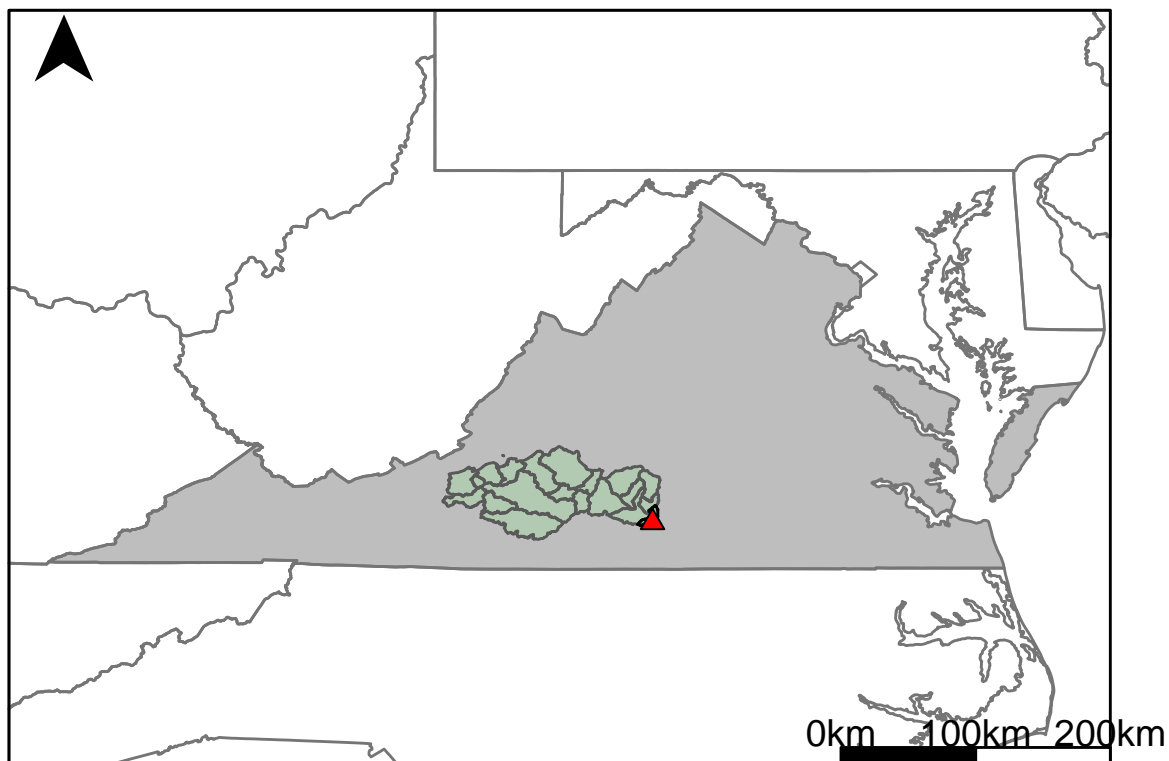


Appendix H.13: USGS Gage 02066000 vs. OR5_8200_8370



This river segment follows part of the flow of the Roanoke River. The gage is located in Halifax County, VA (Lat 36°54'54", Long 78°44'28") approximately 43 miles northeast of Danville, VA. Drainage area is 2966 sq. miles. This gage started taking data in 1901 and is still taking data. Flow in this area is regulated by Leesville Lake, approximately 68.7 miles upstream, and Smith Mountain Lake, approximately 86.7 miles upstream. Both of these lakes have dams associated with them but there are no diversions. The average daily discharge error between the model and gage data for the 20 year timespan was -0.32%, with 42.1% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	1040	613	41.1
Feb. Low Flow	1220	722	40.8
Mar. Low Flow	1230	1380	-12.2
Apr. Low Flow	1270	1890	-48.8
May Low Flow	1500	2590	-72.7
Jun. Low Flow	1680	2800	-66.7
Jul. Low Flow	1560	1740	-11.5
Aug. Low Flow	1930	1300	32.6
Sep. Low Flow	1350	1100	18.5
Oct. Low Flow	1140	738	35.3
Nov. Low Flow	1050	688	34.5
Dec. Low Flow	959	657	31.5

