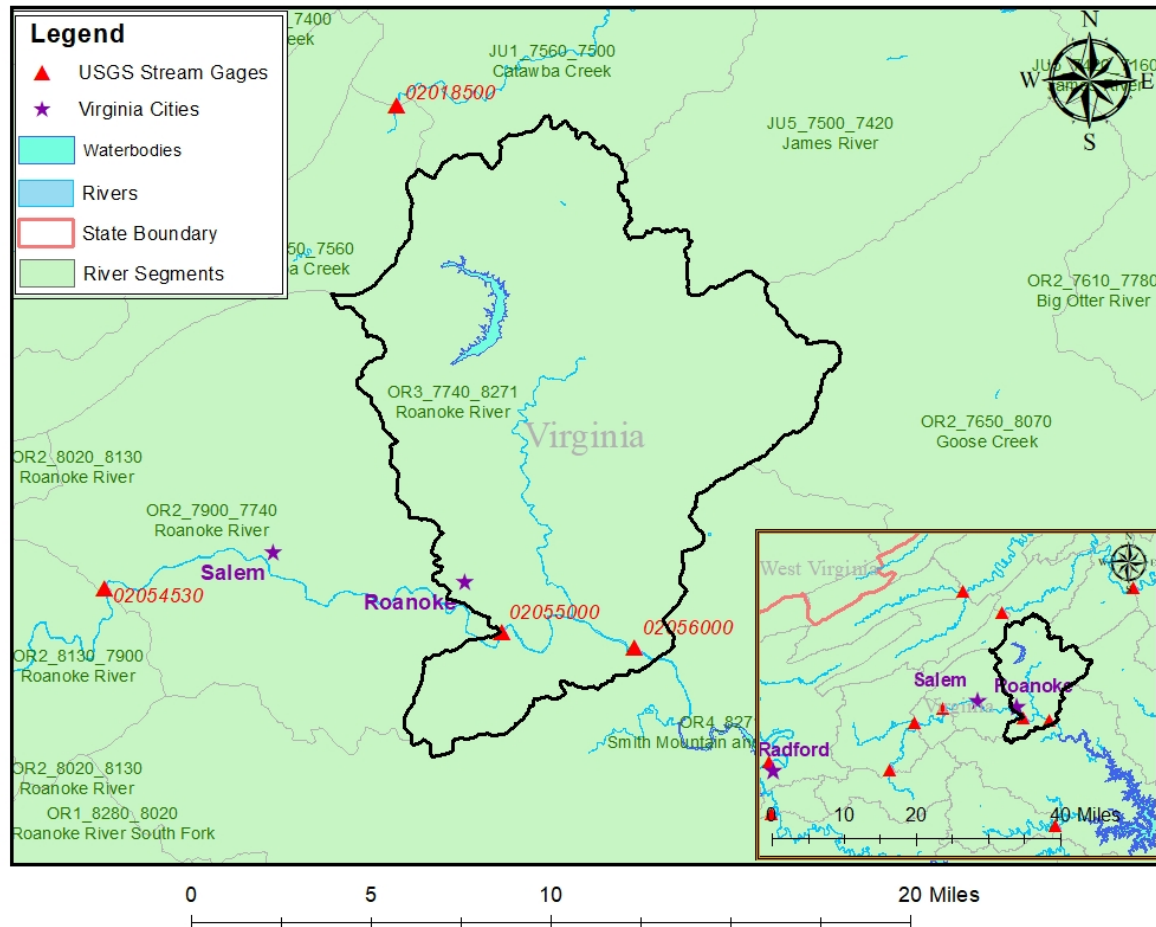


# 02056000 vs. OR3\_7740\_8271

*Daniel Hildebrand, Hailey Alsbaugh, and Kelsey Reitz*

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This river segment follows part of the flow of the Roanoke River. The gage is located in Roanoke County, VA (Lat 37°15'18", Long 79°52'18") approximately 4 miles southeast of Roanoke, VA. Drainage area is 509 sq. miles. This gage started taking data in 1926 and is still taking data. There is complete regulation of low flow conditions in this area due to a power plant located only 200 ft upstream. There is very little storage at the facility, so excess water frequently overtops the dam. The average daily discharge error between the model and gage data for the 20 year timespan was 4.04%, with 29.2% of its rolling three month time spans above 20% error.

