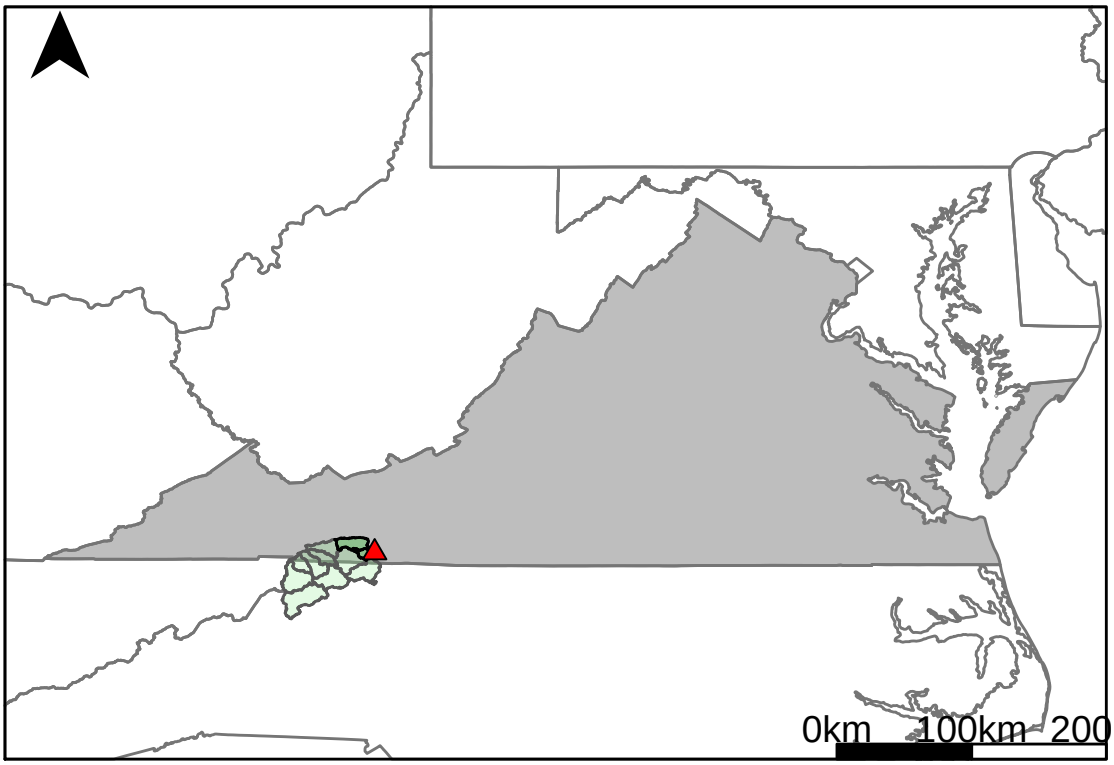
03164000 vs. NR5_9050_8870+NR1_8960_8870



This river segment follows part of the flow of the New River. The gage is located in Grayson County, VA (Lat 3638'50", Long 8058'45") approximately 3 miles east of Galax, VA. Drainage area is 1141 sq. miles. This gage started taking data in 1929 and is still taking data. There is a privately owned low concrete dam with a small generator for electricity 36.4 miles upstream of the station near the Mouth of Wilson, VA. Almost all of the water flows over the dam because it has very little storage capacity but it can cause problems for extremely low flows. The average daily discharge error between the model and gage data for the 20 year timespan was 5.32%, with 28.7% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	610	510	16.4
Feb. Low Flow	754	611	19
Mar. Low Flow	943	976	-3.5
Apr. Low Flow	781	965	-23.6
May Low Flow	1300	1290	0.77
Jun. Low Flow	1540	1590	-3.25
Jul. Low Flow	1540	1310	14.9
Aug. Low Flow	1400	1070	23.6
Sep. Low Flow	1110	943	15
Oct. Low Flow	857	727	15.2
Nov. Low Flow	685	640	6.57
Dec. Low Flow	587	568	3.24

