03171000 vs. NR6_8500_7820+NR3_8430_7820

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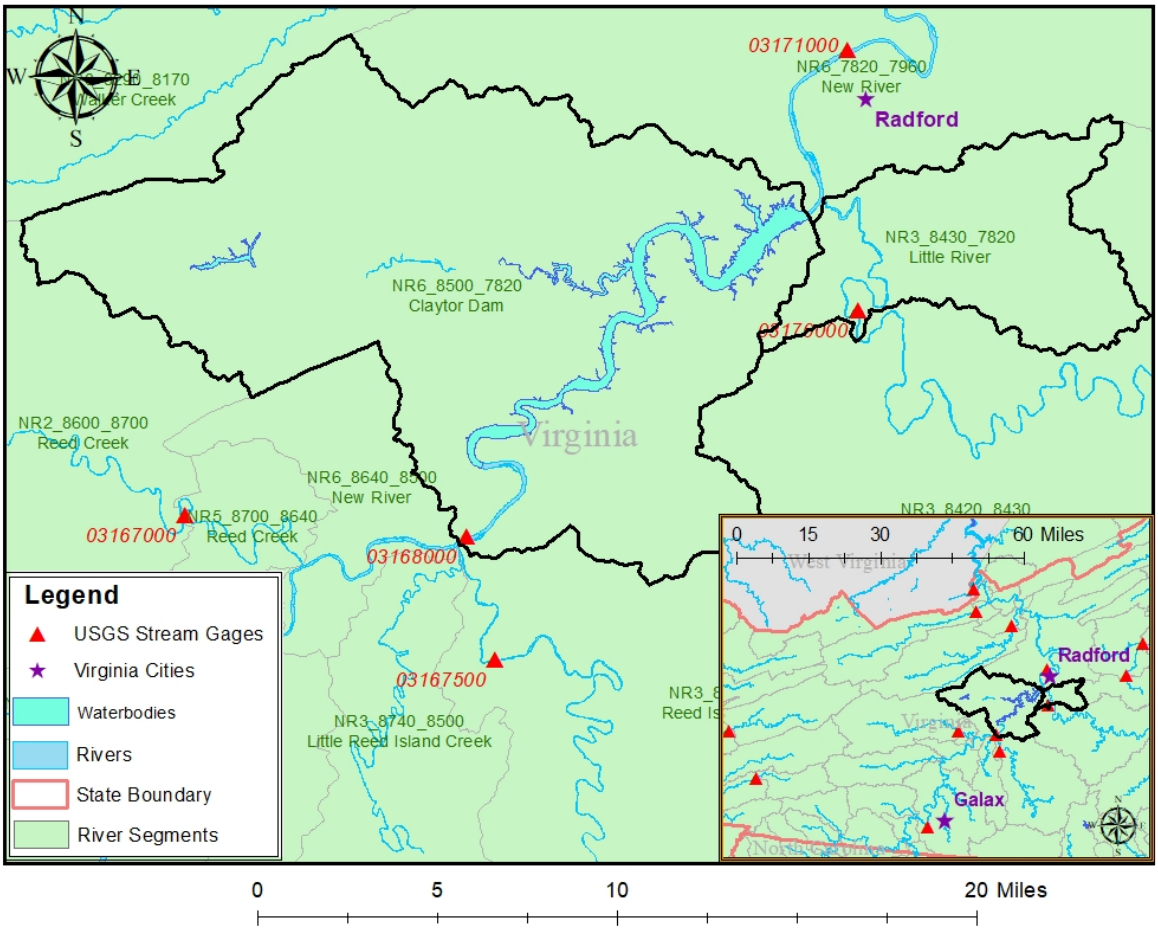

This river segment follows part of the flow of the New River. The gage is located in Pulaski County, VA (Lat 3708'30", Long 8034'10") approximately 1 mile northeast of Radford, VA. Drainage area is 2767 sq. miles. This gage started taking data in 1907 and is still taking data. There are two dams and 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 Byllesyby 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 -3.39%, with 37.5% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	1060	1230	-16
Feb. Low Flow	1060	1330	-25.5
Mar. Low Flow	1050	2450	-133
Apr. Low Flow	1080	2420	-124
May Low Flow	1160	3640	-214
Jun. Low Flow	1400	4160	-197
Jul. Low Flow	1360	1740	-27.9
Aug. Low Flow	1720	1380	19.8
Sep. Low Flow	1750	2150	-22.9
Oct. Low Flow	1390	3760	-171
Nov. Low Flow	1120	2370	-112
Dec. Low Flow	1090	1570	-44

