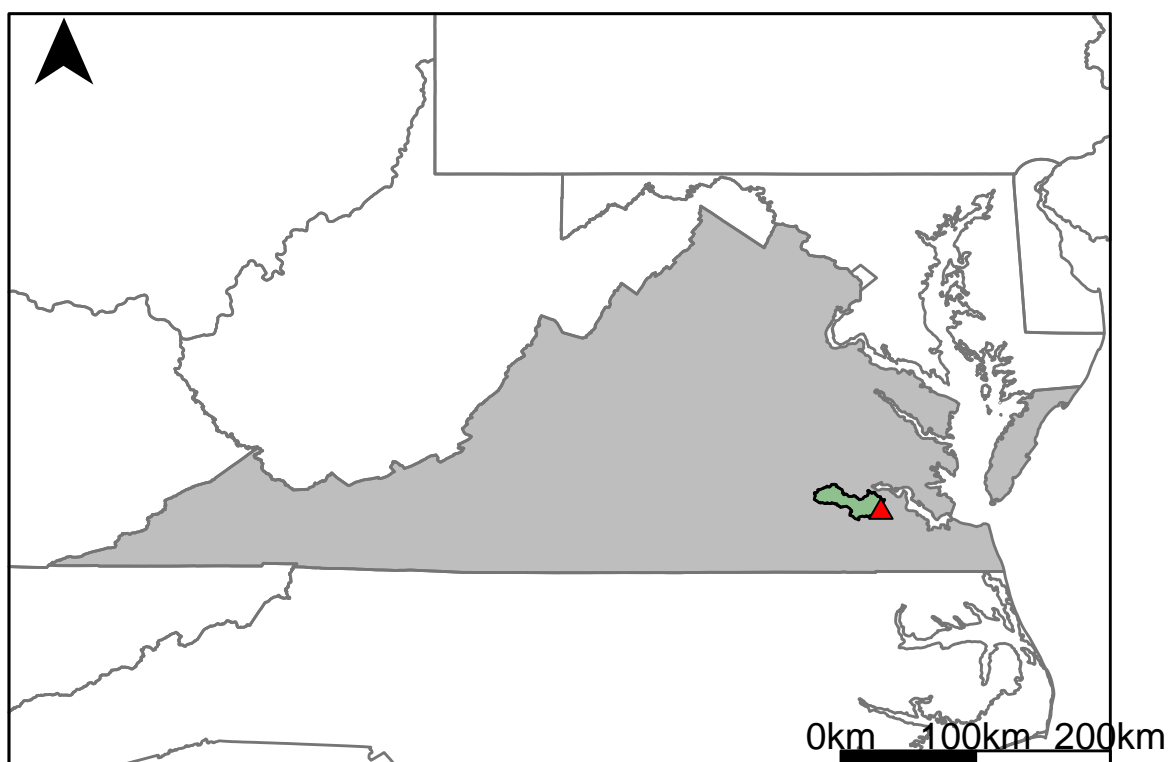


Appendix B: Blackwater River Gages

Appendix B.1: USGS Gage 02047500 vs. MN3_7540_7680



This river segment follows part of the flow of the Blackwater River, a tributary of the Meherrin River. The gage is located in Surry County, VA (Lat 37°01'30", Long 76°52'30") approximately 32 miles southeast of Petersburg, VA. Drainage area is 290 sq. miles. This gage started taking data in 1941 and is still taking data but there is a gap from 1987-01-09 to 1988-07-27. The average daily discharge error between the model and gage data for the 20 year timespan was 0.96%, with 56.2% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	8.98	13	-44.8
Feb. Low Flow	44	59.9	-36.1
Mar. Low Flow	90.5	94.5	-4.42
Apr. Low Flow	150	169	-12.7
May Low Flow	191	244	-27.7
Jun. Low Flow	202	185	8.42
Jul. Low Flow	150	103	31.3
Aug. Low Flow	49	52.7	-7.55
Sep. Low Flow	8.43	15.3	-81.5
Oct. Low Flow	0.66	13.7	-1960
Nov. Low Flow	2.33	16.9	-625
Dec. Low Flow	0.02	15.5	-77400

