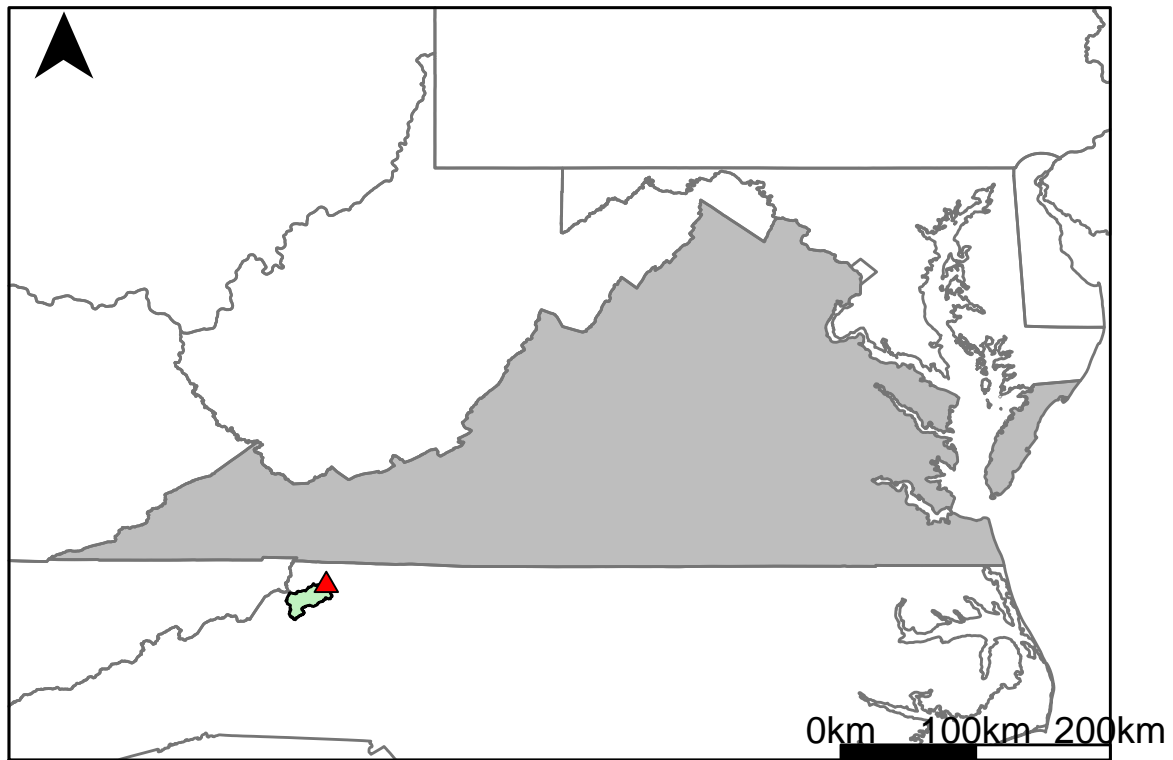


Appendix F: New River Gages

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 2.15%, with 22.5% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	163	136	16.6
Feb. Low Flow	187	151	19.3
Mar. Low Flow	226	216	4.42
Apr. Low Flow	255	212	16.9
May Low Flow	270	285	-5.56
Jun. Low Flow	356	336	5.62
Jul. Low Flow	345	293	15.1
Aug. Low Flow	284	250	12
Sep. Low Flow	271	213	21.4
Oct. Low Flow	204	183	10.3
Nov. Low Flow	173	166	4.05
Dec. Low Flow	157	138	12.1

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	418	409	2.15
Jan. Mean Flow	474	487	-2.74
Feb. Mean Flow	480	552	-15
Mar. Mean Flow	565	617	-9.2
Apr. Mean Flow	547	543	0.73
May Mean Flow	430	415	3.49
Jun. Mean Flow	405	382	5.68
Jul. Mean Flow	338	286	15.4
Aug. Mean Flow	337	301	10.7
Sep. Mean Flow	344	333	3.2
Oct. Mean Flow	313	307	1.92
Nov. Mean Flow	401	359	10.5
Dec. Mean Flow	388	339	12.6