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	3090	3100	-0.32
Jan. Mean Flow	3570	3870	-8.4
Feb. Mean Flow	4070	4720	-16
Mar. Mean Flow	4860	5650	-16.3
Apr. Mean Flow	4610	4690	-1.74
May Mean Flow	3450	3210	6.96
Jun. Mean Flow	2790	2620	6.09
Jul. Mean Flow	2030	1610	20.7
Aug. Mean Flow	1880	1410	25
Sep. Mean Flow	2680	2440	8.96
Oct. Mean Flow	2010	1980	1.49
Nov. Mean Flow	2510	2360	5.98
Dec. Mean Flow	2740	2770	-1.09

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	2170	1360	37.3
Feb. High Flow	6200	3520	43.2
Mar. High Flow	4320	4370	-1.16
Apr. High Flow	9350	8710	6.84
May High Flow	10400	6450	38
Jun. High Flow	13400	13300	0.75
Jul. High Flow	11500	11900	-3.48
Aug. High Flow	5830	5290	9.26
Sep. High Flow	4470	3570	20.1
Oct. High Flow	3300	1980	40
Nov. High Flow	2860	1440	49.7
Dec. High Flow	2670	1220	54.3

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	350	109	68.9
Med. 1 Day Min	918	389	57.6
Min. 3 Day Min	393	110	72
Med. 3 Day Min	945	405	57.1
Min. 7 Day Min	406	113	72.2
Med. 7 Day Min	972	423	56.5
Min. 30 Day Min	458	145	68.3
Med. 30 Day Min	1060	616	41.9
Min. 90 Day Min	522	272	47.9
Med. 90 Day Min	1400	848	39.4
7Q10	605	170	71.9
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	852	3100	-264
Mean Baseflow	1640	1830	-11.6

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	78700	74600	5.21
Med. 1 Day Max	31500	35200	-11.7
Max. 3 Day Max	63200	61900	2.06
Med. 3 Day Max	26600	23000	13.5
Max. 7 Day Max	37000	36600	1.08
Med. 7 Day Max	18500	16600	10.3
Max. 30 Day Max	18300	16300	10.9
Med. 30 Day Max	7600	8090	-6.45
Max. 90 Day Max	10600	12000	-13.2
Med. 90 Day Max	5320	5750	-8.08

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	489	177	63.8
5% Non-Exceedance	781	397	49.2
50% Non-Exceedance	1860	1830	1.61
95% Non-Exceedance	8880	9560	-7.66
99% Non-Exceedance	23100	20900	9.52
Sept. 10% Non-Exceedance	413	413	0

