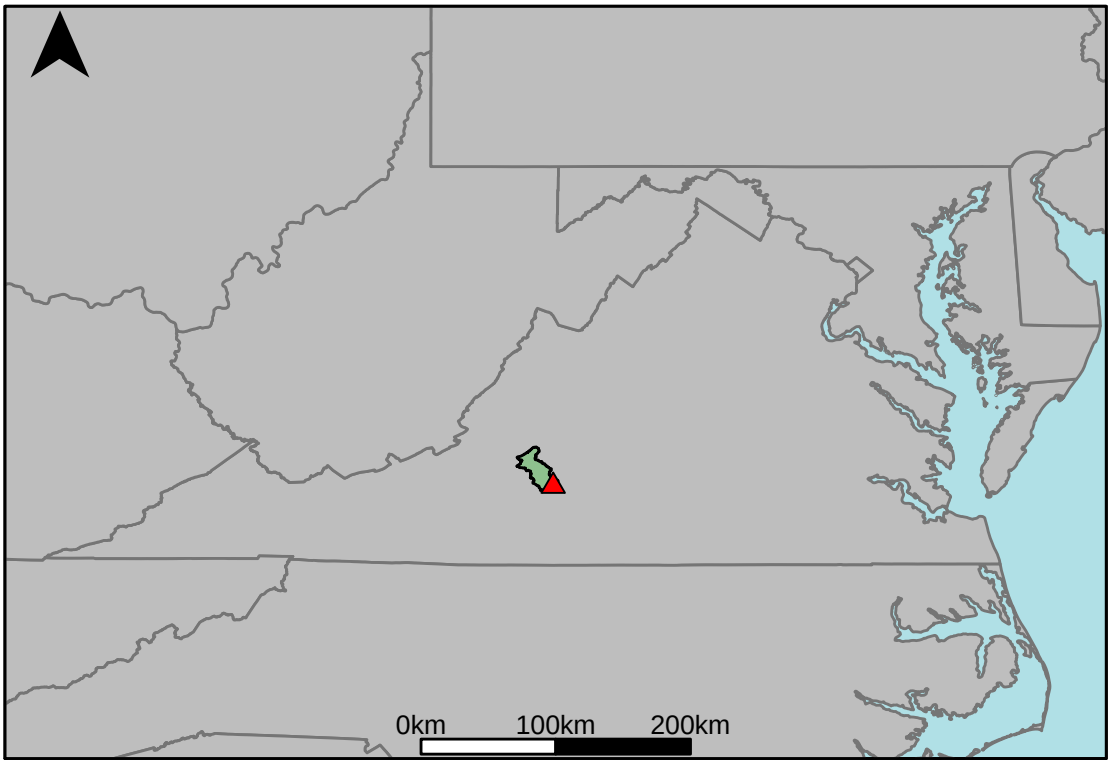
Appendix H.8: USGS Gage 02059500 vs. OR2_7650_8070



This river segment follows part of the flow of the Goose Creek, a tributary of the Roanoke River. The gage is located in Bedford County, VA (Lat 3710'23", Long 7931'14") approximately 27 miles southwest of Lynchburg, VA. Drainage area is 188 sq. miles. This gage started taking data in 1930 and is still taking data. There are no known anthropogenic alterations in this area that would affect the flow conditions. Prior to 1954 there was a mill upstream but it has since been decommissioned. The average daily discharge error between the model and gage data for the 20 year timespan was -1.04%, with 46.7% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	49	34.9	-28.8
Feb. Low Flow	67	40.9	-39
Mar. Low Flow	91	65.7	-27.8
Apr. Low Flow	76	113	48.7
May Low Flow	118	139	17.8
Jun. Low Flow	132	142	7.58
Jul. Low Flow	126	105	-16.7
Aug. Low Flow	111	80.9	-27.1
Sep. Low Flow	86	67.8	-21.2
Oct. Low Flow	58	43.9	-24.3
Nov. Low Flow	48	38.9	-19
Dec. Low Flow	47	32.3	-31.3