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	1880	1780	5.32
Jan. Mean Flow	2210	2150	2.71
Feb. Mean Flow	2490	2570	-3.21
Mar. Mean Flow	2810	2940	-4.63
Apr. Mean Flow	2620	2440	6.87
May Mean Flow	2100	1800	14.3
Jun. Mean Flow	1860	1610	13.4
Jul. Mean Flow	1390	1160	16.5
Aug. Mean Flow	1250	1230	1.6
Sep. Mean Flow	1340	1290	3.73
Oct. Mean Flow	1200	1230	-2.5
Nov. Mean Flow	1640	1500	8.54
Dec. Mean Flow	1710	1510	11.7

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	1440	1180	18.1
Feb. High Flow	4140	2450	40.8
Mar. High Flow	3850	2570	33.2
Apr. High Flow	4740	5250	-10.8
May High Flow	6070	4790	21.1
Jun. High Flow	8060	7220	10.4
Jul. High Flow	5500	4840	12
Aug. High Flow	3890	3970	-2.06
Sep. High Flow	2430	2160	11.1
Oct. High Flow	2320	1700	26.7
Nov. High Flow	2200	1300	40.9
Dec. High Flow	1930	1410	26.9

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	283	190	32.9
Med. 1 Day Min	486	417	14.2
Min. 3 Day Min	298	194	34.9
Med. 3 Day Min	505	426	15.6
Min. 7 Day Min	317	201	36.6
Med. 7 Day Min	524	446	14.9
Min. 30 Day Min	398	248	37.7
Med. 30 Day Min	654	569	13
Min. 90 Day Min	524	481	8.21
Med. 90 Day Min	1000	778	22.2
7Q10	362	271	25.1
Year of 90-Day Min. Flow	1988	1988	0
Drought Year Mean	1030	1780	-72.8
Mean Baseflow	1210	1190	1.65

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	57800	44700	22.7
Med. 1 Day Max	18300	17300	5.46
Max. 3 Day Max	31000	30800	0.64
Med. 3 Day Max	11900	14500	-21.8
Max. 7 Day Max	17100	17000	0.58
Med. 7 Day Max	7810	9350	-19.7
Max. 30 Day Max	6560	6460	1.52
Med. 30 Day Max	4050	4250	-4.94
Max. 90 Day Max	4750	5500	-15.8
Med. 90 Day Max	3150	3020	4.13

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	397	336	15.4
5% Non-Exceedance	532	468	12
50% Non-Exceedance	1390	1250	10.1
95% Non-Exceedance	4540	4540	0
99% Non-Exceedance	9300	9980	-7.31
Sept. 10% Non-Exceedance	558	518	7.17

