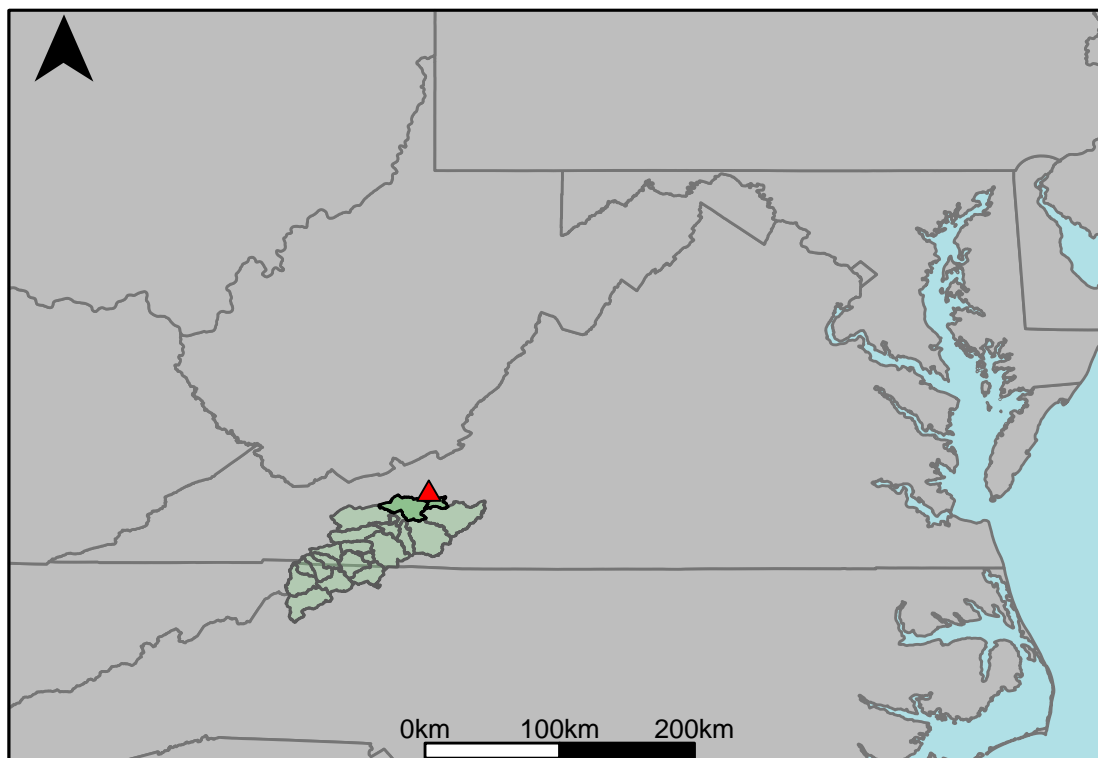


Appendix F.6: USGS Gage 03171000 vs. NR6_8500_7820+NR3_8430_7820



This river segment follows part of the flow of the New River. The gage is located in Pulaski County, VA (Lat 3708'30", Long 8034'10") approximately 1 mile northeast of Radford, VA. Drainage area is 2767 sq. miles. This gage started taking data in 1907 and is still taking data. There are two dams and two power plants located in this area; the Claytor Dam, the Radford Dam, the American Electric Power Plant and the Little River Power Plant. Claytor Dam and the American Electric Power Company are located 5.5 miles upstream and regulate a majority of the normal flow that passes this gage. Radford Dam and the power plant at Little River are half a mile below Claytor Dam, which causes fluctuations during low flow periods. The Buck and Byllesby powerplants are also in this area but are before Claytor Dam so their effect on this gage should be minimal to none at all. The average daily discharge error between the model and gage data for the 20 year timespan was -2.61%, with 37.9% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	1060	1220	15.1
Feb. Low Flow	1060	1320	24.5
Mar. Low Flow	1050	2430	131
Apr. Low Flow	1080	2410	123
May Low Flow	1160	3610	211
Jun. Low Flow	1400	4130	195
Jul. Low Flow	1360	1730	27.2
Aug. Low Flow	1720	1370	-20.3
Sep. Low Flow	1750	2140	22.3
Oct. Low Flow	1390	3740	169
Nov. Low Flow	1120	2350	110
Dec. Low Flow	1090	1560	43.1