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	3830	3960	-3.39
Jan. Mean Flow	4440	4470	-0.68
Feb. Mean Flow	5210	5180	0.58
Mar. Mean Flow	5790	5840	-0.86
Apr. Mean Flow	5290	4630	12.5
May Mean Flow	4300	3270	24
Jun. Mean Flow	3790	3940	-3.96
Jul. Mean Flow	2840	4330	-52.5
Aug. Mean Flow	2580	3630	-40.7
Sep. Mean Flow	2690	2880	-7.06
Oct. Mean Flow	2490	2970	-19.3
Nov. Mean Flow	3310	3060	7.55
Dec. Mean Flow	3320	3410	-2.71

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	4130	2180	47.2
Feb. High Flow	7360	2710	63.2
Mar. High Flow	7420	3640	50.9
Apr. High Flow	8750	7590	13.3
May High Flow	10700	5470	48.9
Jun. High Flow	12300	7540	38.7
Jul. High Flow	12200	5780	52.6
Aug. High Flow	9120	4010	56
Sep. High Flow	6410	4740	26.1
Oct. High Flow	4870	4920	-1.03
Nov. High Flow	4800	4330	9.79
Dec. High Flow	4630	2740	40.8

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	754	1030	-36.6
Med. 1 Day Min	917	1090	-18.9
Min. 3 Day Min	787	1030	-30.9
Med. 3 Day Min	964	1100	-14.1
Min. 7 Day Min	793	1030	-29.9
Med. 7 Day Min	1070	1130	-5.61
Min. 30 Day Min	810	1040	-28.4
Med. 30 Day Min	1340	1240	7.46
Min. 90 Day Min	990	1070	-8.08
Med. 90 Day Min	2000	2020	-1
7Q10	860	1040	-20.9
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	1710	1970	-15.2
Mean Baseflow	1840	3290	-78.8

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	74000	21100	71.5
Med. 1 Day Max	35800	13900	61.2
Max. 3 Day Max	49300	20000	59.4
Med. 3 Day Max	22000	13600	38.2
Max. 7 Day Max	27800	18200	34.5
Med. 7 Day Max	15000	12600	16
Max. 30 Day Max	14500	13600	6.21
Med. 30 Day Max	8110	9090	-12.1
Max. 90 Day Max	10500	10300	1.9
Med. 90 Day Max	6760	6710	0.74

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	858	1050	-22.4
5% Non-Exceedance	989	1120	-13.2
50% Non-Exceedance	2820	3230	-14.5
95% Non-Exceedance	9930	9820	1.11
99% Non-Exceedance	17800	14400	19.1
Sept. 10% Non-Exceedance	1220	1040	14.8

