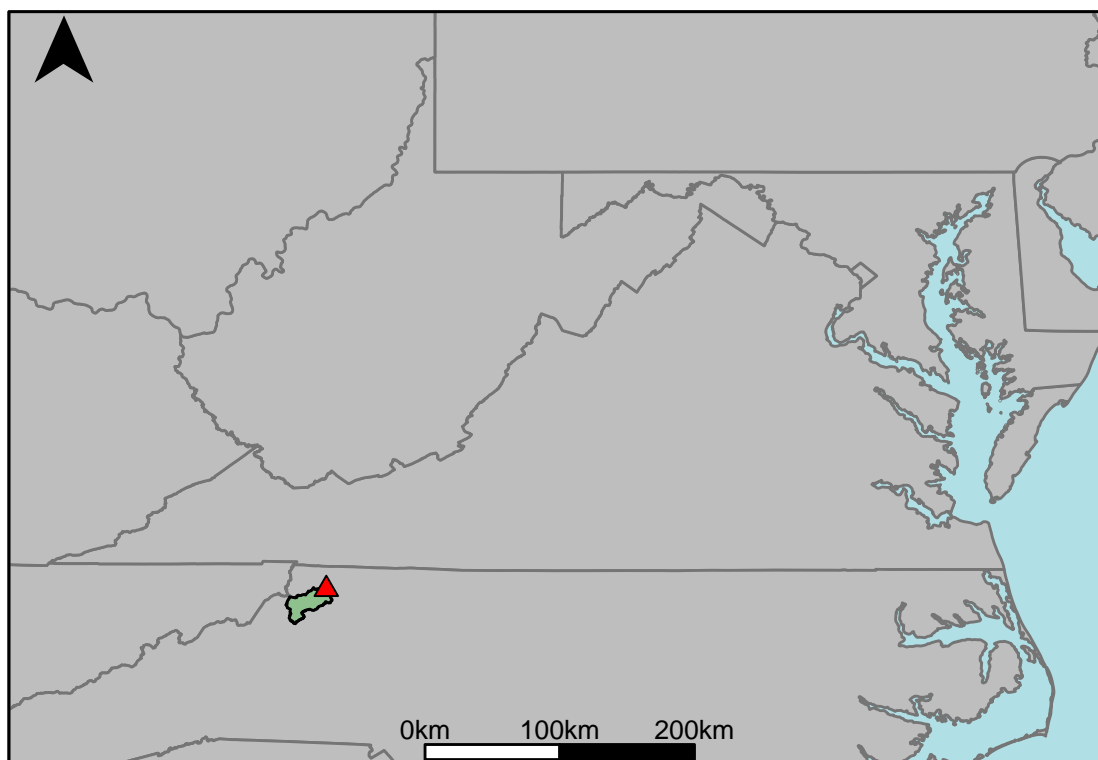


Appendix F: New River Gages

Appendix F.1: USGS Gage 03161000 vs. NR3_9310_9240



This river segment follows part of the flow of the South Fork of the New River. The gage is located in Ashe County, NC (Lat 36°23'36", Long 81°24'25") approximately 33 miles southwest of Galax, VA. Drainage area is 205 sq. miles. This gage started taking data in 1924 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 0%, with 24.6% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	163	139	-14.7
Feb. Low Flow	187	154	-17.6
Mar. Low Flow	226	221	-2.21
Apr. Low Flow	255	216	-15.3
May Low Flow	270	291	7.78
Jun. Low Flow	356	344	-3.37
Jul. Low Flow	345	300	-13
Aug. Low Flow	284	255	-10.2
Sep. Low Flow	271	218	-19.6
Oct. Low Flow	204	187	-8.33
Nov. Low Flow	173	169	-2.31
Dec. Low Flow	157	141	-10.2

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	418	418	0
Jan. Mean Flow	474	498	5.06
Feb. Mean Flow	480	565	17.7
Mar. Mean Flow	565	631	11.7
Apr. Mean Flow	547	556	1.65
May Mean Flow	430	424	-1.4
Jun. Mean Flow	405	390	-3.7
Jul. Mean Flow	338	292	-13.6
Aug. Mean Flow	337	308	-8.61
Sep. Mean Flow	344	340	-1.16
Oct. Mean Flow	313	314	0.32
Nov. Mean Flow	401	368	-8.23
Dec. Mean Flow	388	347	-10.6