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	192	194	1.04
Jan. Mean Flow	229	247	7.86
Feb. Mean Flow	253	288	13.8
Mar. Mean Flow	290	332	14.5
Apr. Mean Flow	278	290	4.32
May Mean Flow	210	203	-3.33
Jun. Mean Flow	193	178	-7.77
Jul. Mean Flow	122	106	-13.1
Aug. Mean Flow	104	91	-12.5
Sep. Mean Flow	180	154	-14.4
Oct. Mean Flow	119	130	9.24
Nov. Mean Flow	150	152	1.33
Dec. Mean Flow	176	173	-1.7

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	127	135	6.3
Feb. High Flow	306	471	53.9
Mar. High Flow	577	403	-30.2
Apr. High Flow	733	524	-28.5
May High Flow	576	496	-13.9
Jun. High Flow	899	870	-3.23
Jul. High Flow	607	580	-4.45
Aug. High Flow	303	323	6.6
Sep. High Flow	295	200	-32.2
Oct. High Flow	280	149	-46.8
Nov. High Flow	229	146	-36.2
Dec. High Flow	211	123	-41.7

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	6.04	3.12	-48.3
Med. 1 Day Min	38	20.5	-46.1
Min. 3 Day Min	6.42	3.24	-49.5
Med. 3 Day Min	38.7	20.8	-46.3
Min. 7 Day Min	7.18	3.51	-51.1
Med. 7 Day Min	44.1	22.2	-49.7
Min. 30 Day Min	10.7	6.33	-40.8
Med. 30 Day Min	50	34.8	-30.4
Min. 90 Day Min	17.8	15.7	-11.8
Med. 90 Day Min	74.1	57.3	-22.7
7Q10	15.7	8.41	-46.4
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	39.3	36.7	-6.62
Mean Baseflow	100	111	11

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	26000	10200	-60.8
Med. 1 Day Max	2710	2810	3.69
Max. 3 Day Max	10700	4990	-53.4
Med. 3 Day Max	1580	1950	23.4
Max. 7 Day Max	4810	2610	-45.7
Med. 7 Day Max	972	1010	3.91
Max. 30 Day Max	1340	1250	-6.72
Med. 30 Day Max	475	510	7.37
Max. 90 Day Max	750	793	5.73
Med. 90 Day Max	313	346	10.5

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	15	10.1	-32.7
5% Non-Exceedance	35	20.5	-41.4
50% Non-Exceedance	113	115	1.77
95% Non-Exceedance	510	529	3.73
99% Non-Exceedance	1550	1480	-4.52
Sept. 10% Non-Exceedance	20.6	32	55.3