Fig. 1: Hydrograph

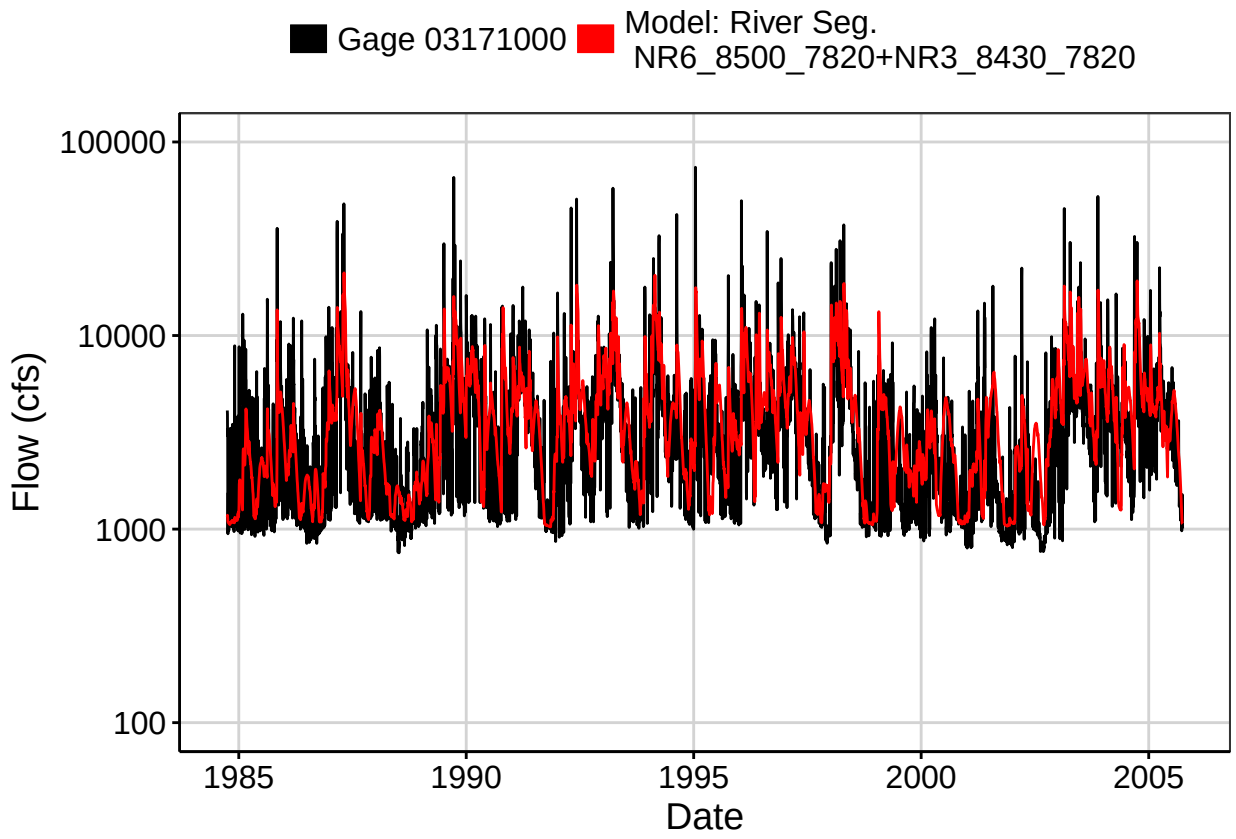

Fig. 2: Zoomed Hydrograph