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	314	311	0.96
Jan. Mean Flow	421	441	-4.75
Feb. Mean Flow	523	522	0.19
Mar. Mean Flow	630	572	9.21
Apr. Mean Flow	498	426	14.5
May Mean Flow	242	246	-1.65
Jun. Mean Flow	122	149	-22.1
Jul. Mean Flow	114	110	3.51
Aug. Mean Flow	207	228	-10.1
Sep. Mean Flow	391	374	4.35
Oct. Mean Flow	162	179	-10.5
Nov. Mean Flow	198	202	-2.02
Dec. Mean Flow	301	298	1

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	110	178	-61.8
Feb. High Flow	266	403	-51.5
Mar. High Flow	546	456	16.5
Apr. High Flow	672	848	-26.2
May High Flow	899	891	0.89
Jun. High Flow	960	980	-2.08
Jul. High Flow	1040	986	5.19
Aug. High Flow	549	494	10
Sep. High Flow	344	260	24.4
Oct. High Flow	337	146	56.7
Nov. High Flow	331	293	11.5
Dec. High Flow	110	227	-106

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	0	0.27	-Inf
Med. 1 Day Min	0	2.78	-Inf
Min. 3 Day Min	0	0.31	-Inf
Med. 3 Day Min	0	3.14	-Inf
Min. 7 Day Min	0	0.43	-Inf
Med. 7 Day Min	0	3.98	-Inf
Min. 30 Day Min	0	2.83	-Inf
Med. 30 Day Min	1.74	10.4	-498
Min. 90 Day Min	1.07	14	-1210
Med. 90 Day Min	40.2	53	-31.8
7Q10	0	1.35	-Inf
Year of 90-Day Min. Flow	2002	1993	100
Drought Year Mean	55.1	311	-464
Mean Baseflow	142	144	-1.41

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	11400	13900	-21.9
Med. 1 Day Max	2350	2570	-9.36
Max. 3 Day Max	10700	12500	-16.8
Med. 3 Day Max	2210	2160	2.26
Max. 7 Day Max	7710	9140	-18.5
Med. 7 Day Max	1930	1700	11.9
Max. 30 Day Max	2350	2740	-16.6
Med. 30 Day Max	823	793	3.65
Max. 90 Day Max	1410	1230	12.8
Med. 90 Day Max	582	592	-1.72

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	0	3.14	-Inf
5% Non-Exceedance	0	7.16	-Inf
50% Non-Exceedance	154	179	-16.2
95% Non-Exceedance	1150	1030	10.4
99% Non-Exceedance	2150	2030	5.58
Sept. 10% Non-Exceedance	6.88	7.2	-4.65

