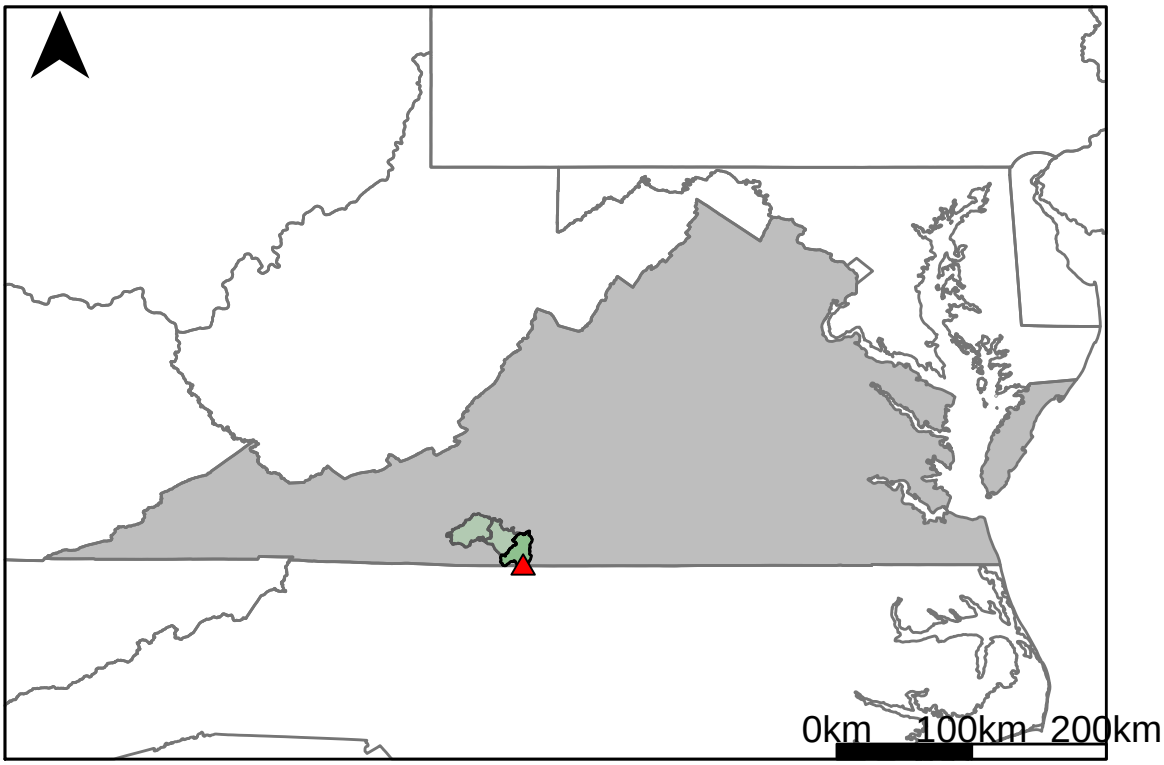
02074000 vs. OD3_8720_8900



This river segment follows part of the flow of the Smith River, a tributary of the Dan River. The gage is located in Rockingham County, NC (Lat 3631'32“, Long 7945'56”) approximately 13 miles southeast of Martinsville, VA. Drainage area is 538 sq. miles. This gage started taking data in 1939 and is still taking data. This area is regulated by the Philpott Reservoir as well as a power plant in Martinsville, VA. The average daily discharge error between the model and gage data for the 20 year timespan was 4.7%, with 48.8% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	196	104	46.9
Feb. Low Flow	200	155	22.5
Mar. Low Flow	214	247	-15.4
Apr. Low Flow	220	300	-36.4
May Low Flow	270	417	-54.4
Jun. Low Flow	242	428	-76.9
Jul. Low Flow	347	276	20.5
Aug. Low Flow	288	232	19.4
Sep. Low Flow	245	174	29
Oct. Low Flow	204	132	35.3
Nov. Low Flow	187	109	41.7
Dec. Low Flow	183	120	34.4