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	477	402	15.7
Feb. High Flow	1010	705	30.2
Mar. High Flow	954	617	35.3
Apr. High Flow	936	1170	-25
May High Flow	995	1080	-8.54
Jun. High Flow	1280	1700	-32.8
Jul. High Flow	1020	1110	-8.82
Aug. High Flow	659	883	-34
Sep. High Flow	645	469	27.3
Oct. High Flow	660	451	31.7
Nov. High Flow	601	400	33.4
Dec. High Flow	556	494	11.2

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	74.7	58.1	22.2
Med. 1 Day Min	142	108	23.9
Min. 3 Day Min	76.5	59.2	22.6
Med. 3 Day Min	144	109	24.3
Min. 7 Day Min	83.3	61.3	26.4
Med. 7 Day Min	154	112	27.3
Min. 30 Day Min	101	71.6	29.1
Med. 30 Day Min	174	143	17.8
Min. 90 Day Min	137	124	9.49
Med. 90 Day Min	233	209	10.3
7Q10	102	81.1	20.5
Year of 90-Day Min. Flow	2002	2001	100
Drought Year Mean	215	409	-90.2
Mean Baseflow	291	263	9.62

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	15400	10800	29.9
Med. 1 Day Max	3330	5040	-51.4
Max. 3 Day Max	7700	7810	-1.43
Med. 3 Day Max	2260	3300	-46
Max. 7 Day Max	4080	4190	-2.7
Med. 7 Day Max	1710	1930	-12.9
Max. 30 Day Max	1560	1750	-12.2
Med. 30 Day Max	890	900	-1.12
Max. 90 Day Max	1000	1310	-31
Med. 90 Day Max	683	677	0.88

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	108	93	13.9
5% Non-Exceedance	138	122	11.6
50% Non-Exceedance	329	290	11.9
95% Non-Exceedance	908	1050	-15.6
99% Non-Exceedance	1860	2340	-25.8
Sept. 10% Non-Exceedance	135	131	2.96