Fig. 1: Hydrograph

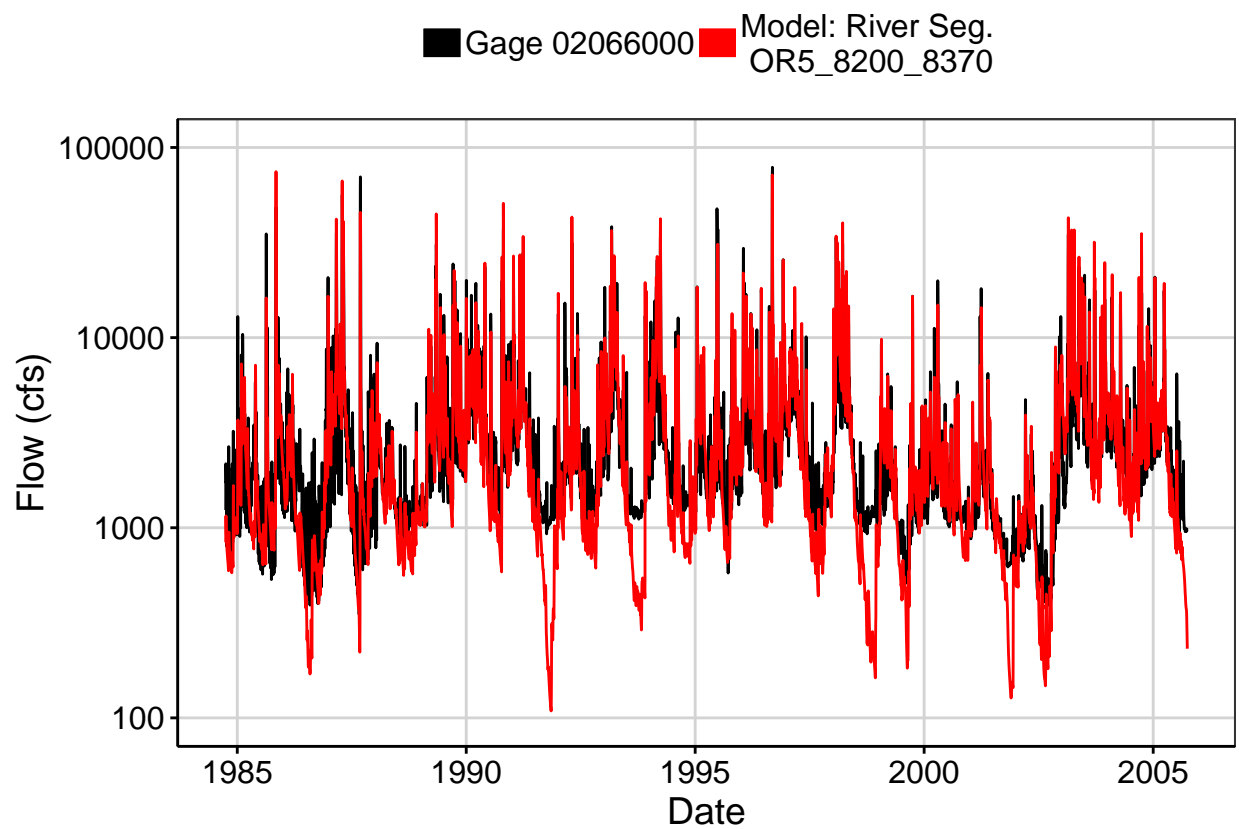


Fig. 2: Zoomed Hydrograph