**Table 1: Monthly Low Flows**

	USGS Gage	Model	Pct. Error
Jan. Low Flow	137	65.7	52
Feb. Low Flow	156	105	32.7
Mar. Low Flow	192	214	-11.5
Apr. Low Flow	210	222	-5.71
May Low Flow	323	382	-18.3
Jun. Low Flow	363	350	3.58
Jul. Low Flow	315	281	10.8
Aug. Low Flow	245	238	2.86
Sep. Low Flow	224	192	14.3
Oct. Low Flow	178	110	38.2
Nov. Low Flow	135	89	34.1
Dec. Low Flow	128	63.4	50.5

**Table 2: Monthly Average Flows**

	USGS Gage	Model	Pct. Error
Overall Mean Flow	544	522	4.04
Jan. Mean Flow	639	654	-2.35
Feb. Mean Flow	807	789	2.23
Mar. Mean Flow	909	888	2.31
Apr. Mean Flow	854	775	9.25
May Mean Flow	612	599	2.12
Jun. Mean Flow	515	491	4.66
Jul. Mean Flow	340	323	5
Aug. Mean Flow	304	247	18.8
Sep. Mean Flow	413	395	4.36
Oct. Mean Flow	279	268	3.94
Nov. Mean Flow	422	429	-1.66
Dec. Mean Flow	458	427	6.77

**Table 3: Monthly High Flows**

	USGS Gage	Model	Pct. Error
Jan. High Flow	364	671	-84.3
Feb. High Flow	727	1120	-54.1
Mar. High Flow	1050	902	14.1
Apr. High Flow	1710	1810	-5.85
May High Flow	1610	1470	8.7
Jun. High Flow	2980	2830	5.03
Jul. High Flow	1700	1530	10
Aug. High Flow	1440	1470	-2.08
Sep. High Flow	727	884	-21.6
Oct. High Flow	621	687	-10.6
Nov. High Flow	563	638	-13.3
Dec. High Flow	341	535	-56.9

**Table 4: Period Low Flows**

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	79.5	0.82	99
Med. 1 Day Min	114	45.2	60.4
Min. 3 Day Min	81	5.05	93.8
Med. 3 Day Min	122	49.4	59.5
Min. 7 Day Min	82.4	7.14	91.3
Med. 7 Day Min	131	54.8	58.2
Min. 30 Day Min	103	10.6	89.7
Med. 30 Day Min	153	90.5	40.8
Min. 90 Day Min	123	46.7	62
Med. 90 Day Min	205	158	22.9
7Q10	102	15.5	84.8
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	176	105	40.3
Mean Baseflow	283	270	4.59

**Table 5: Period High Flows**

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	19700	26500	-34.5
Med. 1 Day Max	8200	7580	7.56
Max. 3 Day Max	12500	12500	0
Med. 3 Day Max	4590	4570	0.44
Max. 7 Day Max	6810	6230	8.52
Med. 7 Day Max	3060	2910	4.9
Max. 30 Day Max	3710	2950	20.5
Med. 30 Day Max	1400	1450	-3.57
Max. 90 Day Max	2130	1840	13.6
Med. 90 Day Max	918	949	-3.38

**Table 6: Non-Exceedance Flows**

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	104	18.6	82.1
5% Non-Exceedance	130	49.4	62
50% Non-Exceedance	302	303	-0.33
95% Non-Exceedance	1490	1530	-2.68
99% Non-Exceedance	4280	4390	-2.57
Sept. 10% Non-Exceedance	43.4	127	-193

