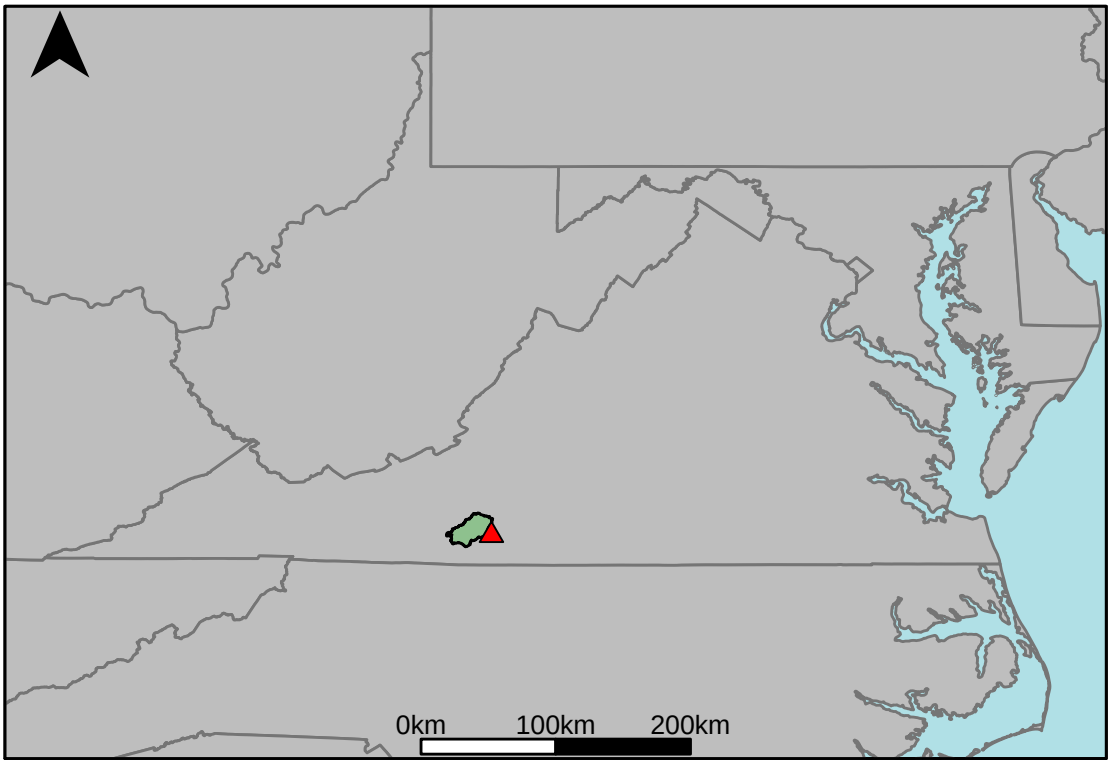
Appendix C.5: USGS Gage 02072000 vs. OD2_8560_8630



This river segment follows part of the flow of the Smith River, a tributary of the Dan River. The gage is located in Franklin County, VA (Lat 3646'50", Long 8001'30") approximately 10 miles northwest of Martinsville, VA. Drainage area is 215 sq. miles. This gage started taking data in 1946 and is still taking data. The Philpott Dam and Reservoir is located 900 ft upstream. The average daily discharge error between the model and gage data for the 20 year timespan was -5.71%, with 38.8% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	50	47.5	-5
Feb. Low Flow	51	47.6	-6.67
Mar. Low Flow	50	47.6	-4.8
Apr. Low Flow	49	49.2	0.41
May Low Flow	51	51.4	0.78
Jun. Low Flow	49	51.8	5.71
Jul. Low Flow	50	49.8	-0.4
Aug. Low Flow	50	50	0
Sep. Low Flow	50	49.6	-0.8
Oct. Low Flow	51	49.3	-3.33
Nov. Low Flow	50	47.9	-4.2
Dec. Low Flow	49	47.5	-3.06

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	280	296	5.71
Jan. Mean Flow	292	266	-8.9
Feb. Mean Flow	270	330	22.2
Mar. Mean Flow	340	433	27.4
Apr. Mean Flow	391	445	13.8
May Mean Flow	301	339	12.6
Jun. Mean Flow	305	310	1.64
Jul. Mean Flow	259	243	-6.18
Aug. Mean Flow	273	227	-16.8
Sep. Mean Flow	269	238	-11.5
Oct. Mean Flow	216	245	13.4
Nov. Mean Flow	221	232	4.98
Dec. Mean Flow	228	246	7.89