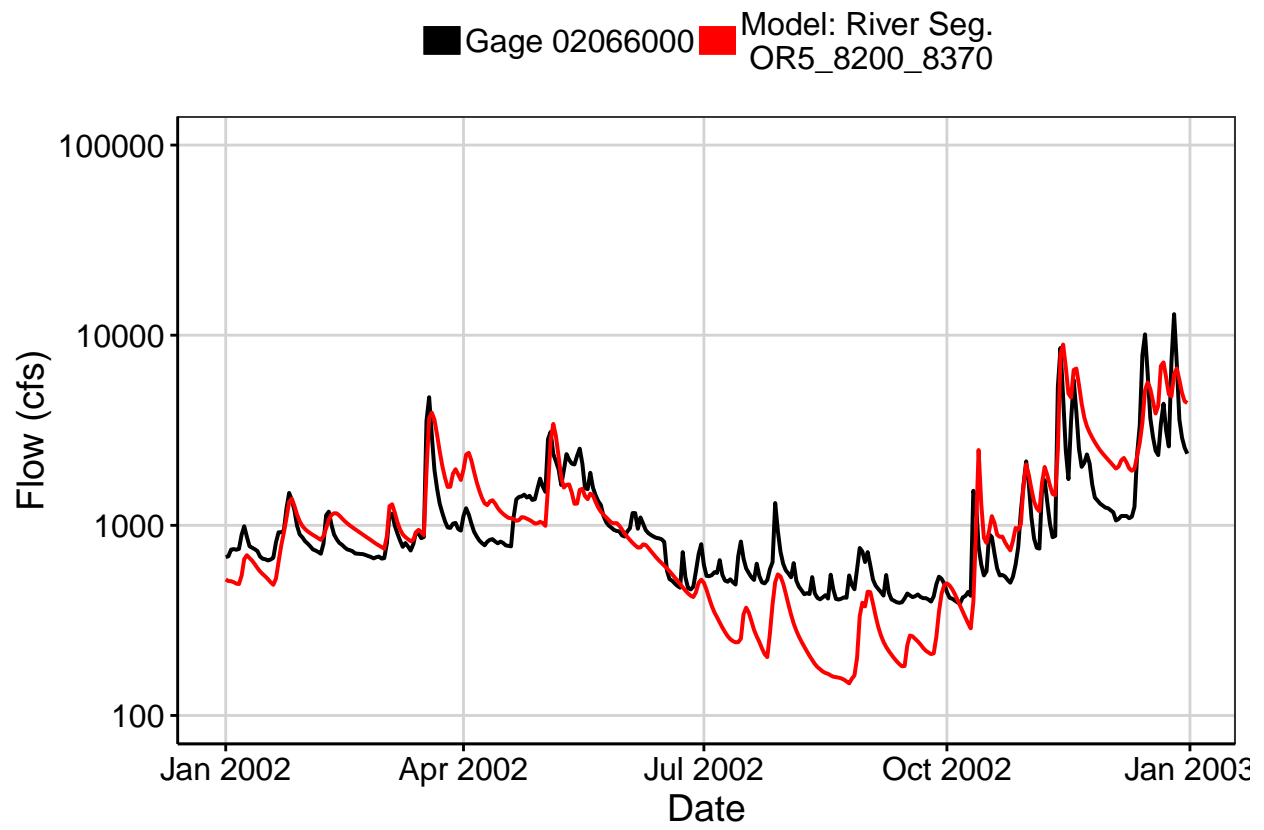


Fig. 3: Flow Exceedance

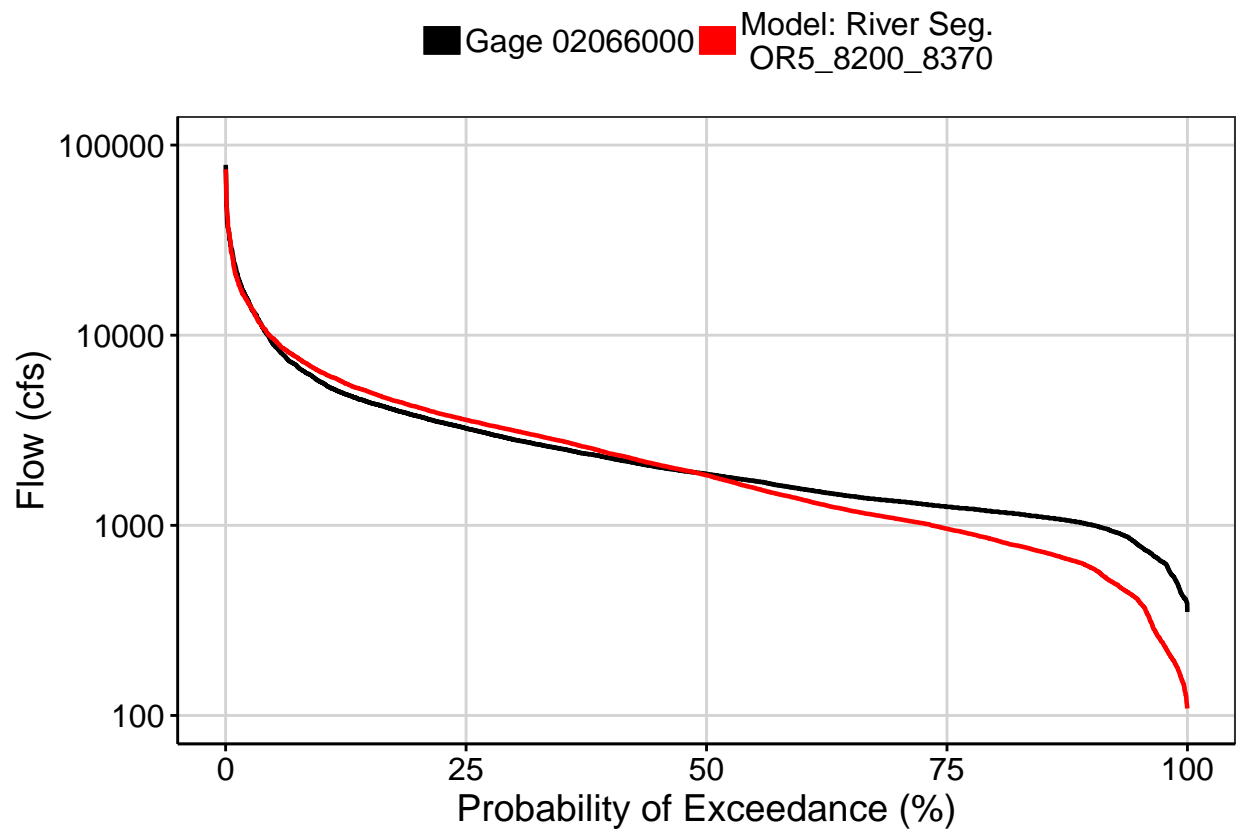


