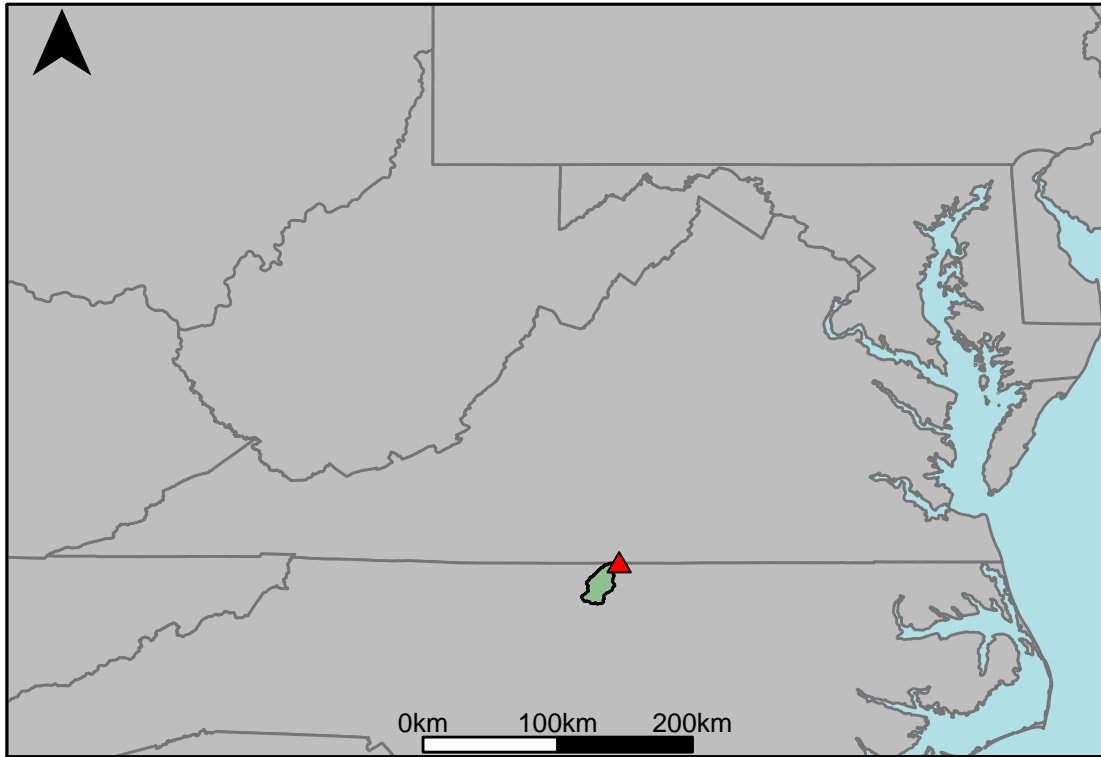


## Appendix C.11: USGS Gage 02077303 vs. OD2\_8920\_8830



This river segment follows part of the flow of the Hyco River, a tributary of the Dan River. The gage is located in Person County, NC (Lat 36°31'21", Long 78°58'51") approximately 24 miles southeast of Danville, VA. Drainage area is 202 sq. miles. This gage started taking data in 1973 and is still taking data. It is regulated by the Afterbay Dam which is 200ft upstream of the gage. The cities of Roxboro and Oxford use the Dam in cases of emergency to supply their citizens with water. The average daily discharge error between the model and gage data for the 20 year timespan was -33.1%, with 67.9% of its rolling three month time spans above 20% error.

**Table 1: Monthly Low Flows**

	USGS Gage	Model	Pct. Error
Jan. Low Flow	16	14.9	-6.87
Feb. Low Flow	13	54.4	318
Mar. Low Flow	15	91.9	513
Apr. Low Flow	18	149	728
May Low Flow	57	223	291
Jun. Low Flow	54	182	237
Jul. Low Flow	20	174	770
Aug. Low Flow	16.5	12.9	-21.8
Sep. Low Flow	15	31.7	111
Oct. Low Flow	13	18.2	40
Nov. Low Flow	14	12.9	-7.86
Dec. Low Flow	14.4	12.9	-10.4

