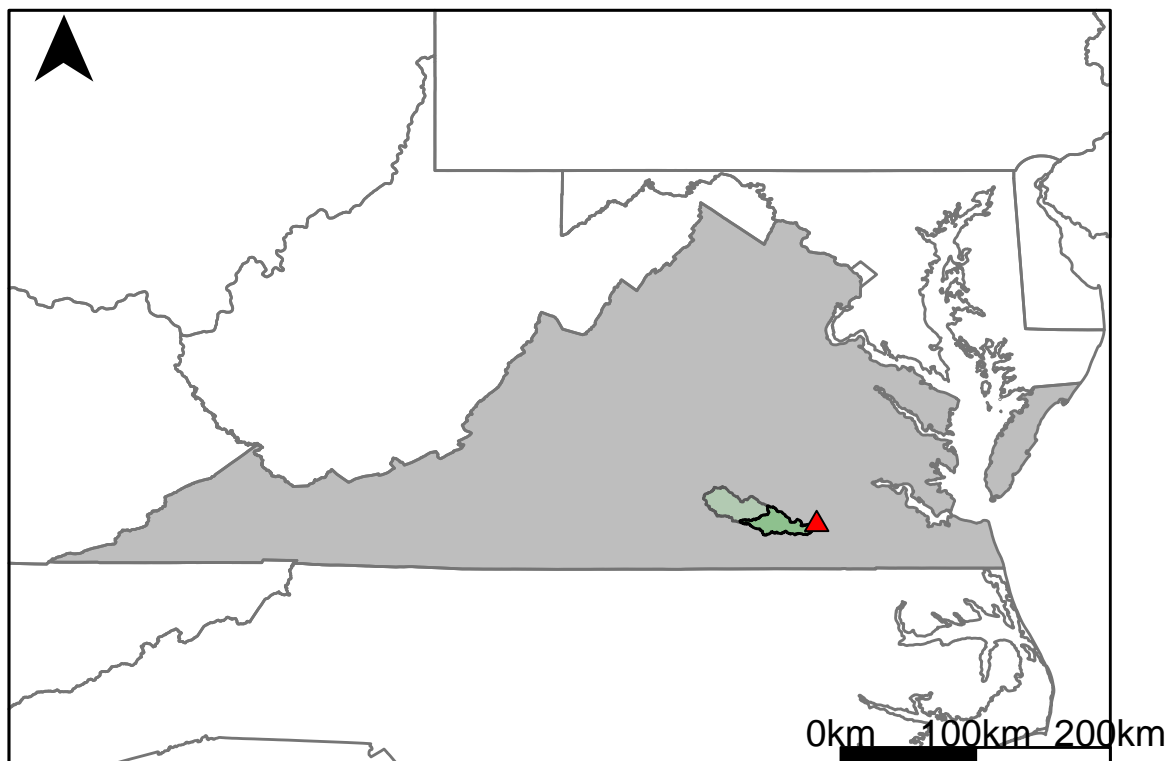


## Appendix G.3: USGS Gage 02045500 vs. MN3\_7930\_8010



This river segment follows part of the flow of the Nottoway River, a tributary of the Meherrin River. The gage is located in Sussex County, VA (Lat 36°54'00", Long 77°24'00") approximately 16 miles northeast of Emporia, VA. Drainage area is 577 sq. miles. This gage started taking data in 1930 and it is still taking data. In the summer months there are occasional diversions of unknown amounts that are used to irrigate local farms. The average daily discharge error between the model and gage data for the 20 year timespan was 3.6%, with 39.2% of its rolling three month time spans above 20% error.

**Table 1: Monthly Low Flows**

	USGS Gage	Model	Pct. Error
Jan. Low Flow	39	29.1	25.4
Feb. Low Flow	109	109	0
Mar. Low Flow	160	150	6.25
Apr. Low Flow	245	244	0.41
May Low Flow	383	390	-1.83
Jun. Low Flow	411	298	27.5
Jul. Low Flow	284	223	21.5
Aug. Low Flow	160	115	28.1
Sep. Low Flow	99	80.1	19.1
Oct. Low Flow	50	36.5	27
Nov. Low Flow	41	40.7	0.73
Dec. Low Flow	31	32.5	-4.84