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	248	214	-13.7
Feb. High Flow	238	221	-7.14
Mar. High Flow	263	267	1.52
Apr. High Flow	612	466	-23.9
May High Flow	468	529	13
Jun. High Flow	632	686	8.54
Jul. High Flow	673	685	1.78
Aug. High Flow	728	558	-23.4
Sep. High Flow	562	446	-20.6
Oct. High Flow	417	295	-29.3
Nov. High Flow	419	284	-32.2
Dec. High Flow	412	261	-36.7

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	38	45.1	18.7
Med. 1 Day Min	46	45.7	-0.65
Min. 3 Day Min	44	68	54.5
Med. 3 Day Min	62	84	35.5
Min. 7 Day Min	60.6	93.5	54.3
Med. 7 Day Min	93.3	129	38.3
Min. 30 Day Min	69.8	93.2	33.5
Med. 30 Day Min	128	126	-1.56
Min. 90 Day Min	72.5	101	39.3
Med. 90 Day Min	143	154	7.69
7Q10	67.7	102	50.7
Year of 90-Day Min. Flow	2003	1985	100
Drought Year Mean	409	459	12.2
Mean Baseflow	57.5	54.3	-5.57

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	5710	2620	-54.1
Med. 1 Day Max	1370	1300	-5.11
Max. 3 Day Max	4300	2010	-53.3
Med. 3 Day Max	1270	1130	-11
Max. 7 Day Max	2380	1650	-30.7
Med. 7 Day Max	1100	751	-31.7
Max. 30 Day Max	1200	1310	9.17
Med. 30 Day Max	628	563	-10.4
Max. 90 Day Max	839	907	8.1
Med. 90 Day Max	438	491	12.1

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	44	45.6	3.64
5% Non-Exceedance	47	48.3	2.77
50% Non-Exceedance	202	216	6.93
95% Non-Exceedance	760	741	-2.5
99% Non-Exceedance	1350	1310	-2.96
Sept. 10% Non-Exceedance	49.6	50	0.81