Fig. 1: Hydrograph

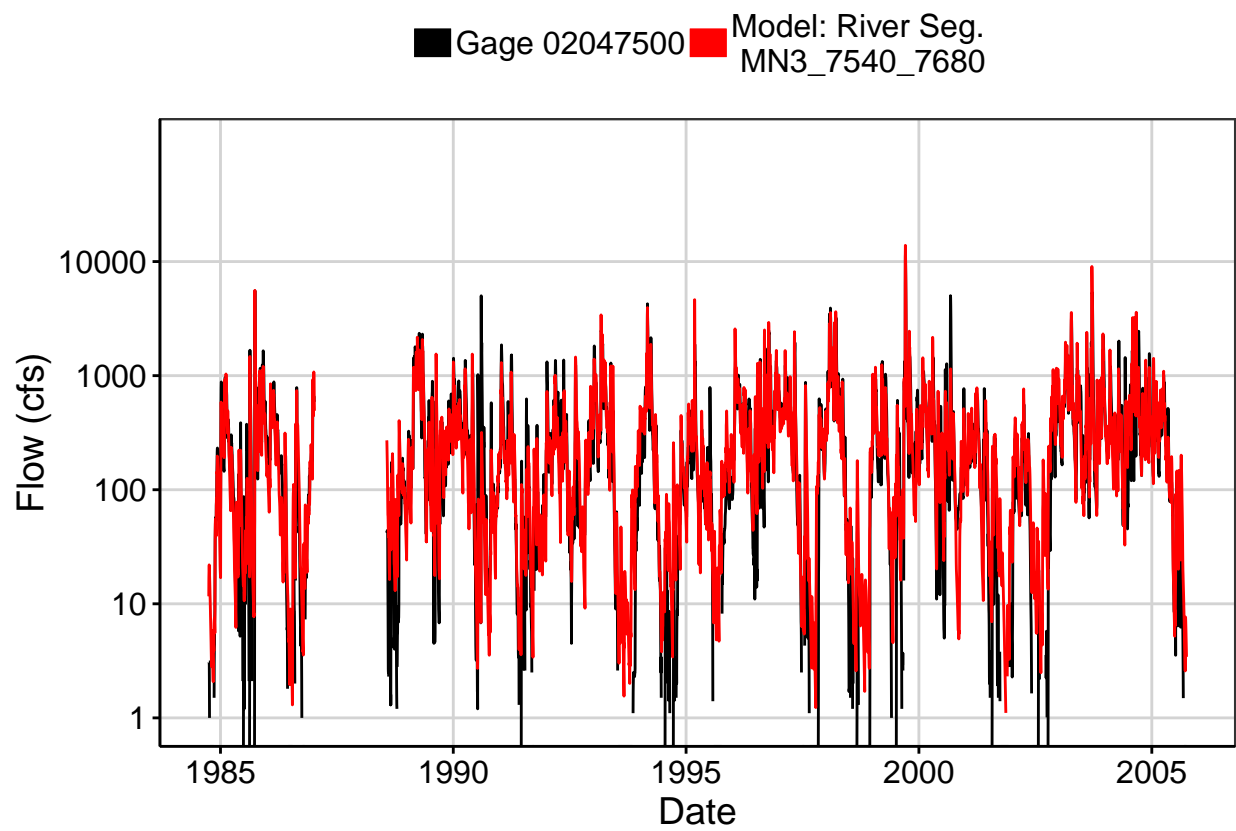


Fig. 2: Zoomed Hydrograph