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	3830	3930	2.61
Jan. Mean Flow	4440	4440	0
Feb. Mean Flow	5210	5150	-1.15
Mar. Mean Flow	5790	5790	0
Apr. Mean Flow	5290	4590	-13.2
May Mean Flow	4300	3240	-24.7
Jun. Mean Flow	3790	3910	3.17
Jul. Mean Flow	2840	4300	51.4
Aug. Mean Flow	2580	3610	39.9
Sep. Mean Flow	2690	2860	6.32
Oct. Mean Flow	2490	2950	18.5
Nov. Mean Flow	3310	3030	-8.46
Dec. Mean Flow	3320	3390	2.11

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	4130	2160	-47.7
Feb. High Flow	7360	2690	-63.5
Mar. High Flow	7420	3620	-51.2
Apr. High Flow	8750	7540	-13.8
May High Flow	10700	5430	-49.3
Jun. High Flow	12300	7490	-39.1
Jul. High Flow	12200	5740	-53
Aug. High Flow	9120	3980	-56.4
Sep. High Flow	6410	4700	-26.7
Oct. High Flow	4870	4880	0.2
Nov. High Flow	4800	4300	-10.4
Dec. High Flow	4630	2720	-41.3

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	754	1020	35.3
Med. 1 Day Min	917	1080	17.8
Min. 3 Day Min	787	1020	29.6
Med. 3 Day Min	964	1100	14.1
Min. 7 Day Min	793	1020	28.6
Med. 7 Day Min	1070	1120	4.67
Min. 30 Day Min	810	1030	27.2
Med. 30 Day Min	1340	1230	-8.21
Min. 90 Day Min	990	1060	7.07
Med. 90 Day Min	2000	2000	0
7Q10	860	1040	20.9
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	1710	1960	14.6
Mean Baseflow	1840	3270	77.7

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	74000	20900	-71.8
Med. 1 Day Max	35800	13800	-61.5
Max. 3 Day Max	49300	19800	-59.8
Med. 3 Day Max	22000	13500	-38.6
Max. 7 Day Max	27800	18100	-34.9
Med. 7 Day Max	15000	12600	-16
Max. 30 Day Max	14500	13500	-6.9
Med. 30 Day Max	8110	9020	11.2
Max. 90 Day Max	10500	10200	-2.86
Med. 90 Day Max	6760	6660	-1.48

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	858	1050	22.4
5% Non-Exceedance	989	1110	12.2
50% Non-Exceedance	2820	3210	13.8
95% Non-Exceedance	9930	9750	-1.81
99% Non-Exceedance	17800	14300	-19.7
Sept. 10% Non-Exceedance	1220	1040	-14.8