**Table 2: Monthly Average Flows**

	USGS Gage	Model	Pct. Error
Overall Mean Flow	148	197	33.1
Jan. Mean Flow	253	327	29.2
Feb. Mean Flow	271	332	22.5
Mar. Mean Flow	385	424	10.1
Apr. Mean Flow	231	336	45.5
May Mean Flow	106	113	6.6
Jun. Mean Flow	82.3	132	60.4
Jul. Mean Flow	45.1	73	61.9
Aug. Mean Flow	64.5	65.1	0.93
Sep. Mean Flow	89.9	151	68
Oct. Mean Flow	60.7	125	106
Nov. Mean Flow	75.6	120	58.7
Dec. Mean Flow	118	171	44.9

**Table 3: Monthly High Flows**

	USGS Gage	Model	Pct. Error
Jan. High Flow	25	95.6	282
Feb. High Flow	18	189	950
Mar. High Flow	355	255	-28.2
Apr. High Flow	983	494	-49.7
May High Flow	940	494	-47.4
Jun. High Flow	1490	709	-52.4
Jul. High Flow	1120	572	-48.9
Aug. High Flow	188	284	51.1
Sep. High Flow	35	90.3	158
Oct. High Flow	36	58.1	61.4
Nov. High Flow	36	33.9	-5.83
Dec. High Flow	26	63.2	143

**Table 4: Period Low Flows**

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	0.27	12.9	4680
Med. 1 Day Min	8.8	12.9	46.6
Min. 3 Day Min	0.33	12.9	3770
Med. 3 Day Min	8.8	12.9	46.6
Min. 7 Day Min	0.45	12.9	2790
Med. 7 Day Min	9.03	12.9	42.9
Min. 30 Day Min	0.8	12.9	1510
Med. 30 Day Min	13.5	12.9	-4.44
Min. 90 Day Min	4.12	12.9	213
Med. 90 Day Min	17.1	23.9	39.8
7Q10	1.77	13.2	646
Year of 90-Day Min. Flow	2002	1985	100
Drought Year Mean	5.11	47.4	828
Mean Baseflow	40	118	195

**Table 5: Period High Flows**

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	7000	11000	57.1
Med. 1 Day Max	3280	1580	-51.8
Max. 3 Day Max	4570	6080	33
Med. 3 Day Max	2500	1290	-48.4
Max. 7 Day Max	2650	3610	36.2
Med. 7 Day Max	1540	1080	-29.9
Max. 30 Day Max	1250	1290	3.2
Med. 30 Day Max	578	499	-13.7
Max. 90 Day Max	772	823	6.61
Med. 90 Day Max	274	368	34.3

**Table 6: Non-Exceedance Flows**

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	1.99	12.9	548
5% Non-Exceedance	4.21	12.9	206
50% Non-Exceedance	23	117	409
95% Non-Exceedance	697	667	-4.3
99% Non-Exceedance	2000	1360	-32
Sept. 10% Non-Exceedance	12.9	6.49	-49.7

