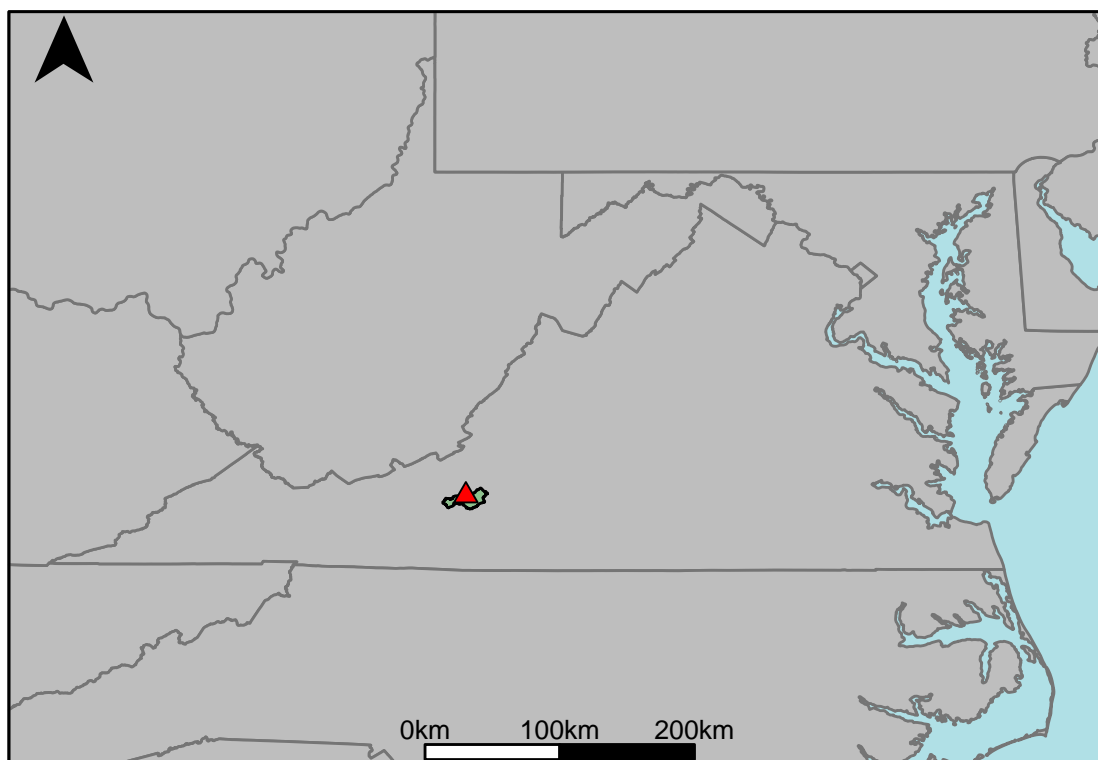


Appendix H: Roanoke River Gages

Appendix H.1: USGS Gage 02053800

vs. OR1_8280_8020



This river segment follows part of the flow of the South Fork of the Roanoke River. The gage is located in Montgomery County, VA (Lat 37°08'24", Long 80°16'00") approximately 17 miles east of Radford, VA. Drainage area is 109 sq. miles. This gage started taking data in 1960 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 3.36%, 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	29	22.6	-22.1
Feb. Low Flow	38	23.2	-38.9
Mar. Low Flow	44	51	15.9
Apr. Low Flow	45	54	20
May Low Flow	66	96.9	46.8
Jun. Low Flow	91	109	19.8
Jul. Low Flow	76	83.4	9.74
Aug. Low Flow	68	69.1	1.62
Sep. Low Flow	51	53.8	5.49
Oct. Low Flow	39	33.1	-15.1
Nov. Low Flow	31	25.4	-18.1
Dec. Low Flow	28	22.4	-20

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	119	115	-3.36
Jan. Mean Flow	141	141	0
Feb. Mean Flow	174	177	1.72
Mar. Mean Flow	205	207	0.98
Apr. Mean Flow	183	179	-2.19
May Mean Flow	136	131	-3.68
Jun. Mean Flow	107	112	4.67
Jul. Mean Flow	71.1	69.3	-2.53
Aug. Mean Flow	58.8	56	-4.76
Sep. Mean Flow	93.4	74.9	-19.8
Oct. Mean Flow	62.9	57.3	-8.9
Nov. Mean Flow	97.7	85.4	-12.6
Dec. Mean Flow	98.5	90.7	-7.92