**Table 2: Monthly Average Flows**

	USGS Gage	Model	Pct. Error
Overall Mean Flow	555	535	3.6
Jan. Mean Flow	758	731	3.56
Feb. Mean Flow	853	911	-6.8
Mar. Mean Flow	1080	1130	-4.63
Apr. Mean Flow	872	792	9.17
May Mean Flow	556	456	18
Jun. Mean Flow	356	270	24.2
Jul. Mean Flow	225	185	17.8
Aug. Mean Flow	264	283	-7.2
Sep. Mean Flow	482	528	-9.54
Oct. Mean Flow	240	257	-7.08
Nov. Mean Flow	457	410	10.3
Dec. Mean Flow	537	498	7.26

**Table 3: Monthly High Flows**

	USGS Gage	Model	Pct. Error
Jan. High Flow	376	218	42
Feb. High Flow	957	760	20.6
Mar. High Flow	1390	861	38.1
Apr. High Flow	2090	1950	6.7
May High Flow	1770	1970	-11.3
Jun. High Flow	2910	3020	-3.78
Jul. High Flow	2560	2180	14.8
Aug. High Flow	1310	974	25.6
Sep. High Flow	875	313	64.2
Oct. High Flow	680	277	59.3
Nov. High Flow	535	511	4.49
Dec. High Flow	315	295	6.35

**Table 4: Period Low Flows**

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	1.48	0.67	55
Med. 1 Day Min	20	18.7	6.5
Min. 3 Day Min	1.73	0.74	56.9
Med. 3 Day Min	20.7	19.4	6.28
Min. 7 Day Min	3.17	1.18	62.8
Med. 7 Day Min	24.3	22.9	5.76
Min. 30 Day Min	11.2	4.8	57.1
Med. 30 Day Min	41.7	39.6	5.04
Min. 90 Day Min	21.4	23.6	-10.3
Med. 90 Day Min	130	97.4	25.1
7Q10	8.68	4.64	46.5
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	134	535	-299
Mean Baseflow	233	235	-0.86

**Table 5: Period High Flows**

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	14300	24600	-72
Med. 1 Day Max	5860	6230	-6.31
Max. 3 Day Max	12200	18500	-51.6
Med. 3 Day Max	5340	5590	-4.68
Max. 7 Day Max	7870	11000	-39.8
Med. 7 Day Max	3410	3620	-6.16
Max. 30 Day Max	3070	3030	1.3
Med. 30 Day Max	1590	1560	1.89
Max. 90 Day Max	2240	2200	1.79
Med. 90 Day Max	1070	1070	0

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	13	11	15.4
5% Non-Exceedance	31	23.2	25.2
50% Non-Exceedance	282	255	9.57
95% Non-Exceedance	1970	1900	3.55
99% Non-Exceedance	4860	4840	0.41
Sept. 10% Non-Exceedance	23.2	23	0.86