**Fig. 1: Hydrograph**

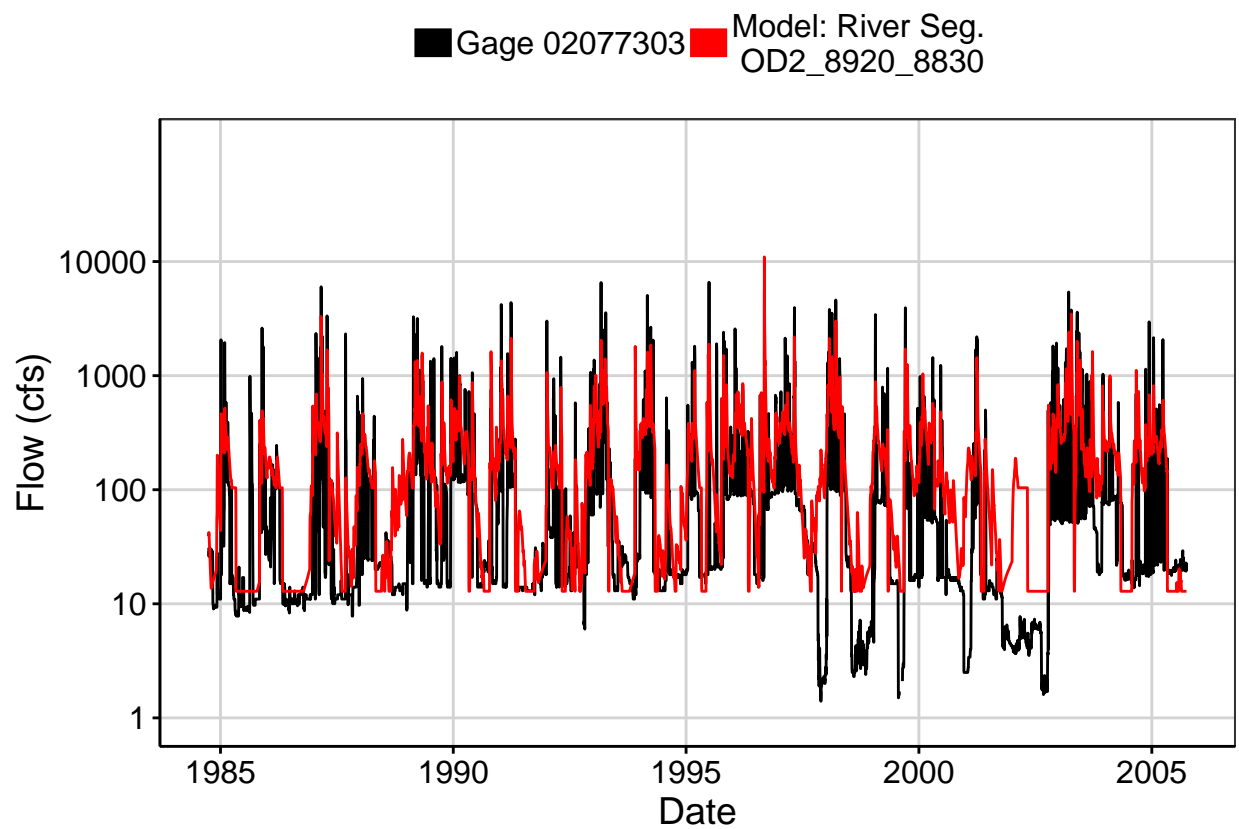


Fig. 2: Zoomed Hydrograph

