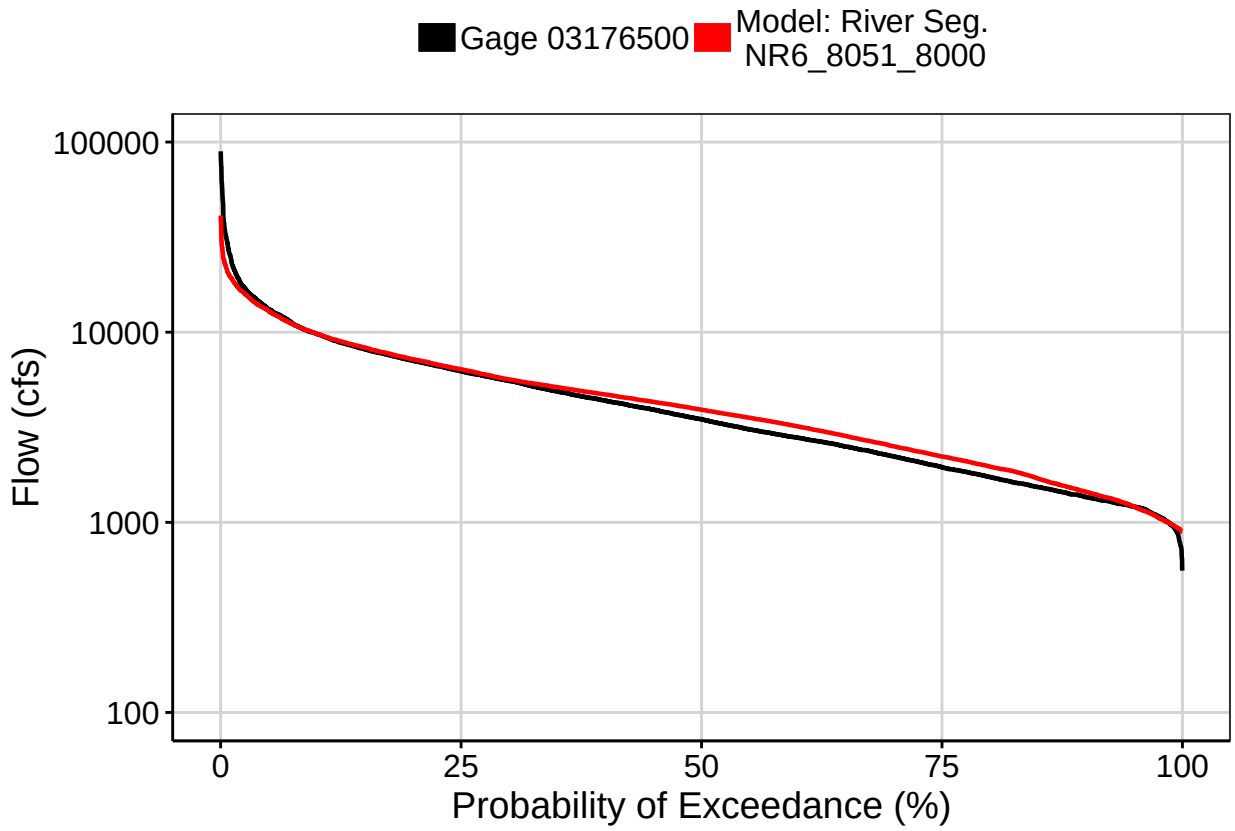


Fig. 4: Baseflow

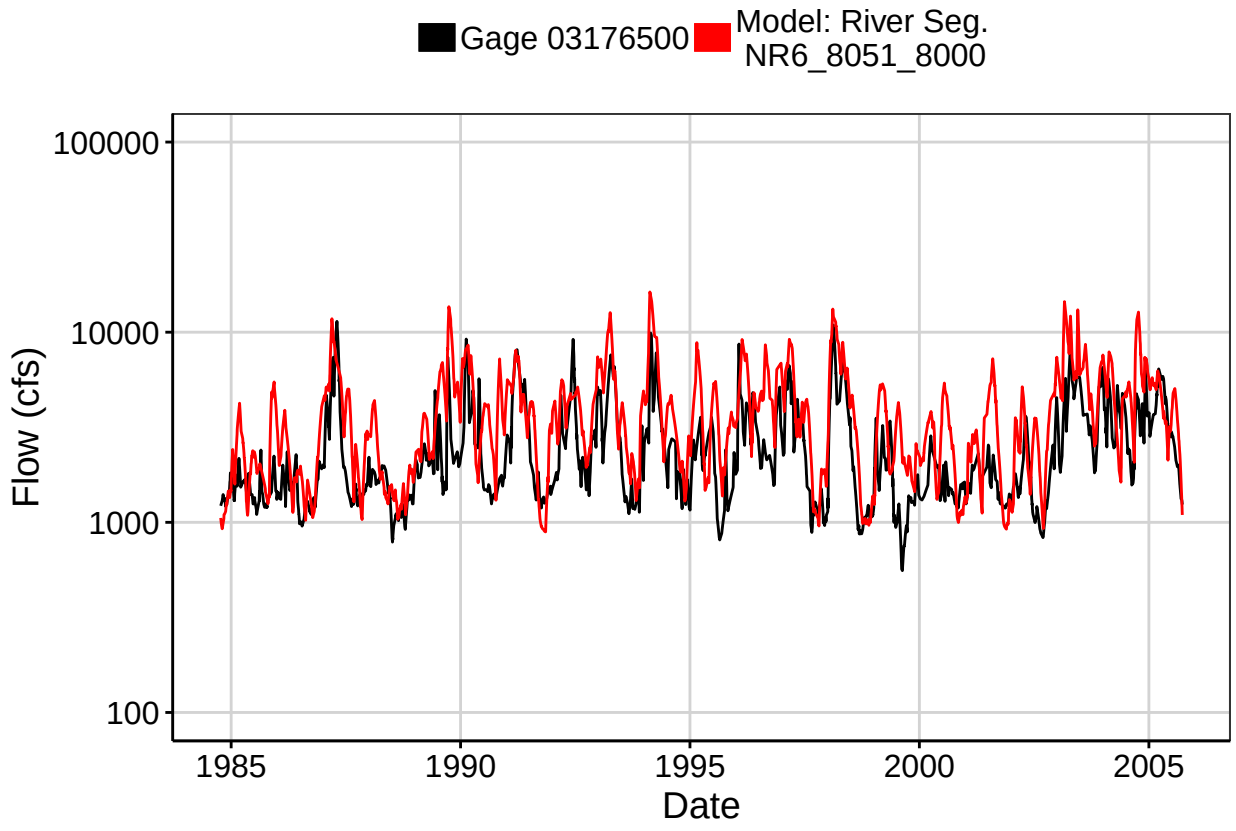