Fig. 1: Hydrograph

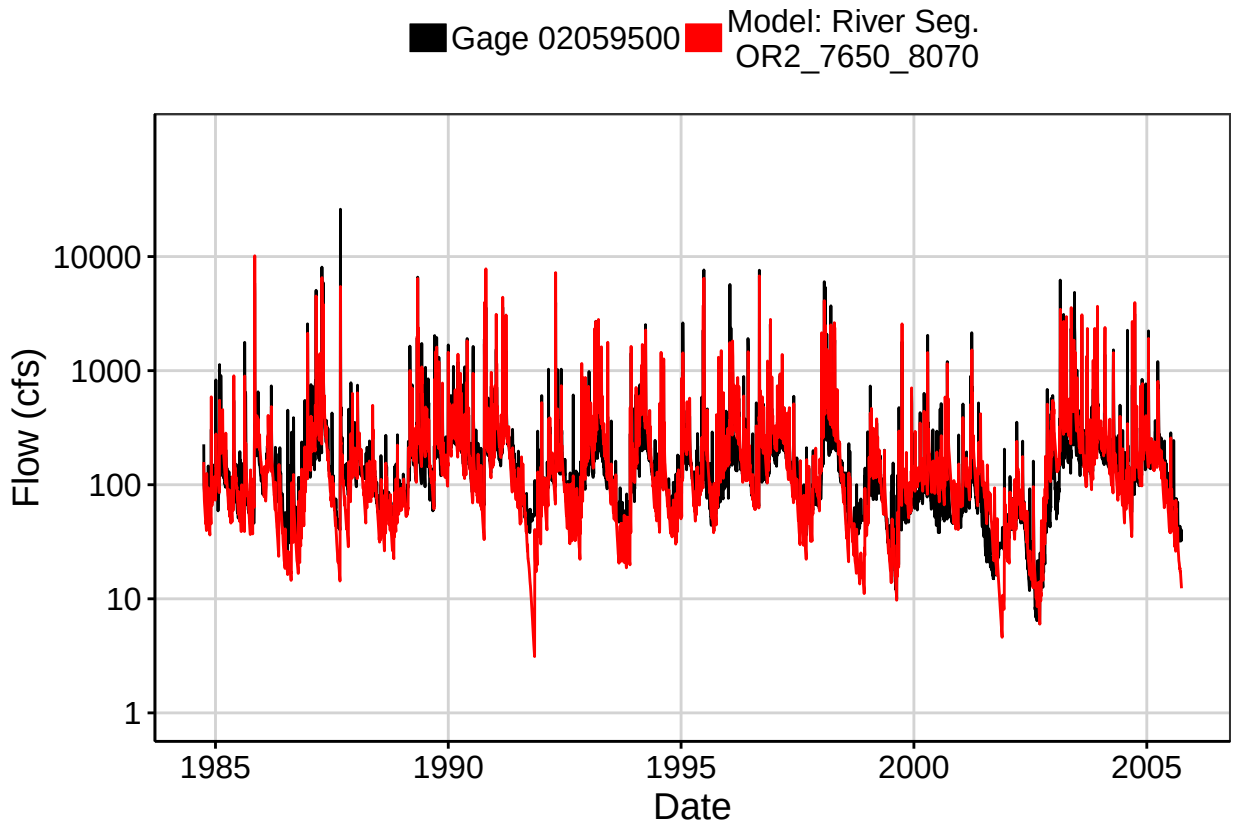


Fig. 2: Zoomed Hydrograph