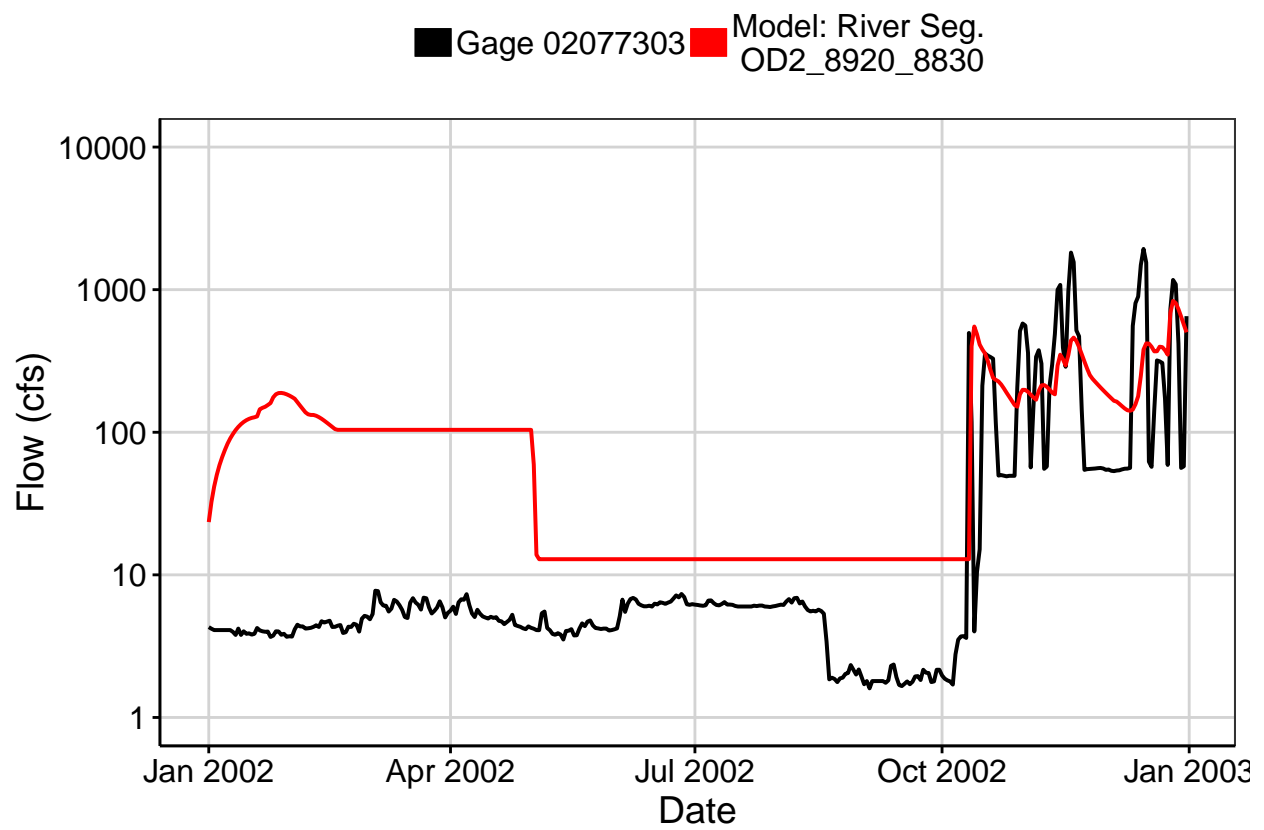


Fig. 3: Flow Exceedance

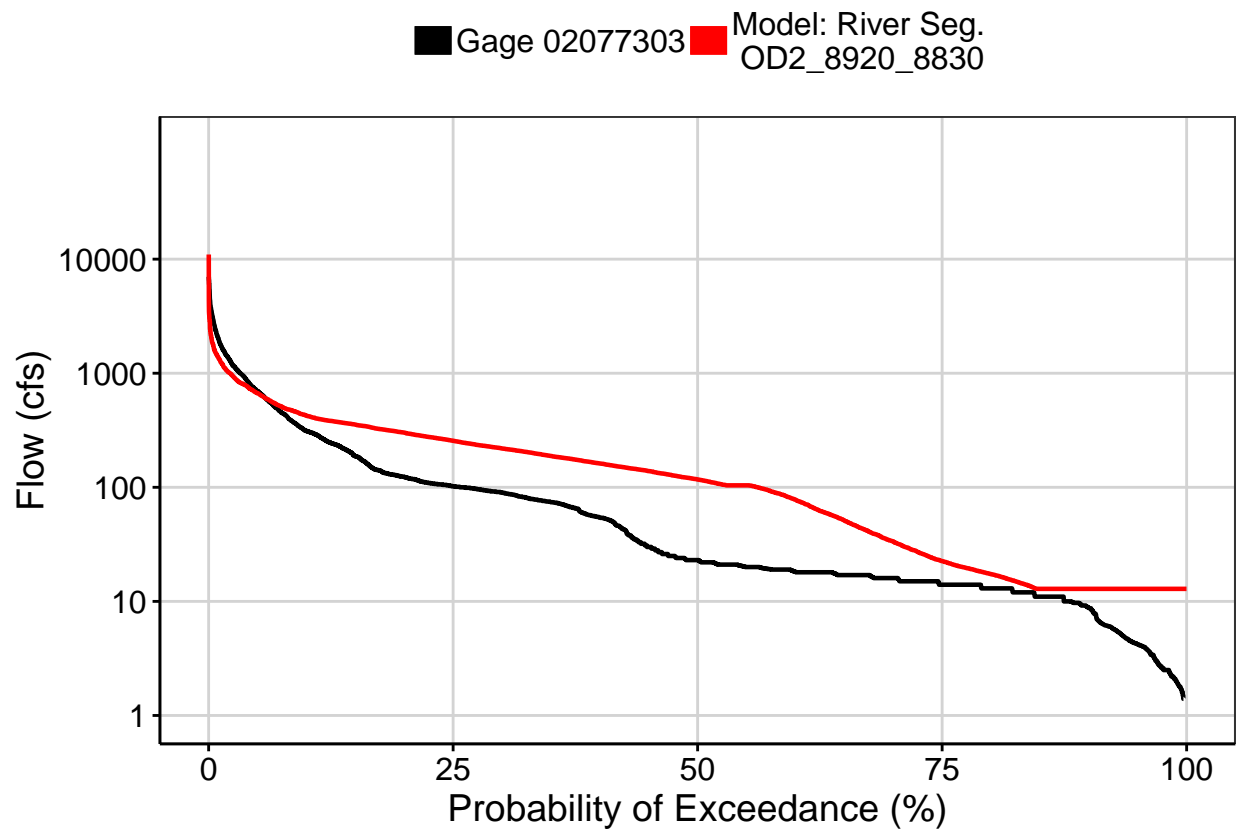