Fig. 5: Combined Baseflow

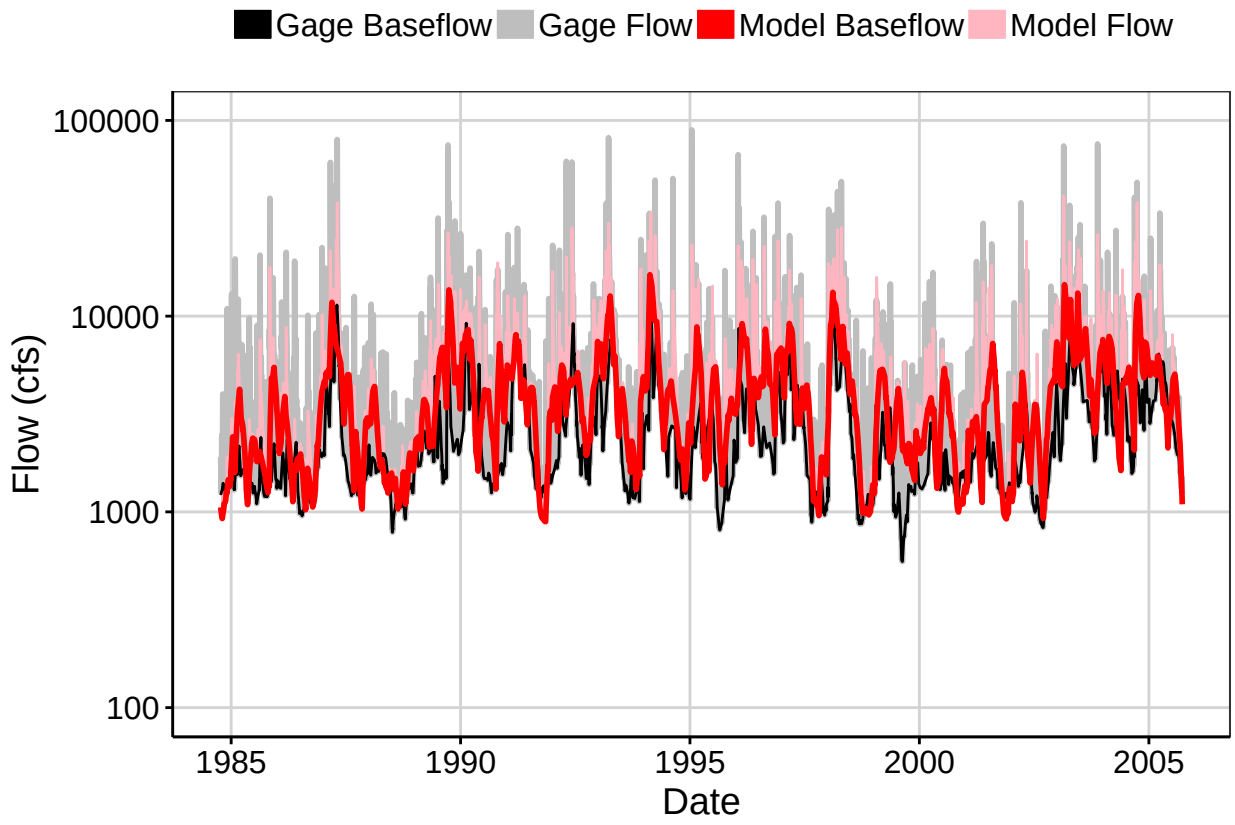