Fig. 1: Hydrograph

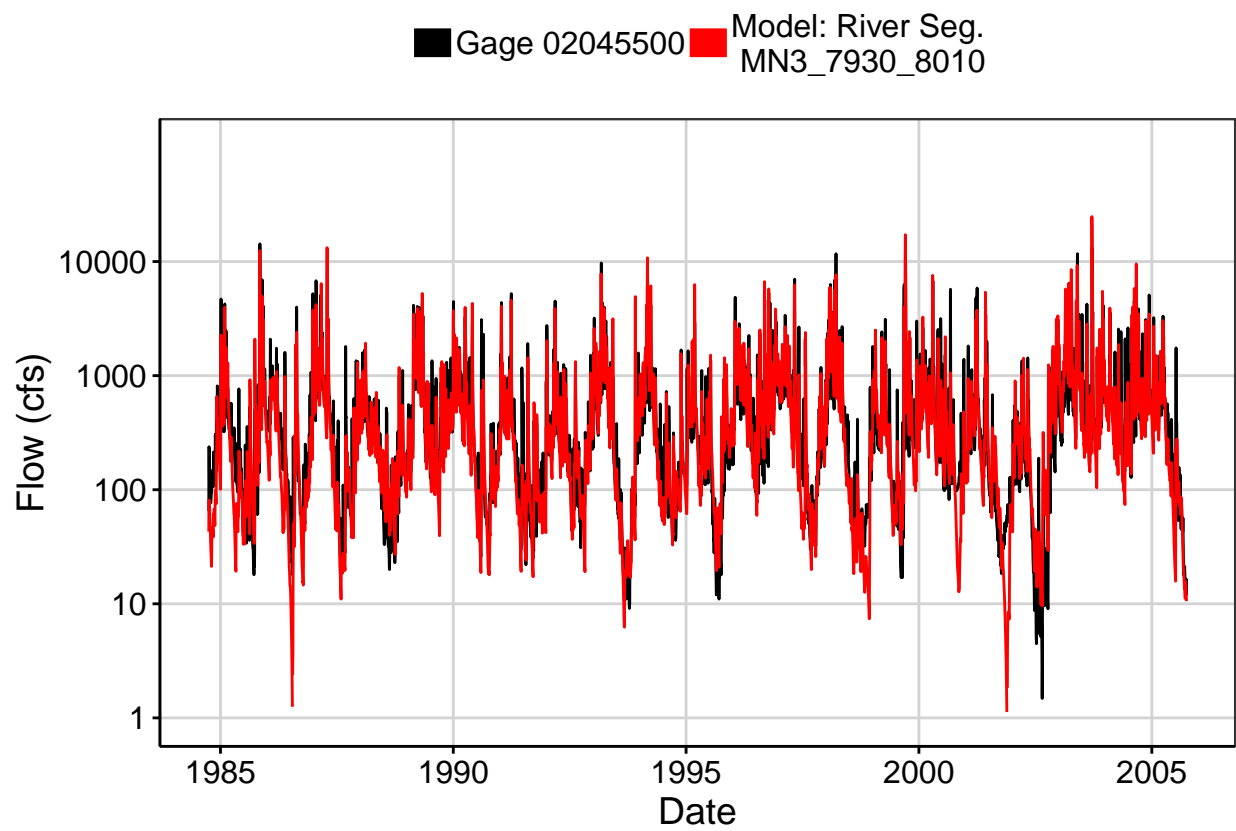


Fig. 2: Zoomed Hydrograph