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	477	411	-13.8
Feb. High Flow	1010	721	-28.6
Mar. High Flow	954	631	-33.9
Apr. High Flow	936	1200	28.2
May High Flow	995	1100	10.6
Jun. High Flow	1280	1740	35.9
Jul. High Flow	1020	1130	10.8
Aug. High Flow	659	903	37
Sep. High Flow	645	479	-25.7
Oct. High Flow	660	461	-30.2
Nov. High Flow	601	409	-31.9
Dec. High Flow	556	506	-8.99

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	74.7	59.5	-20.3
Med. 1 Day Min	142	110	-22.5
Min. 3 Day Min	76.5	60.5	-20.9
Med. 3 Day Min	144	111	-22.9
Min. 7 Day Min	83.3	62.7	-24.7
Med. 7 Day Min	154	115	-25.3
Min. 30 Day Min	101	73.2	-27.5
Med. 30 Day Min	174	147	-15.5
Min. 90 Day Min	137	127	-7.3
Med. 90 Day Min	233	214	-8.15
7Q10	102	83	-18.6
Year of 90-Day Min. Flow	2002	2001	100
Drought Year Mean	215	230	6.98
Mean Baseflow	291	269	-7.56

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	15400	11000	-28.6
Med. 1 Day Max	3330	5160	55
Max. 3 Day Max	7700	7990	3.77
Med. 3 Day Max	2260	3380	49.6
Max. 7 Day Max	4080	4290	5.15
Med. 7 Day Max	1710	1970	15.2
Max. 30 Day Max	1560	1790	14.7
Med. 30 Day Max	890	920	3.37
Max. 90 Day Max	1000	1340	34
Med. 90 Day Max	683	692	1.32

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	108	95.2	-11.9
5% Non-Exceedance	138	125	-9.42
50% Non-Exceedance	329	297	-9.73
95% Non-Exceedance	908	1070	17.8
99% Non-Exceedance	1860	2390	28.5
Sept. 10% Non-Exceedance	134	138	2.99