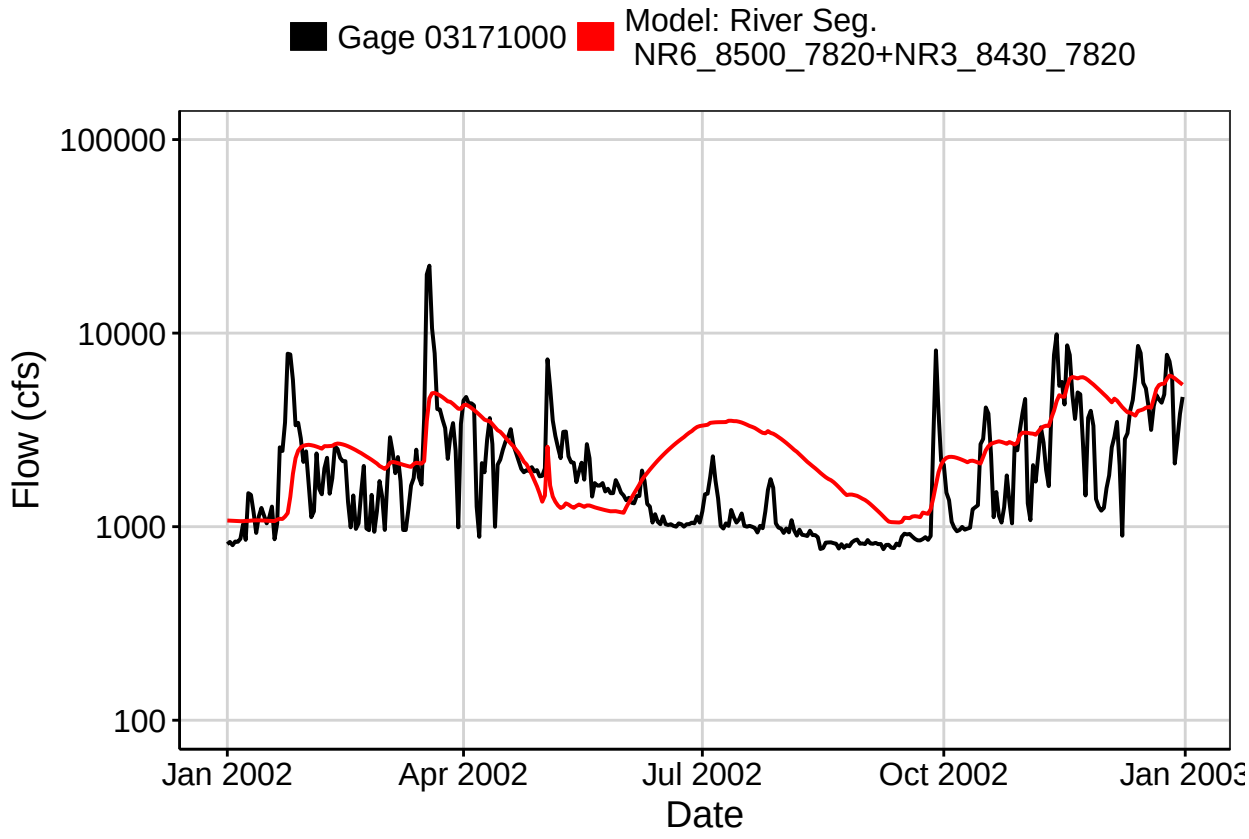

Fig. 3: Flow Exceedance

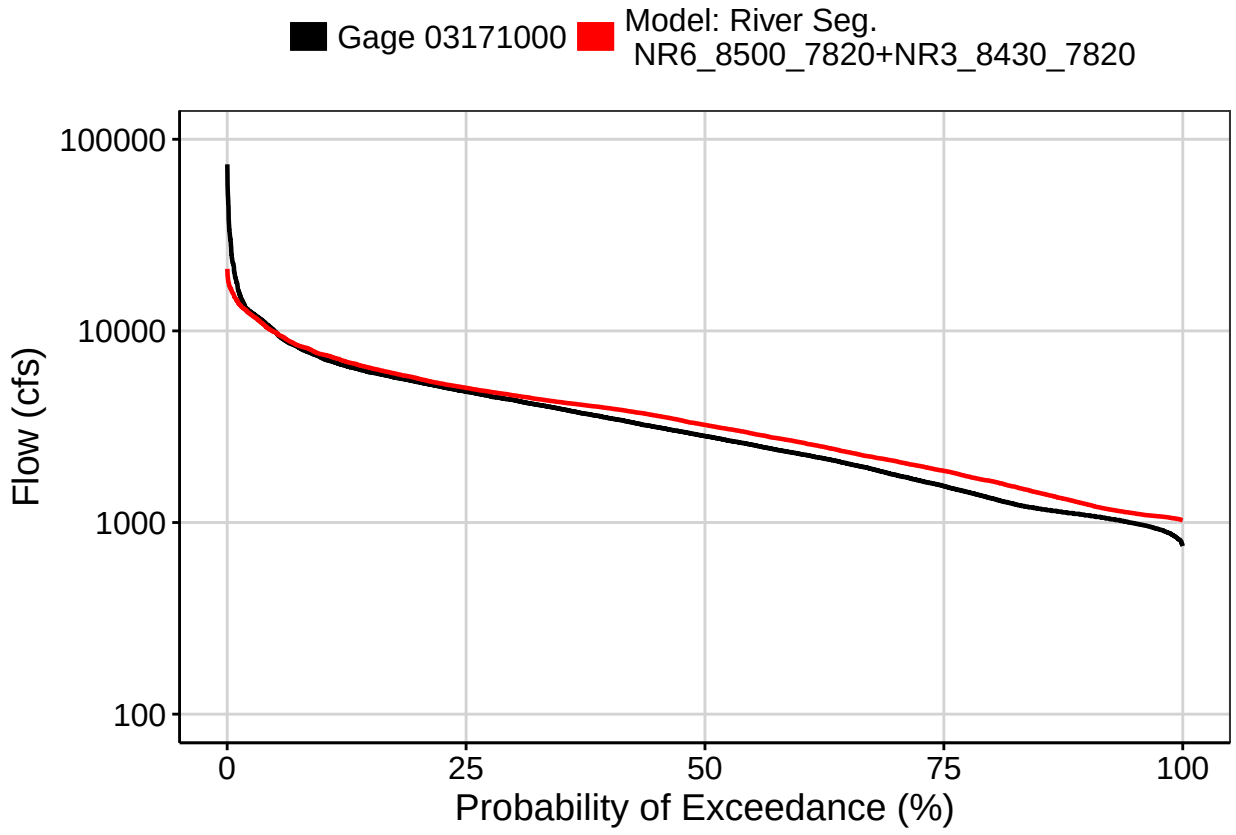