Fig. 1: Hydrograph

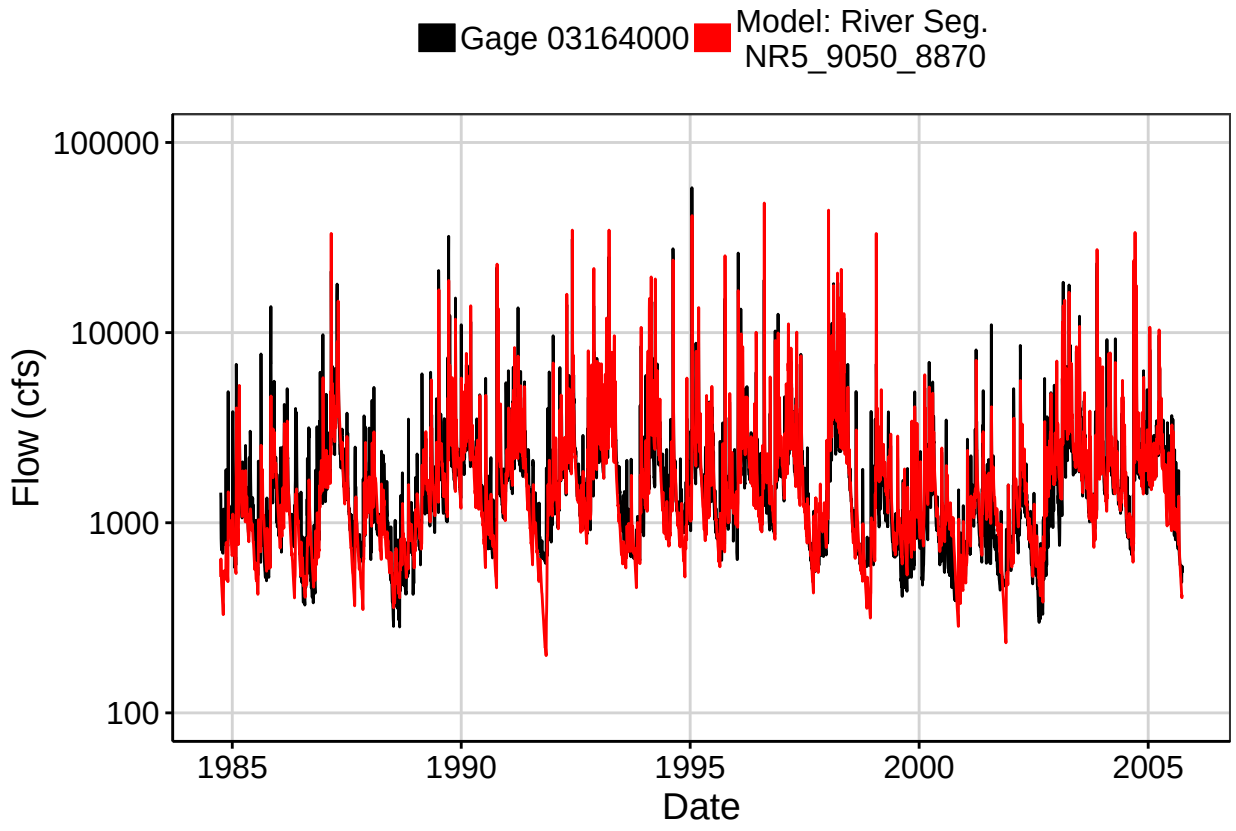


Fig. 2: Zoomed Hydrograph