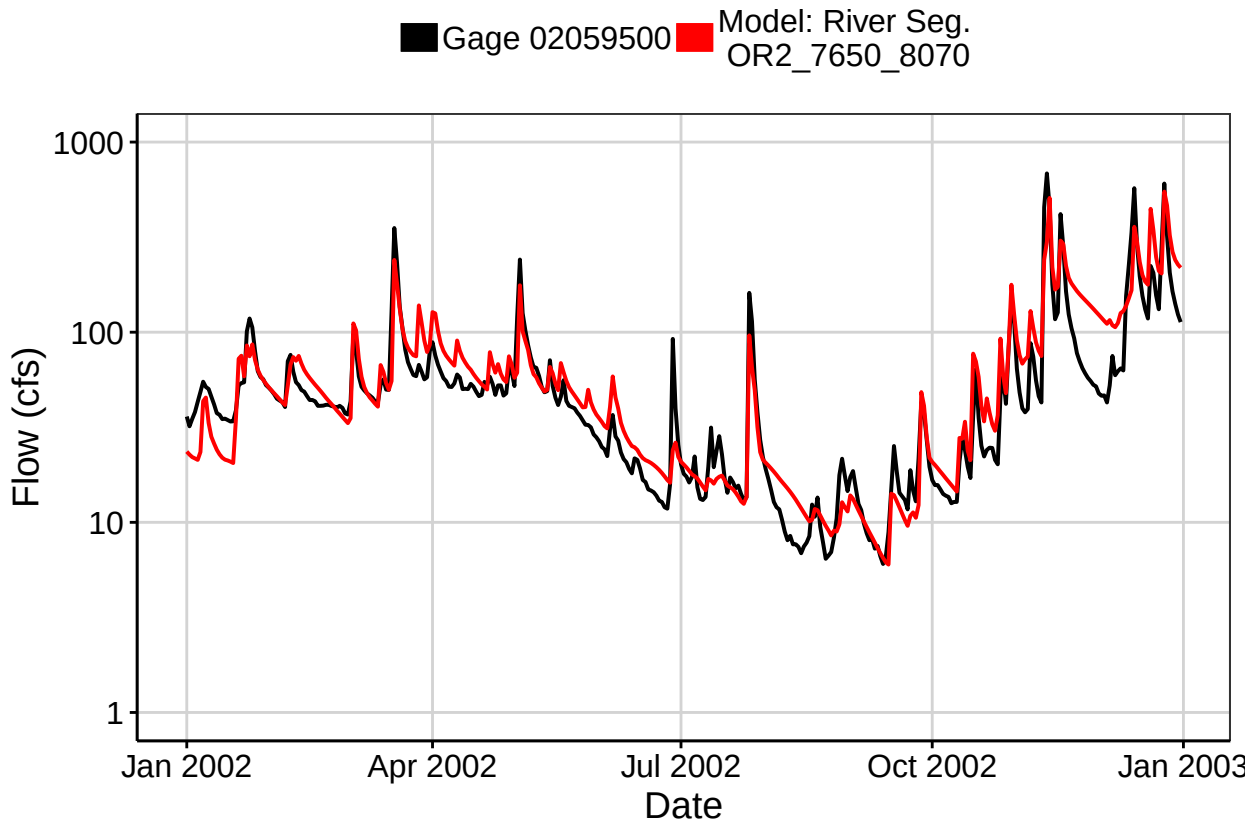


Fig. 3: Flow Exceedance

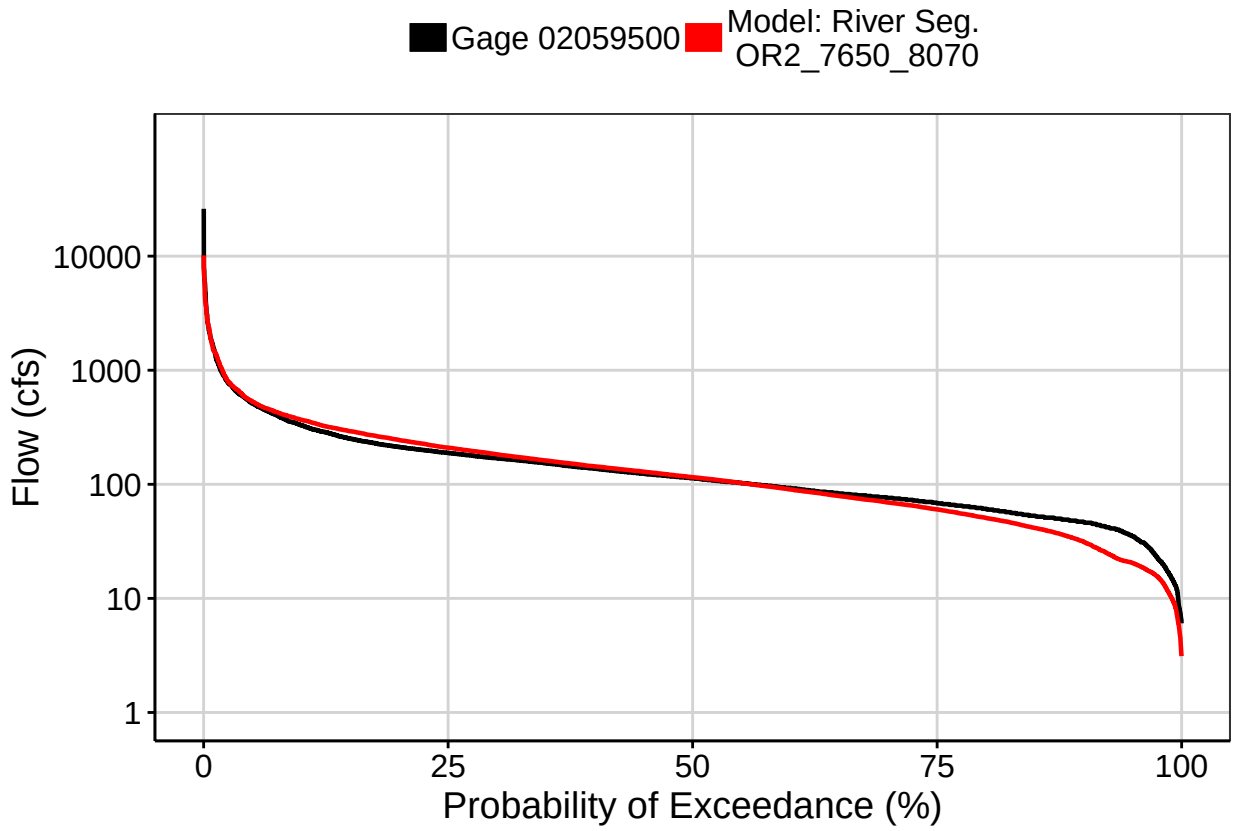