Fig. 4: Baseflow

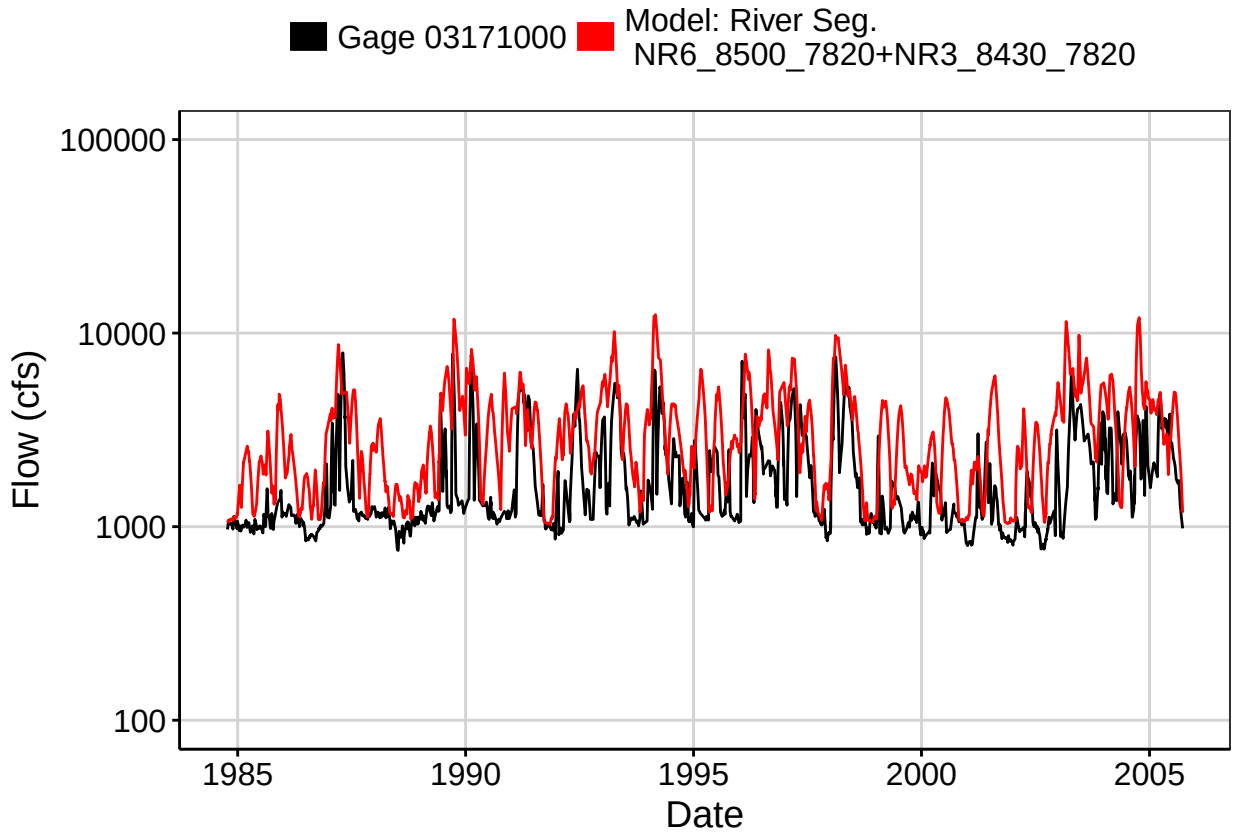

Fig. 5: Combined Baseflow