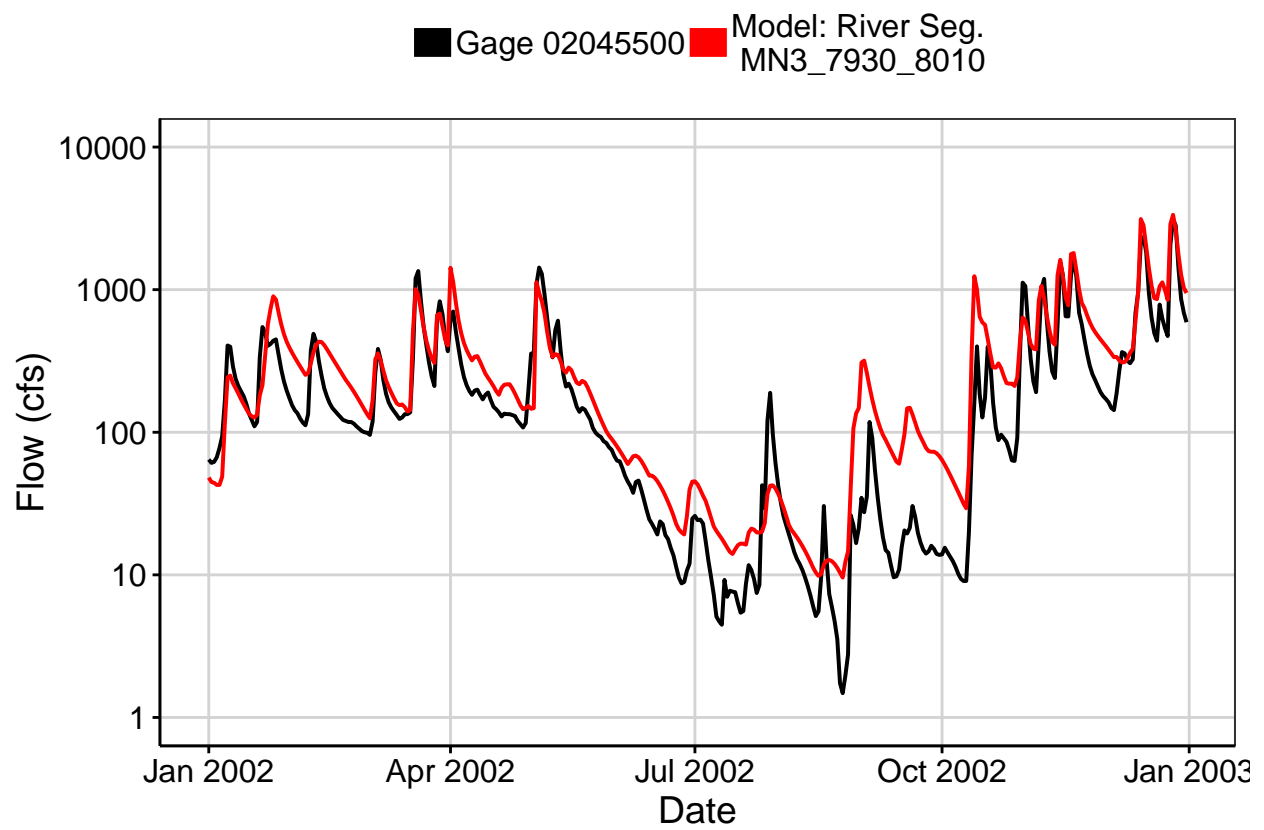


Fig. 3: Flow Exceedance

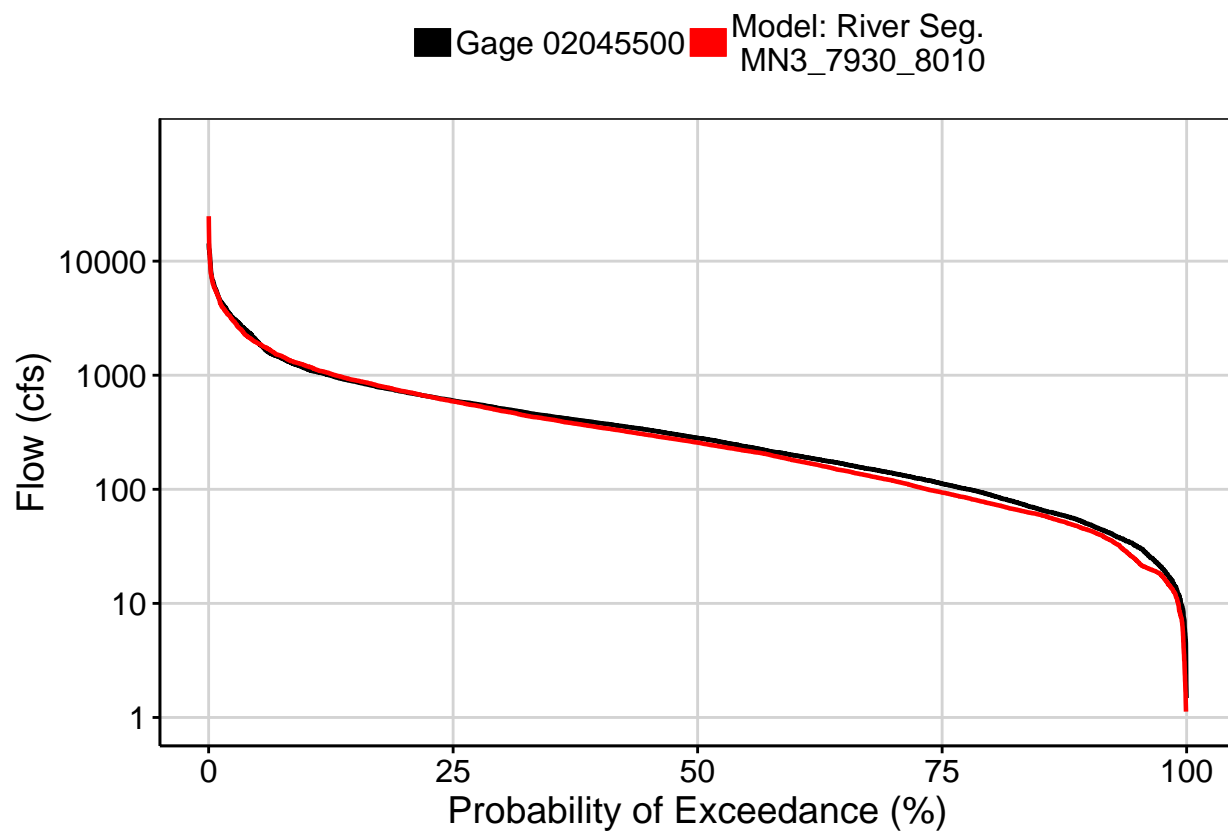