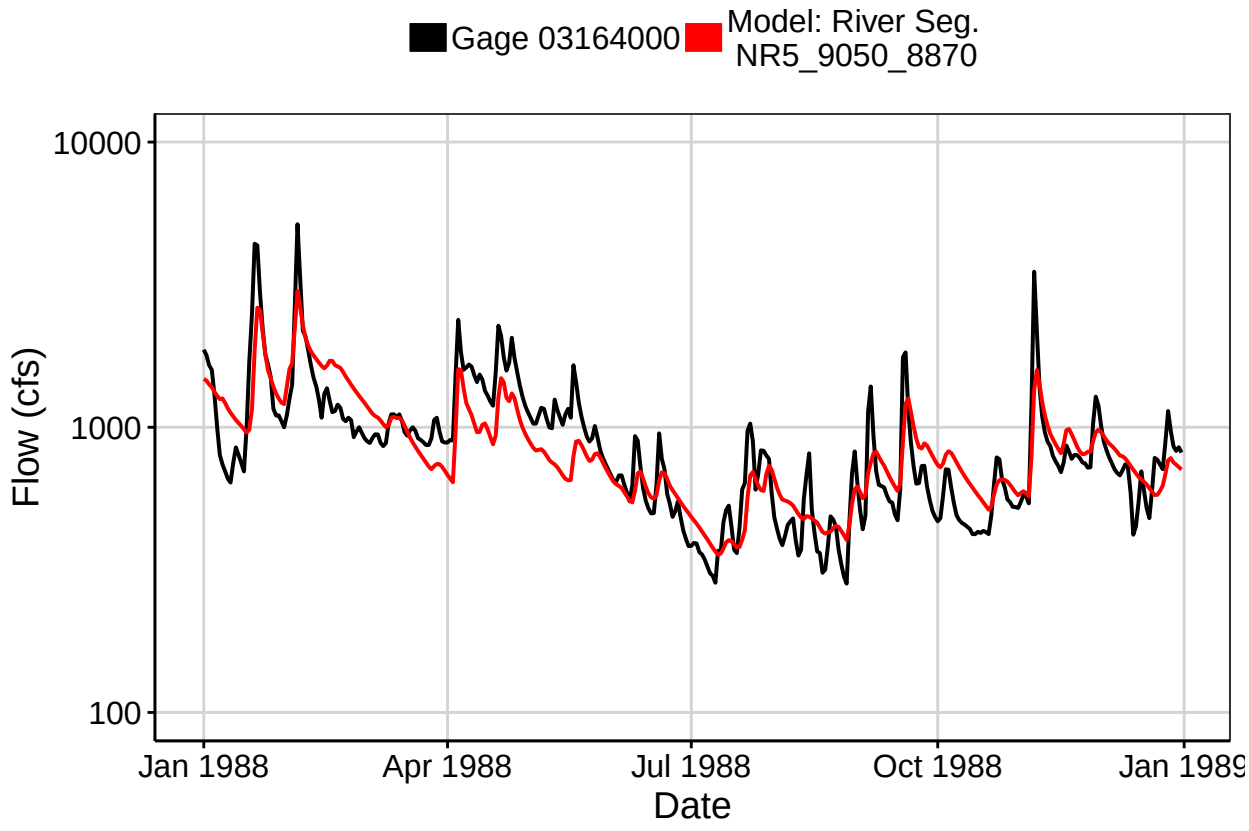


Fig. 3: Flow Exceedance

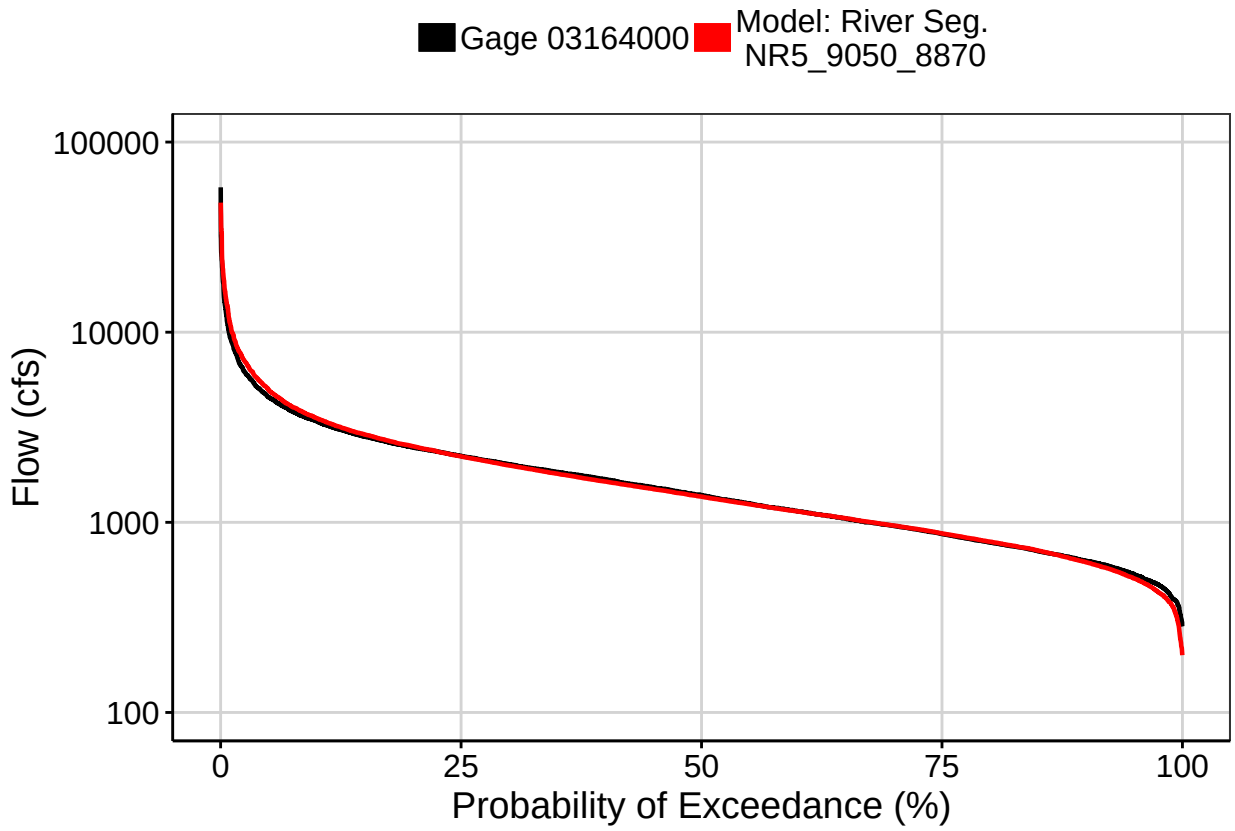