Fig. 6: Largest Error Segment

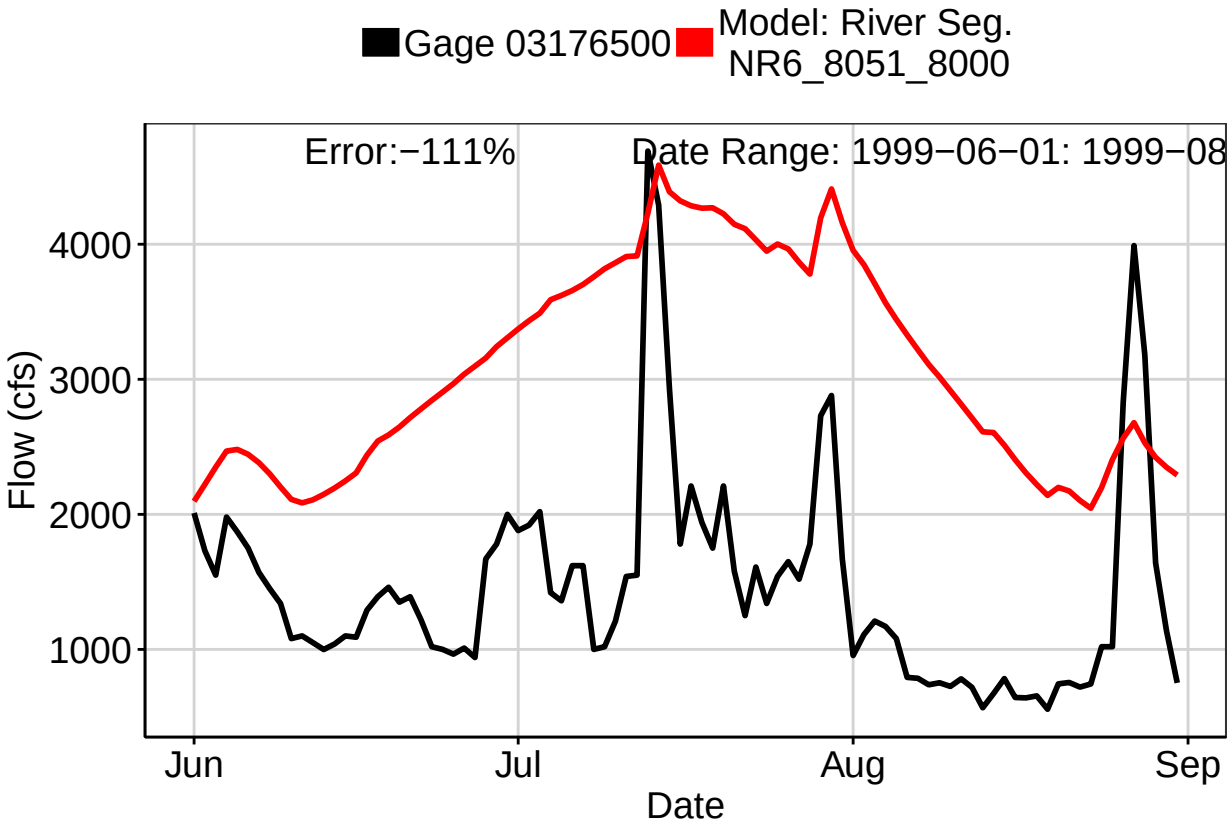