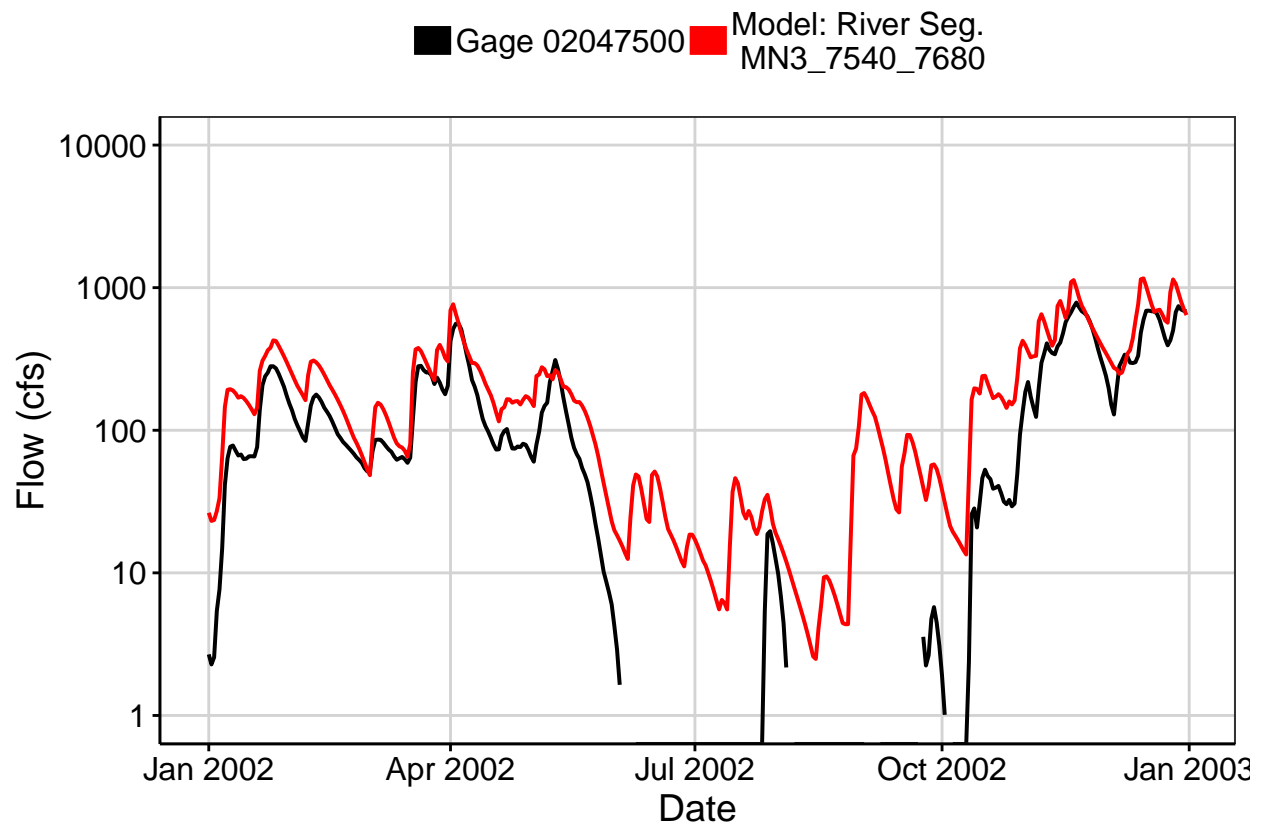


Fig. 3: Flow Exceedance

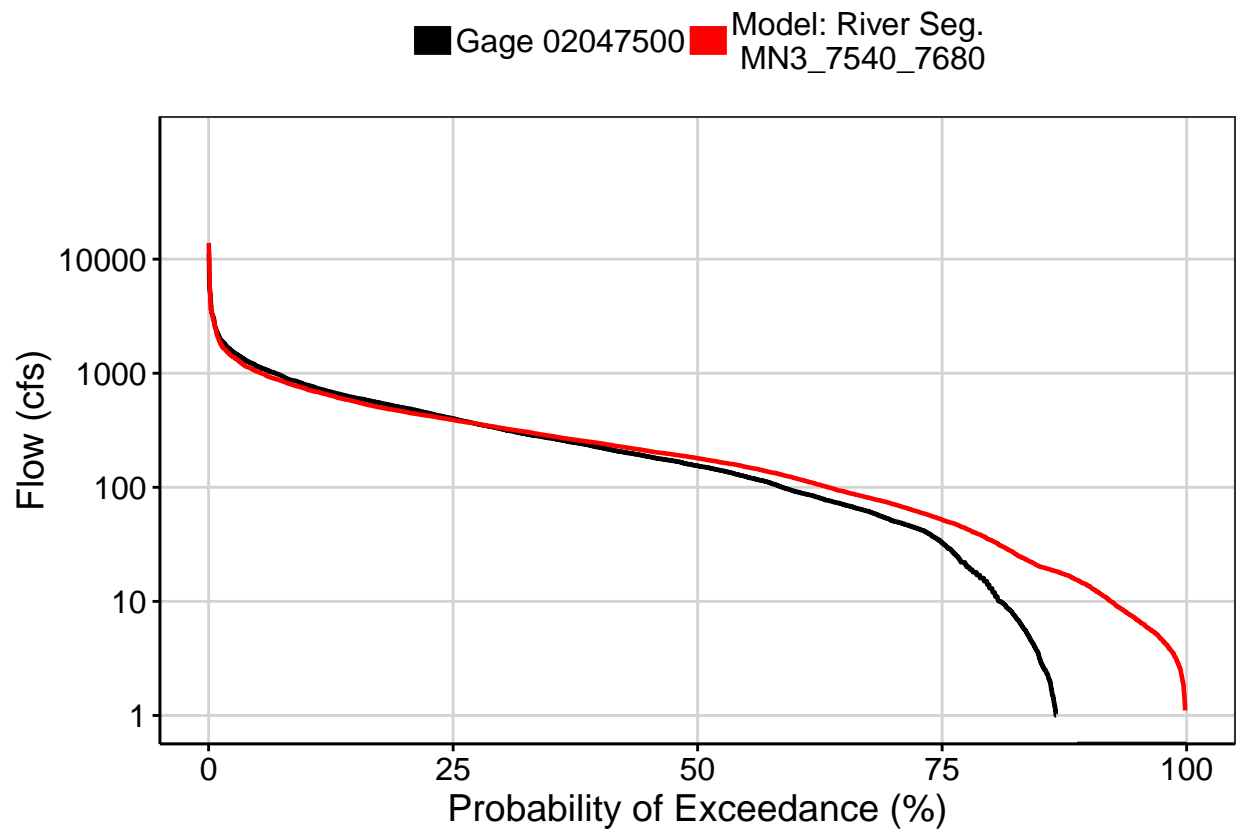