Fig. 1: Hydrograph

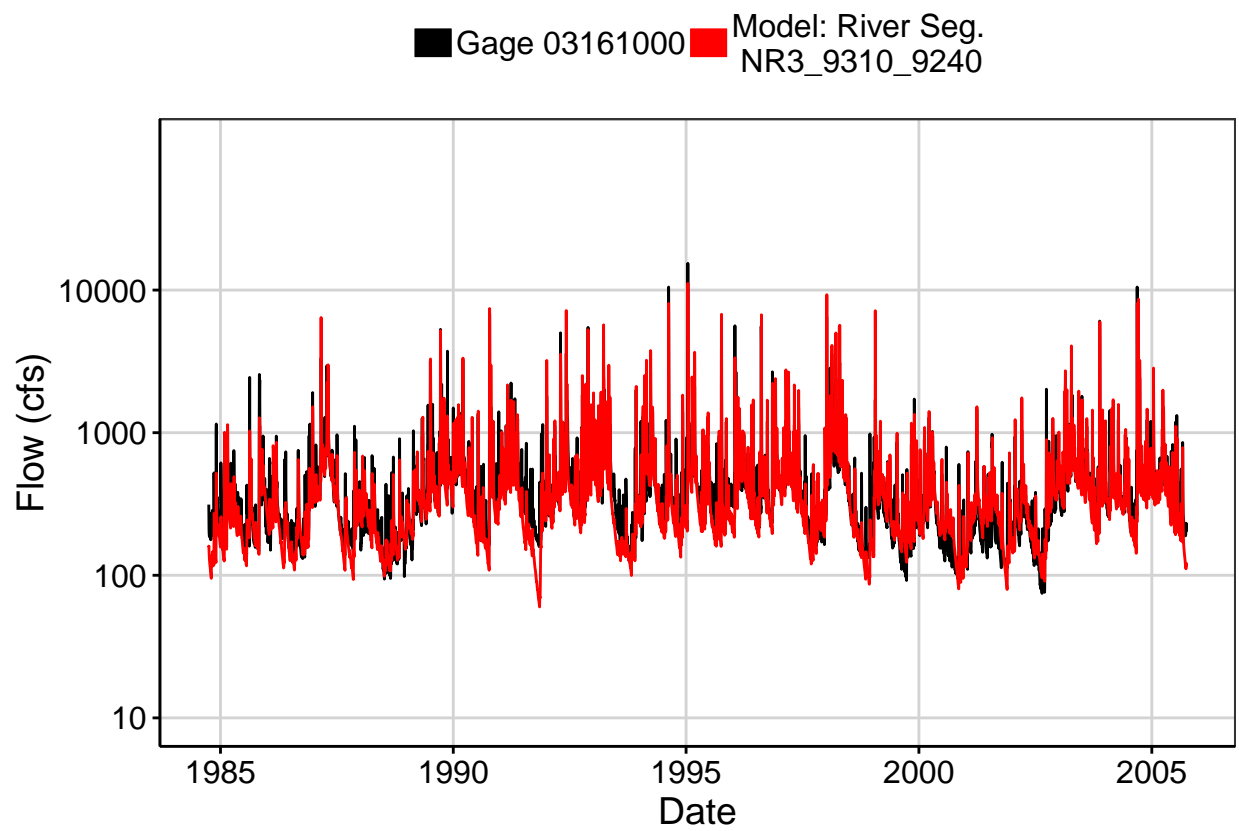


Fig. 2: Zoomed Hydrograph