Fig. 1: Hydrograph

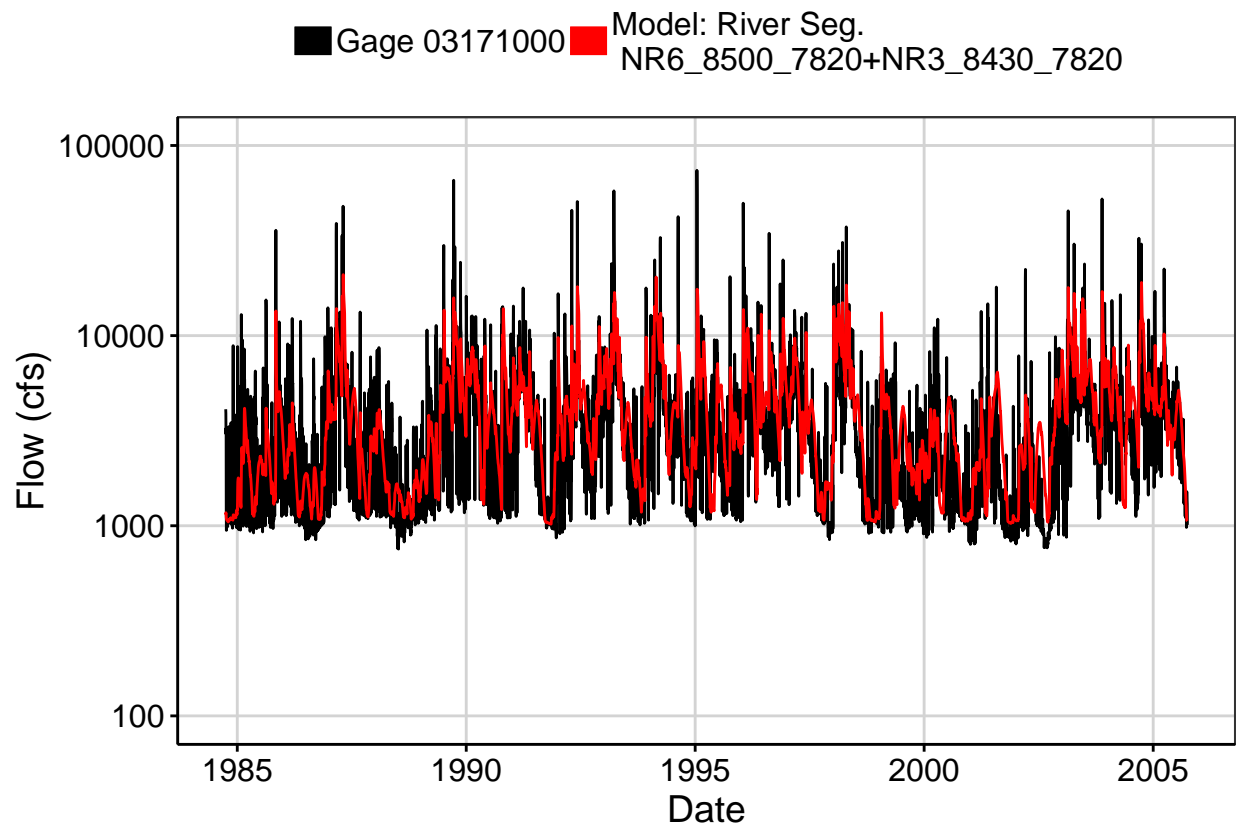


Fig. 2: Zoomed Hydrograph