Fig. 1: Hydrograph

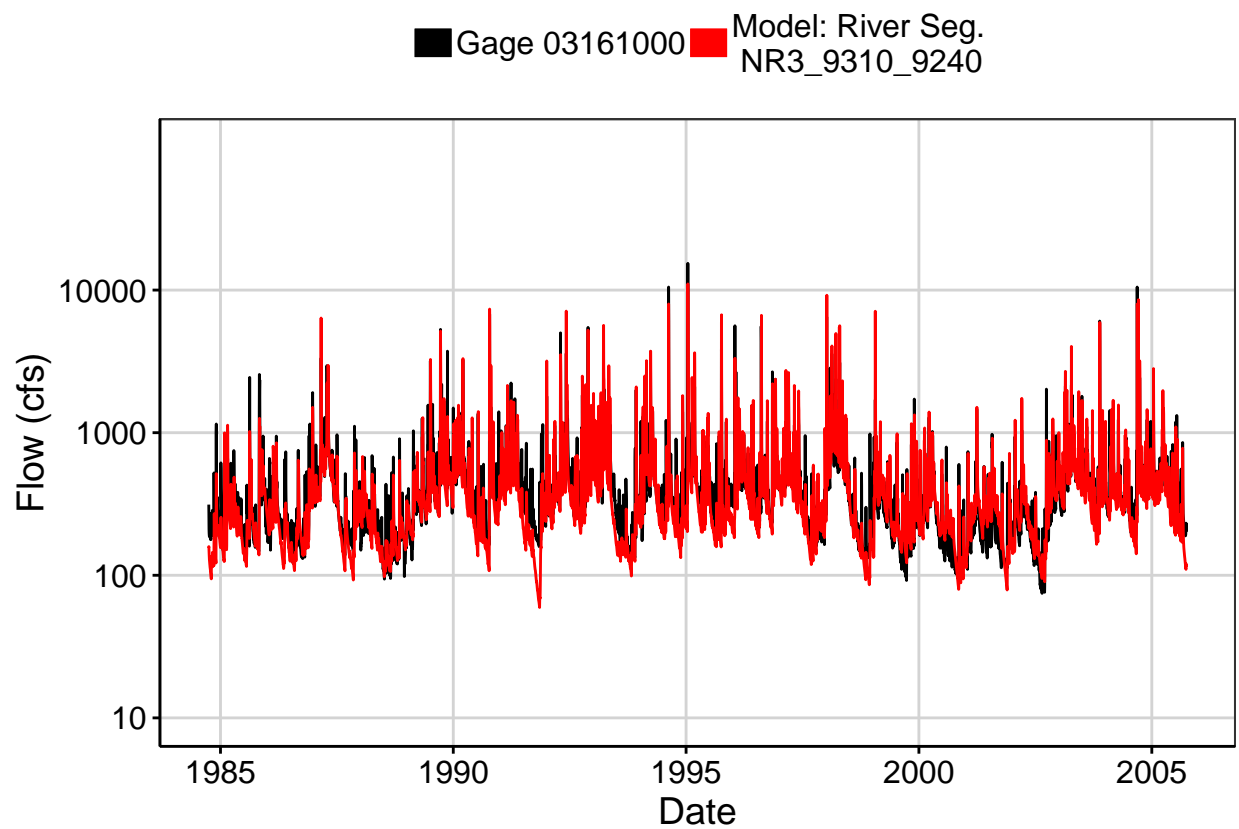


Fig. 2: Zoomed Hydrograph