Fig. 4: Baseflow

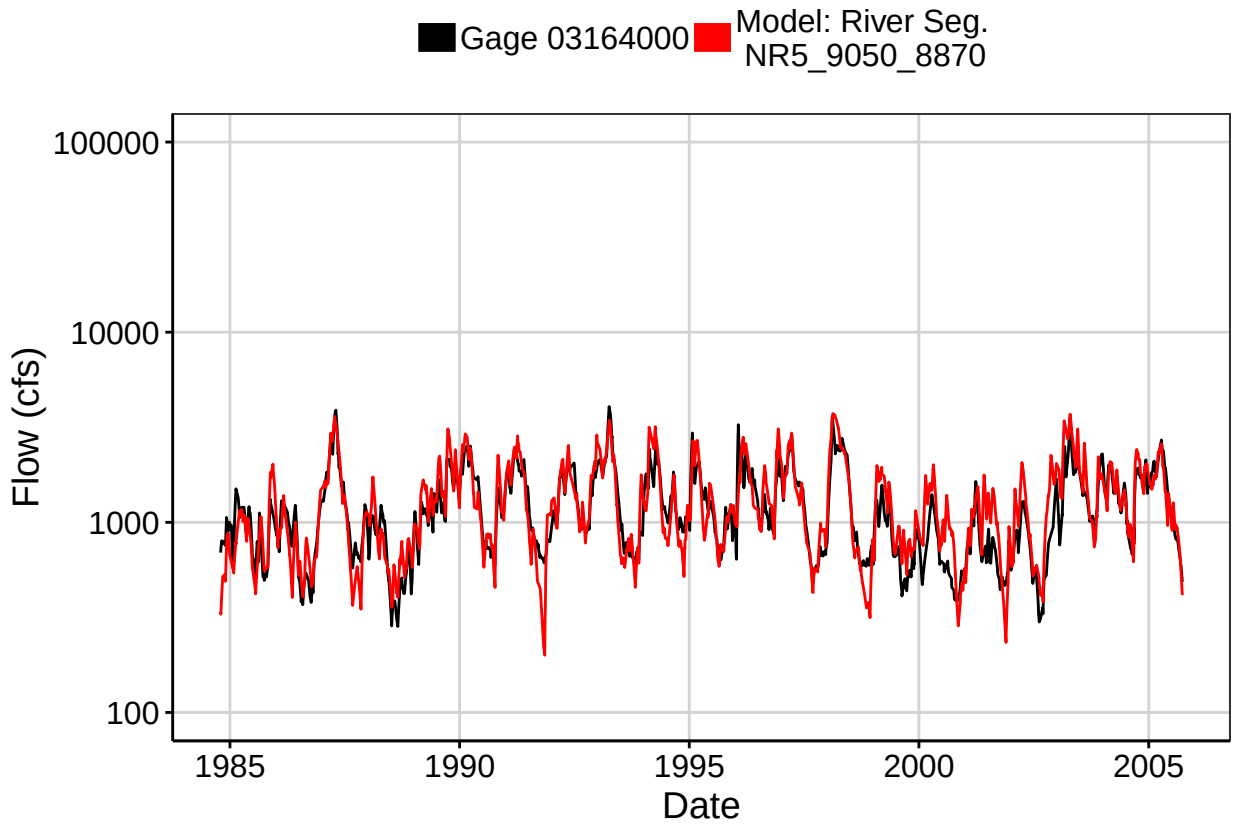


Fig. 5: Combined Baseflow