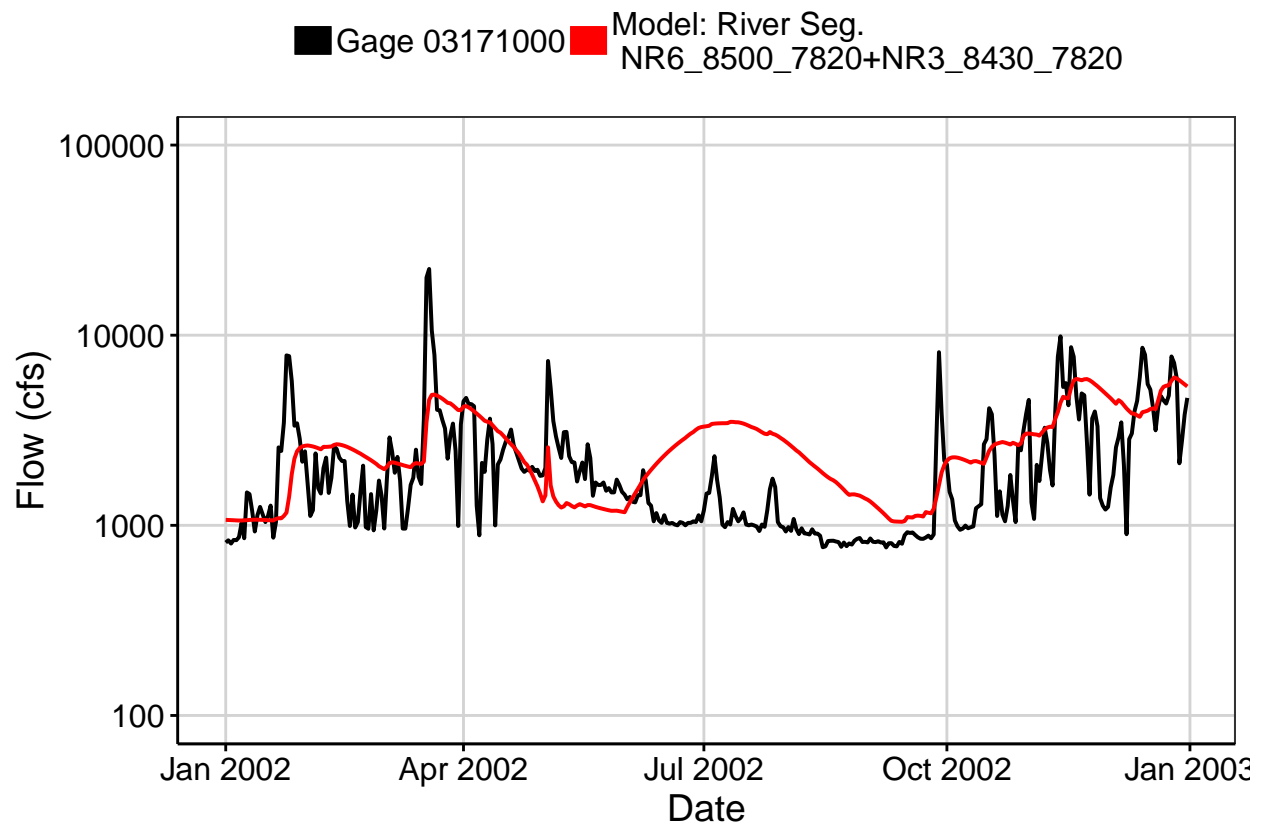


Fig. 3: Flow Exceedance

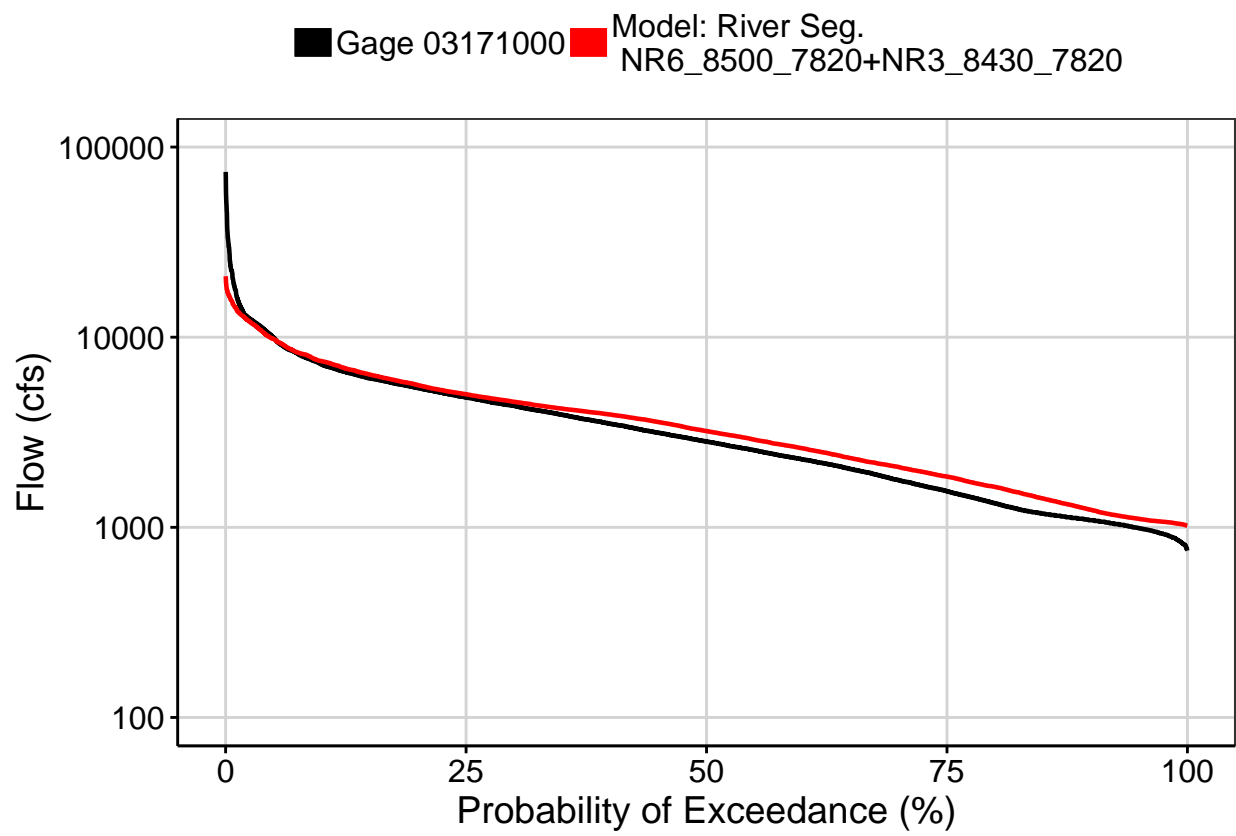