Fig. 4: Baseflow

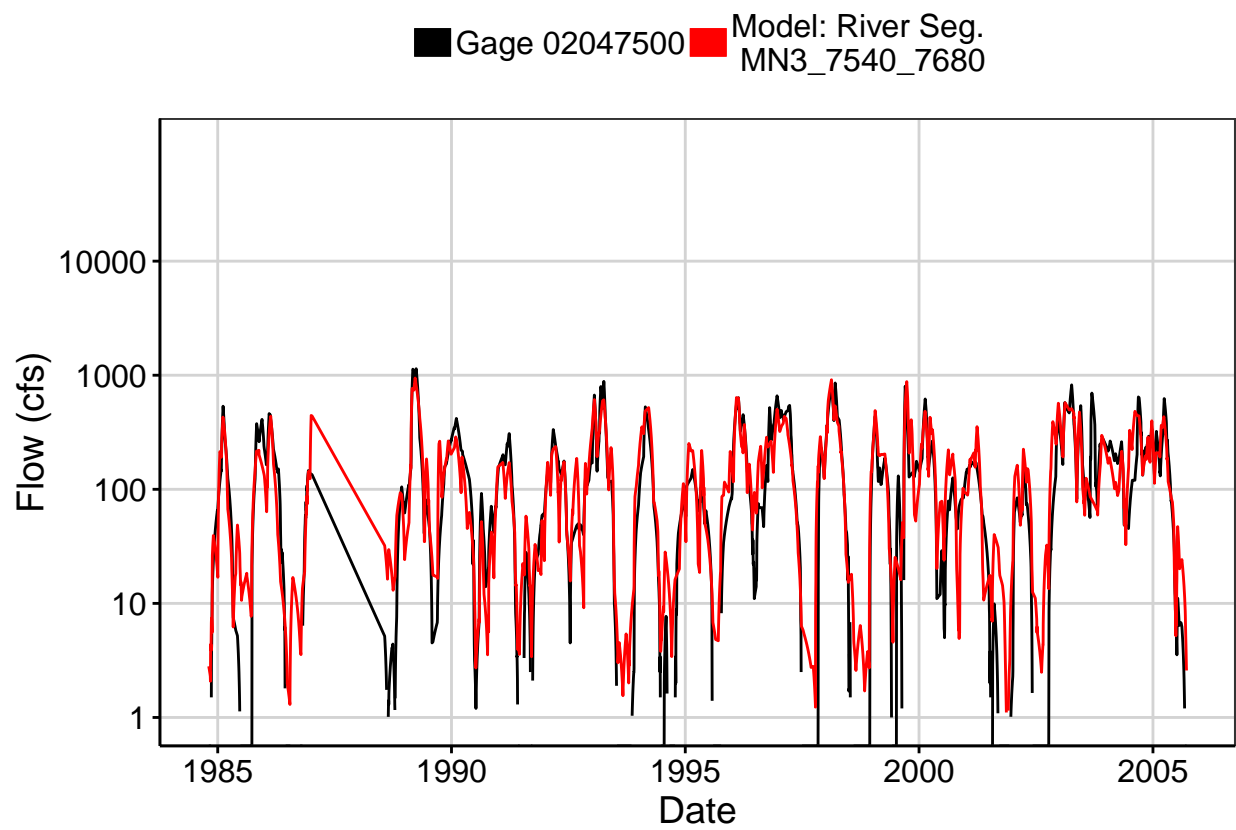


Fig. 5: Combined Baseflow