Fig. 4: Baseflow

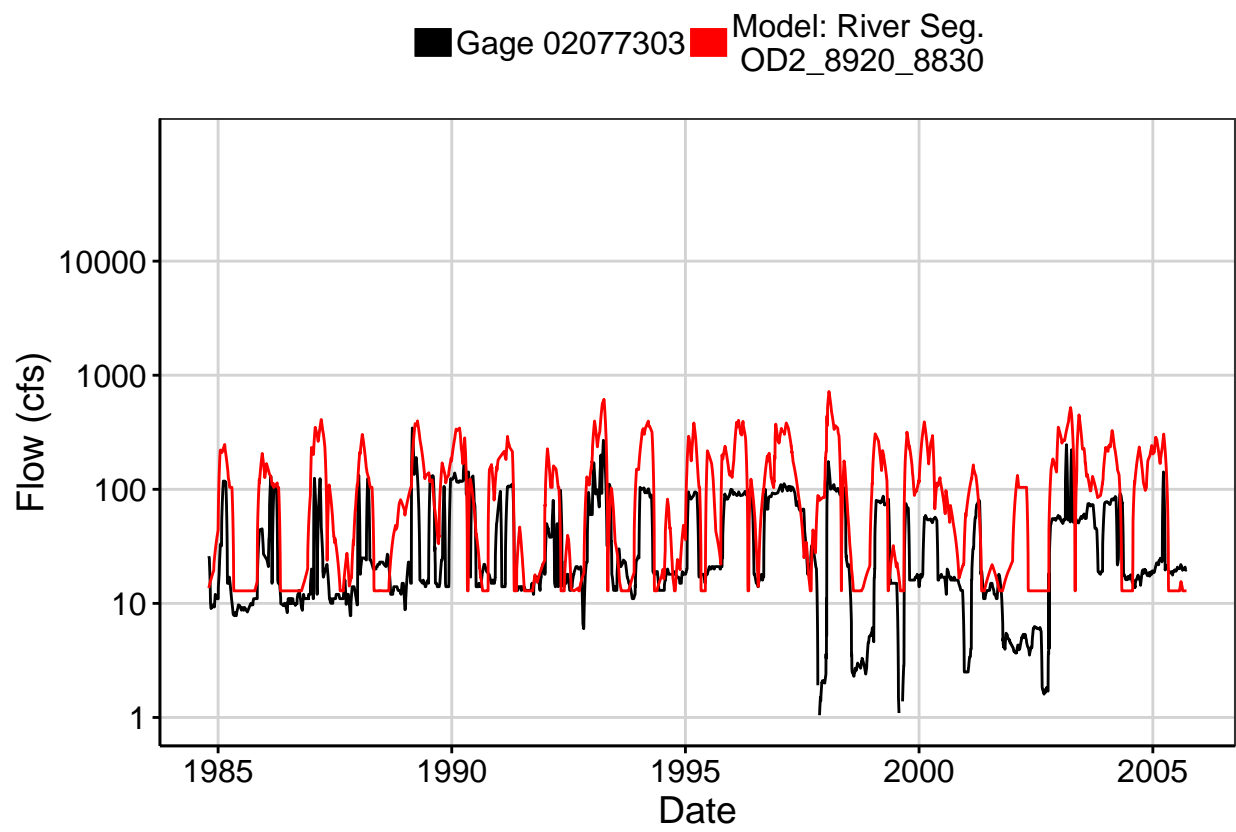


Fig. 5: Combined Baseflow