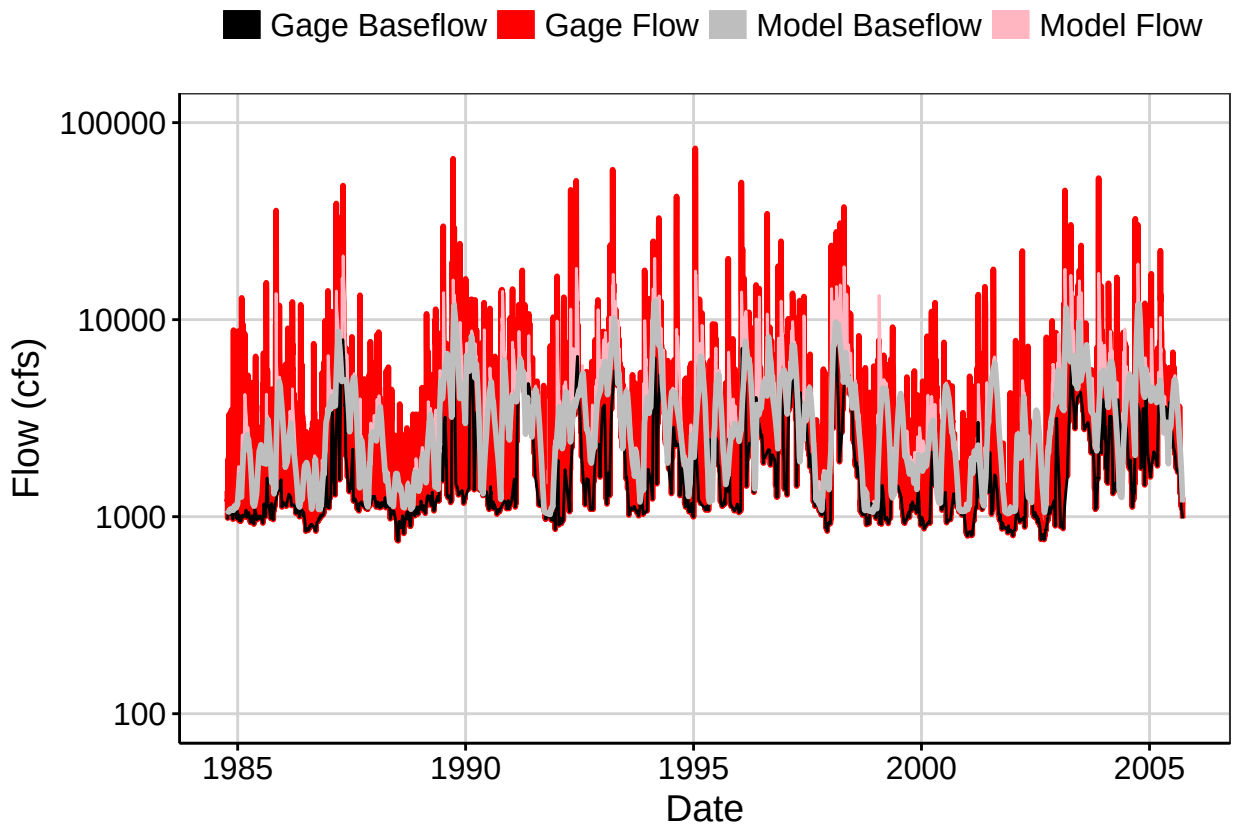

Fig. 6: Largest Error Segment

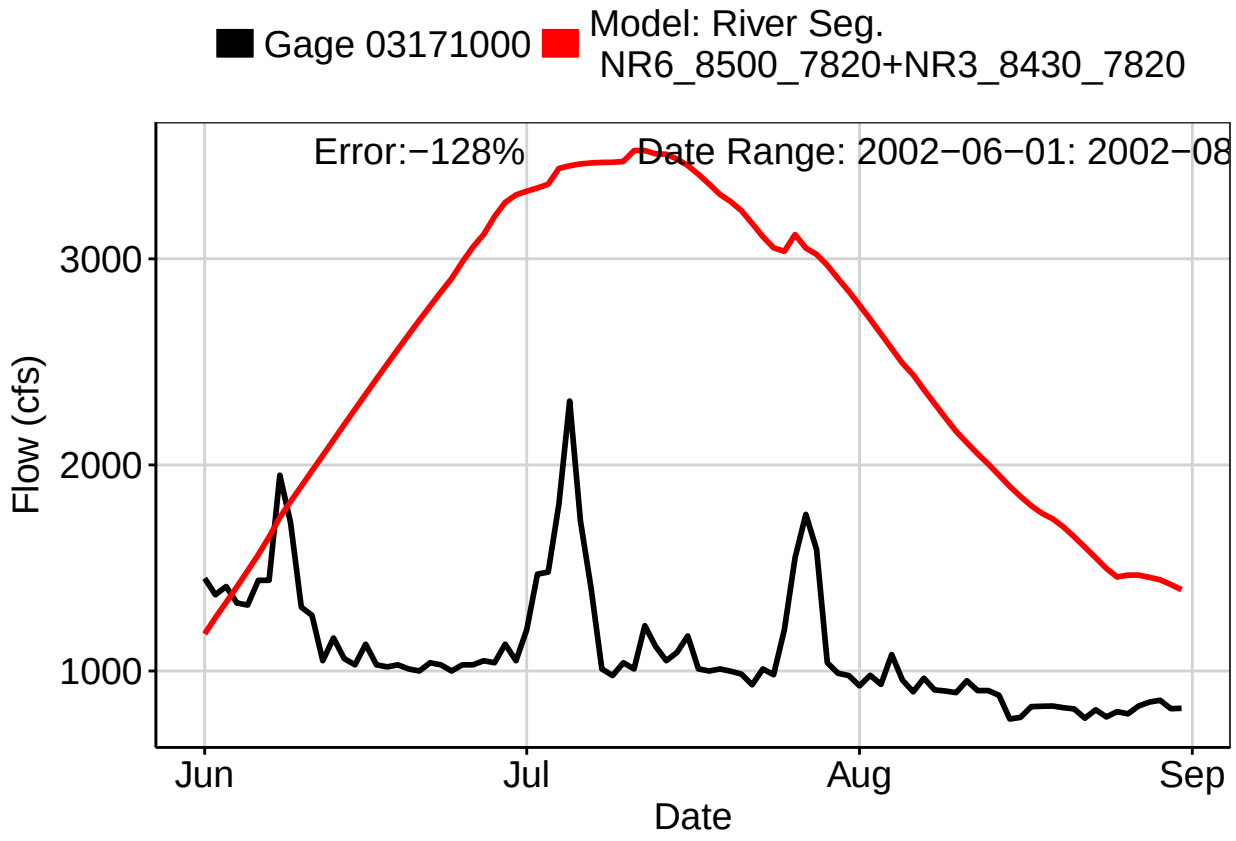