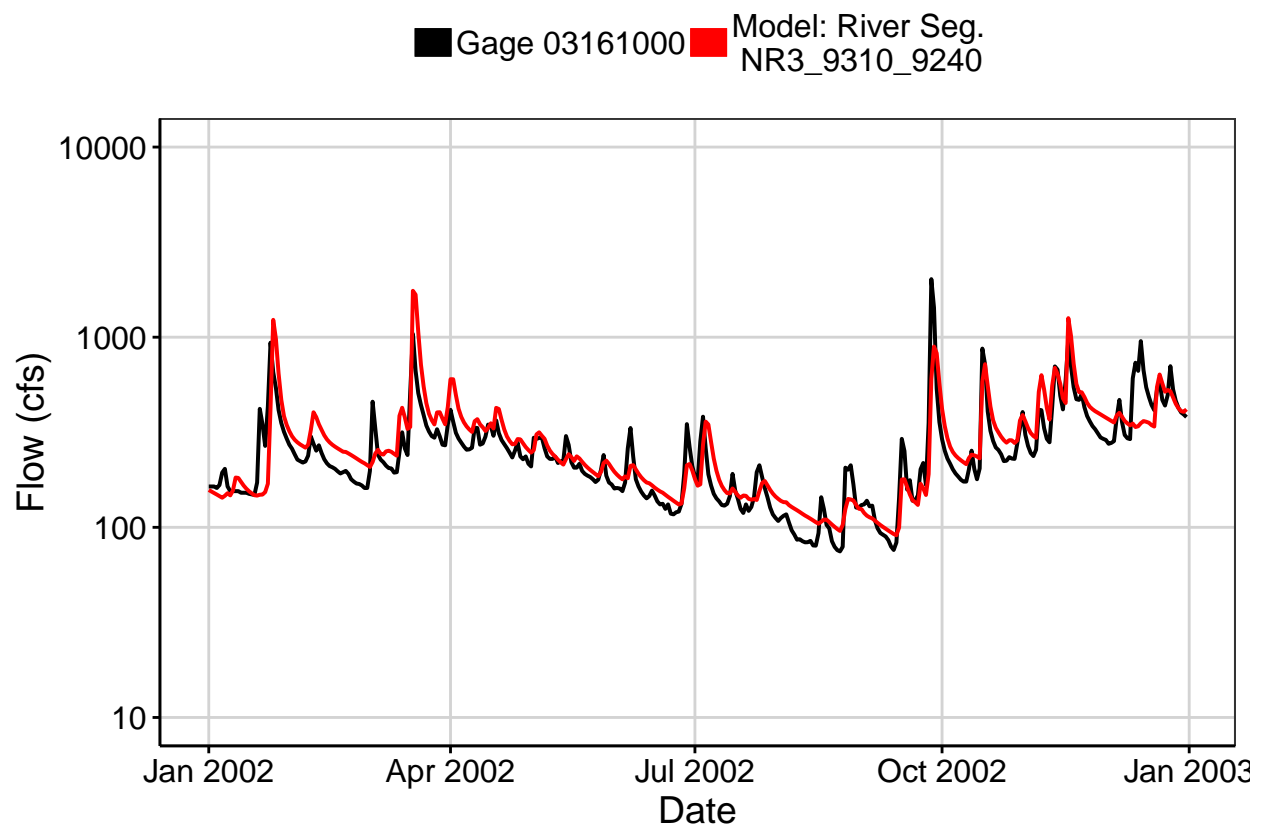


Fig. 3: Flow Exceedance

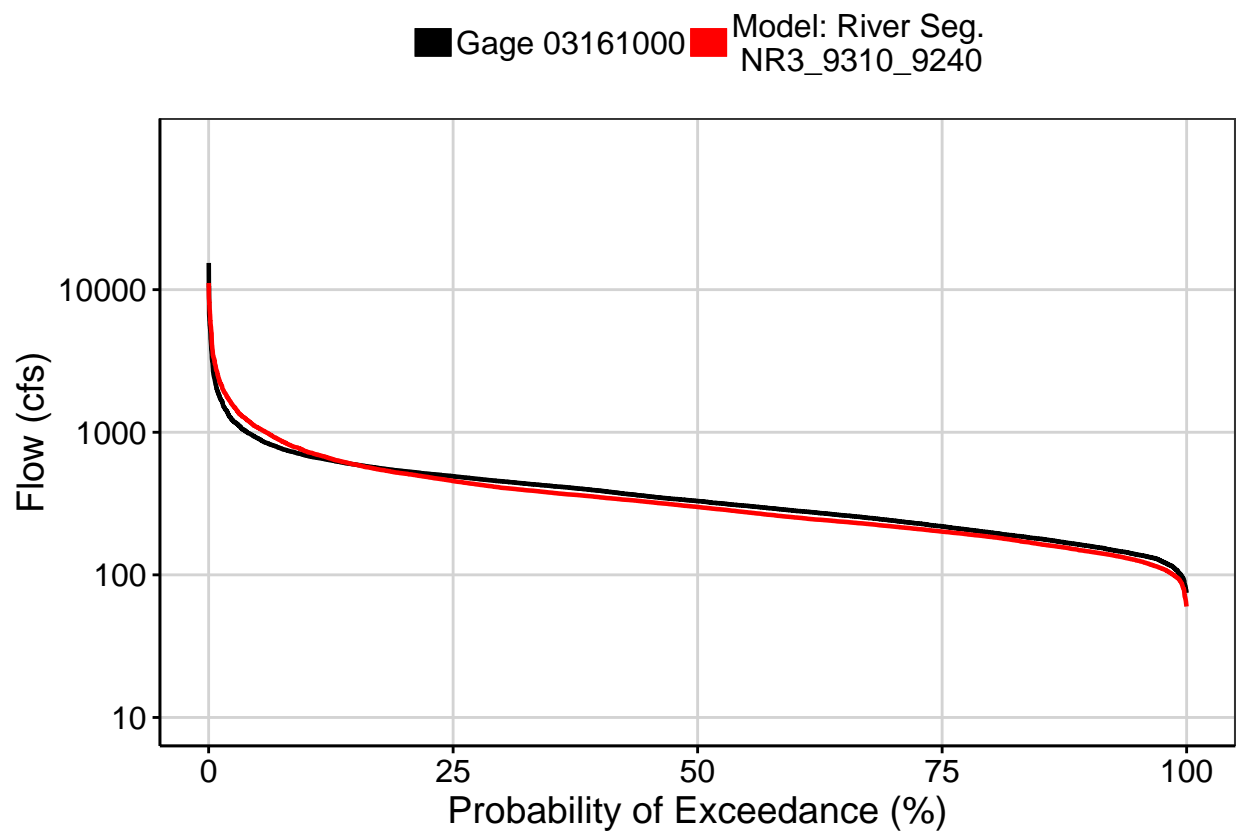