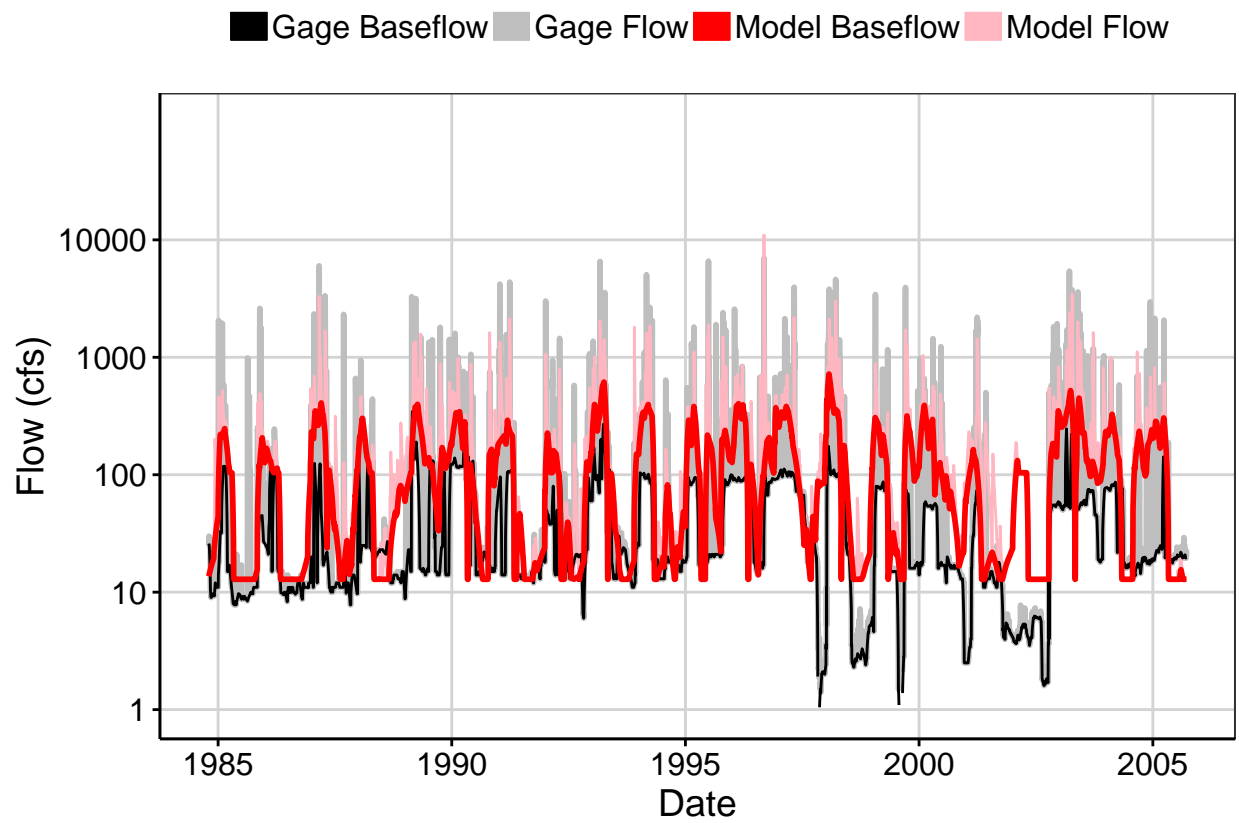




Fig. 6: Largest Error Segment

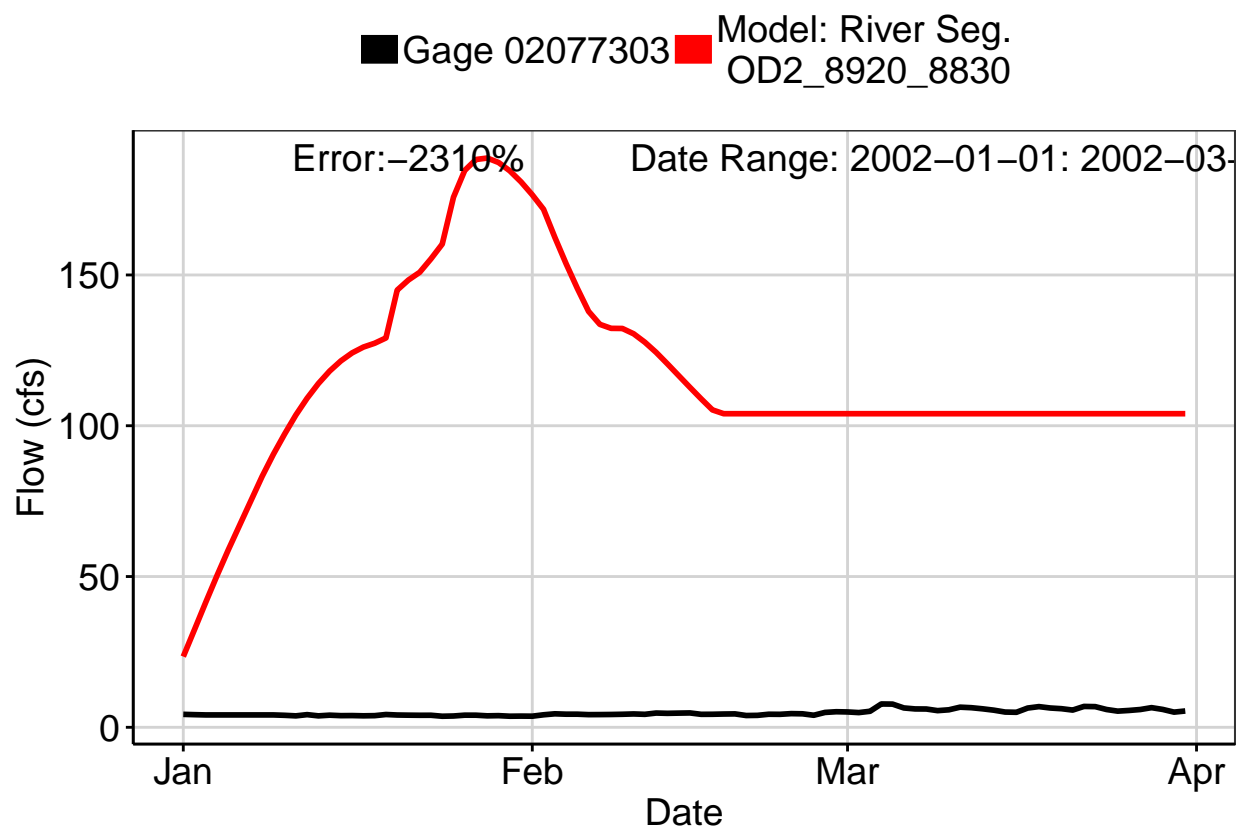