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	101	60.8	-39.8
Feb. High Flow	222	208	-6.31
Mar. High Flow	239	120	-49.8
Apr. High Flow	378	473	25.1
May High Flow	338	324	-4.14
Jun. High Flow	631	712	12.8
Jul. High Flow	341	364	6.74
Aug. High Flow	301	282	-6.31
Sep. High Flow	172	191	11
Oct. High Flow	117	99.8	-14.7
Nov. High Flow	80	71.9	-10.1
Dec. High Flow	72	69.5	-3.47

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	6.95	3.96	-43
Med. 1 Day Min	22	14.1	-35.9
Min. 3 Day Min	7.19	3.98	-44.6
Med. 3 Day Min	22	14.4	-34.5
Min. 7 Day Min	7.52	4.1	-45.5
Med. 7 Day Min	23.3	15.1	-35.2
Min. 30 Day Min	12.2	5.47	-55.2
Med. 30 Day Min	29.9	20.2	-32.4
Min. 90 Day Min	15.6	14.6	-6.41
Med. 90 Day Min	42.4	32	-24.5
7Q10	13.3	7.81	-41.3
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	38.8	37.2	-4.12
Mean Baseflow	64.9	71.2	9.71

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	4270	4430	3.75
Med. 1 Day Max	1920	1430	-25.5
Max. 3 Day Max	2460	1900	-22.8
Med. 3 Day Max	1300	976	-24.9
Max. 7 Day Max	1340	1070	-20.1
Med. 7 Day Max	757	604	-20.2
Max. 30 Day Max	768	612	-20.3
Med. 30 Day Max	327	307	-6.12
Max. 90 Day Max	477	398	-16.6
Med. 90 Day Max	205	208	1.46

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	14.1	10	-29.1
5% Non-Exceedance	22	16.7	-24.1
50% Non-Exceedance	71	70.9	-0.14
95% Non-Exceedance	313	321	2.56
99% Non-Exceedance	847	808	-4.6
Sept. 10% Non-Exceedance	15.2	22	44.7