Fig. 4: Baseflow

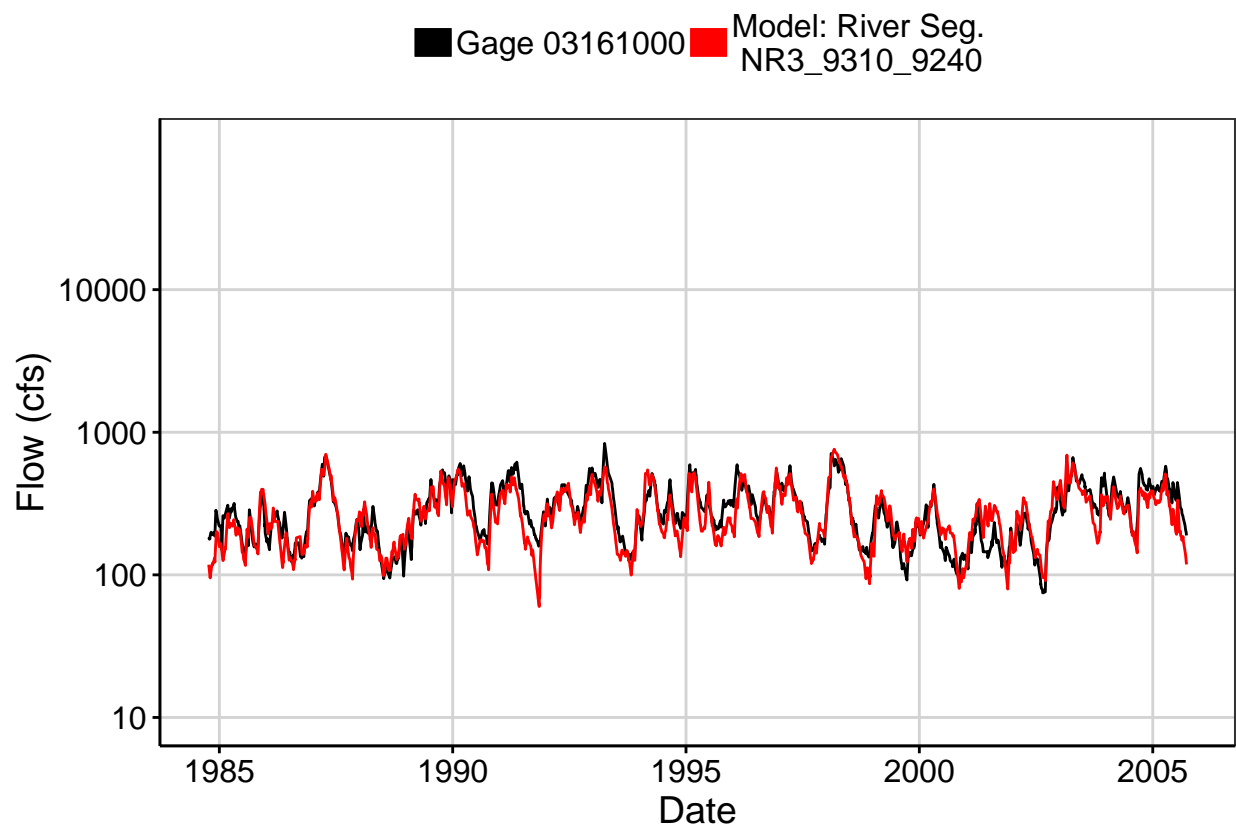


Fig. 5: Combined Baseflow