**Fig. 1: Hydrograph**

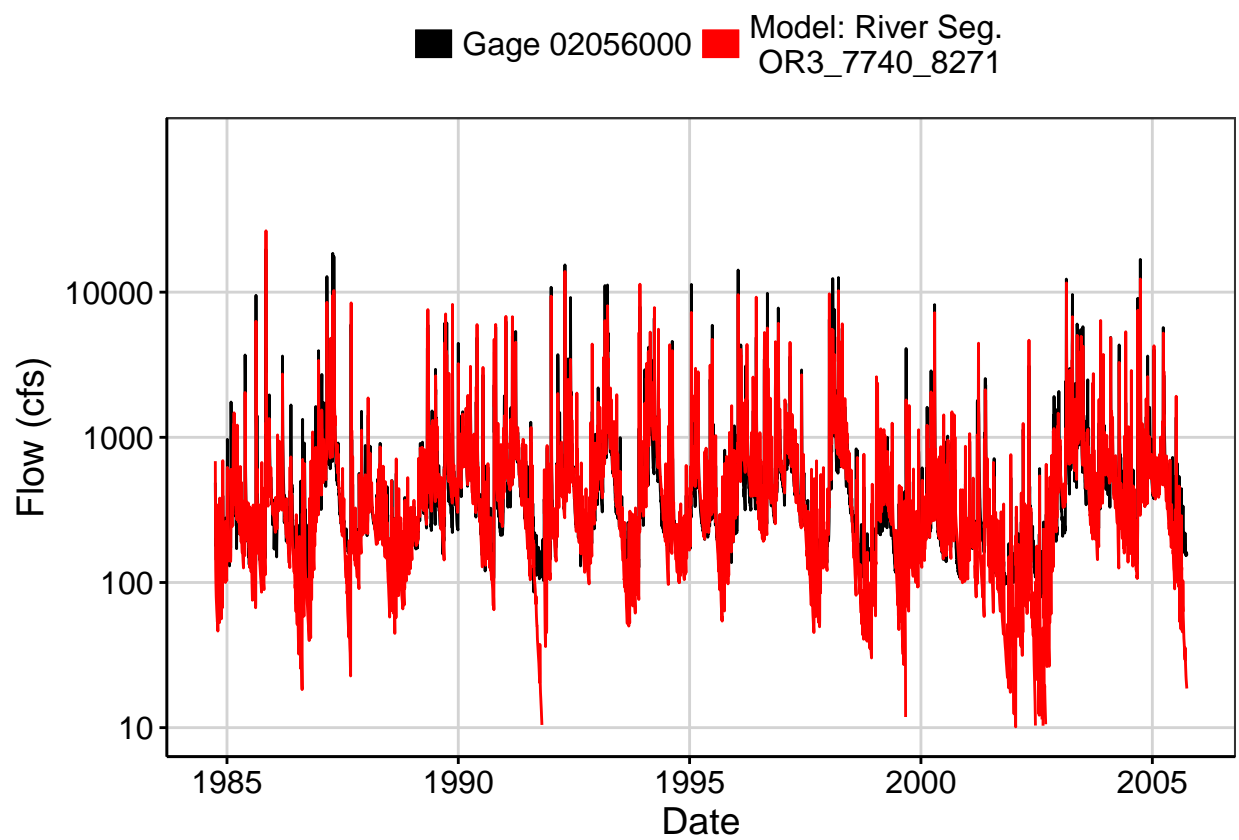


Fig. 2: Zoomed Hydrograph