Fig. 4: Baseflow

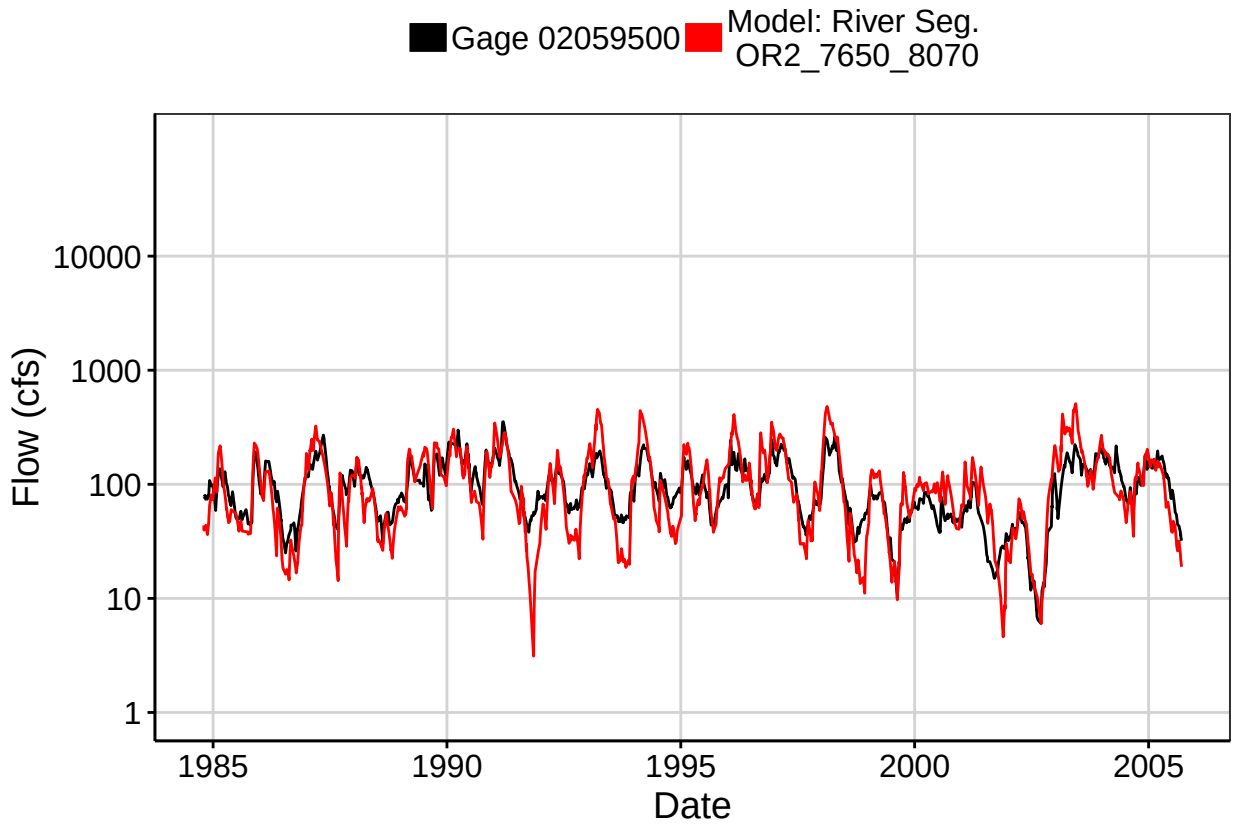


Fig. 5: Combined Baseflow