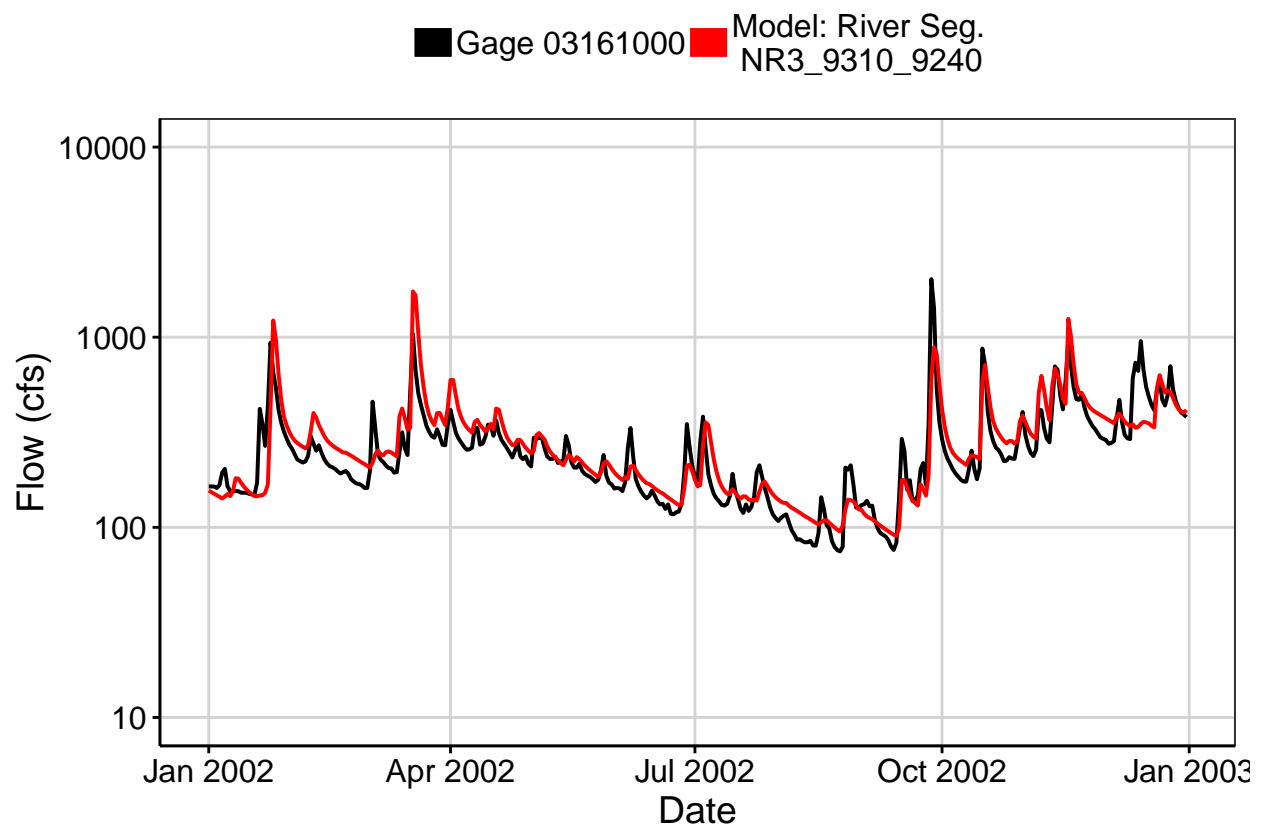


Fig. 3: Flow Exceedance

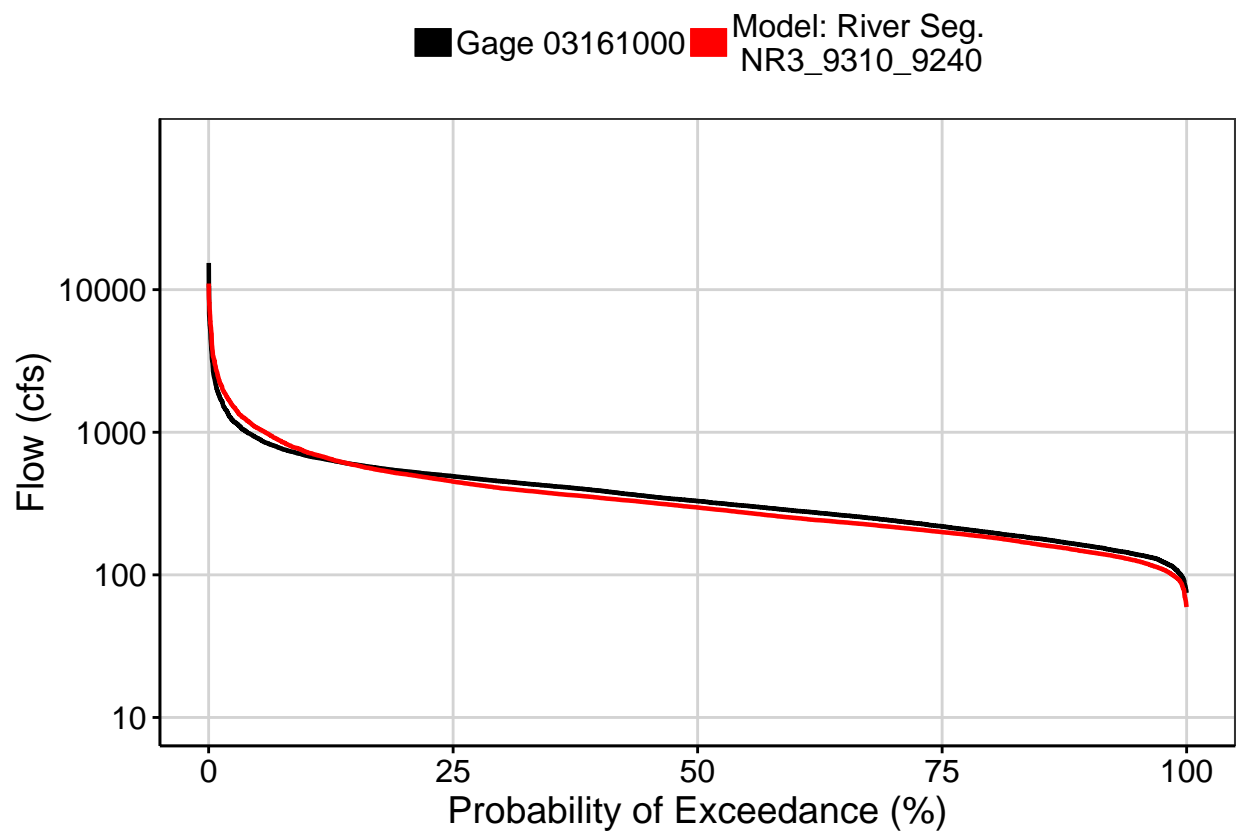