Fig. 4: Baseflow

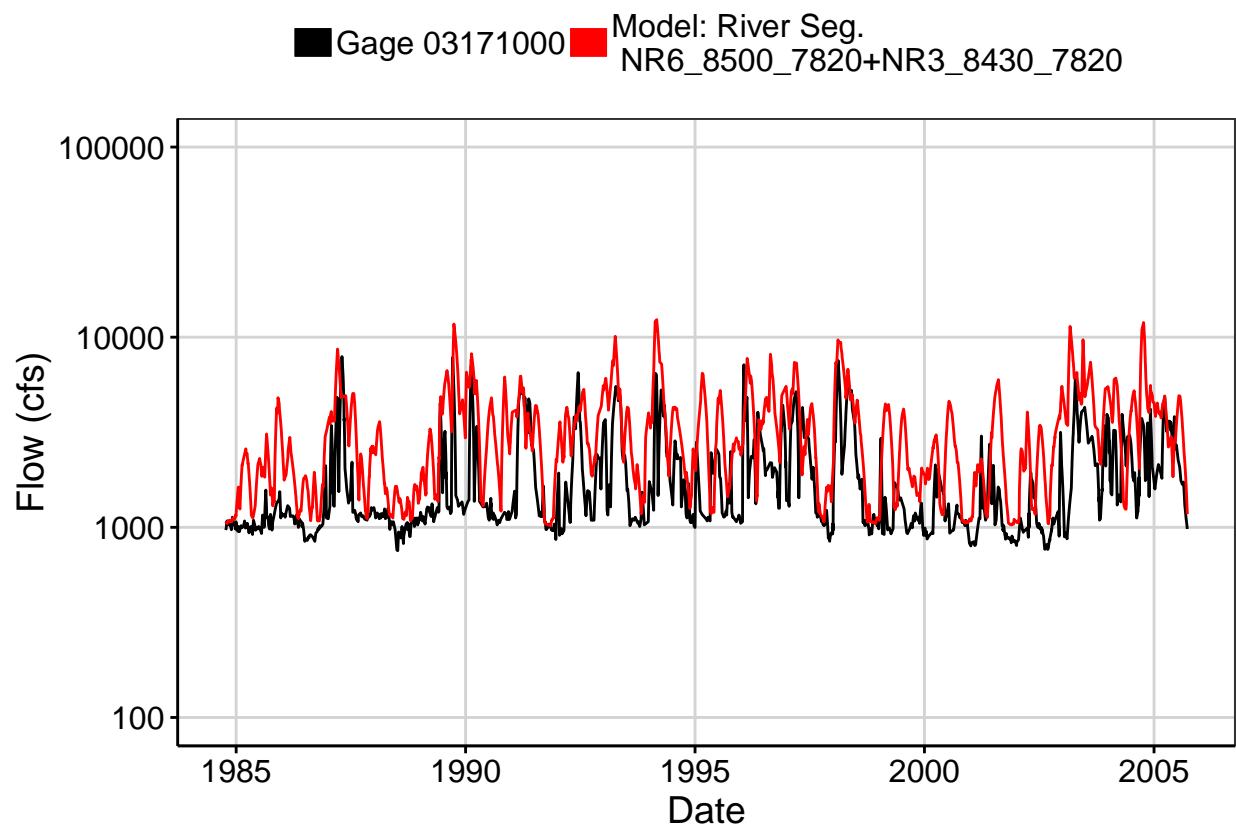


Fig. 5: Combined Baseflow