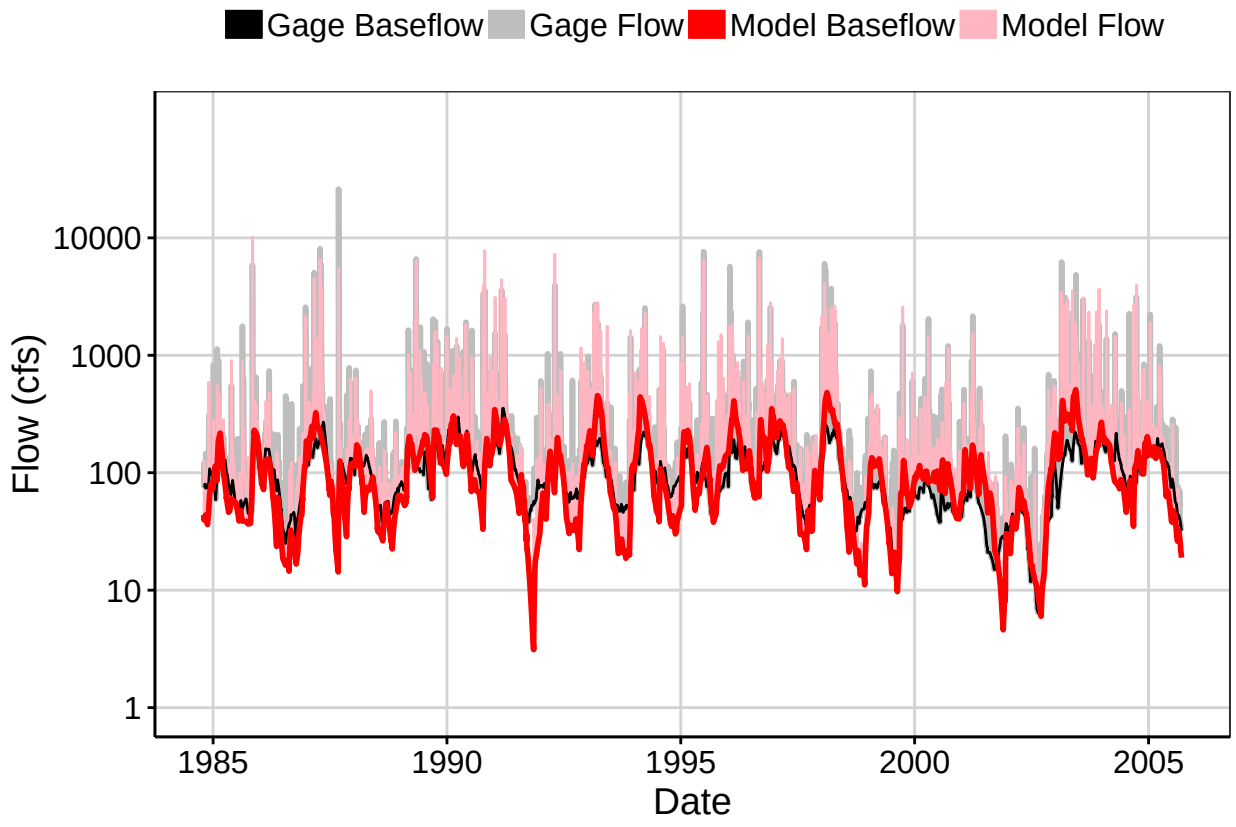


Fig. 6: Largest Error Segment

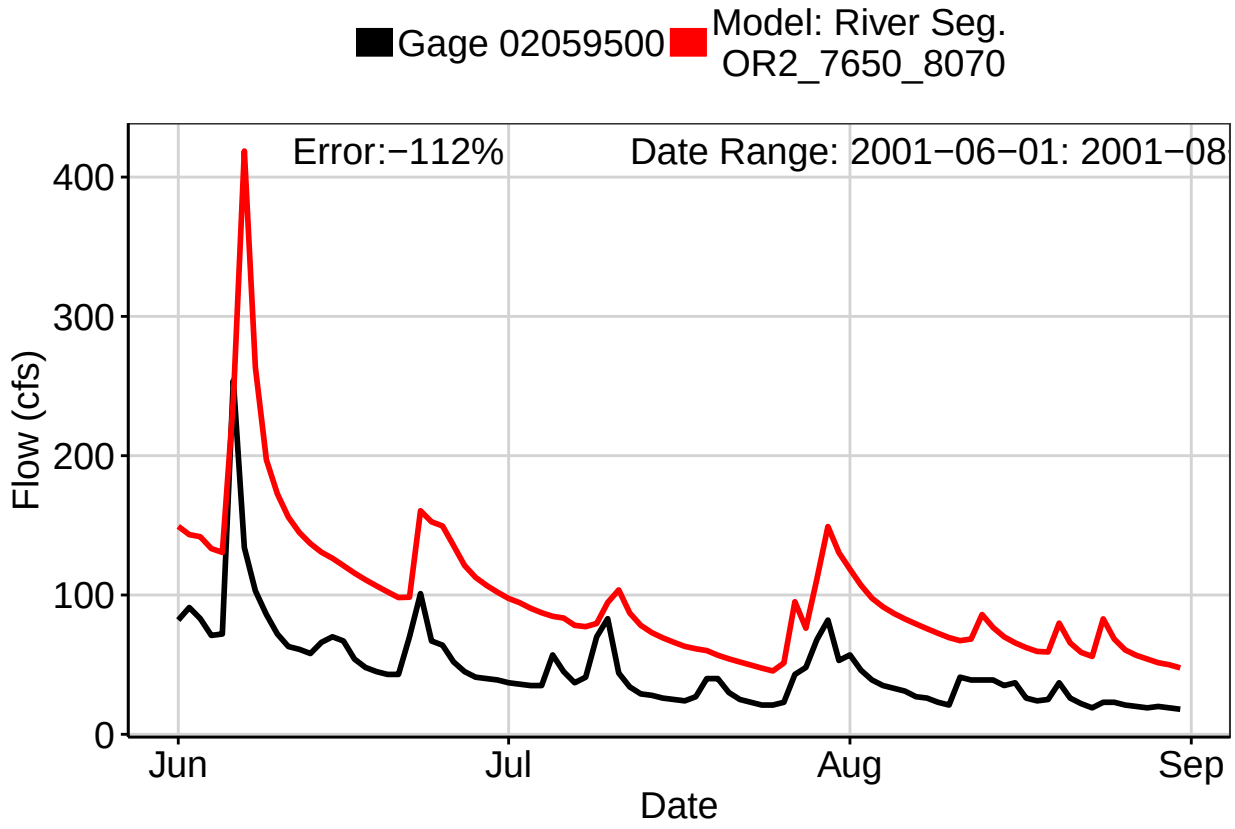