Fig. 4: Baseflow

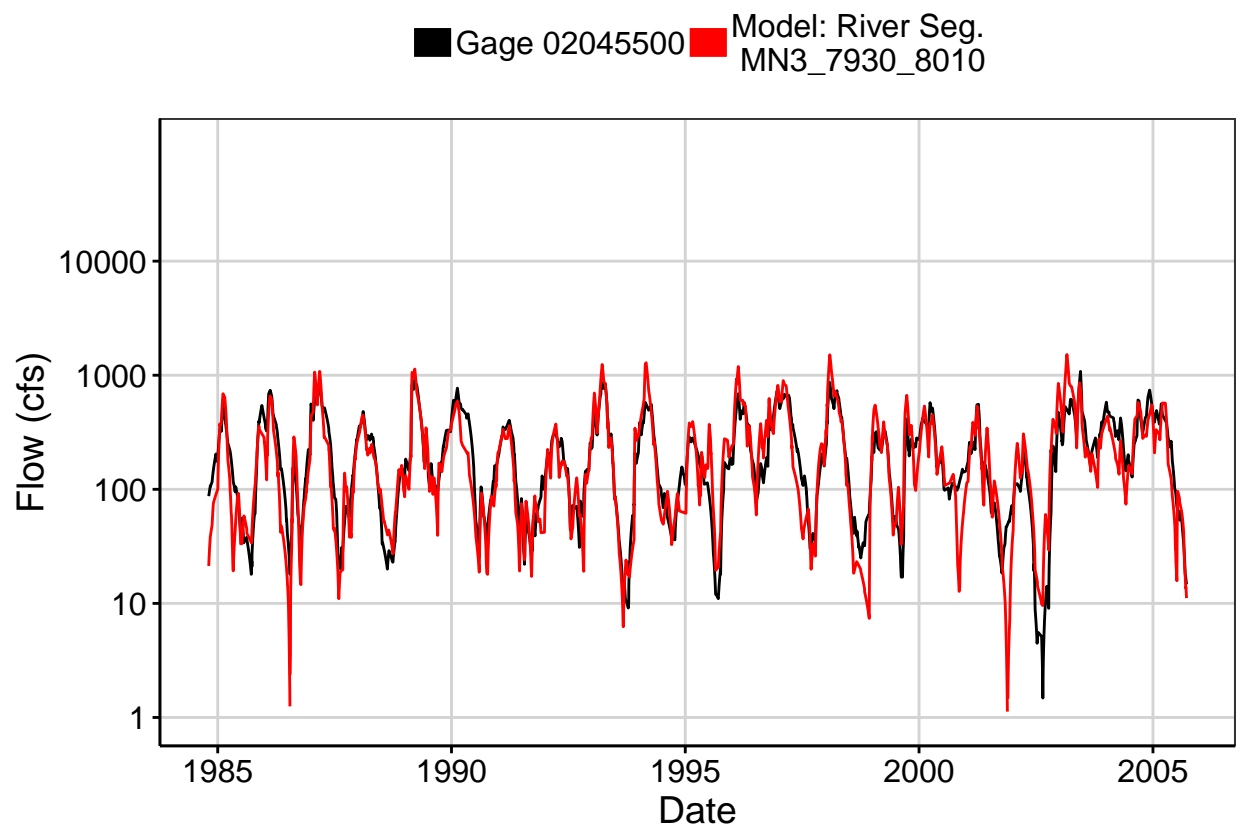


Fig. 5: Combined Baseflow