Fig. 1: Hydrograph

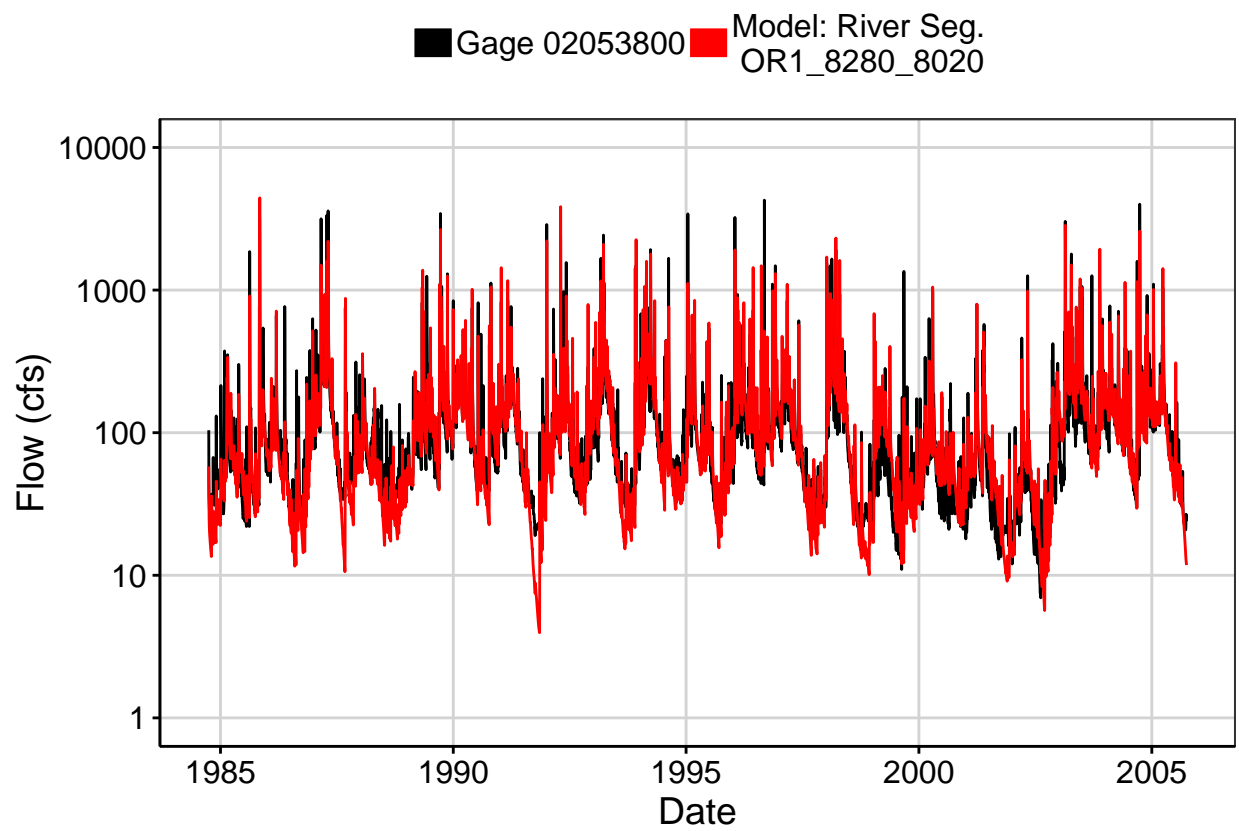


Fig. 2: Zoomed Hydrograph