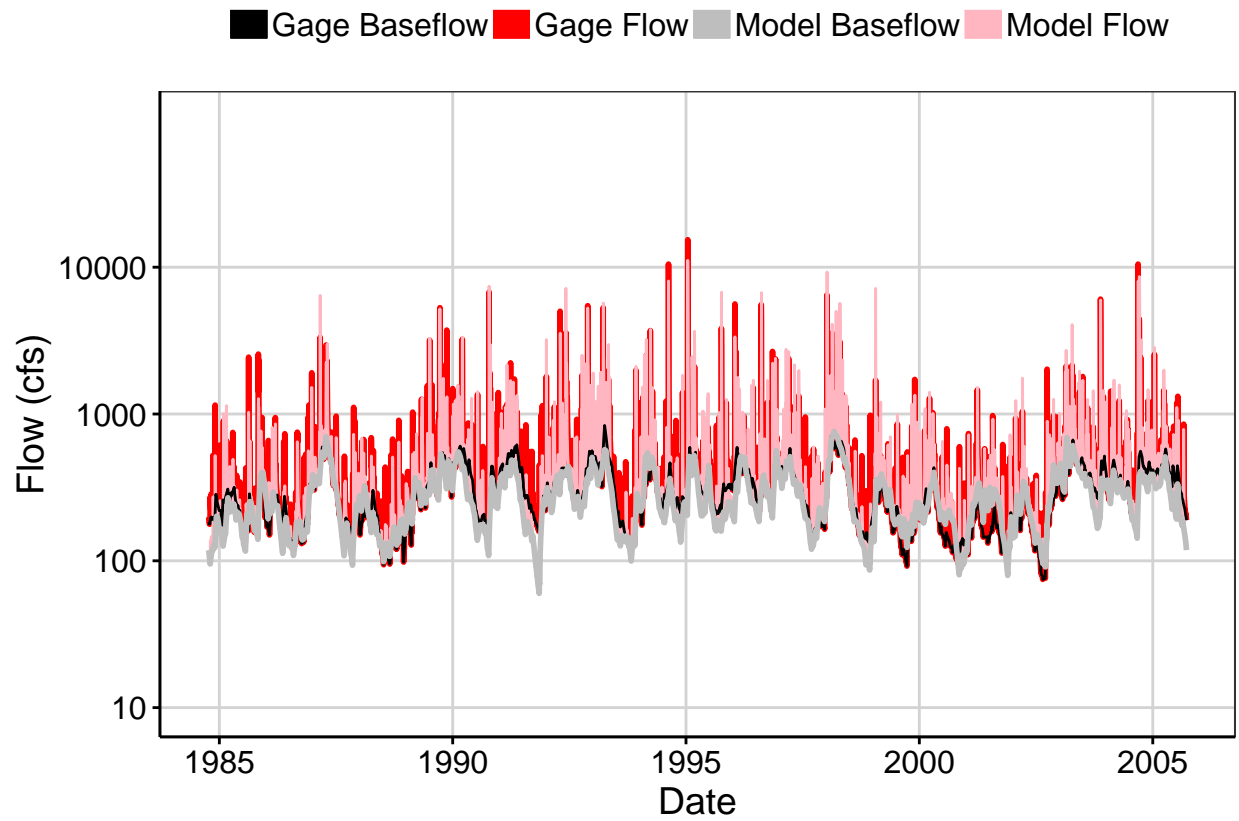


Fig. 6: Largest Error Segment

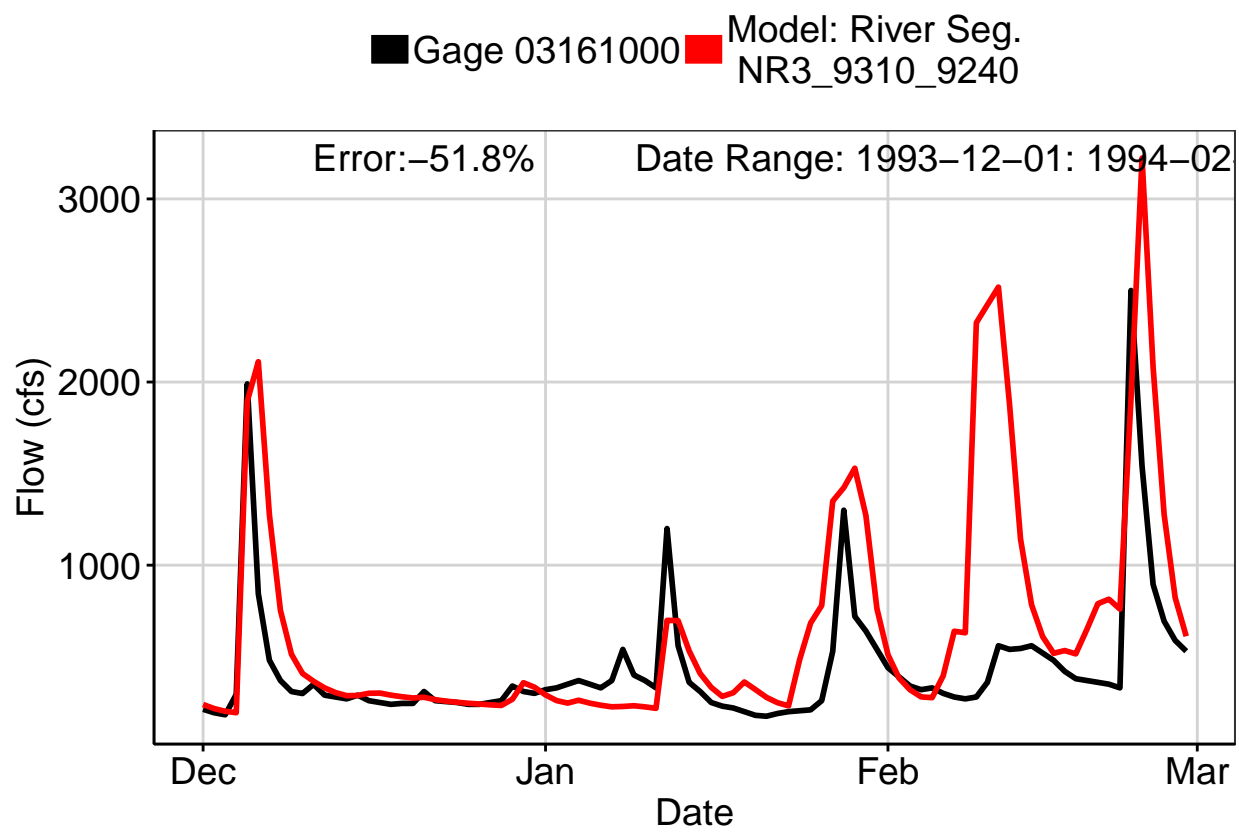