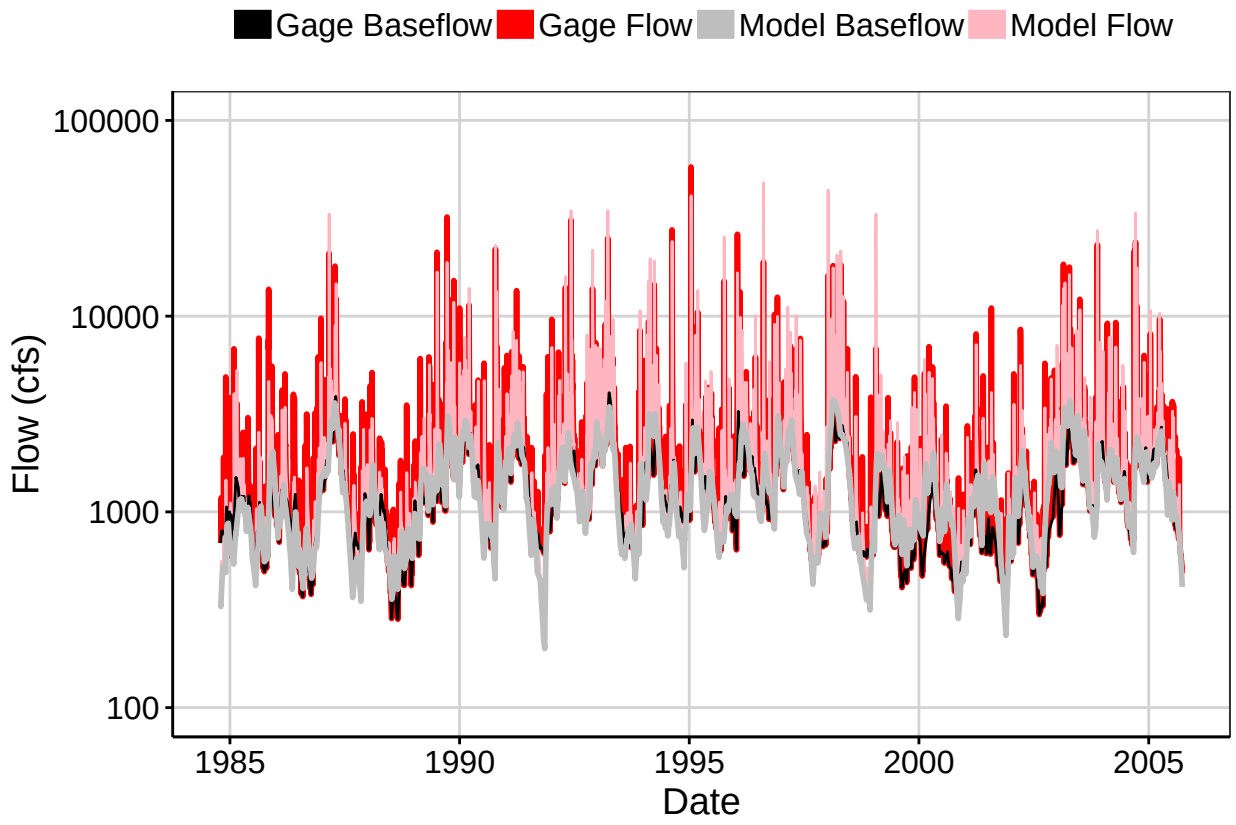


Fig. 6: Largest Error Segment

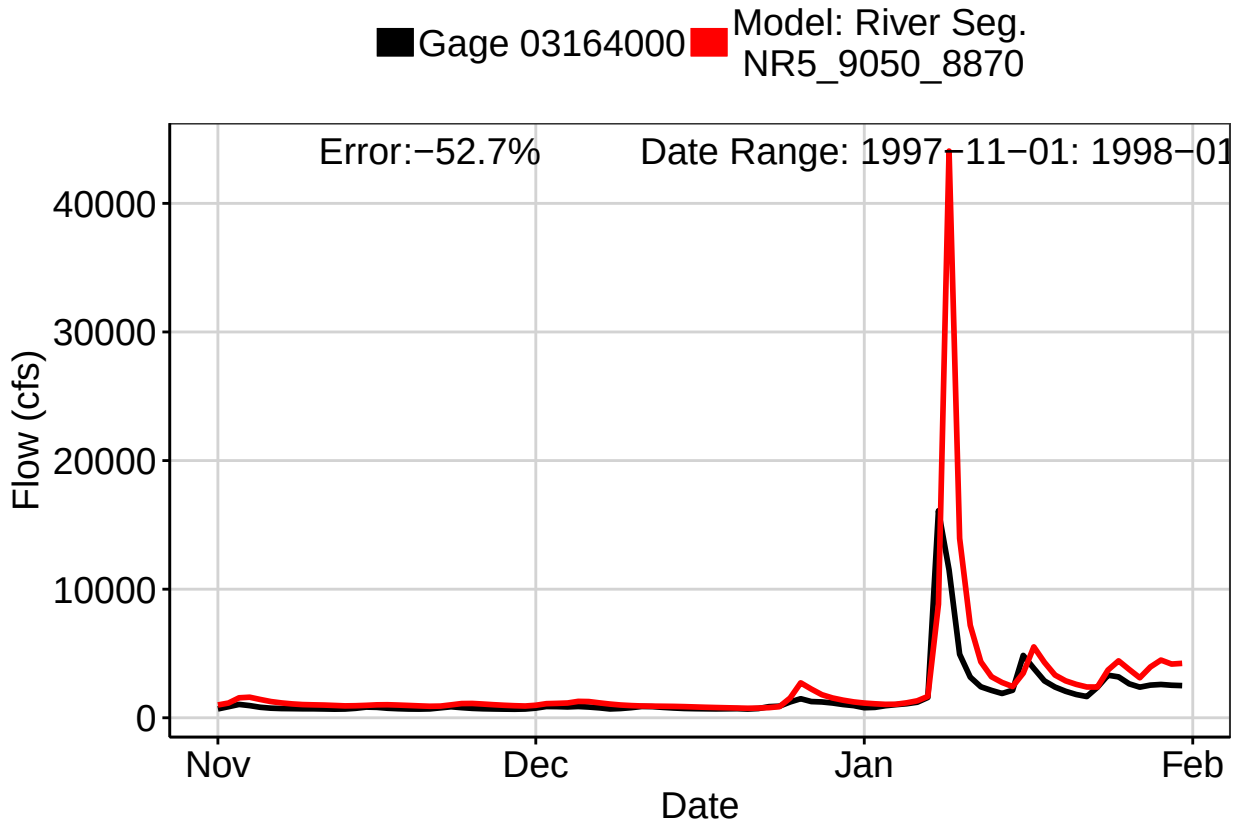