Fig. 7: Second Largest Error Segment

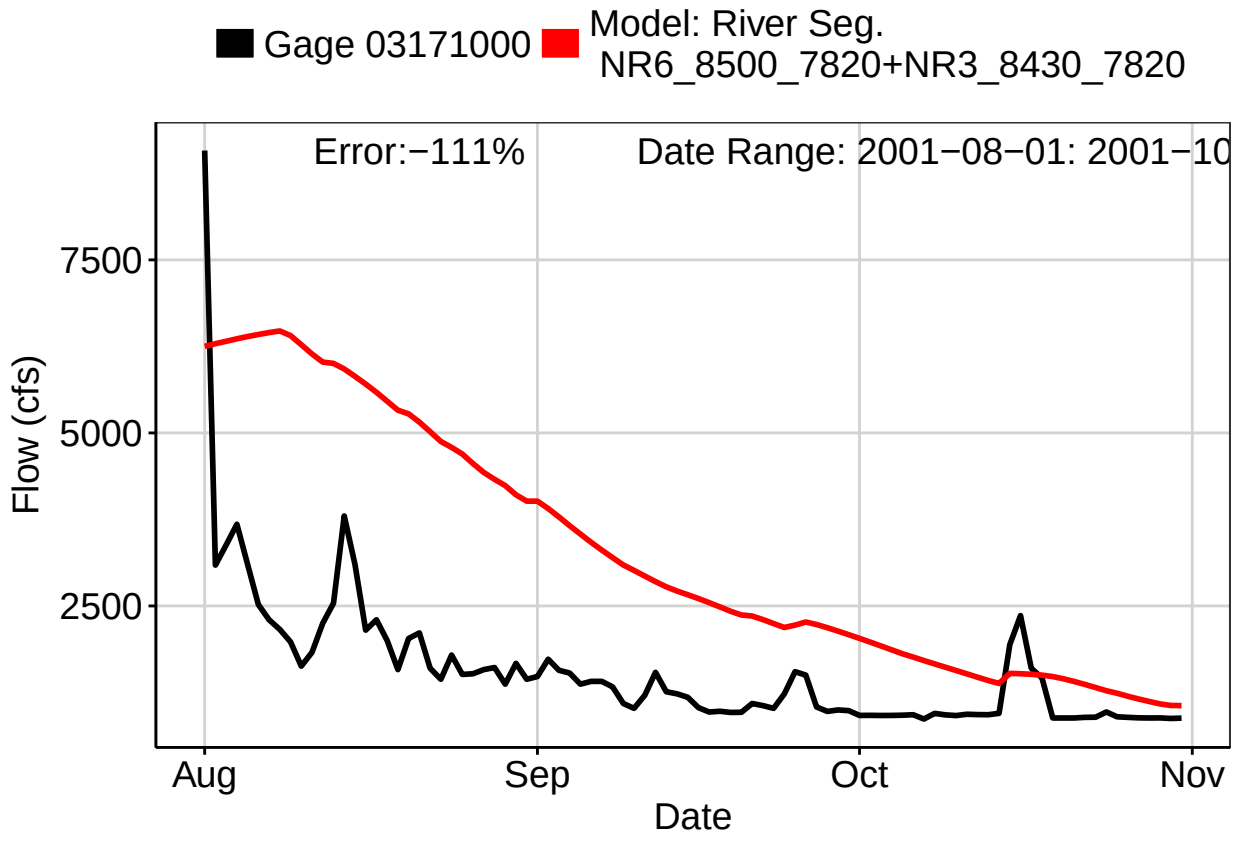