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	702	669	4.7
Jan. Mean Flow	761	758	0.39
Feb. Mean Flow	747	924	-23.7
Mar. Mean Flow	961	1180	-22.8
Apr. Mean Flow	935	985	-5.35
May Mean Flow	762	683	10.4
Jun. Mean Flow	745	604	18.9
Jul. Mean Flow	616	394	36
Aug. Mean Flow	583	398	31.7
Sep. Mean Flow	657	537	18.3
Oct. Mean Flow	522	471	9.77
Nov. Mean Flow	550	507	7.82
Dec. Mean Flow	590	603	-2.2

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	563	605	-7.46
Feb. High Flow	1110	1700	-53.2
Mar. High Flow	1330	1330	0
Apr. High Flow	1570	1660	-5.73
May High Flow	1720	1380	19.8
Jun. High Flow	2180	4240	-94.5
Jul. High Flow	1760	1800	-2.27
Aug. High Flow	1600	1380	13.8
Sep. High Flow	1440	807	44
Oct. High Flow	1440	610	57.6
Nov. High Flow	1020	444	56.5
Dec. High Flow	928	408	56

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	72.8	57.3	21.3
Med. 1 Day Min	124	81.6	34.2
Min. 3 Day Min	86	63.5	26.2
Med. 3 Day Min	181	92.7	48.8
Min. 7 Day Min	99.8	77.8	22
Med. 7 Day Min	259	129	50.2
Min. 30 Day Min	125	96	23.2
Med. 30 Day Min	306	151	50.7
Min. 90 Day Min	137	121	11.7
Med. 90 Day Min	375	211	43.7
7Q10	150	88.2	41.2
Year of 90-Day Min. Flow	2002	1986	100
Drought Year Mean	254	669	-163
Mean Baseflow	298	308	-3.36

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	15300	15900	-3.92
Med. 1 Day Max	6350	8000	-26
Max. 3 Day Max	8230	10200	-23.9
Med. 3 Day Max	4090	4620	-13
Max. 7 Day Max	5500	6030	-9.64
Med. 7 Day Max	2840	2910	-2.46
Max. 30 Day Max	3050	3330	-9.18
Med. 30 Day Max	1520	1570	-3.29
Max. 90 Day Max	2050	2220	-8.29
Med. 90 Day Max	1150	1120	2.61

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	115	80.8	29.7
5% Non-Exceedance	185	118	36.2
50% Non-Exceedance	496	413	16.7
95% Non-Exceedance	1770	1850	-4.52
99% Non-Exceedance	3980	4340	-9.05
Sept. 10% Non-Exceedance	124	128	-3.23