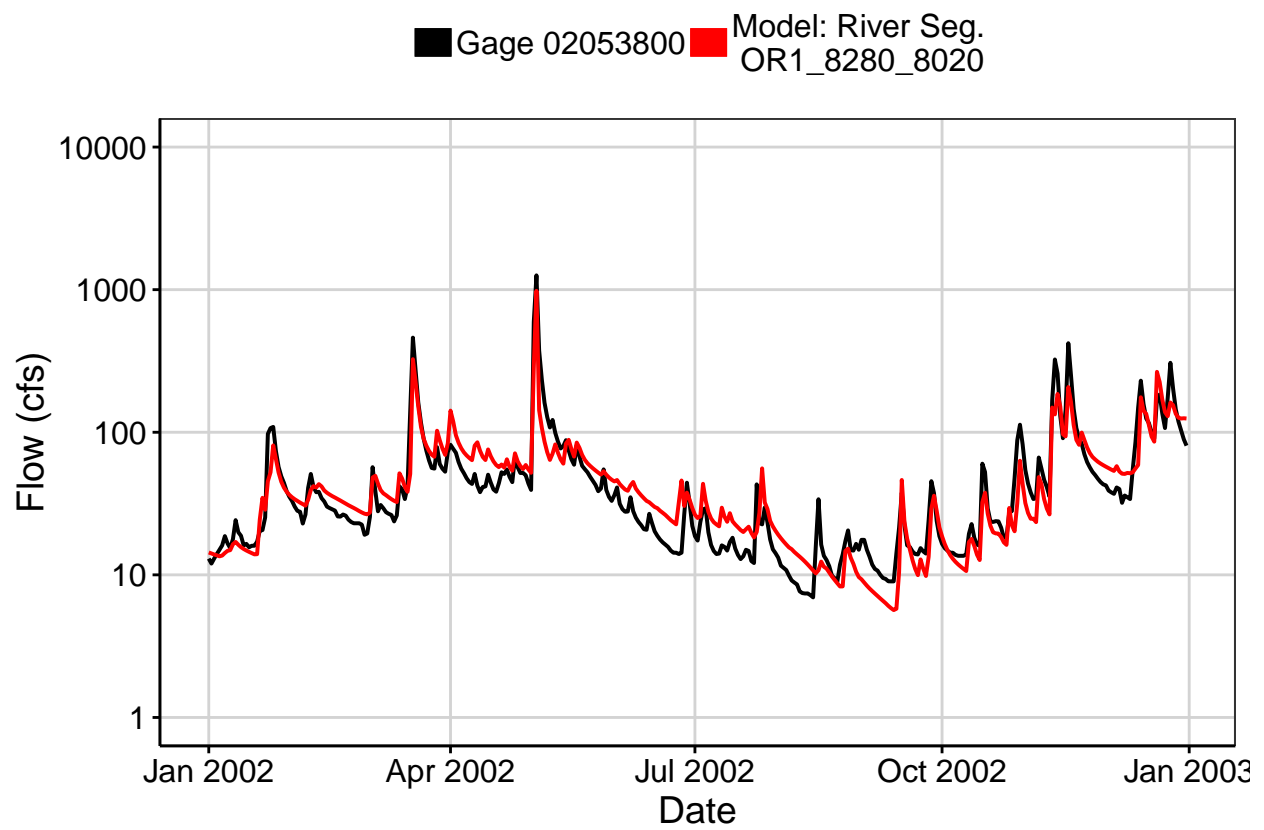


Fig. 3: Flow Exceedance

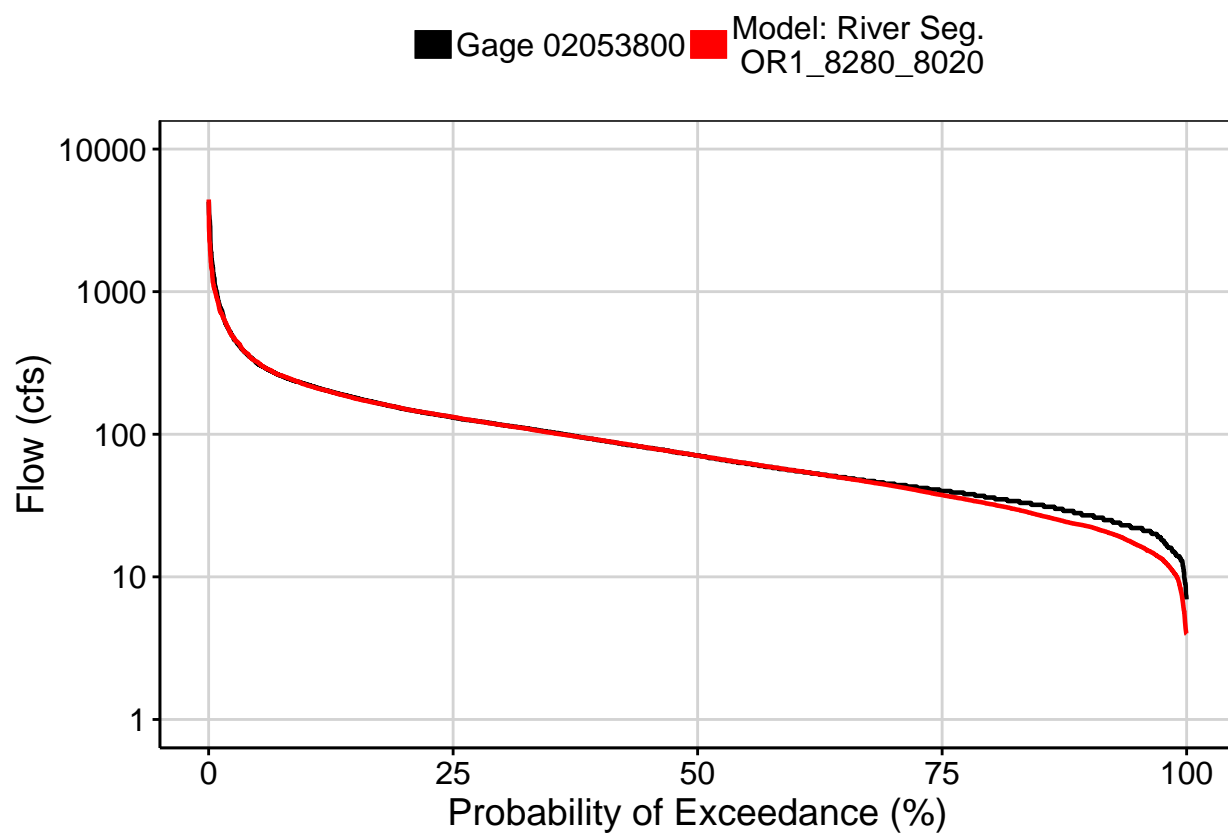