Fig. 4: Baseflow

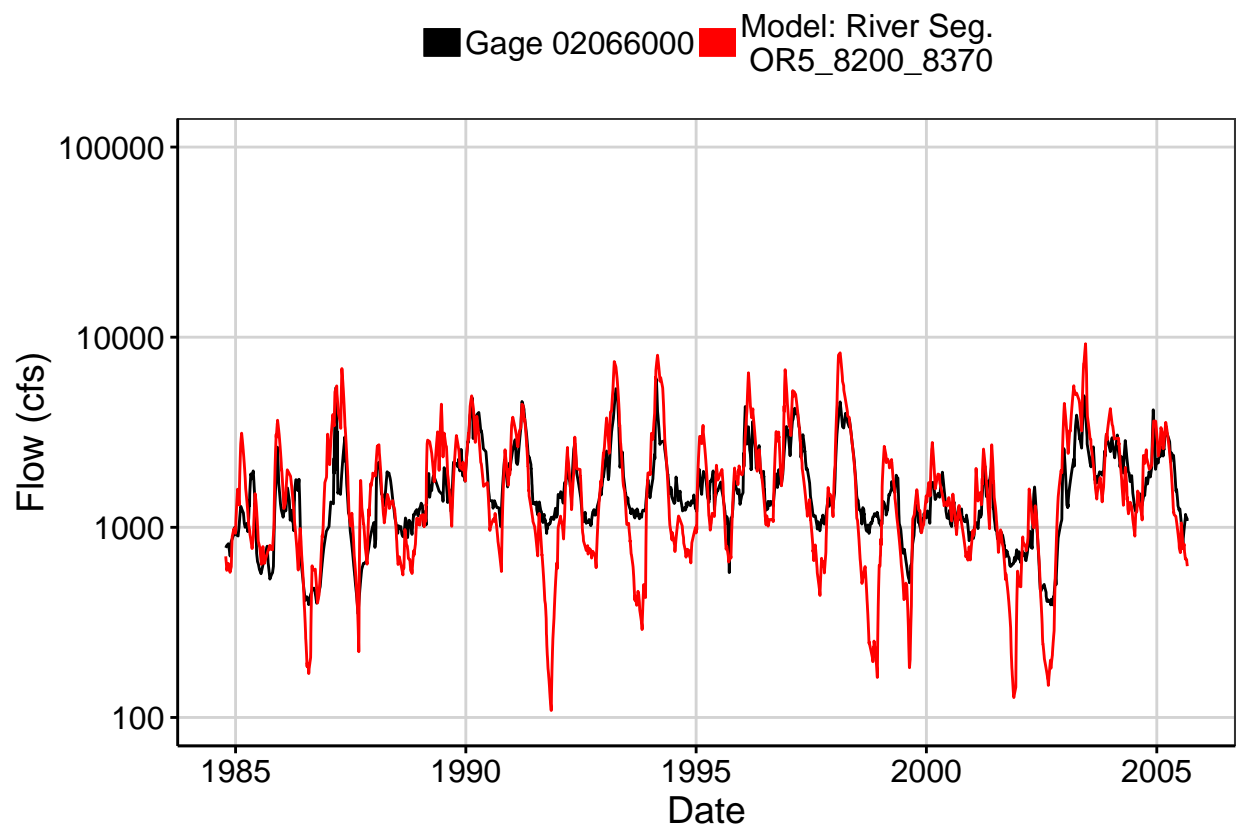


Fig. 5: Combined Baseflow