Fig. 7: Second Largest Error Segment

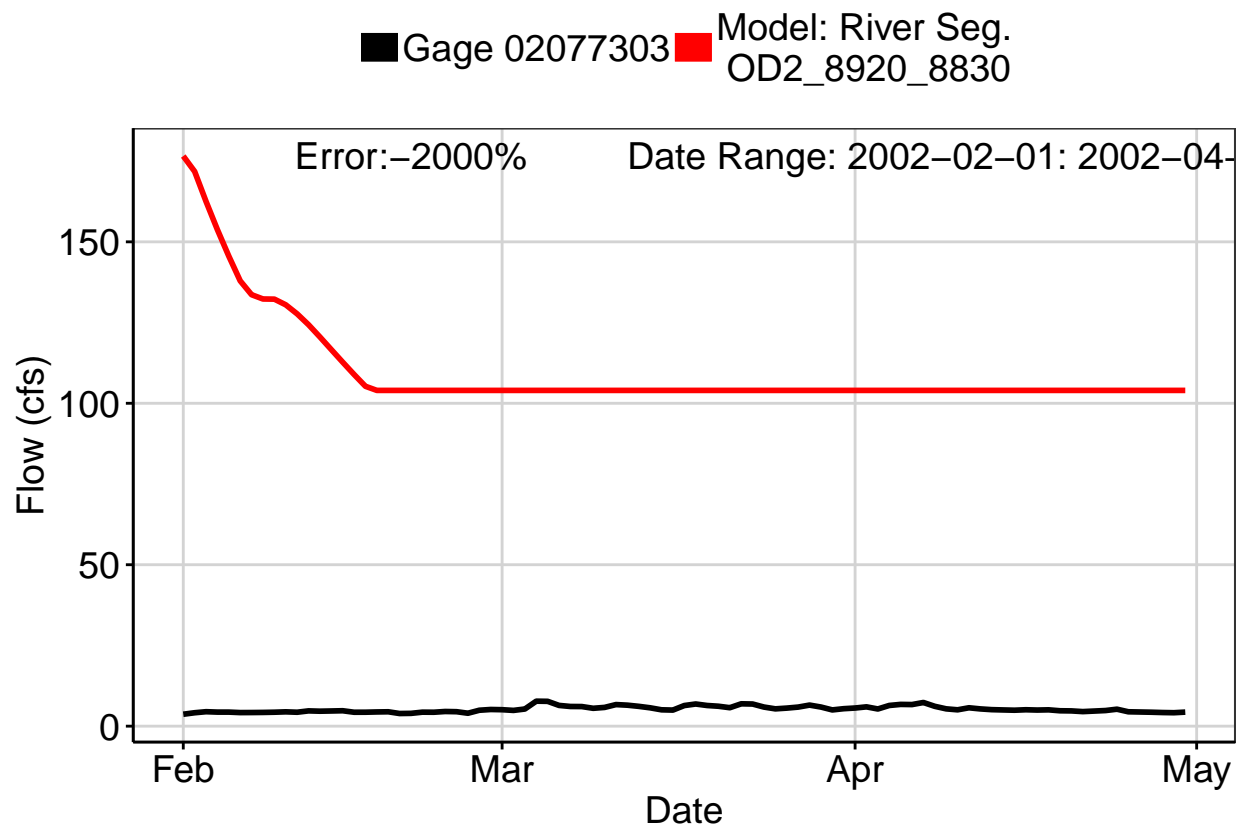