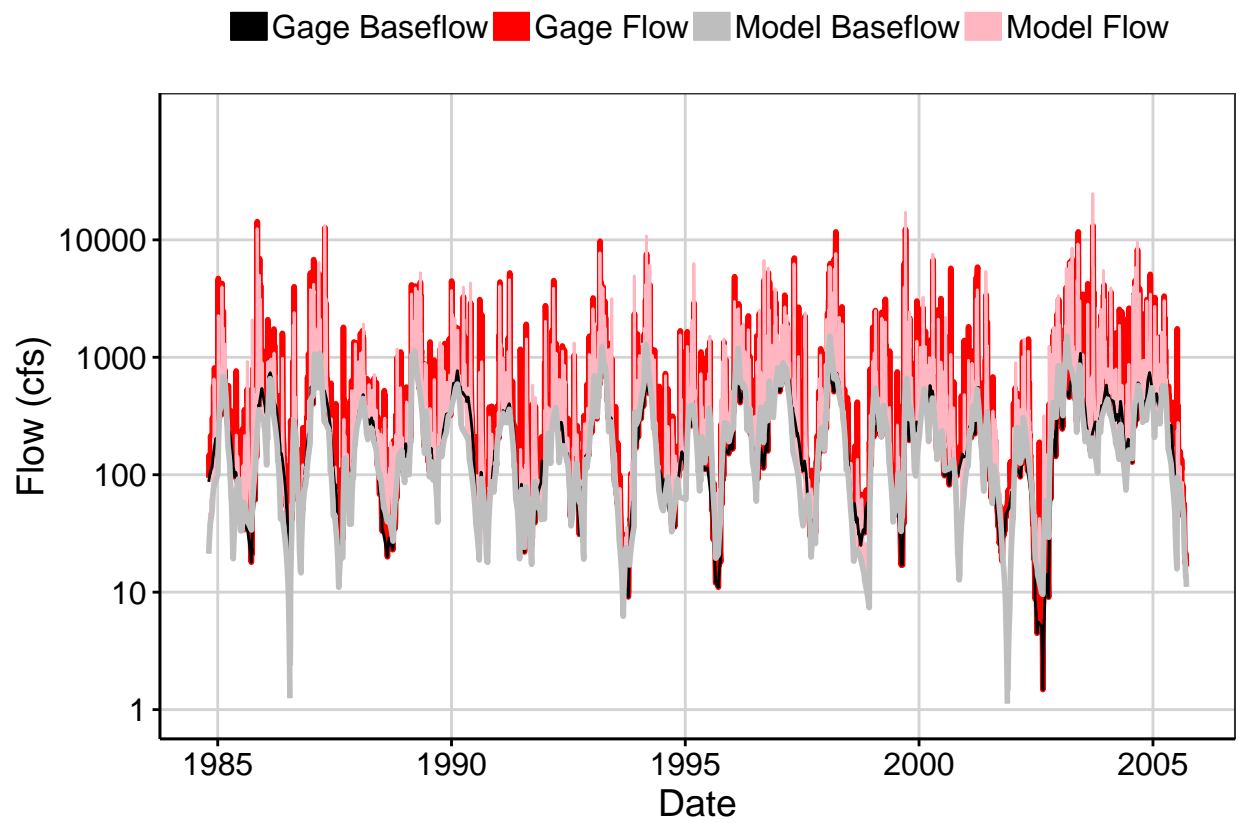




Fig. 6: Largest Error Segment

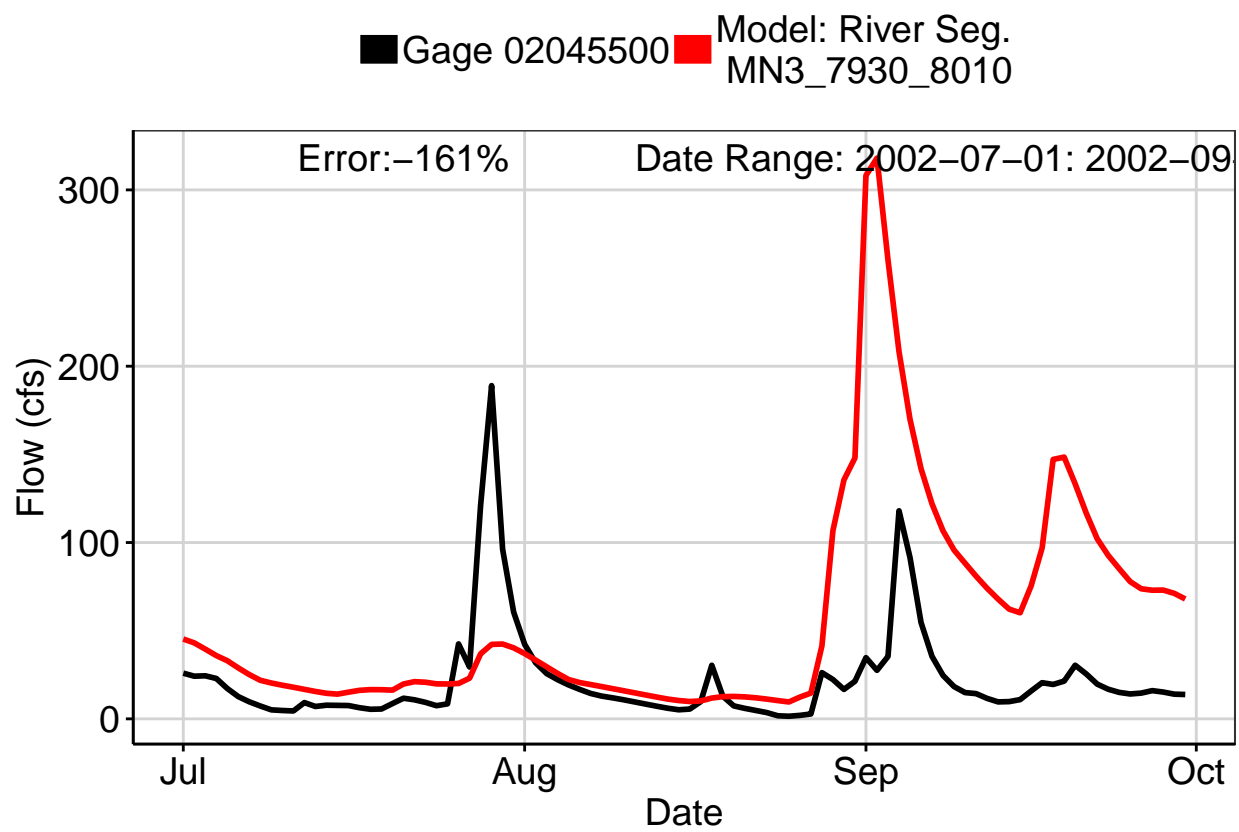