Fig. 4: Baseflow

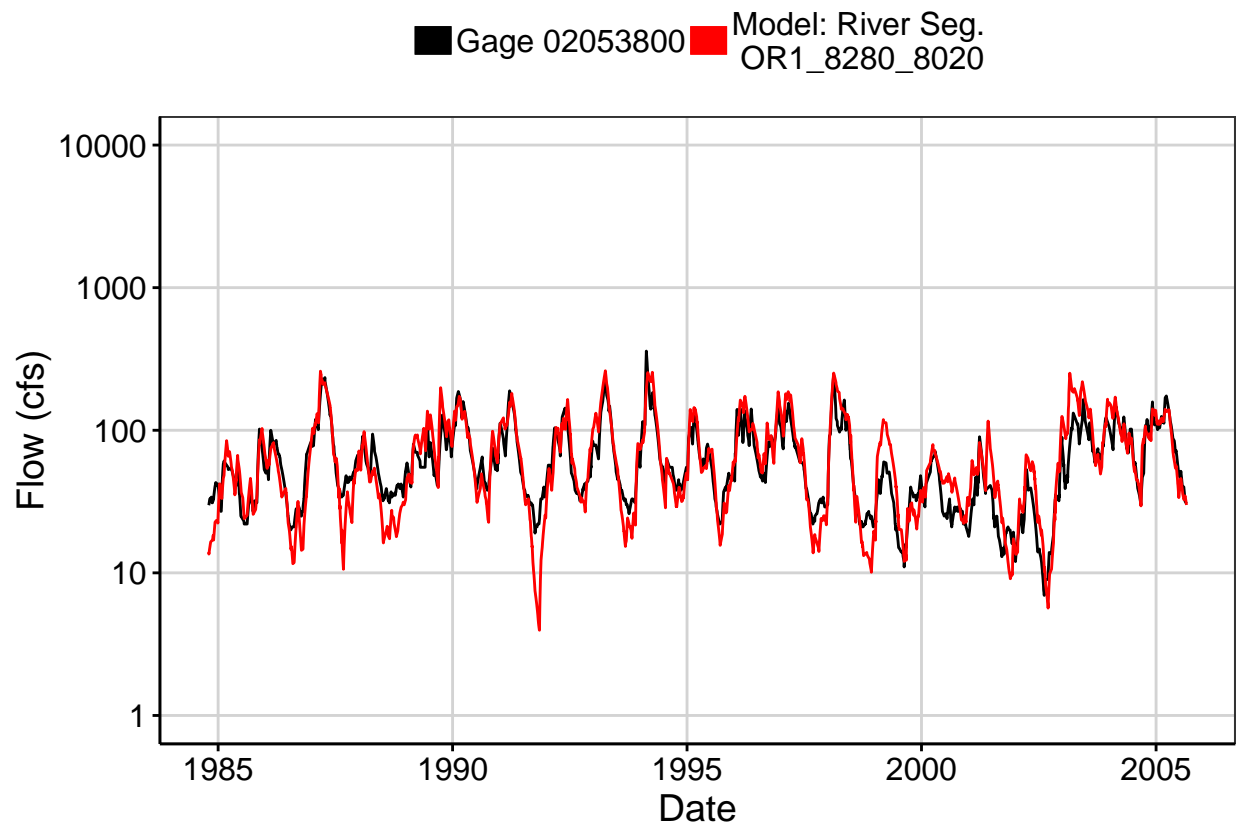


Fig. 5: Combined Baseflow