Fig. 7: Second Largest Error Segment

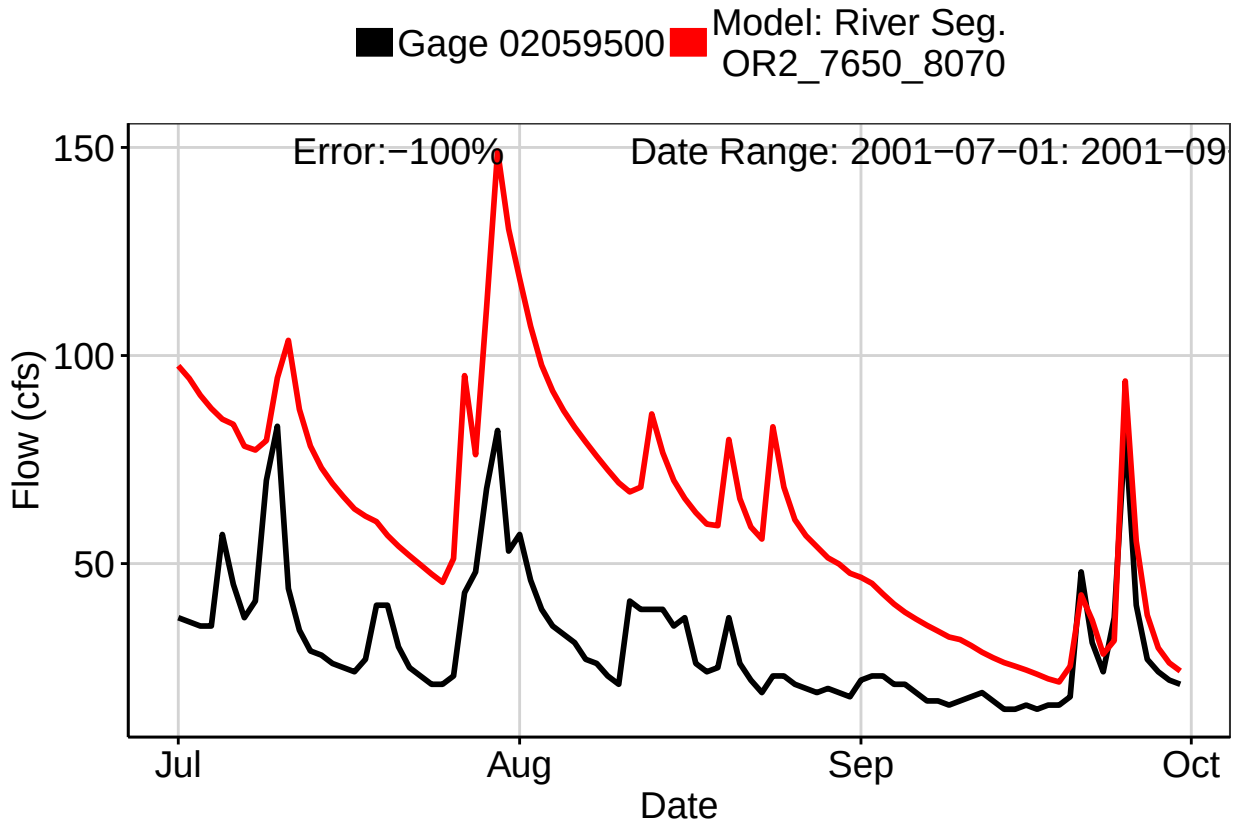