Fig. 1: Hydrograph

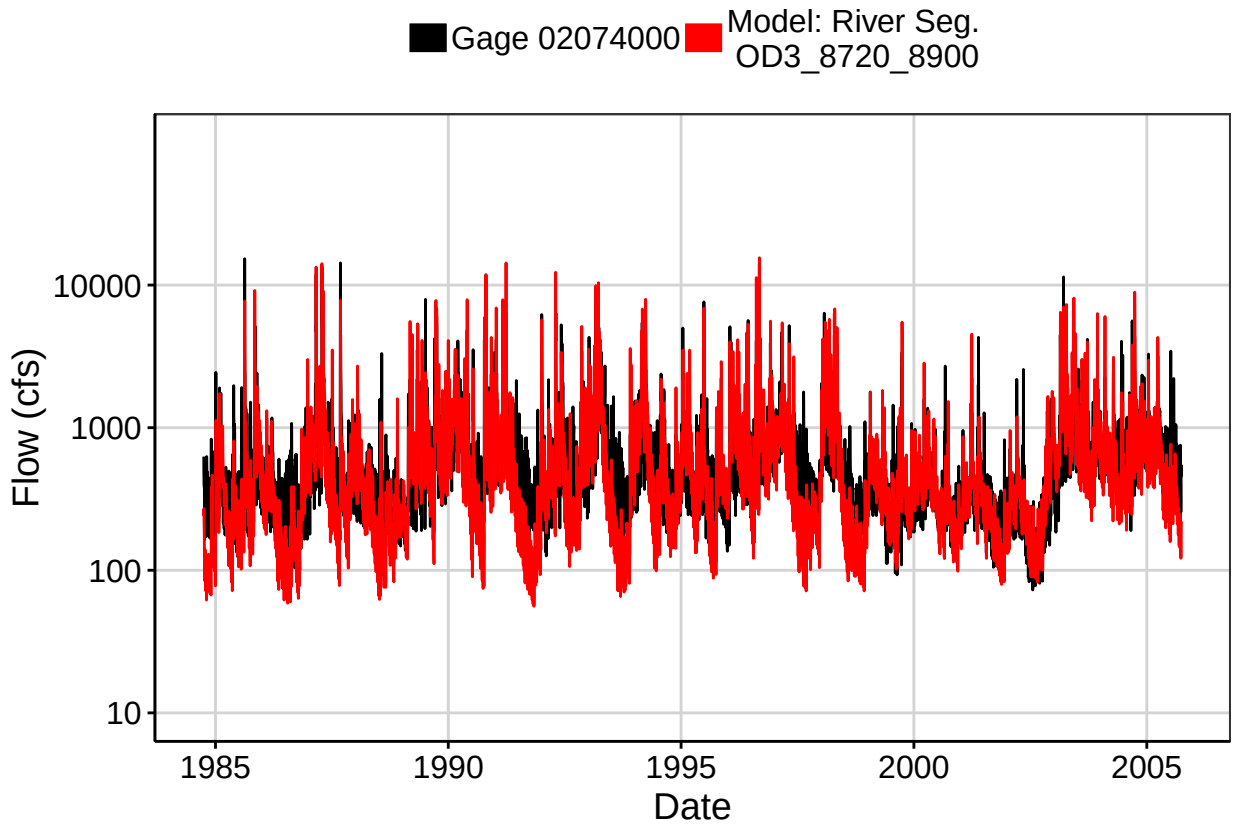


Fig. 2: Zoomed Hydrograph