Fig. 7: Second Largest Error Segment

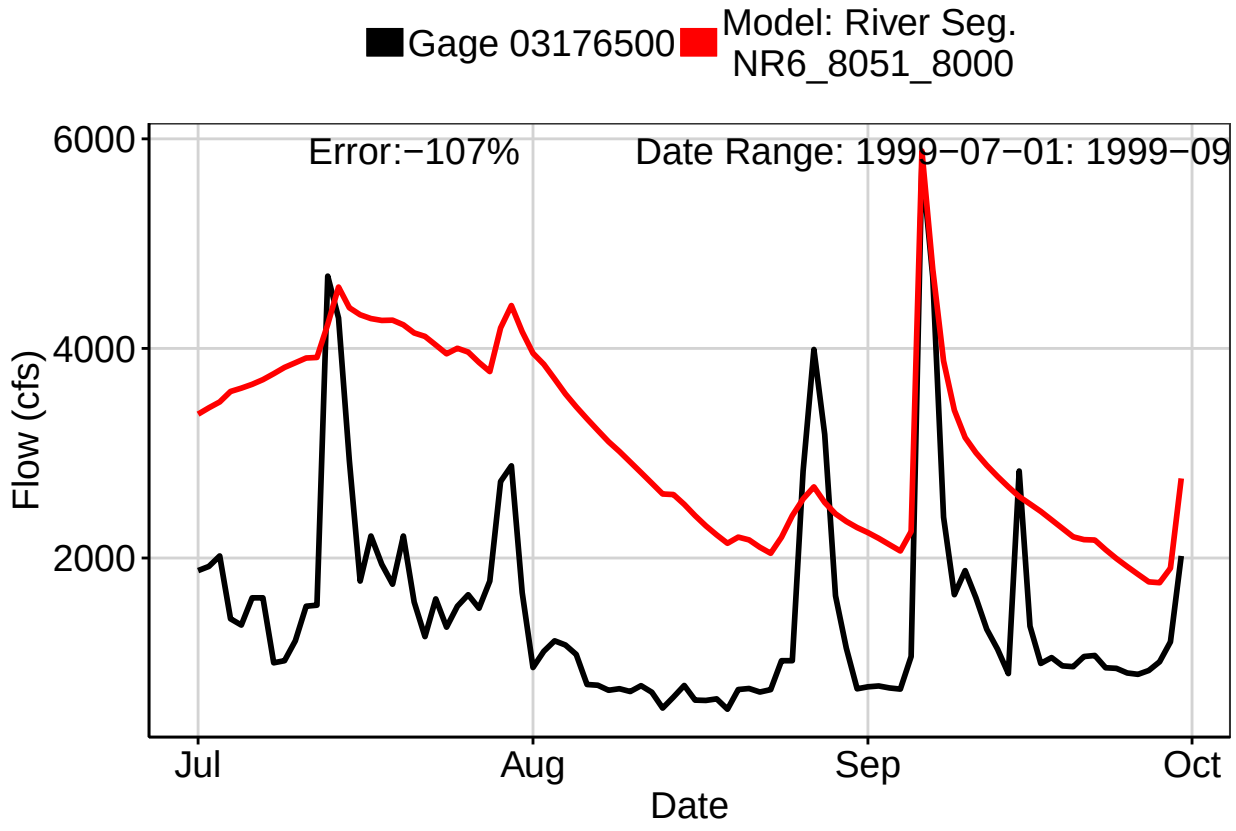


Fig. 8: Third