Fig. 7: Second Largest Error Segment

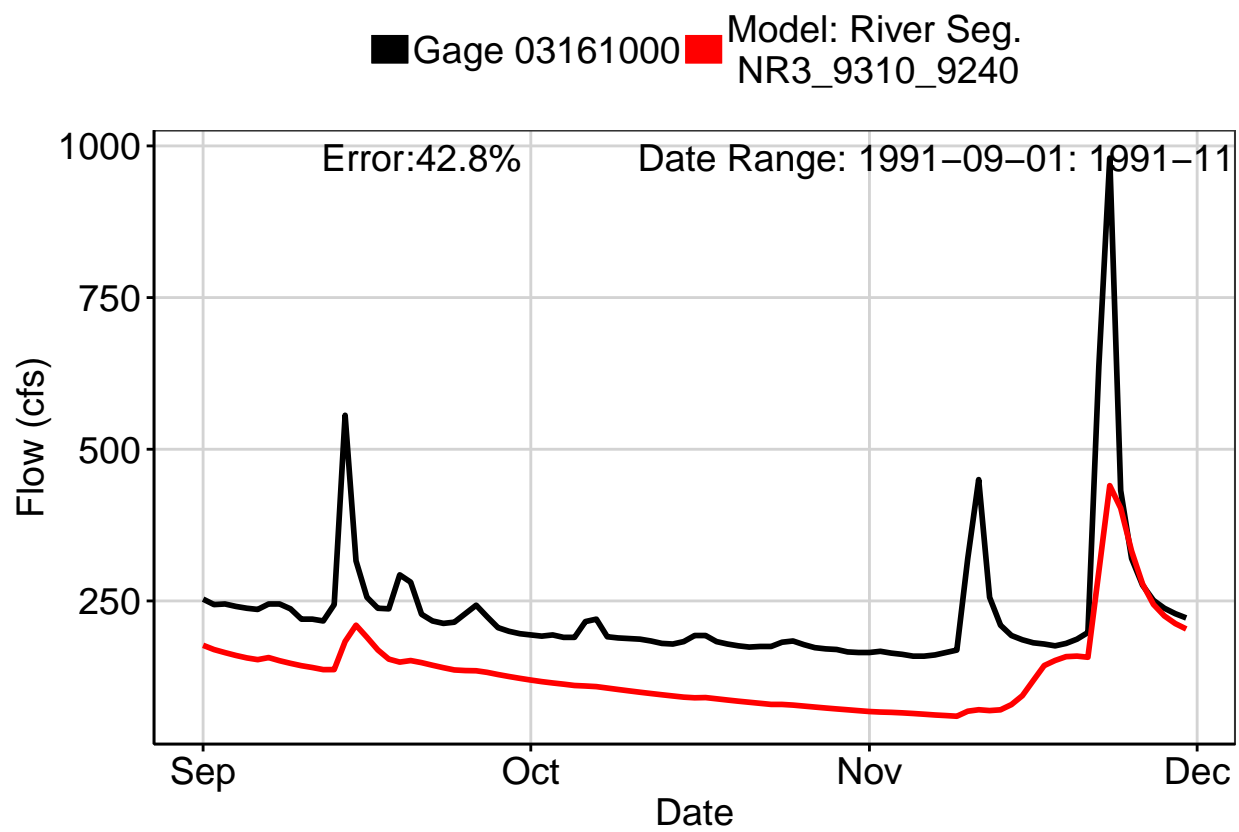