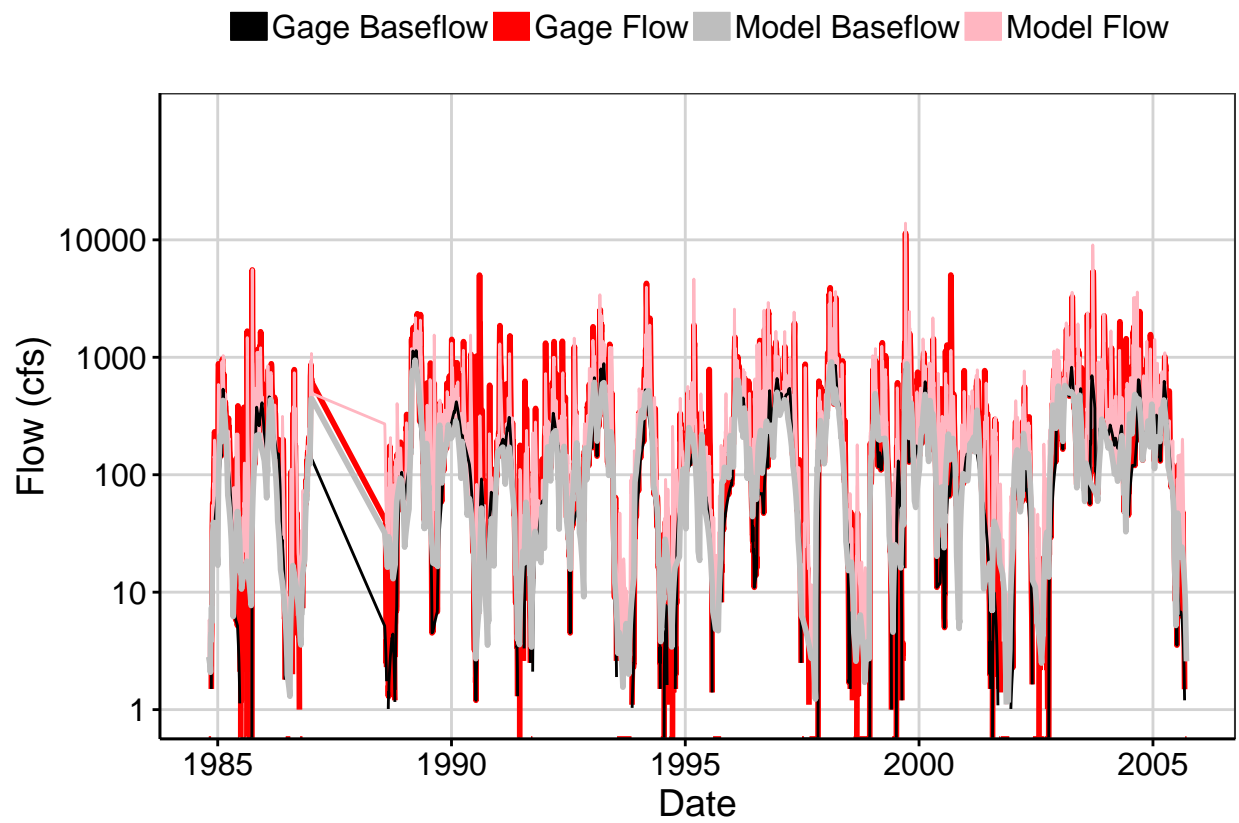


Fig. 6: Largest Error Segment

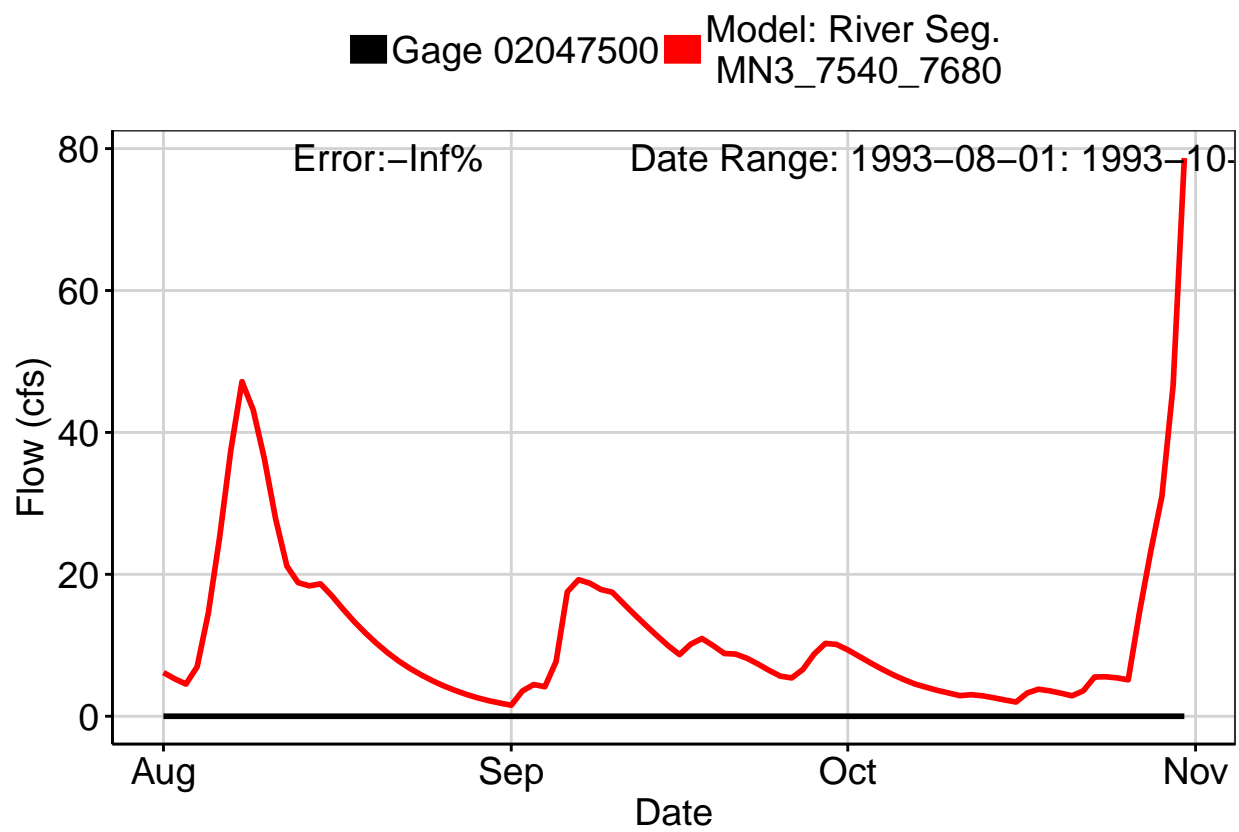