Fig. 1: Hydrograph

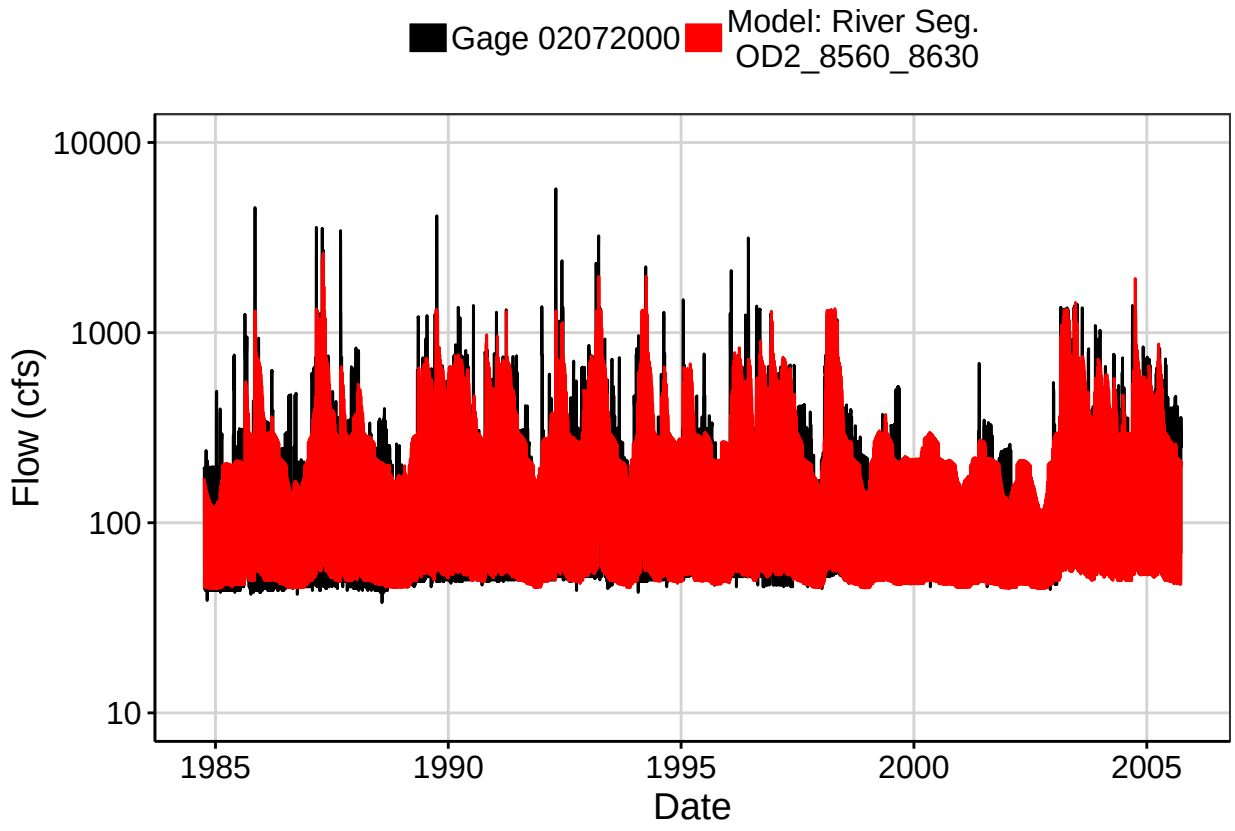


Fig. 2: Zoomed Hydrograph