Fig. 8: Third Largest Error Segment

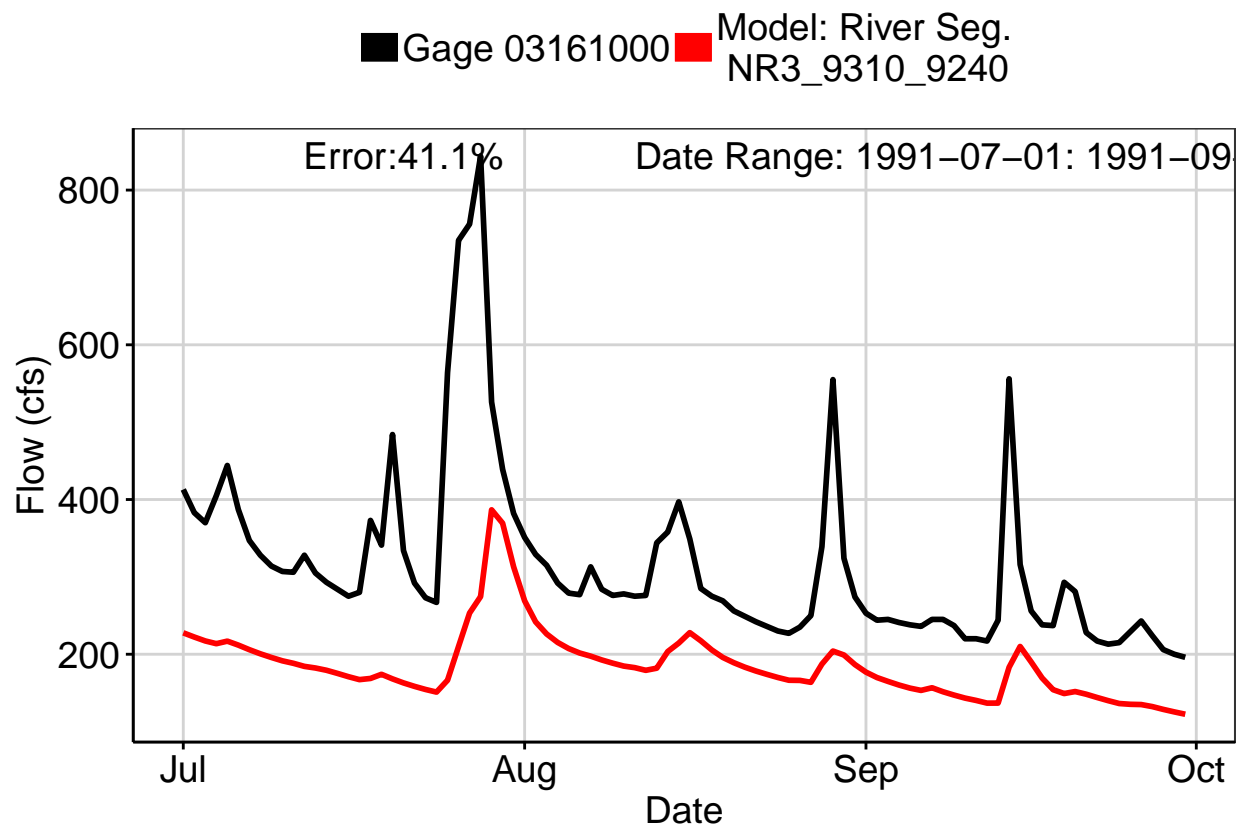


Fig. 9: Residuals Plot