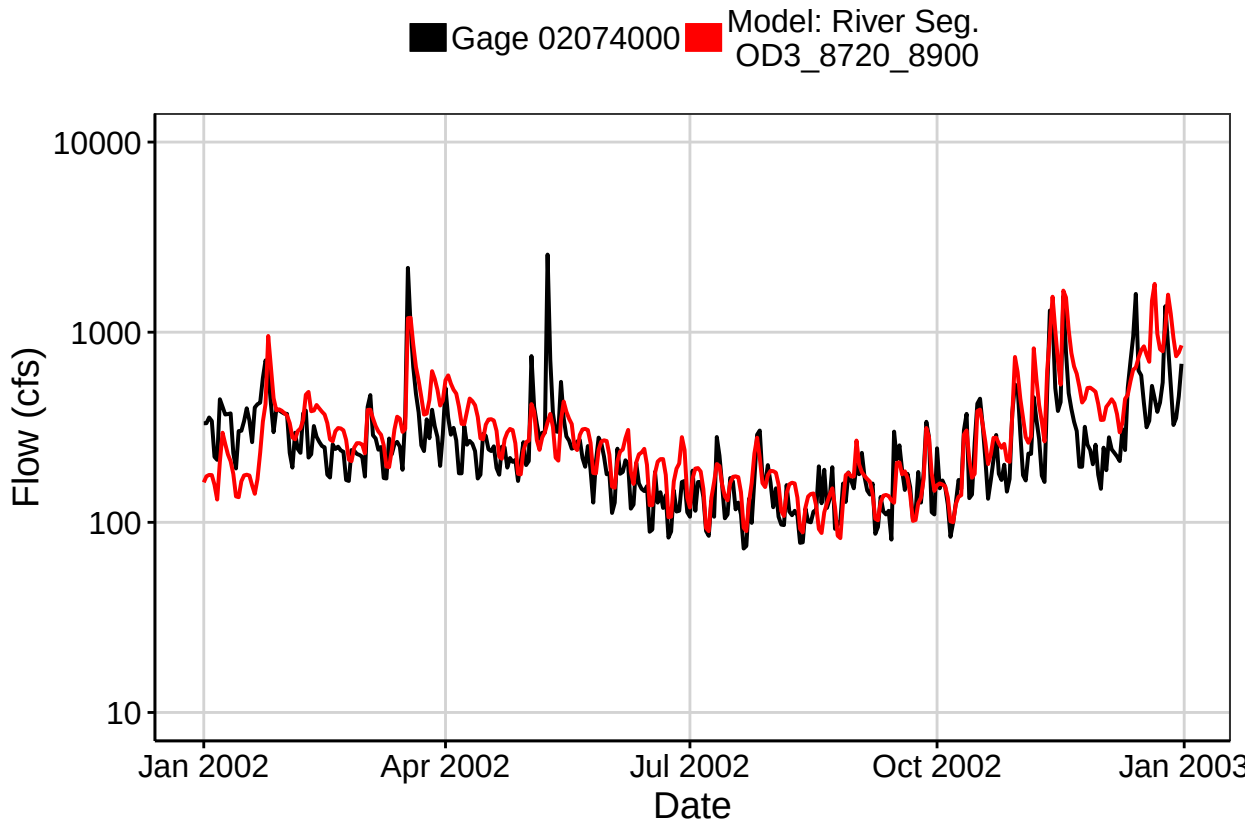


Fig. 3: Flow Exceedance

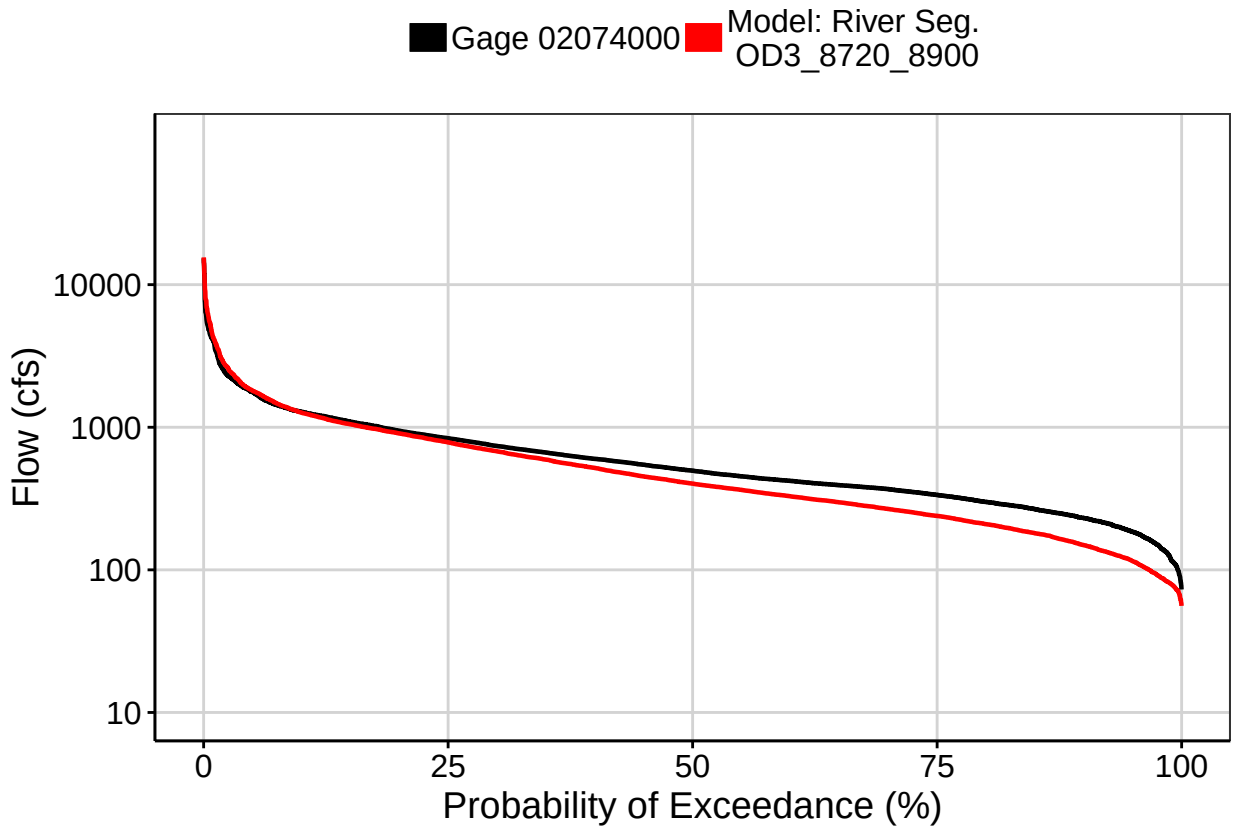