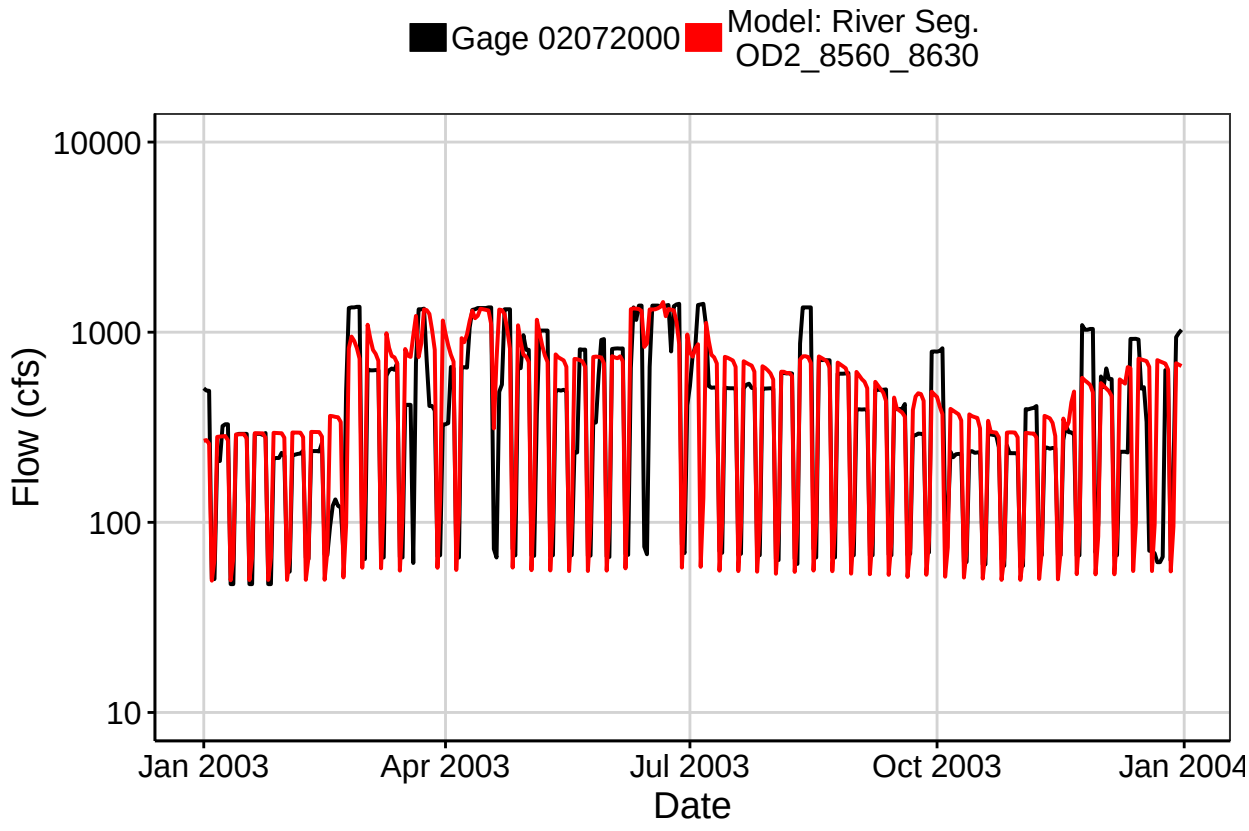


Fig. 3: Flow Exceedance

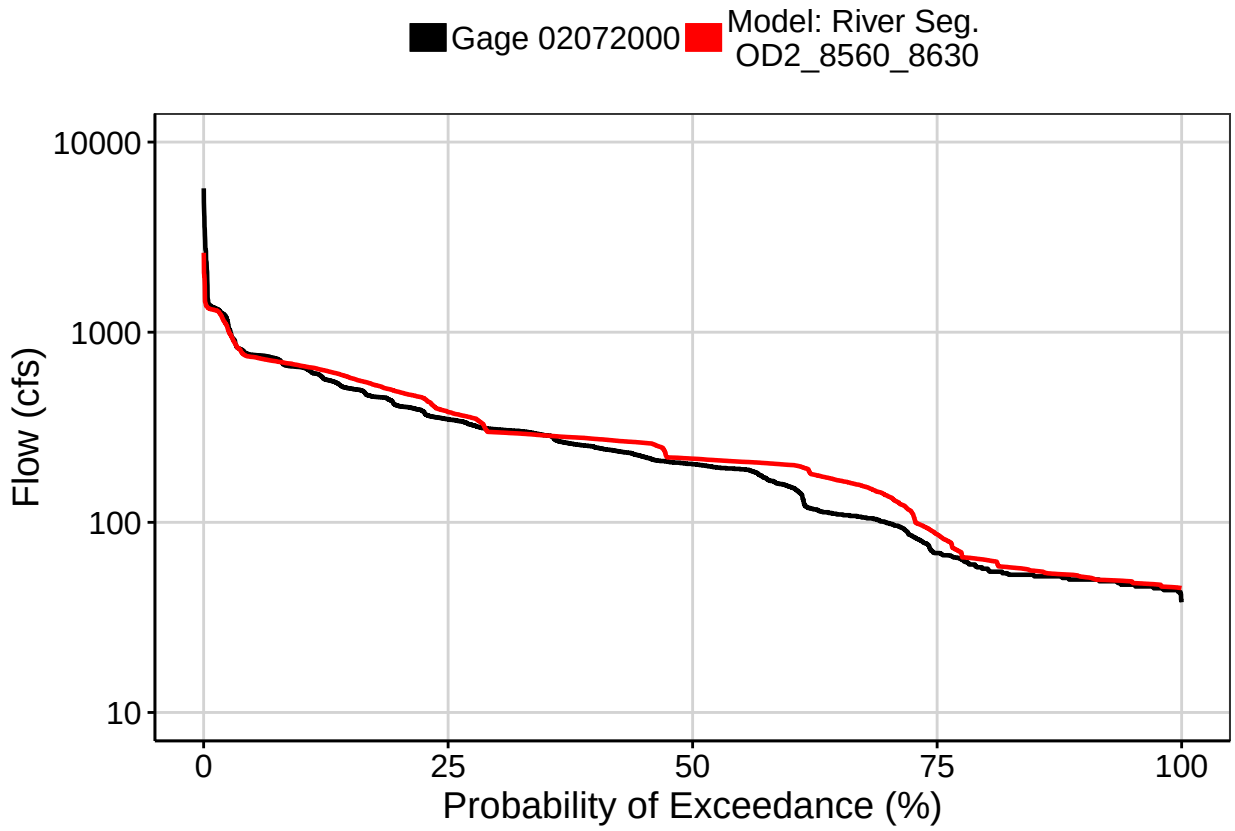