Fig. 7: Second Largest Error Segment

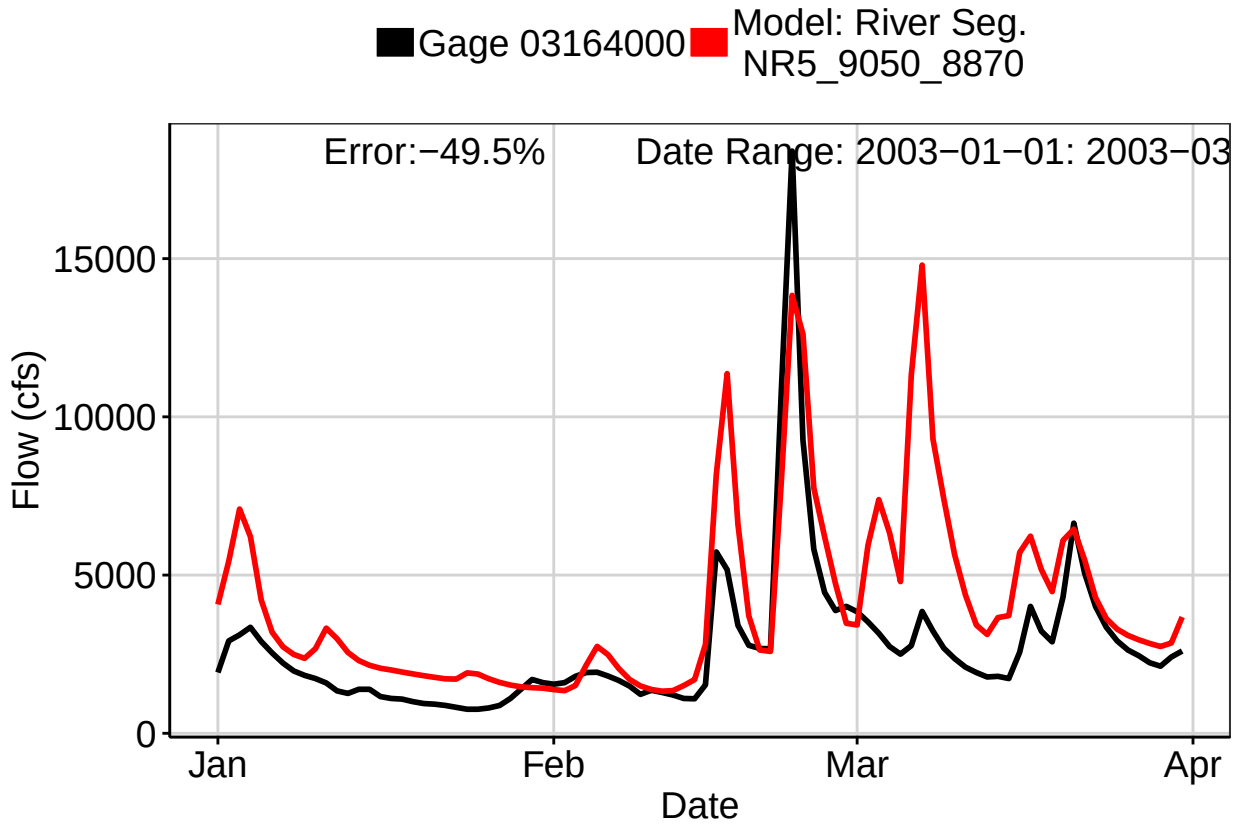