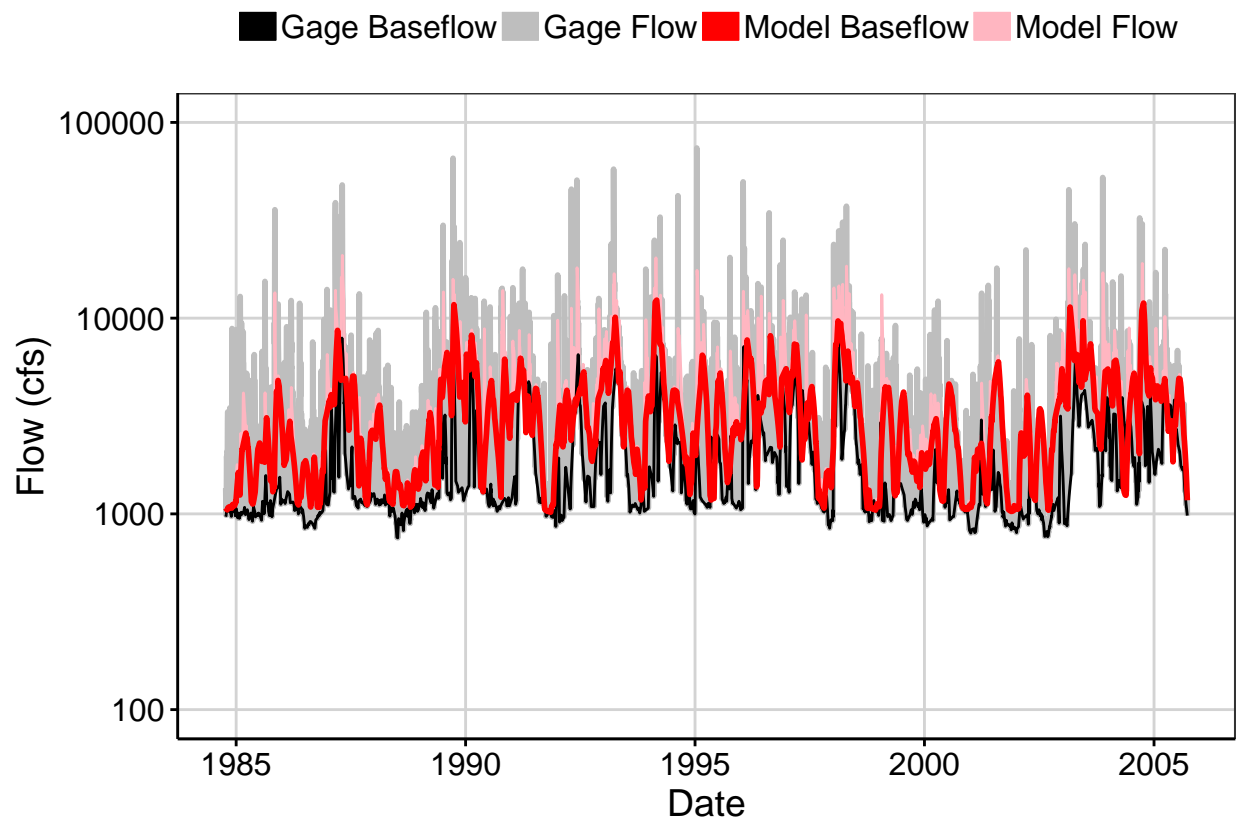


Fig. 6: Largest Error Segment

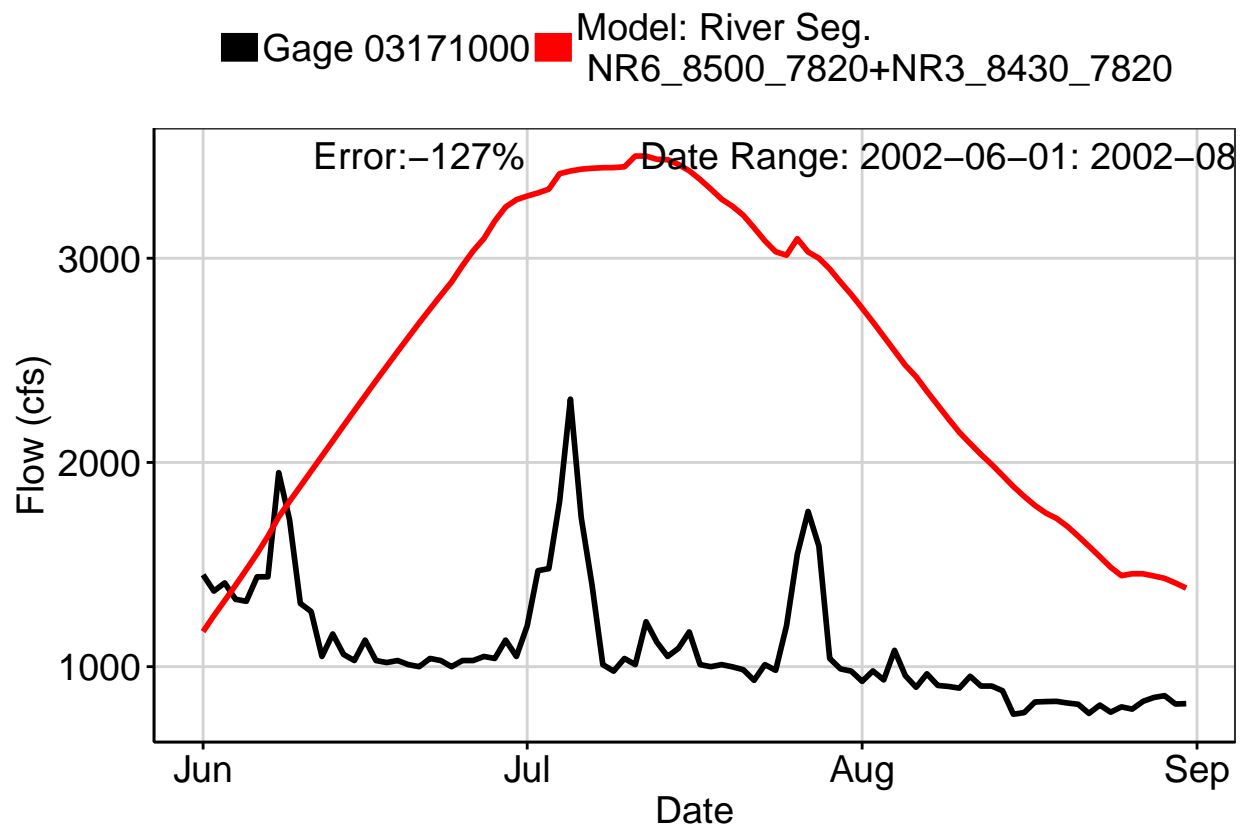