Fig. 4: Baseflow

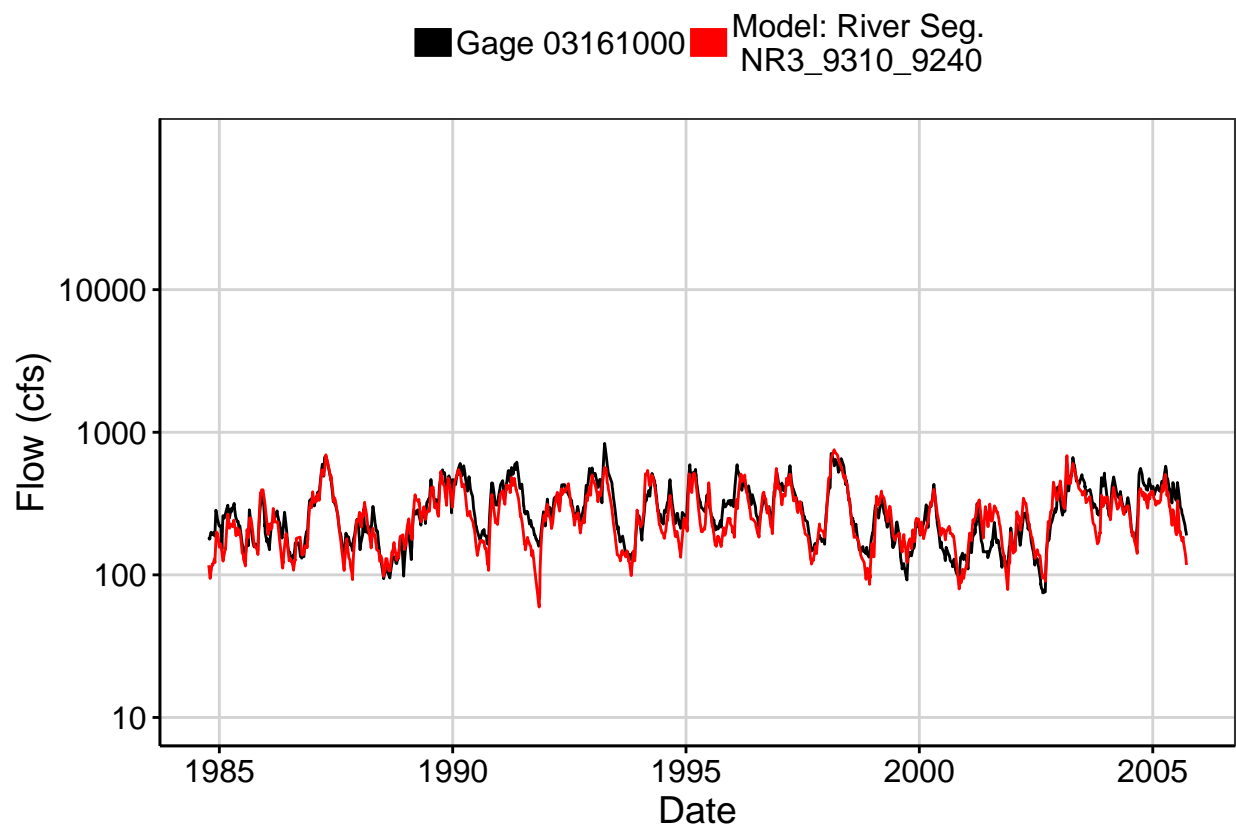


Fig. 5: Combined Baseflow