Fig. 4: Baseflow

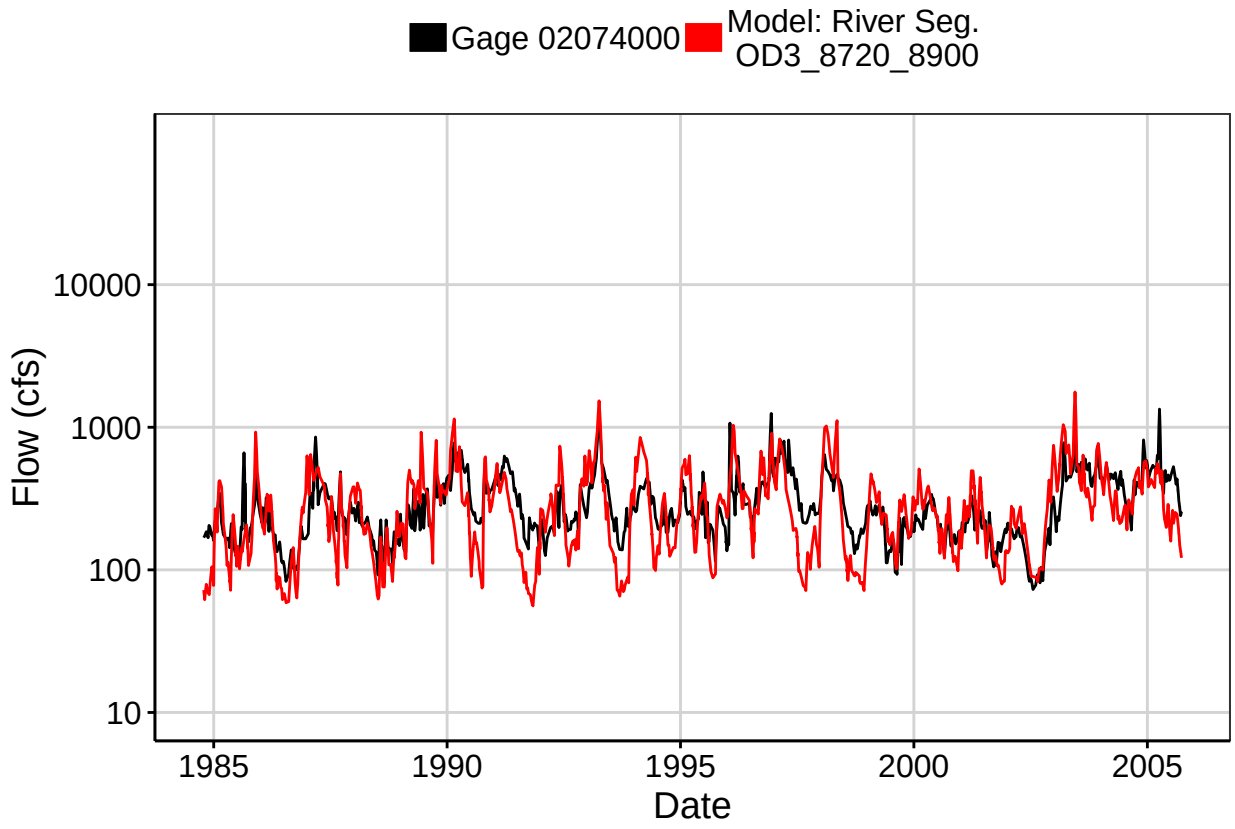


Fig. 5: Combined Baseflow