Fig. 7: Second Largest Error Segment

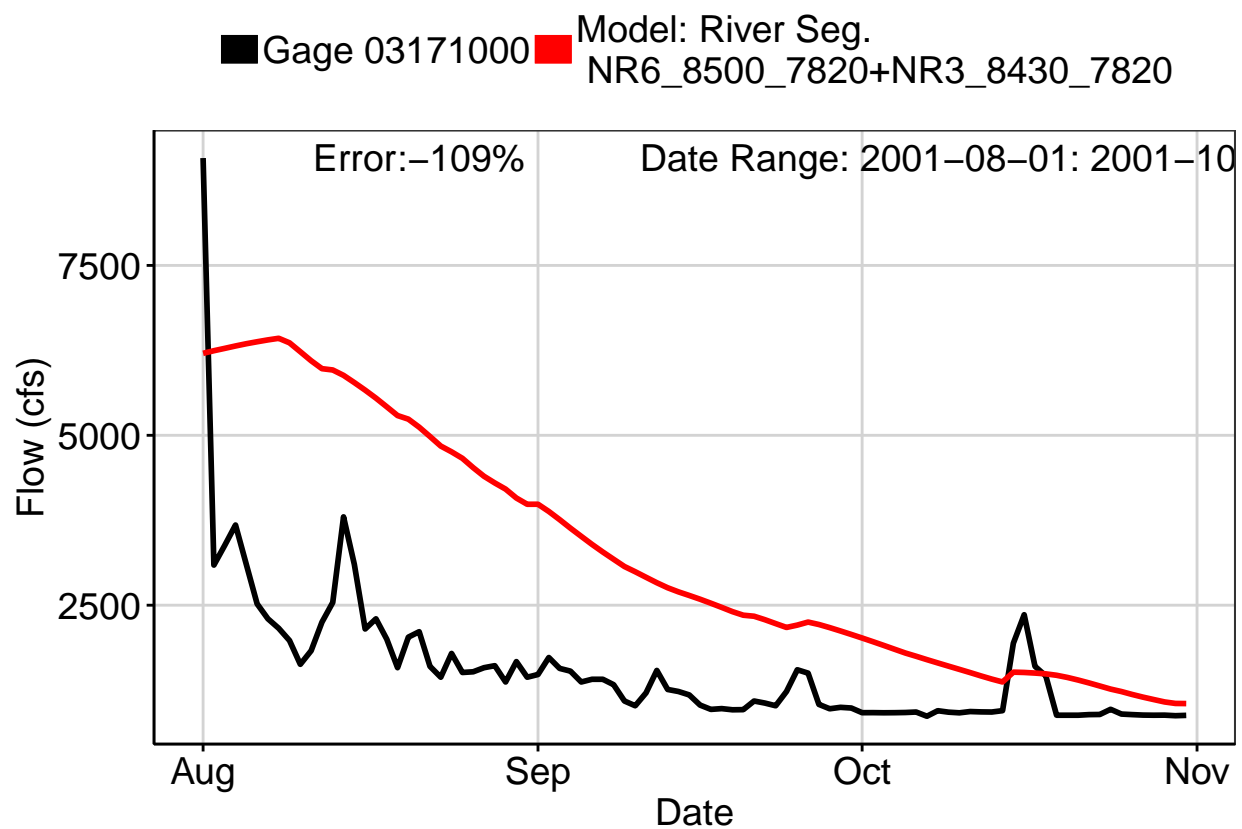