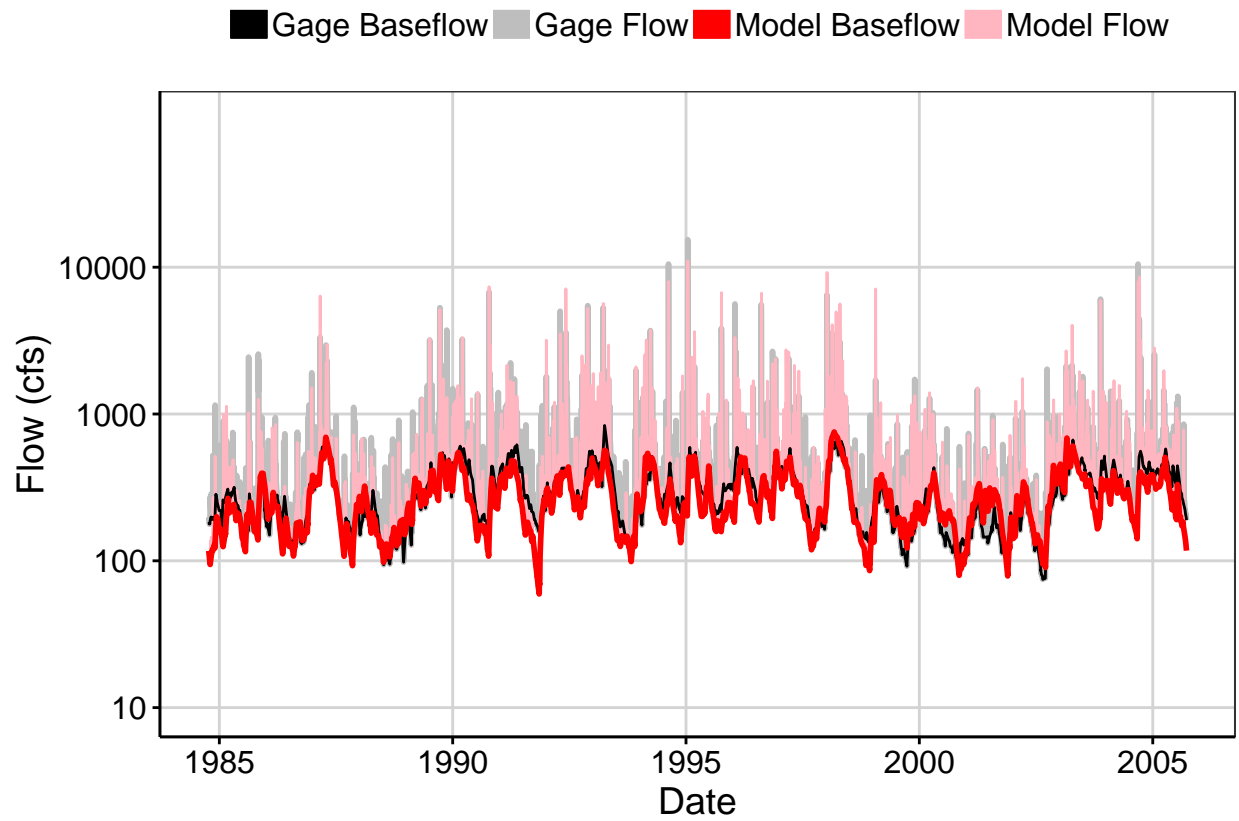


Fig. 6: Largest Error Segment

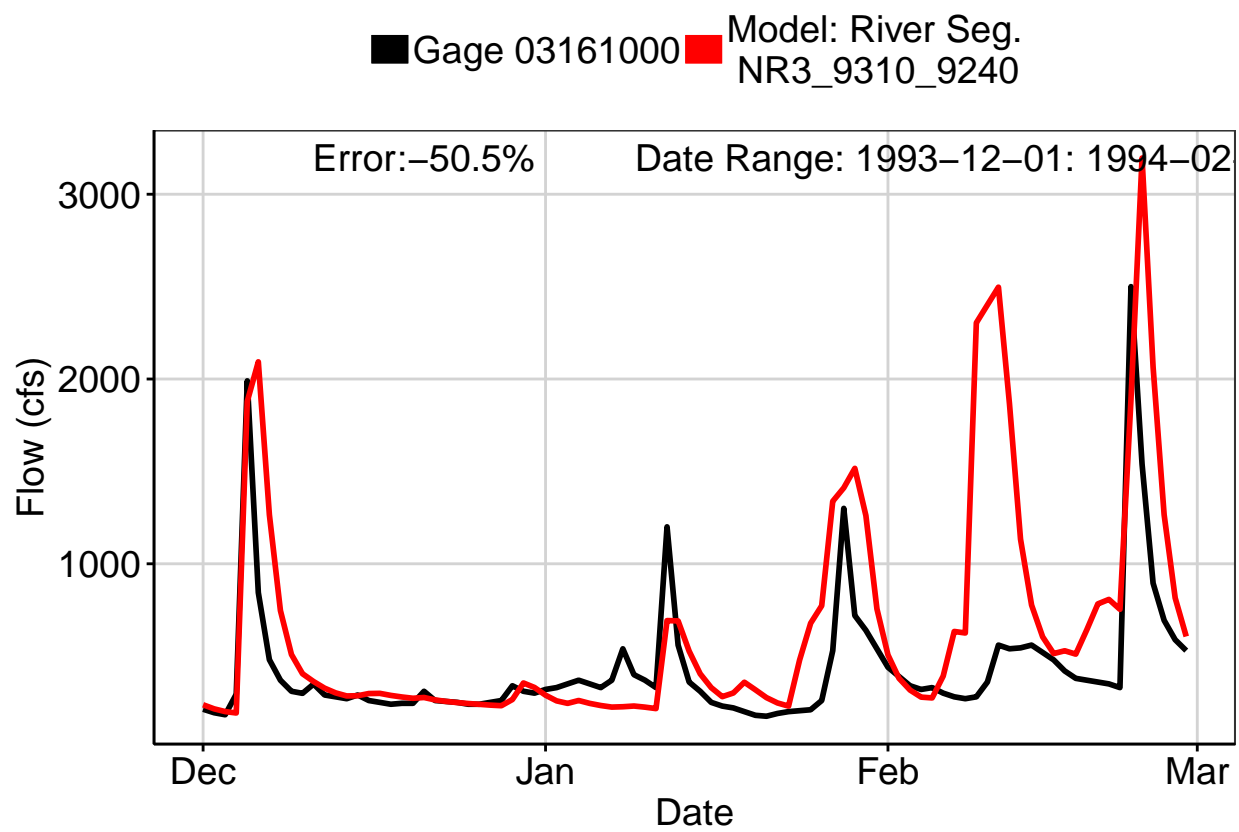