Fig. 7: Second Largest Error Segment

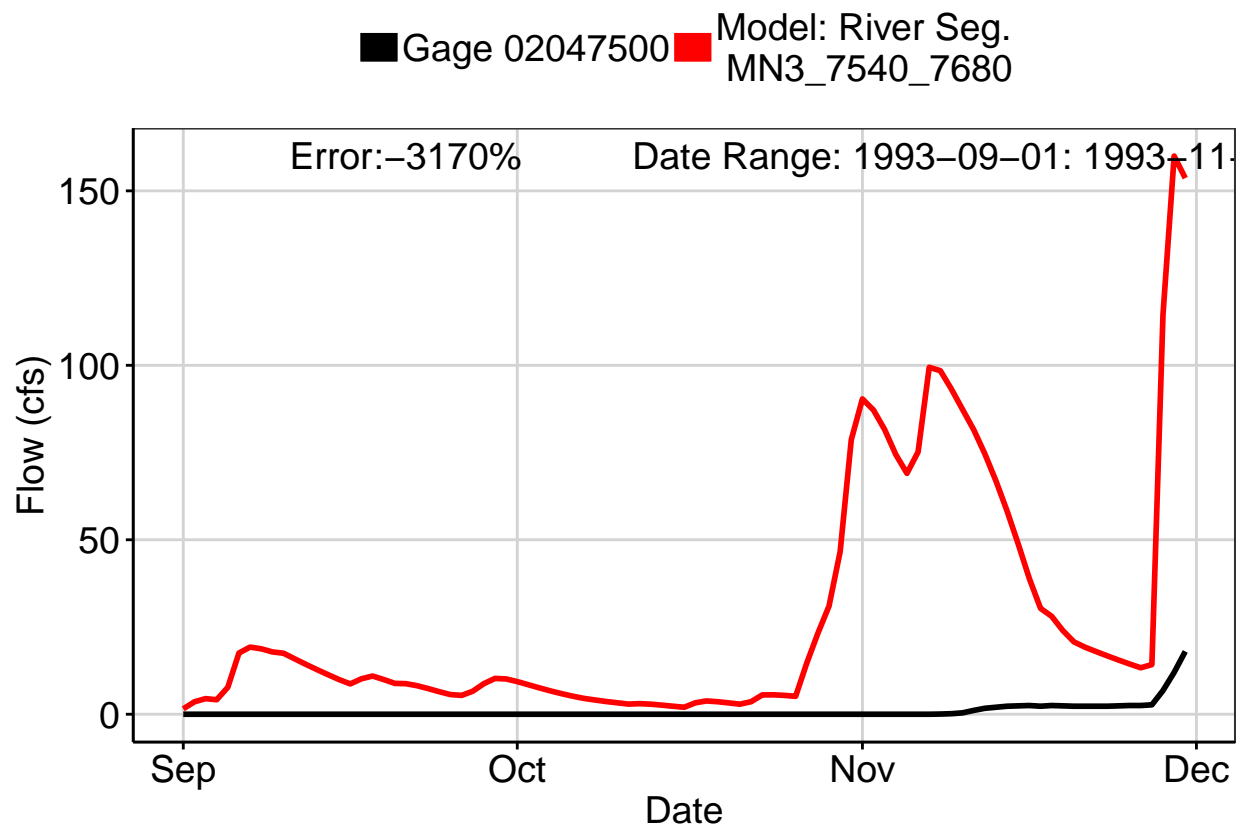