Fig. 4: Baseflow

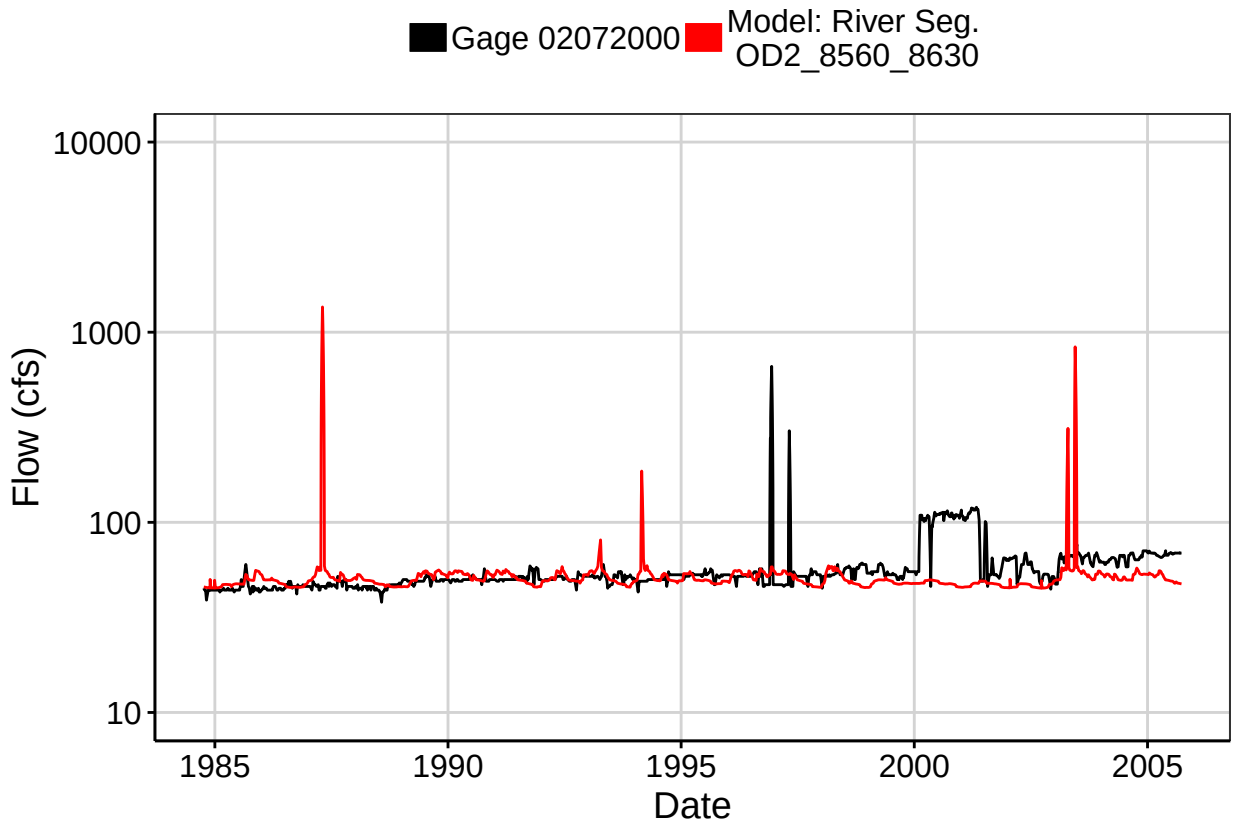


Fig. 5: Combined Baseflow