Largest Error Segment

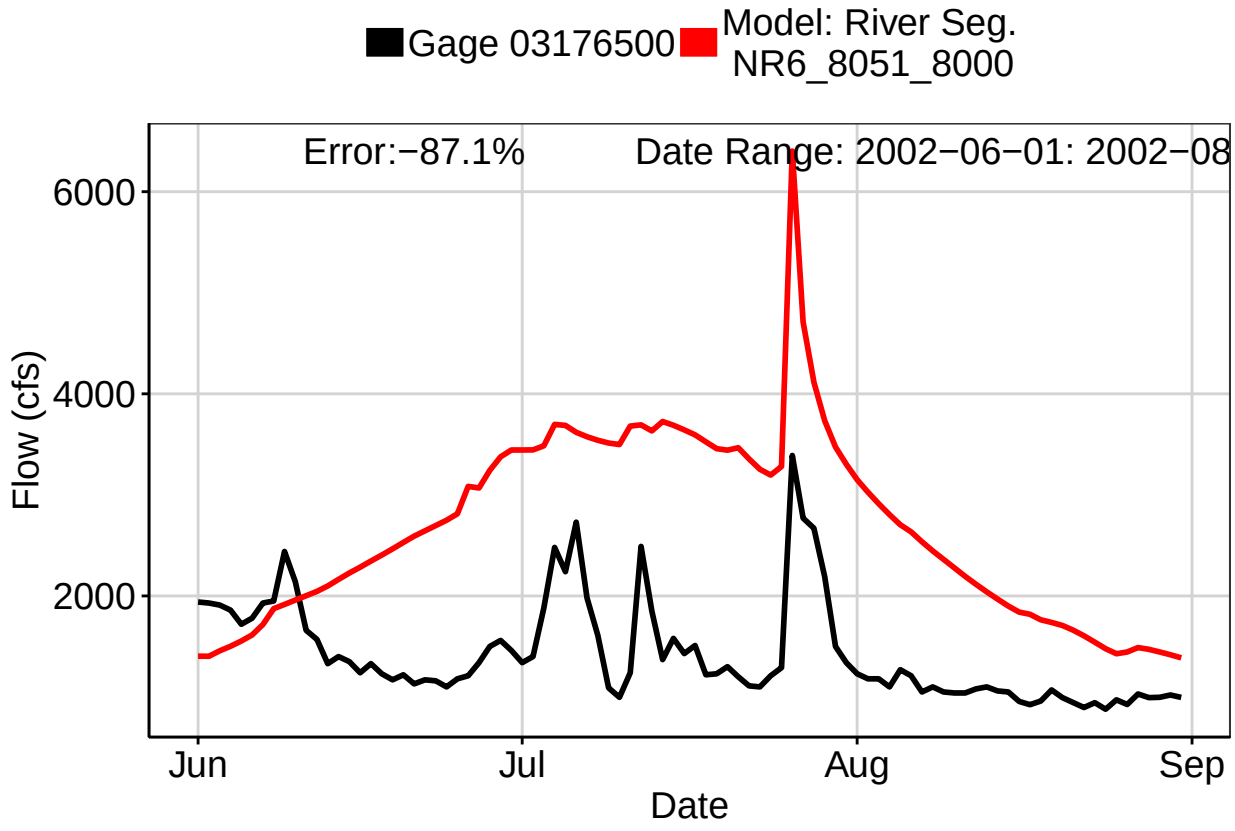


Fig. 9: Residuals Plot