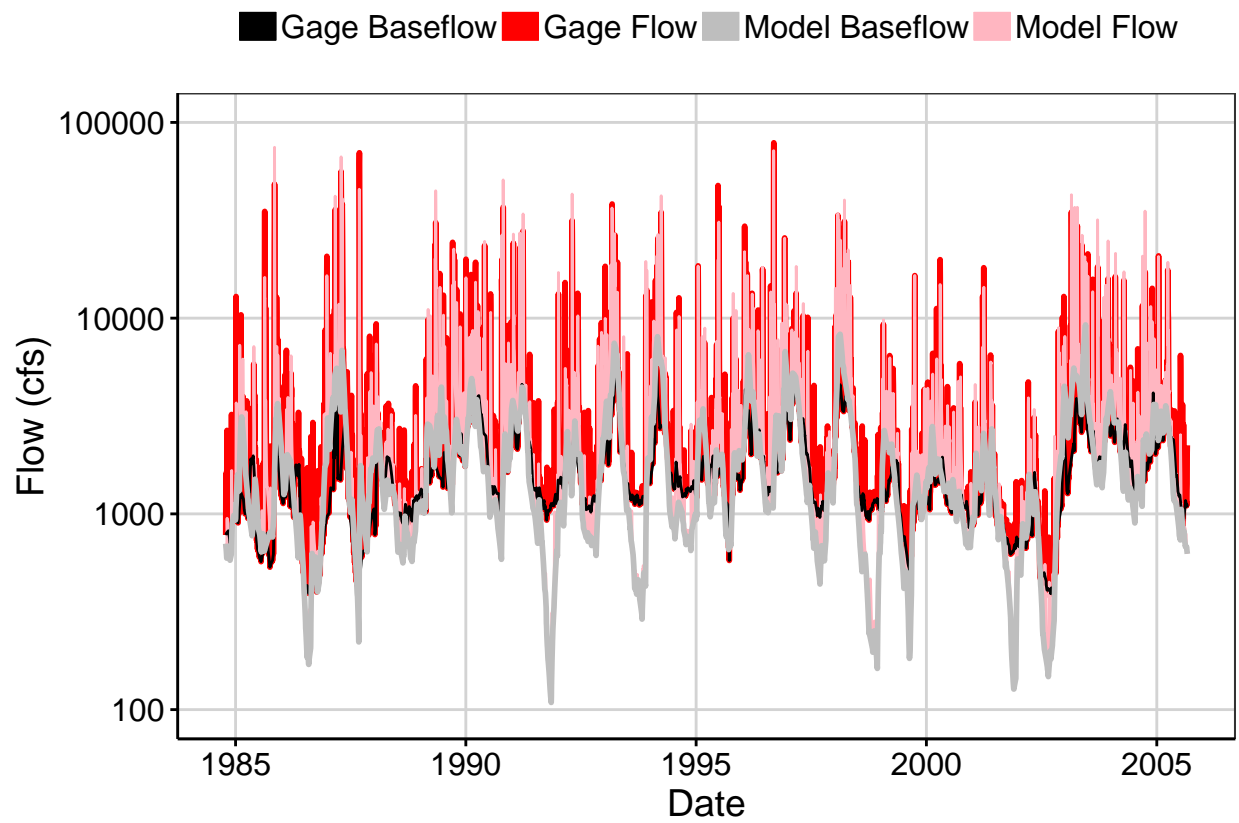


Fig. 6: Largest Error Segment

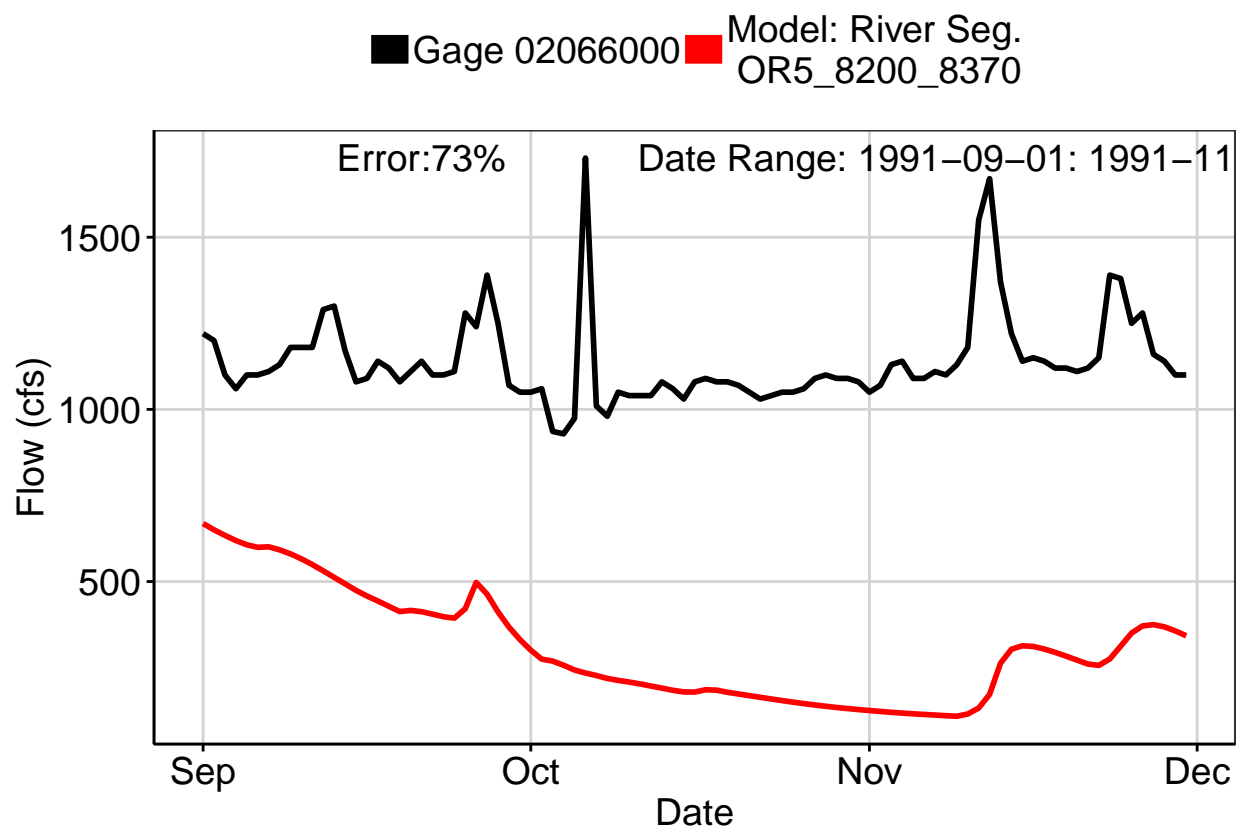