Fig. 7: Second Largest Error Segment

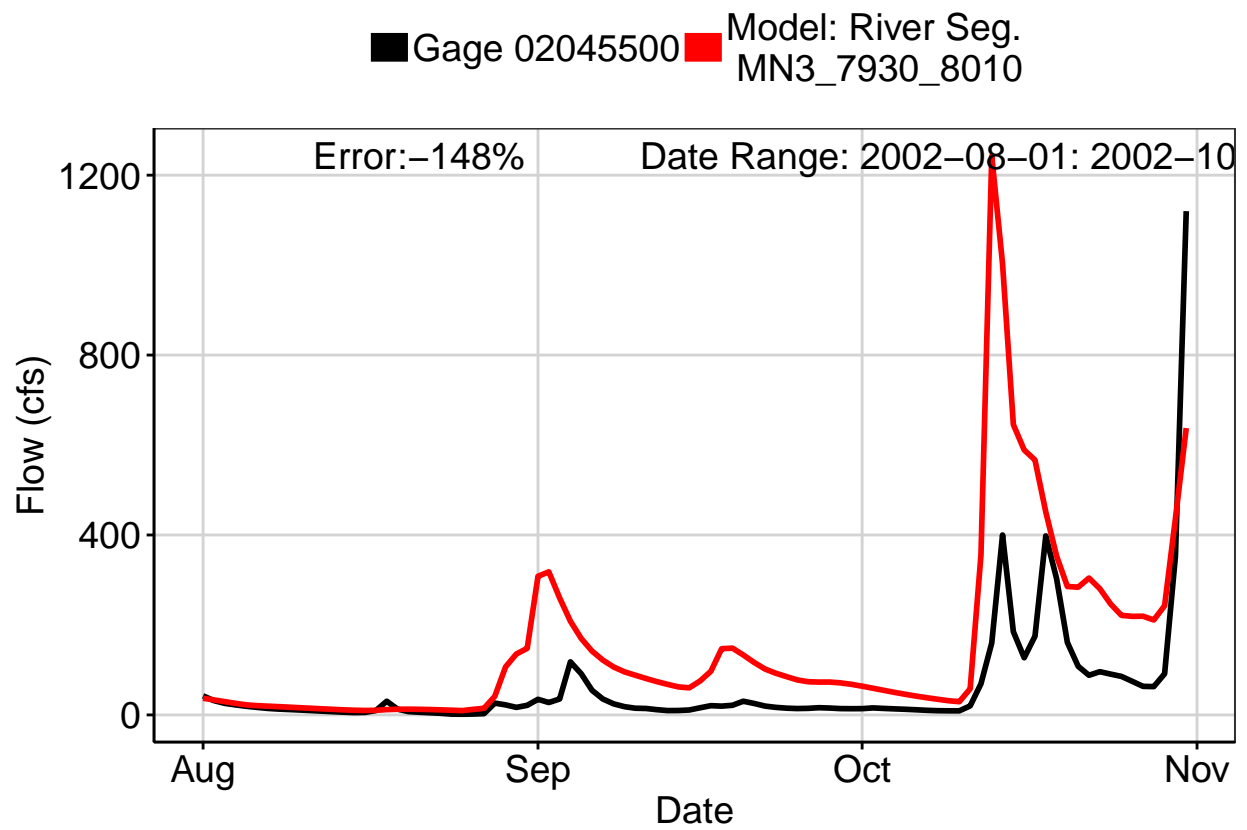