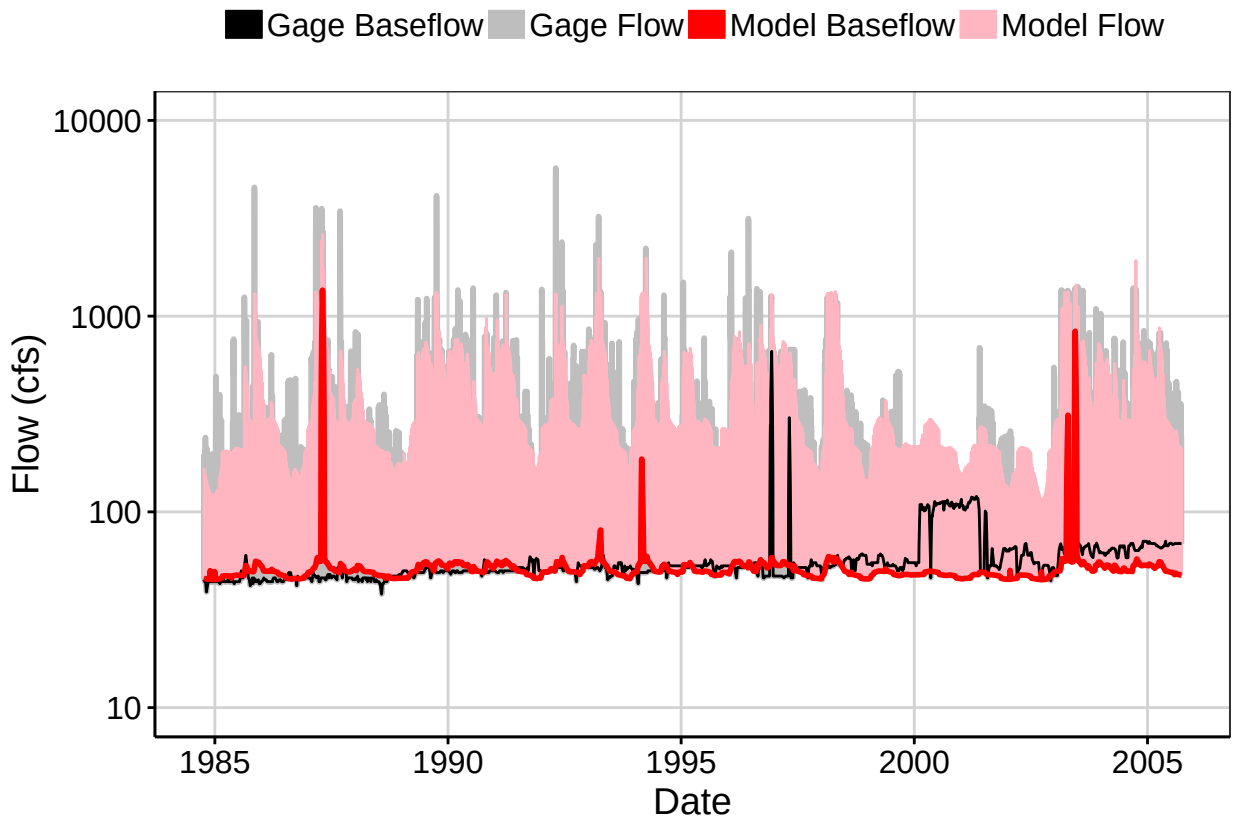


Fig. 6: Largest Error Segment

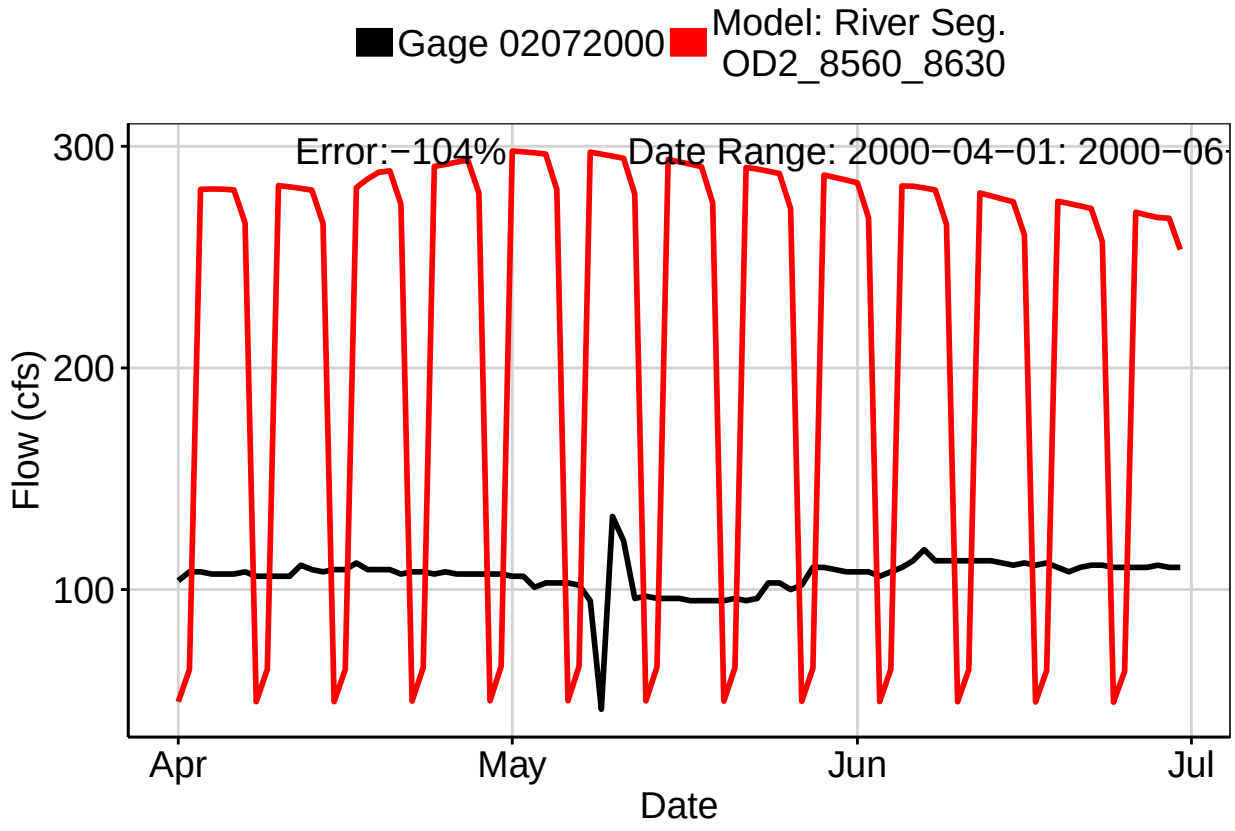