Fig. 7: Second Largest Error Segment

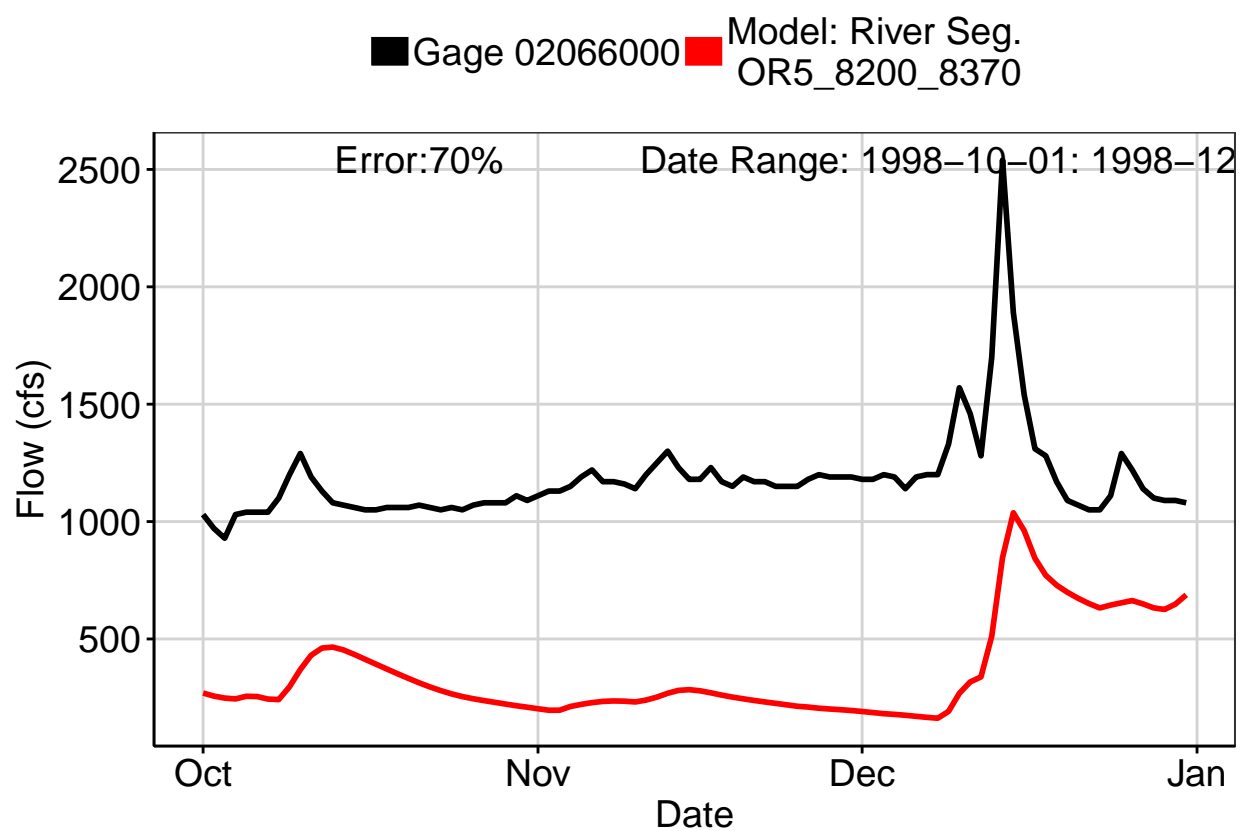