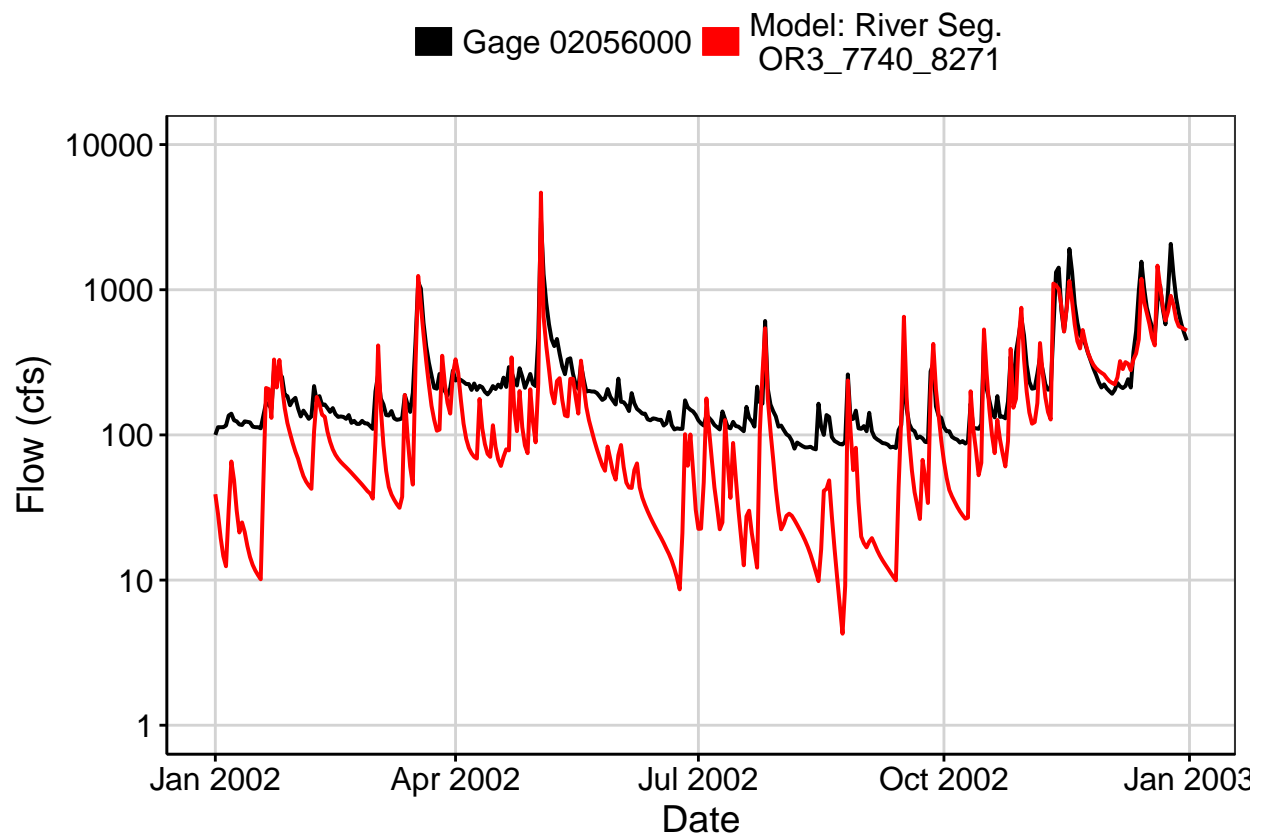


Fig. 3: Flow Exceedance

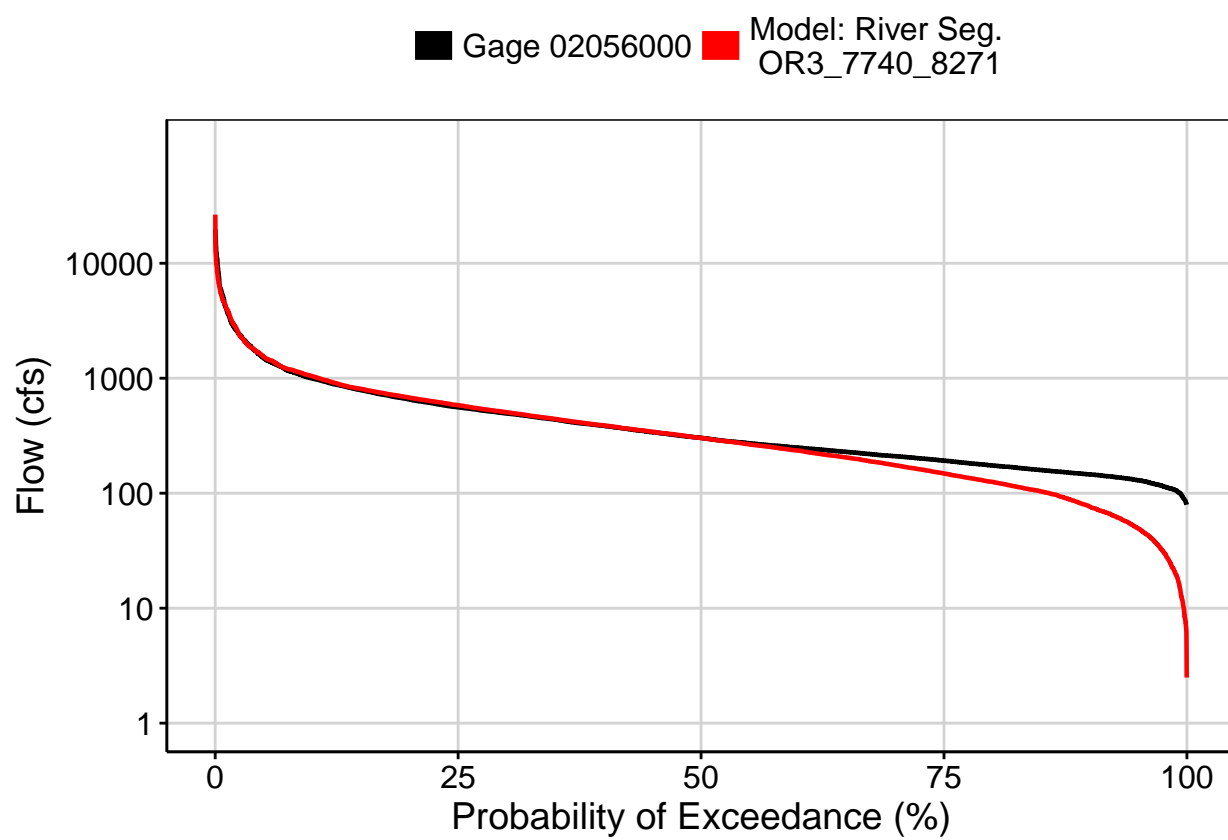