Fig. 7: Second Largest Error Segment

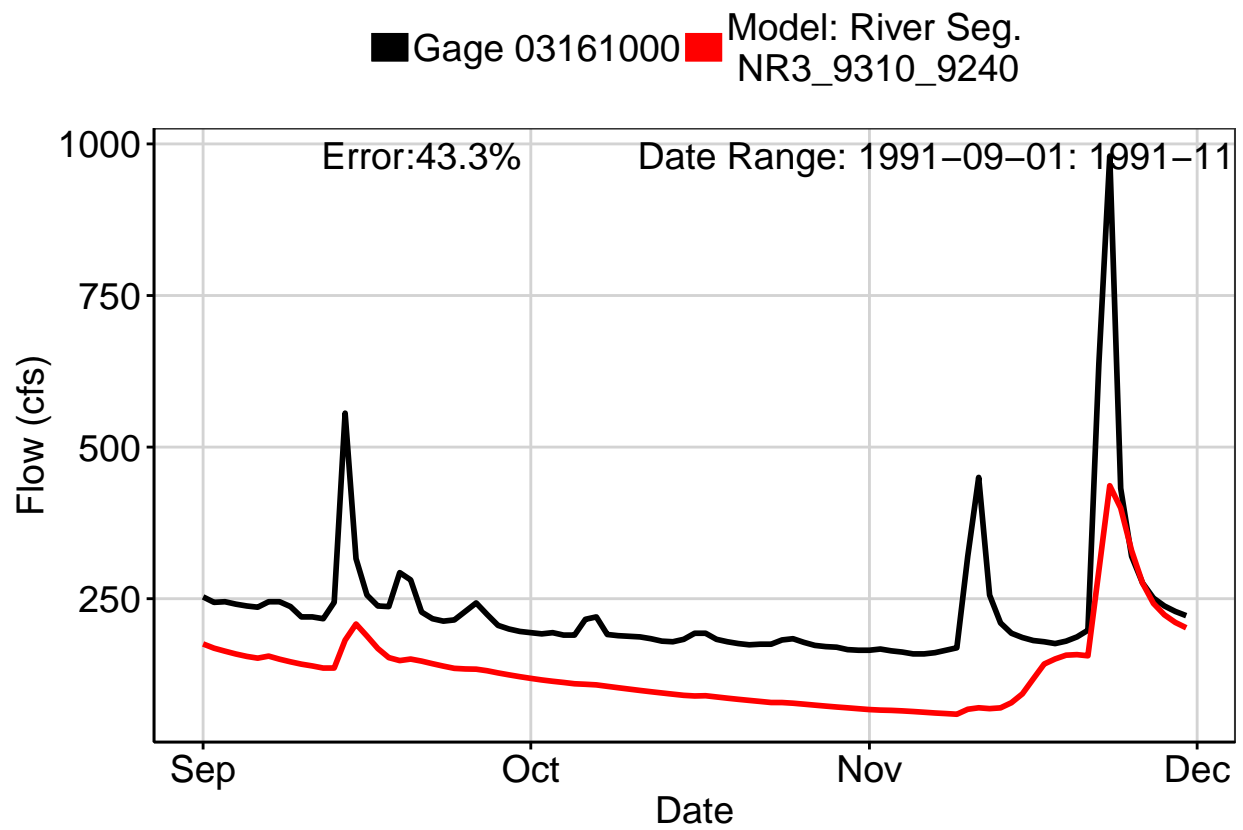