Fig. 8: Third Largest Error Segment

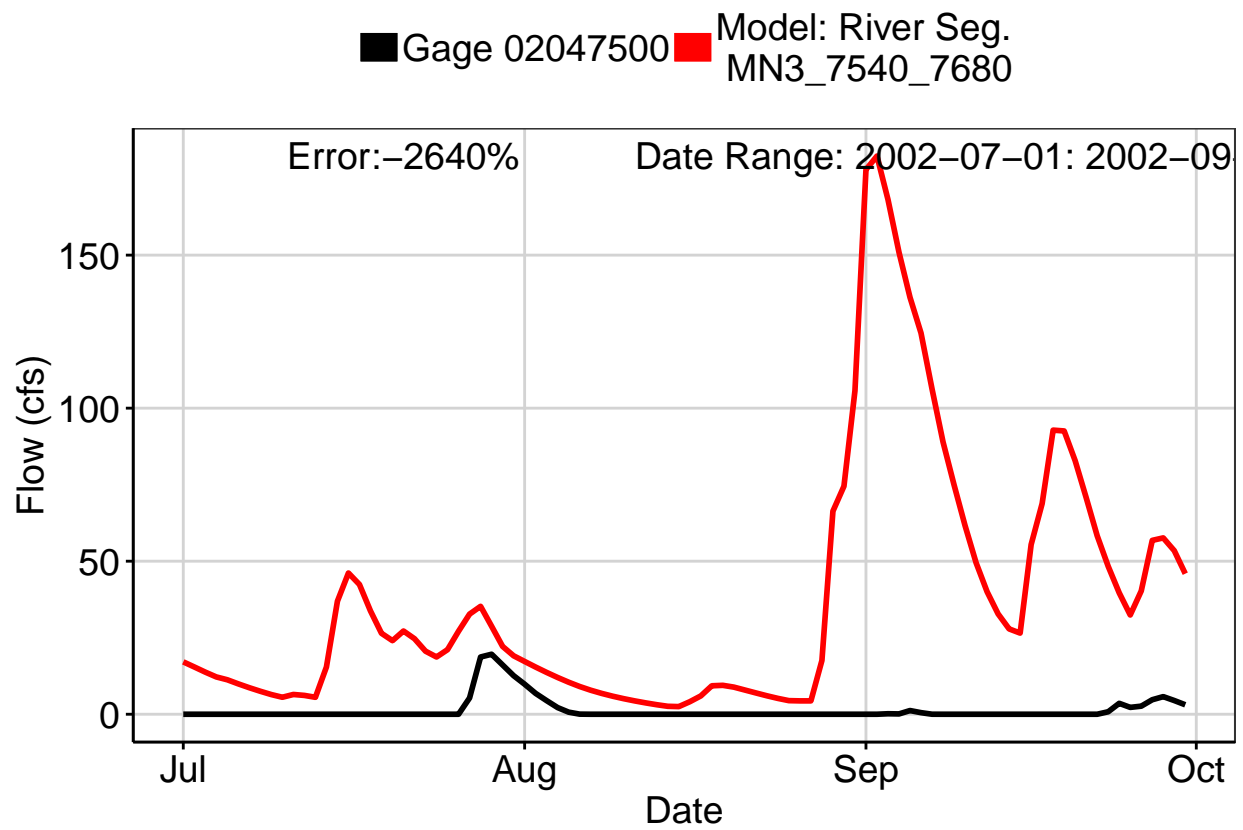


Fig. 9: Residuals Plot