Fig. 8: Third Largest Error Segment

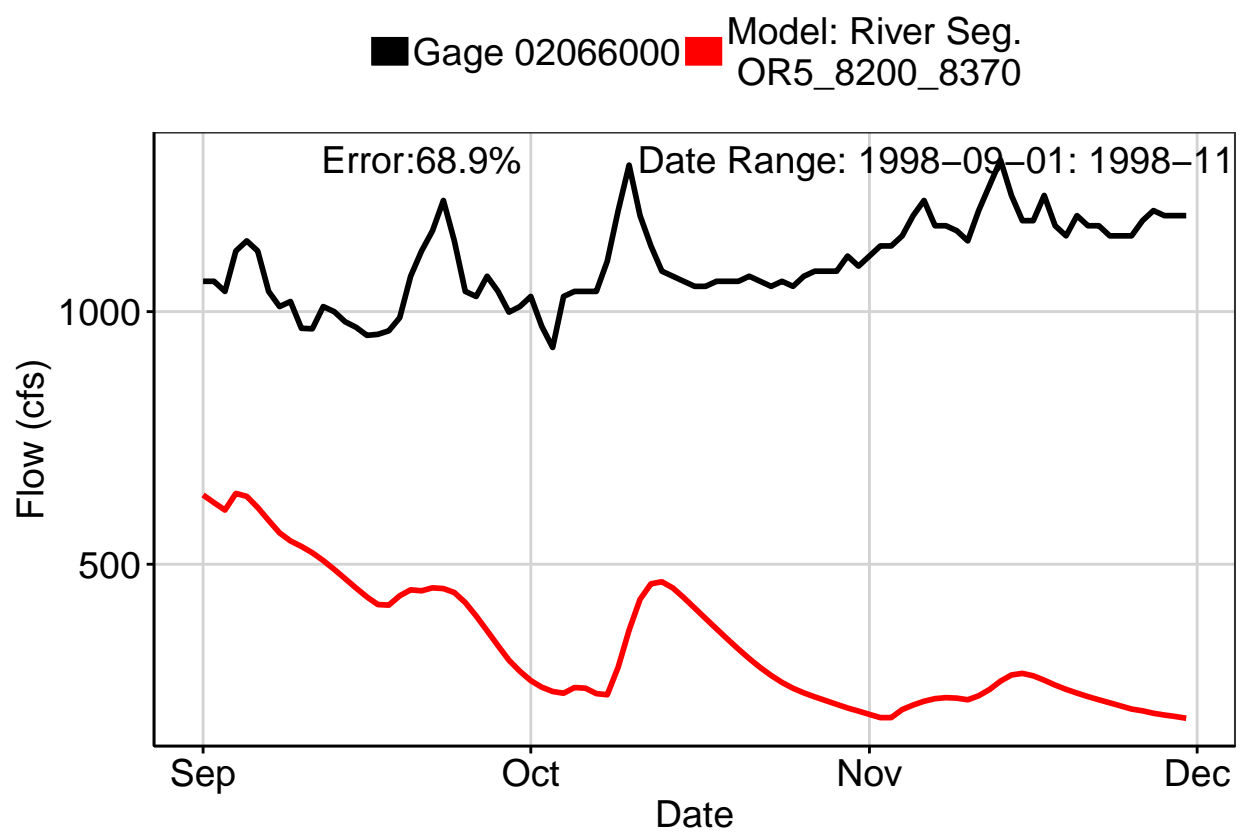


Fig. 9: Residuals Plot