Fig. 8: Third Largest Error Segment

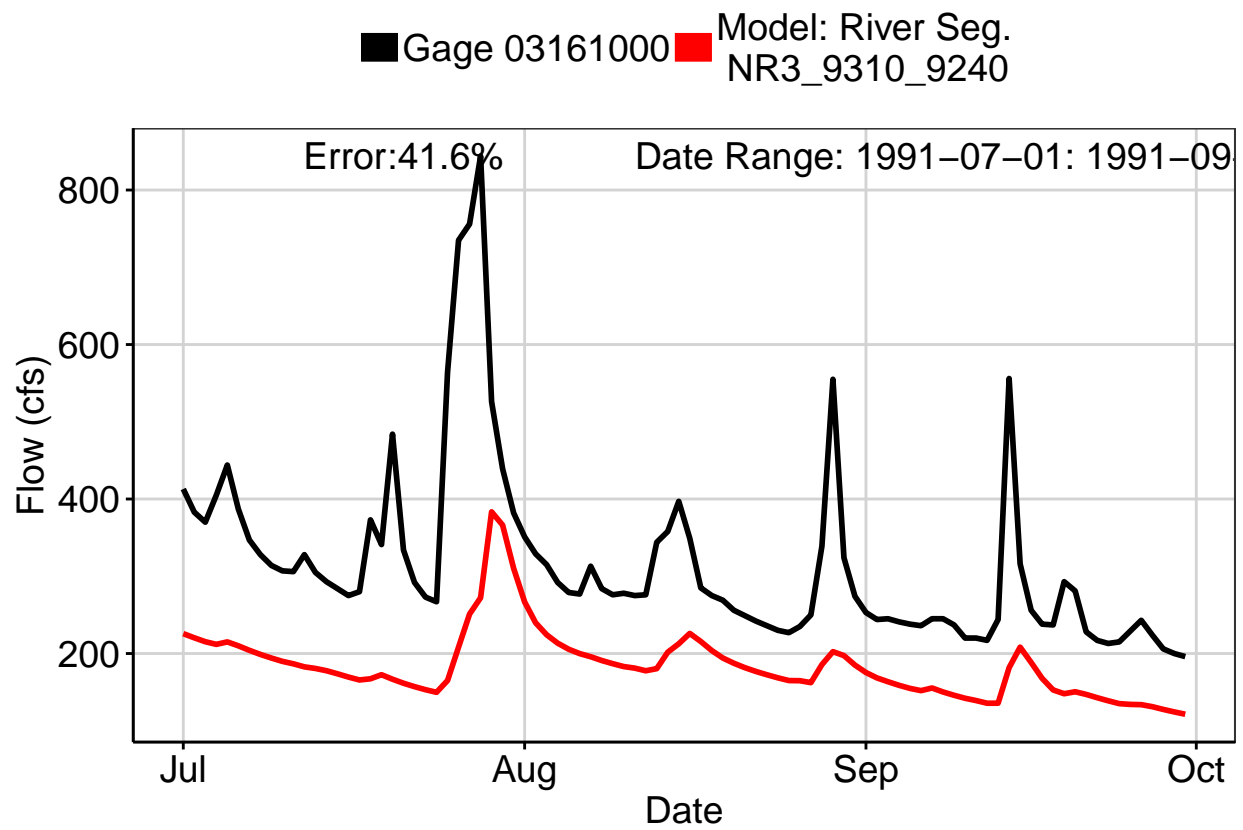


Fig. 9: Residuals Plot