Fig. 8: Third Largest Error Segment

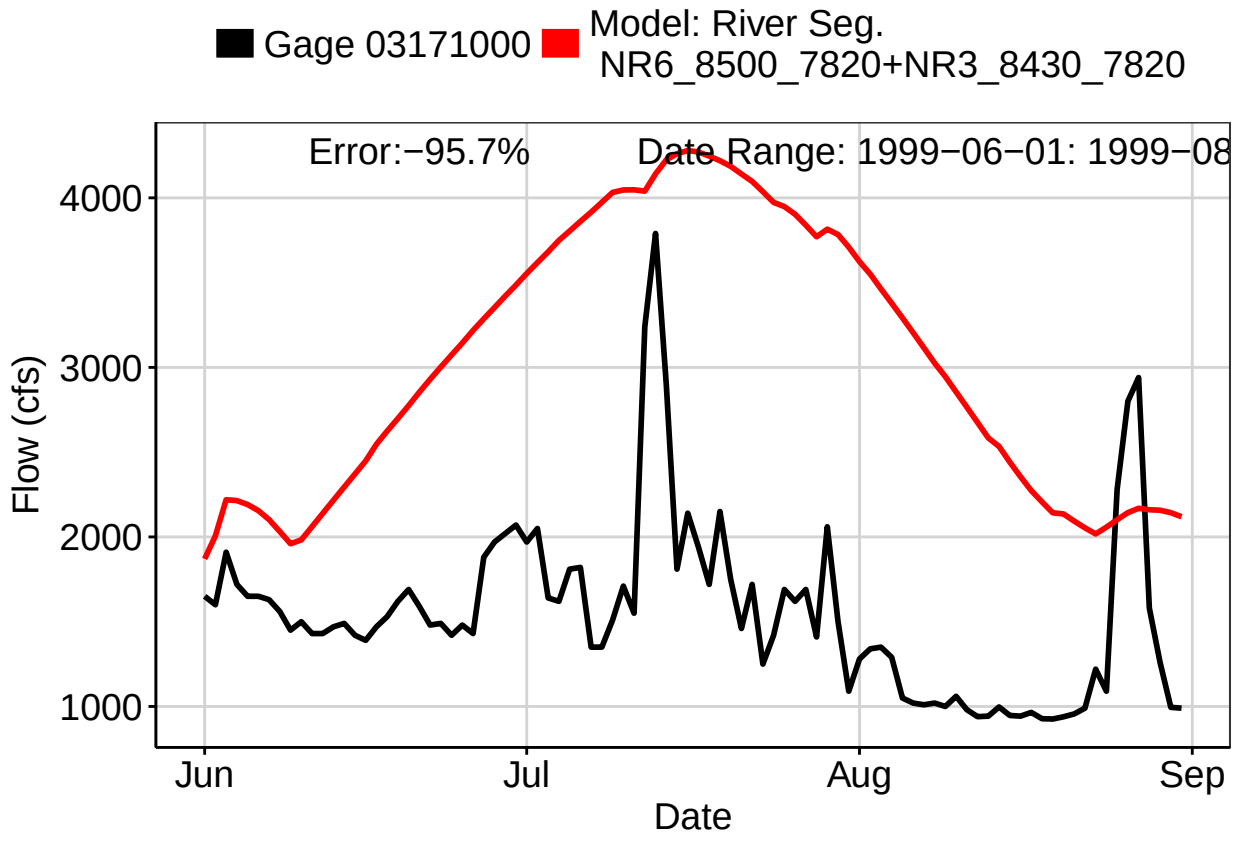

Fig. 9: Residuals Plot