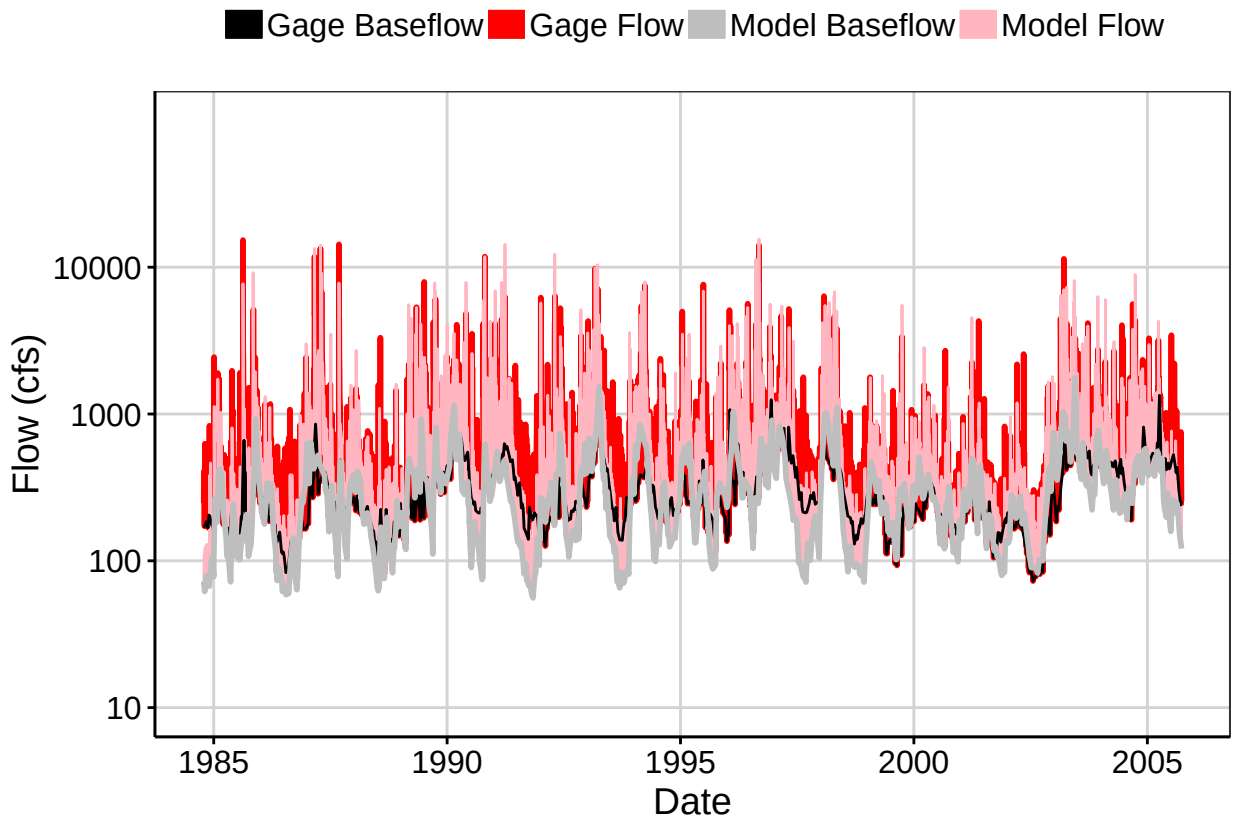


Fig. 6: Largest Error Segment

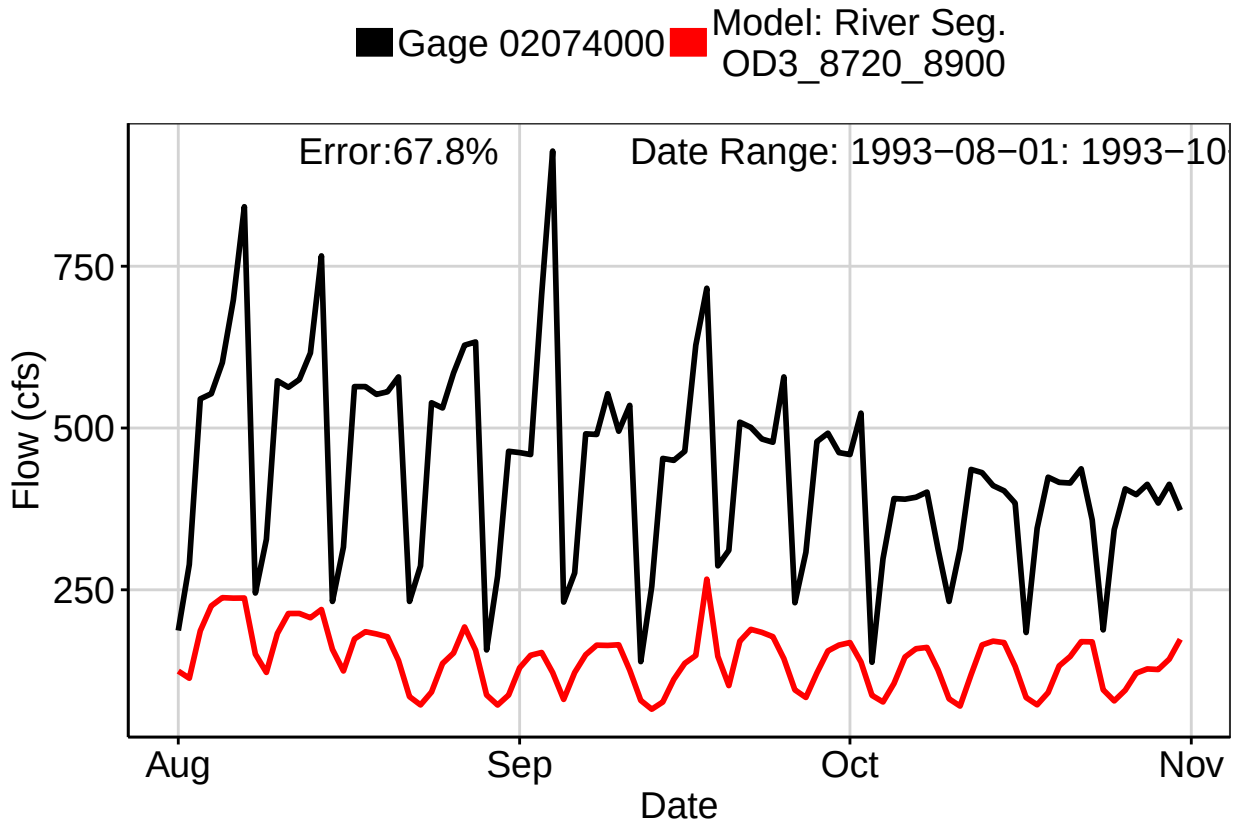