Fig. 8: Third Largest Error Segment

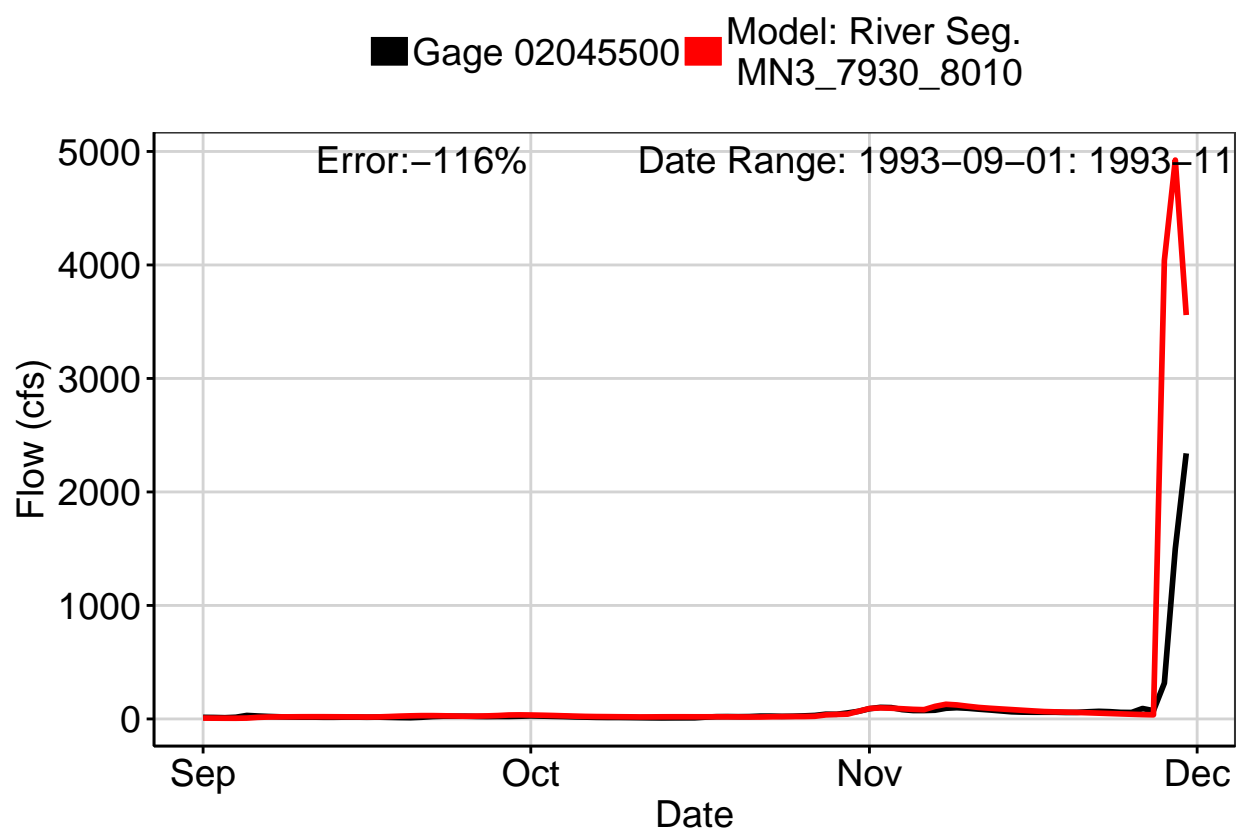


Fig. 9: Residuals Plot