Fig. 8: Third Largest Error Segment

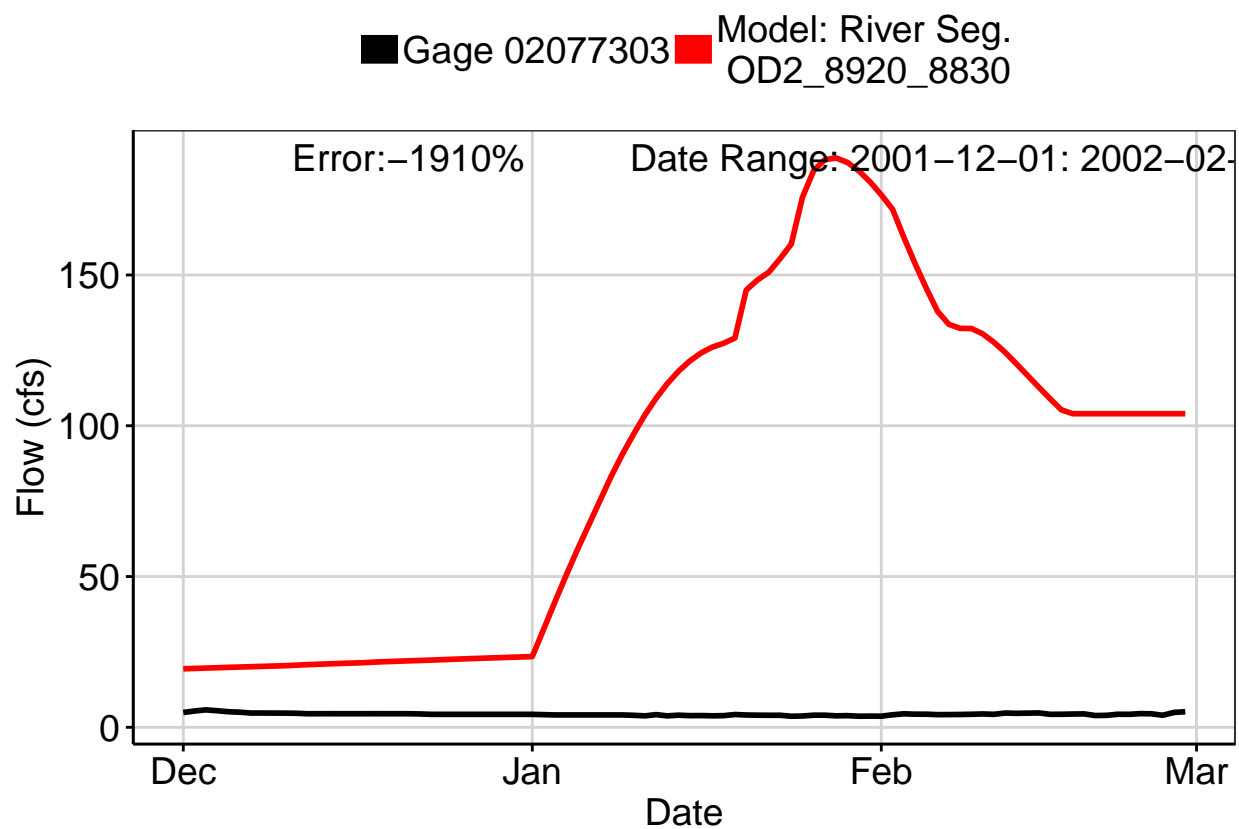


Fig. 9: Residuals Plot