Fig. 7: Second Largest Error Segment

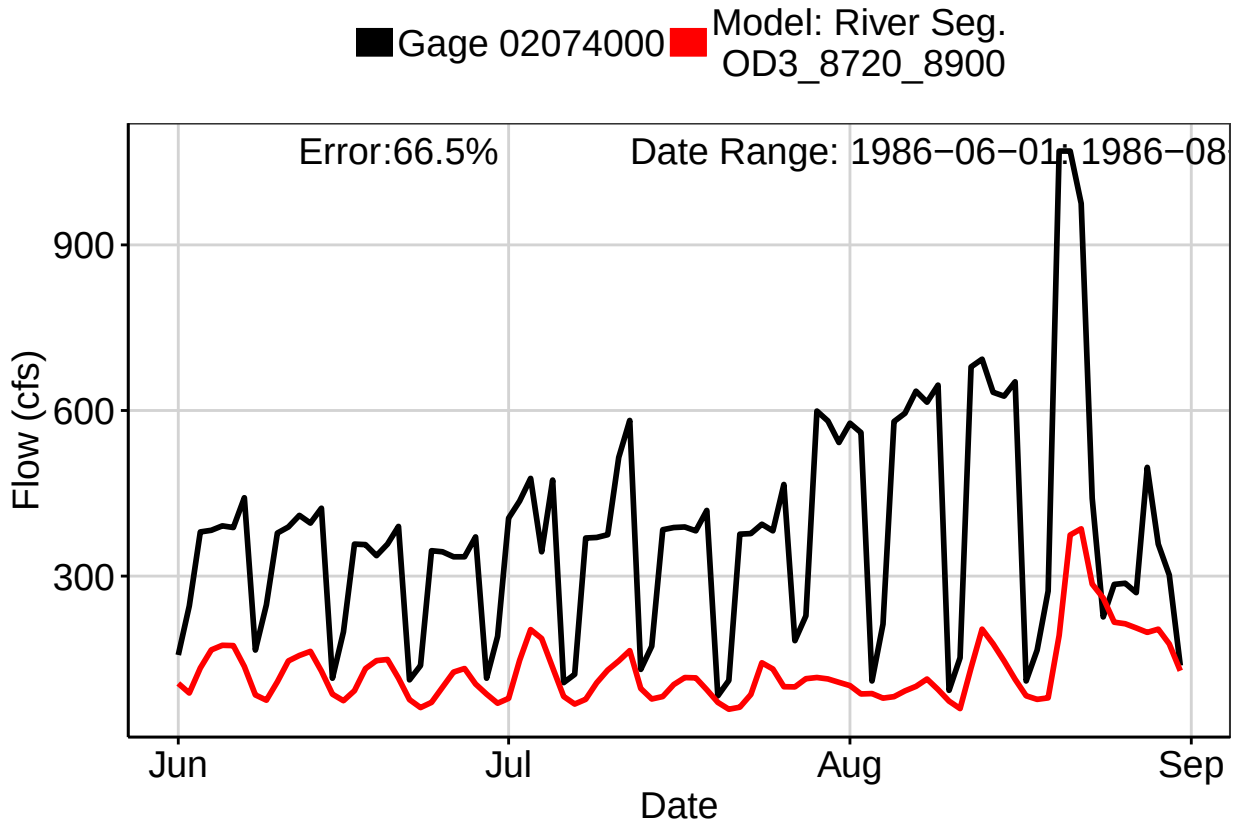