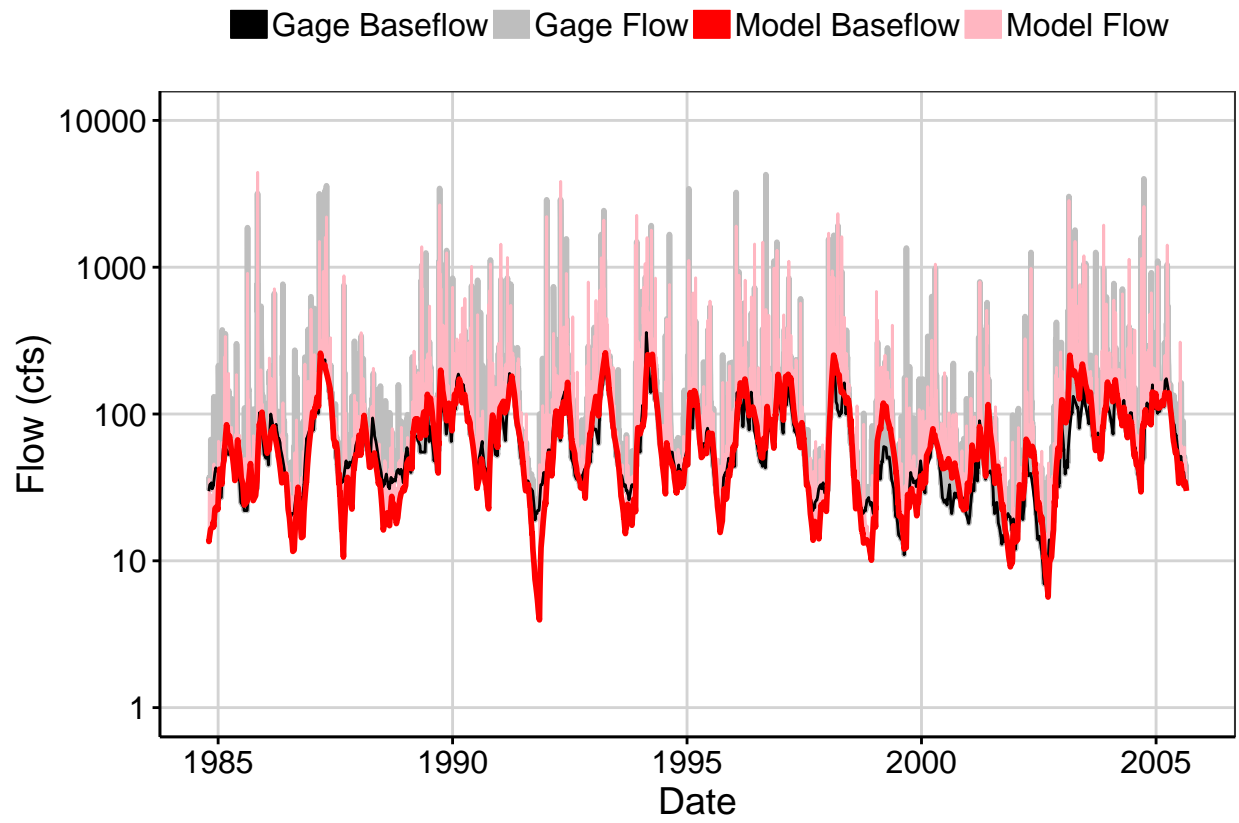


Fig. 6: Largest Error Segment

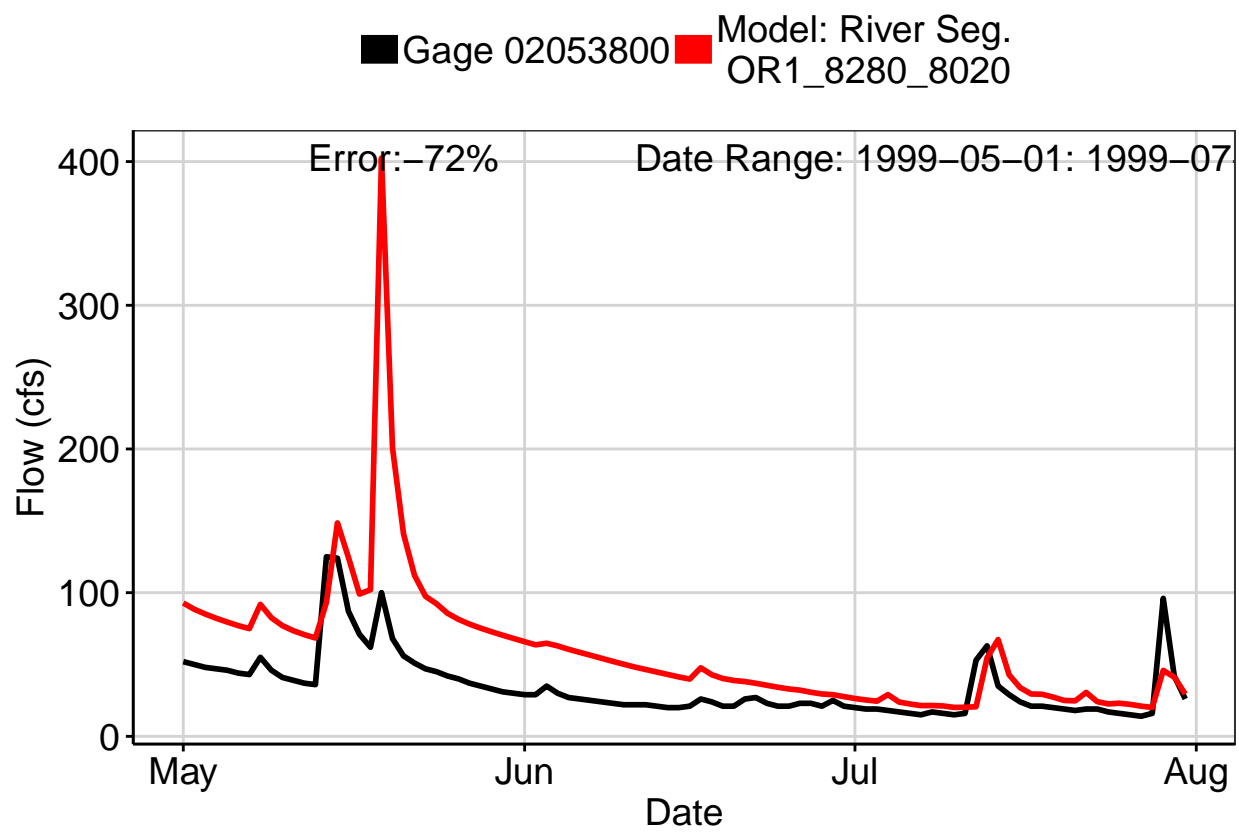