Fig. 7: Second Largest Error Segment

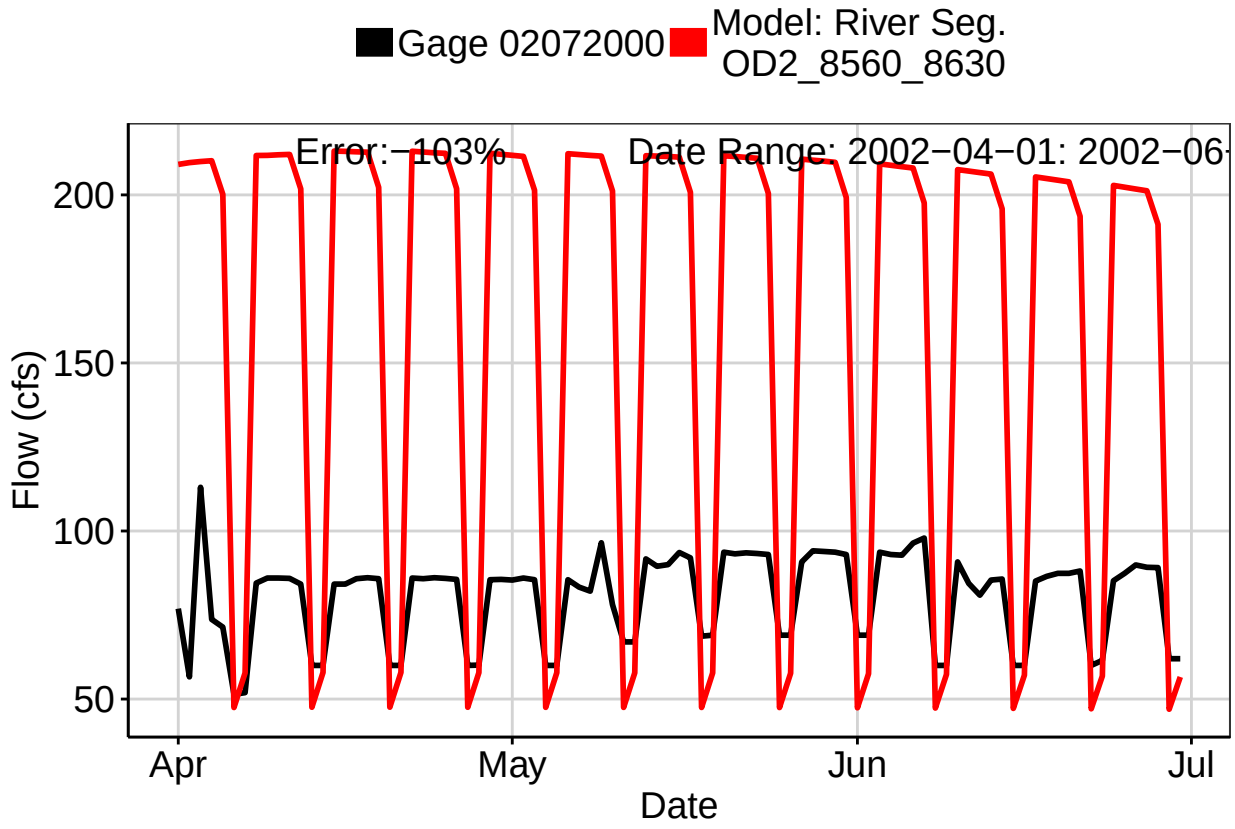