Fig. 8: Third Largest Error Segment

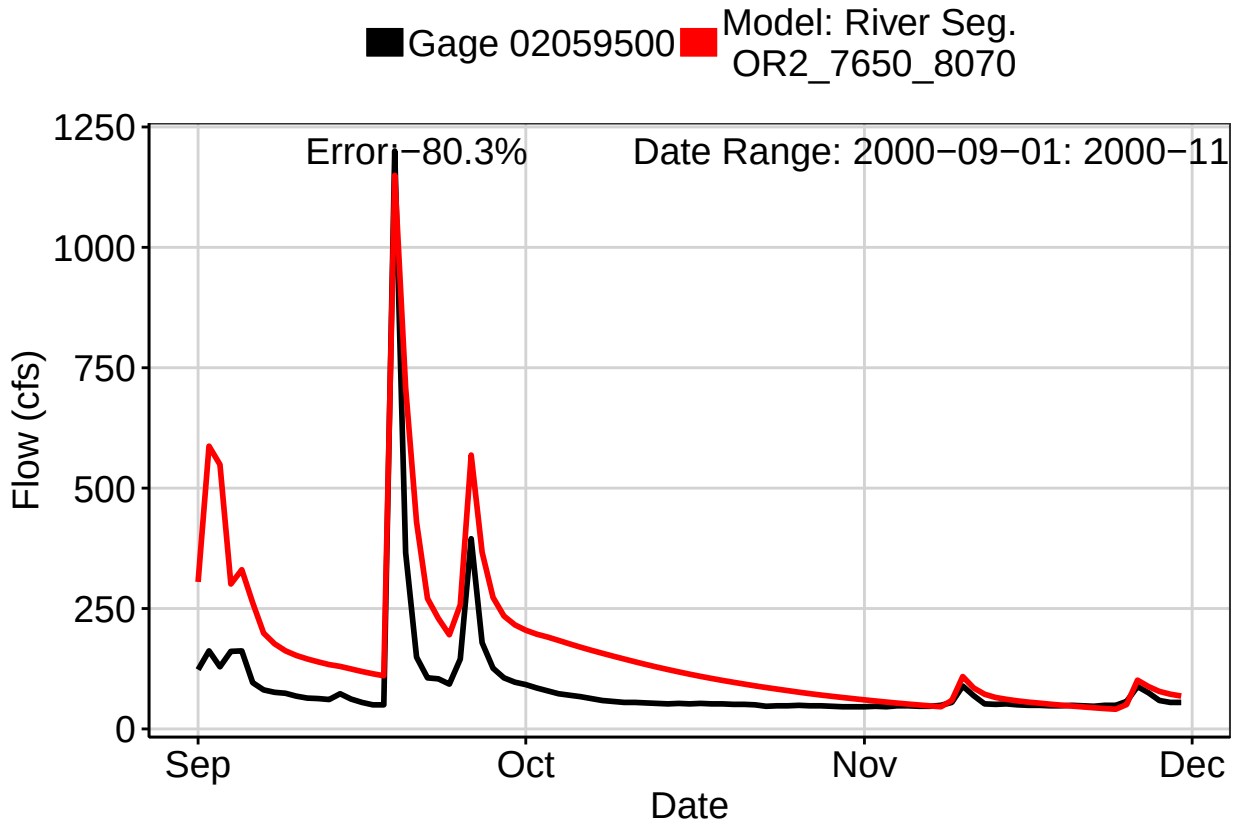


Fig. 9: Residuals Plot