Fig. 7: Second Largest Error Segment

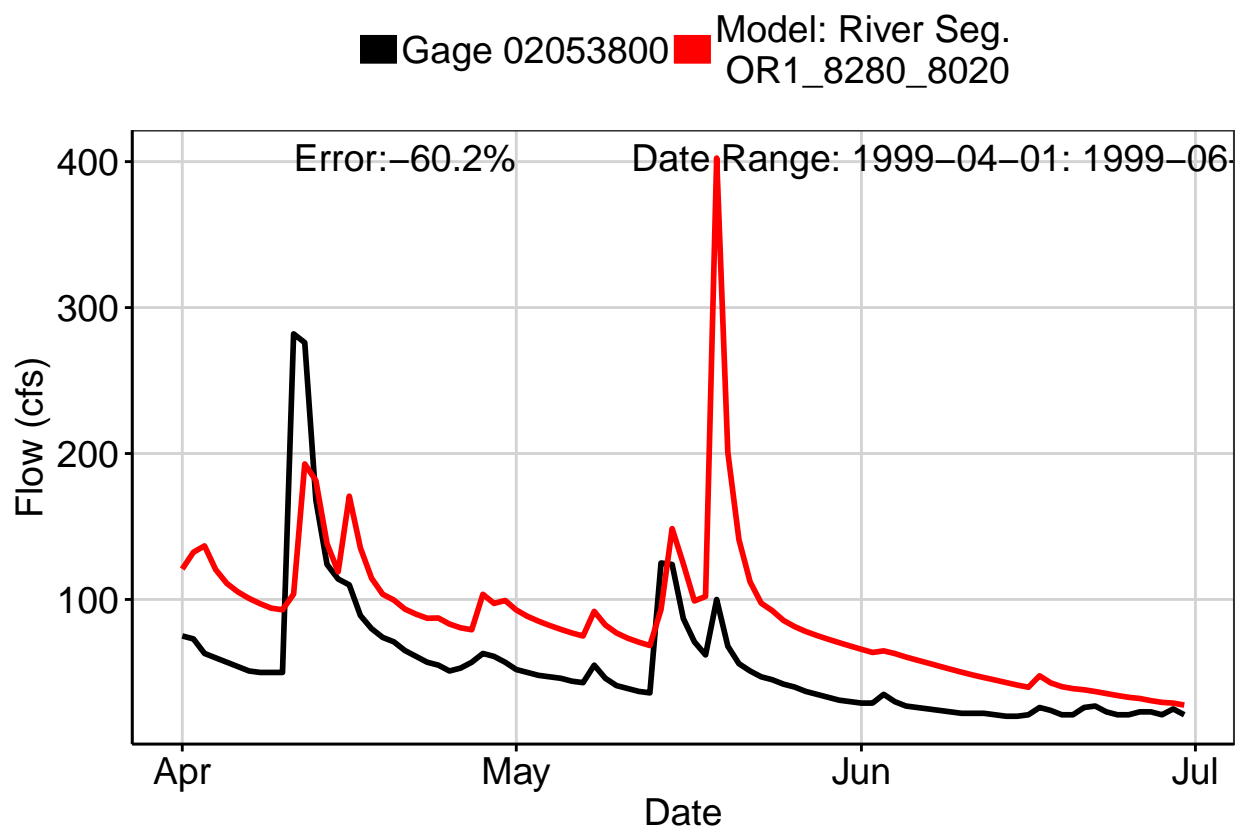