Fig. 8: Third Largest Error Segment

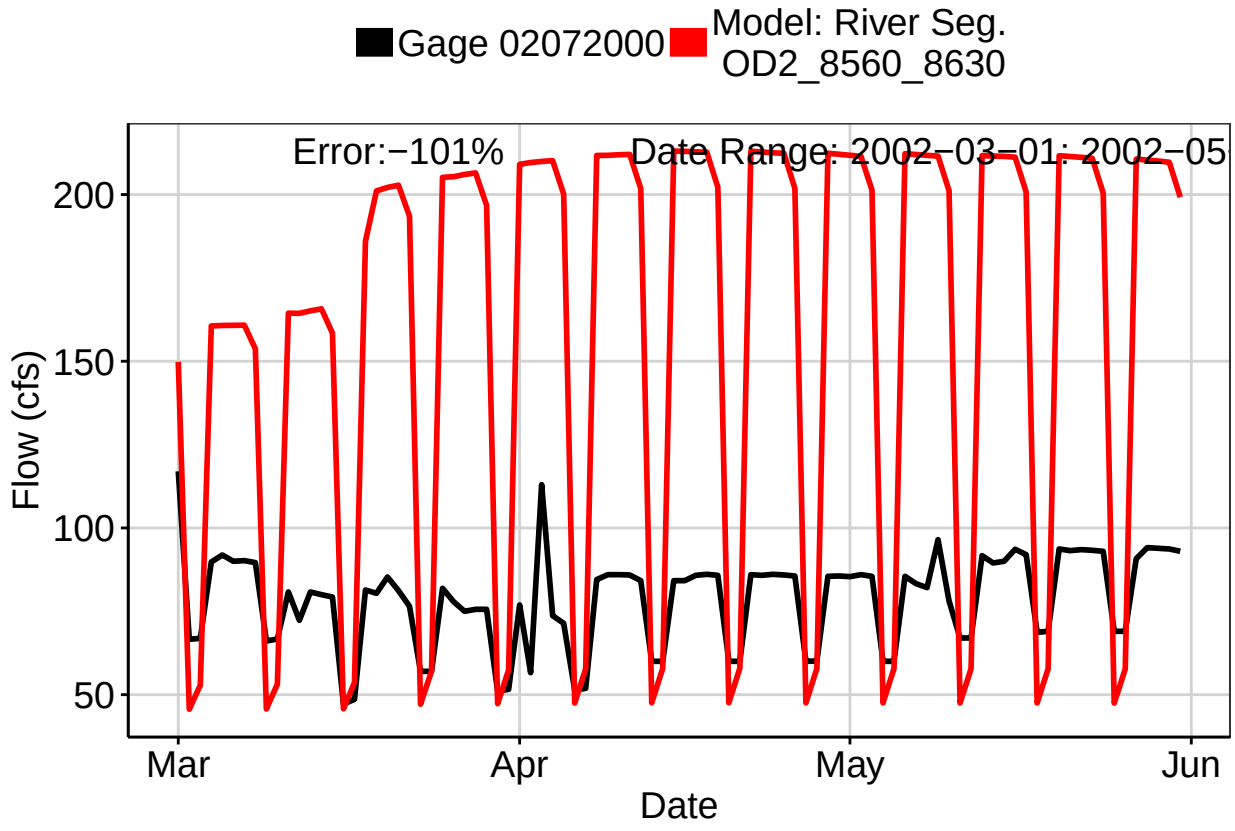


Fig. 9: Residuals Plot