Fig. 8: Third Largest Error Segment

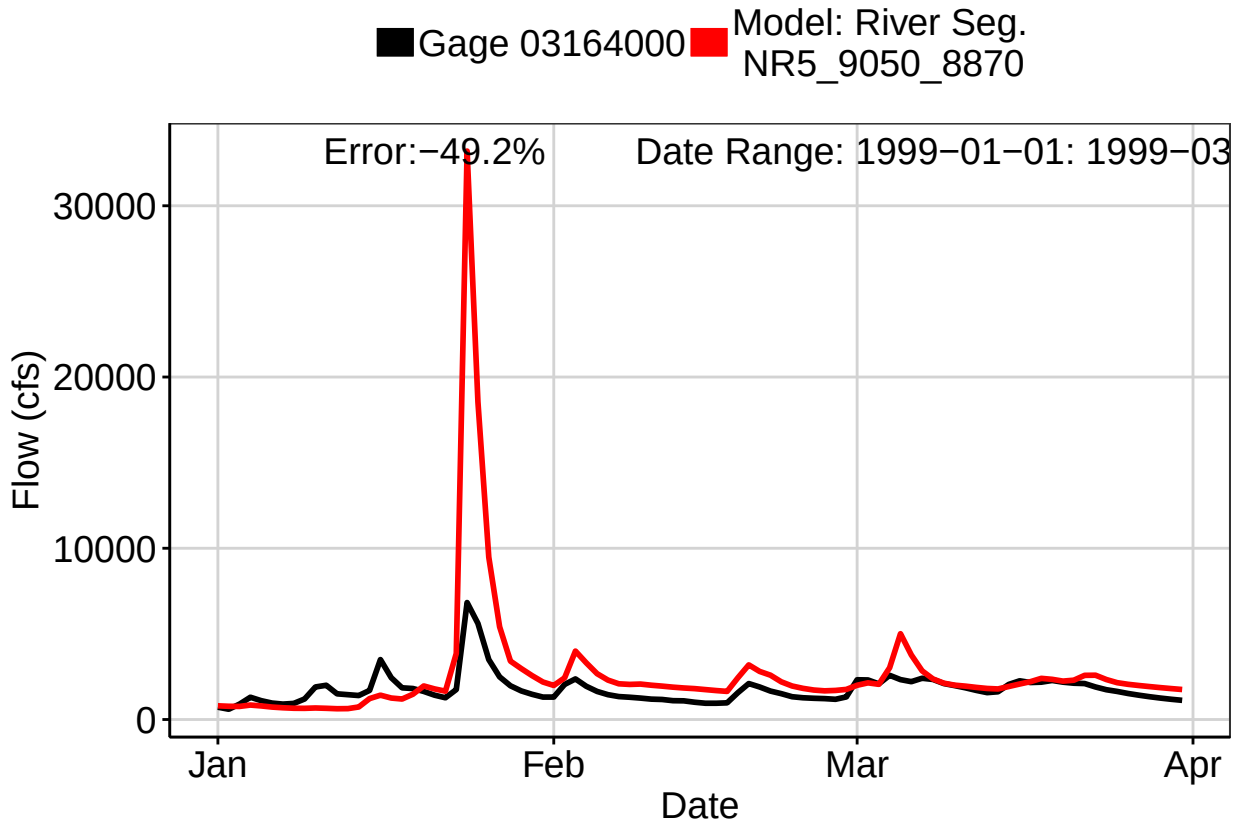


Fig. 9: Residuals Plot