Fig. 8: Third Largest Error Segment

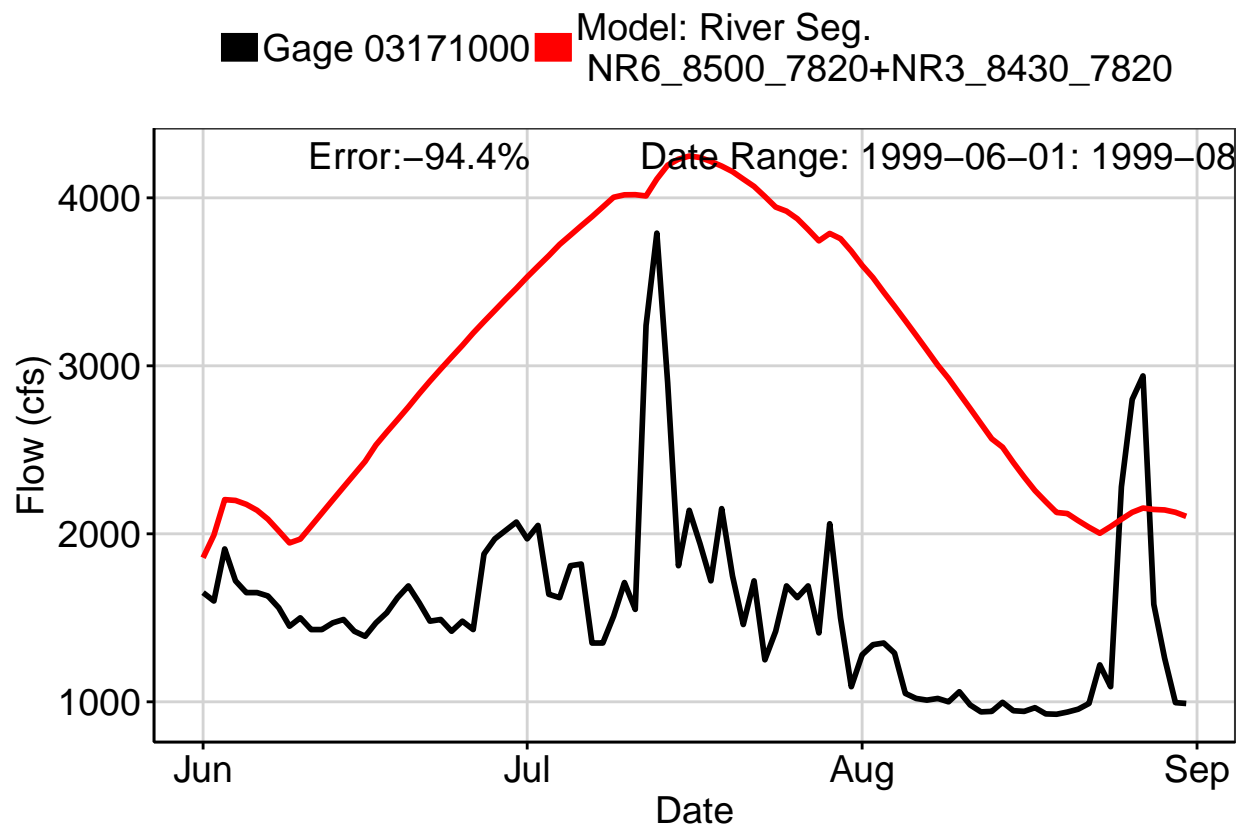


Fig. 9: Residuals Plot