Fig. 8: Third Largest Error Segment

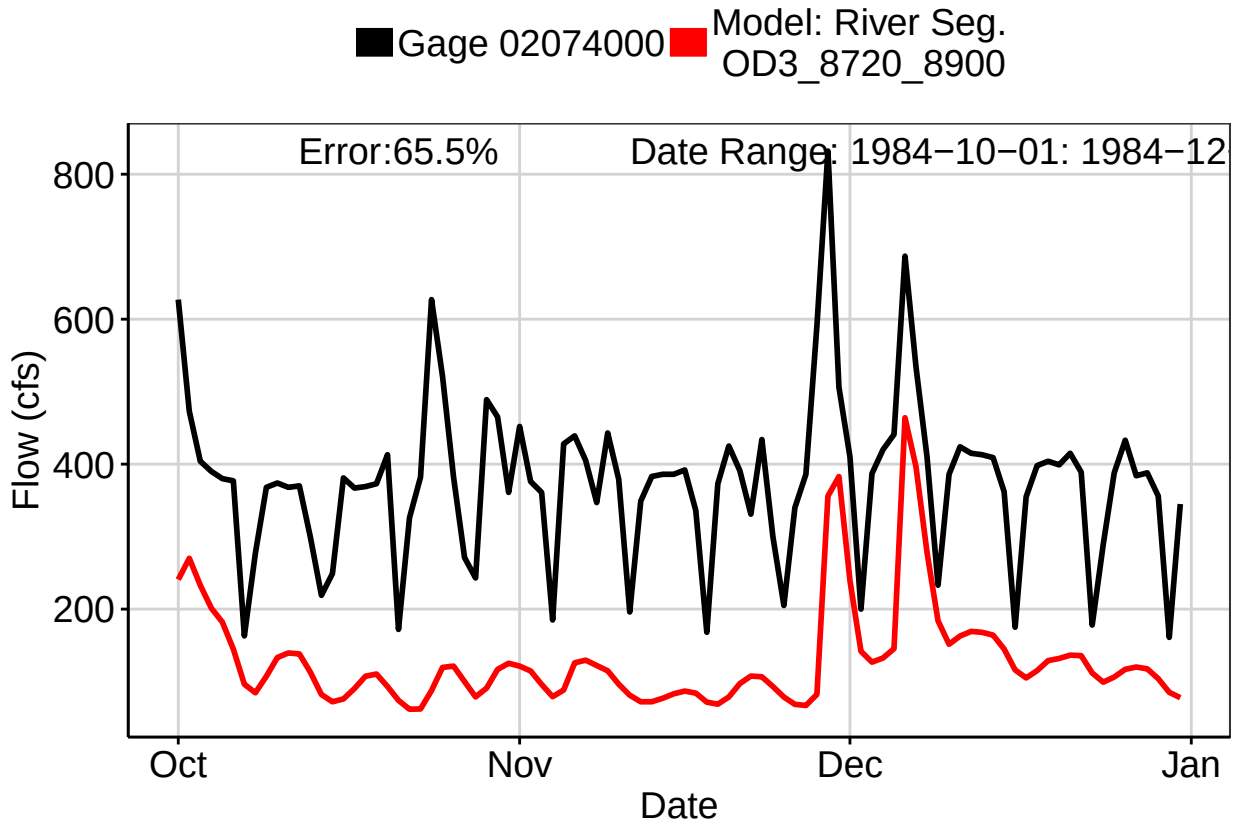


Fig. 9: Residuals Plot