Fig. 8: Third Largest Error Segment

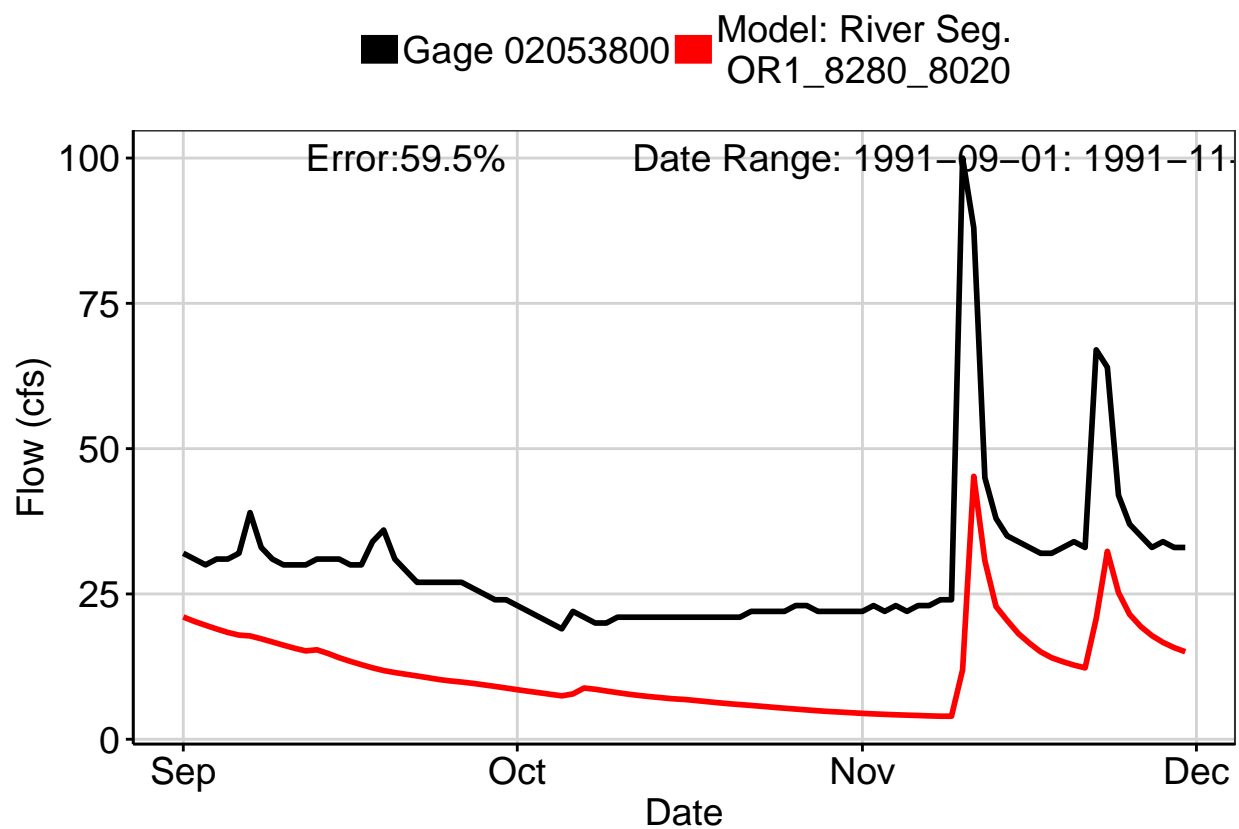


Fig. 9: Residuals Plot