Fig. 4: Baseflow

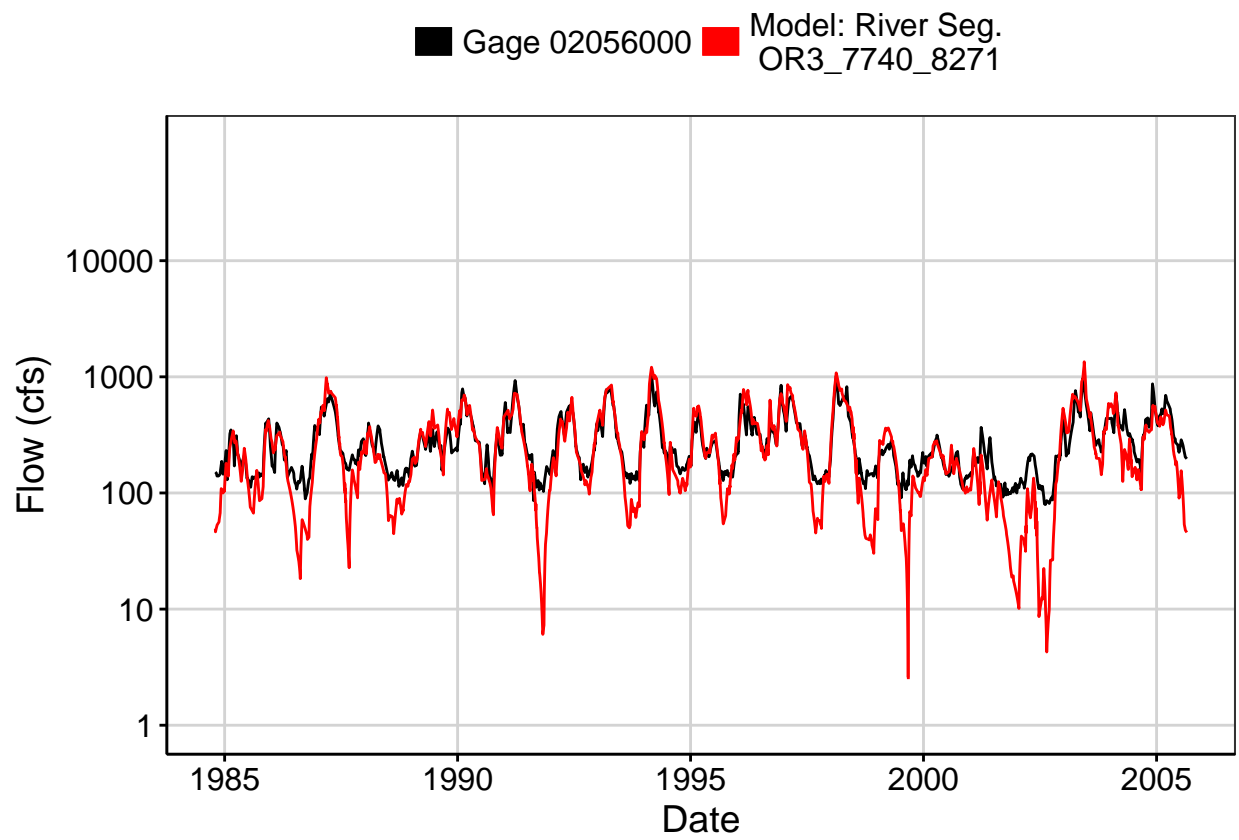


Fig. 5: Combined Baseflow

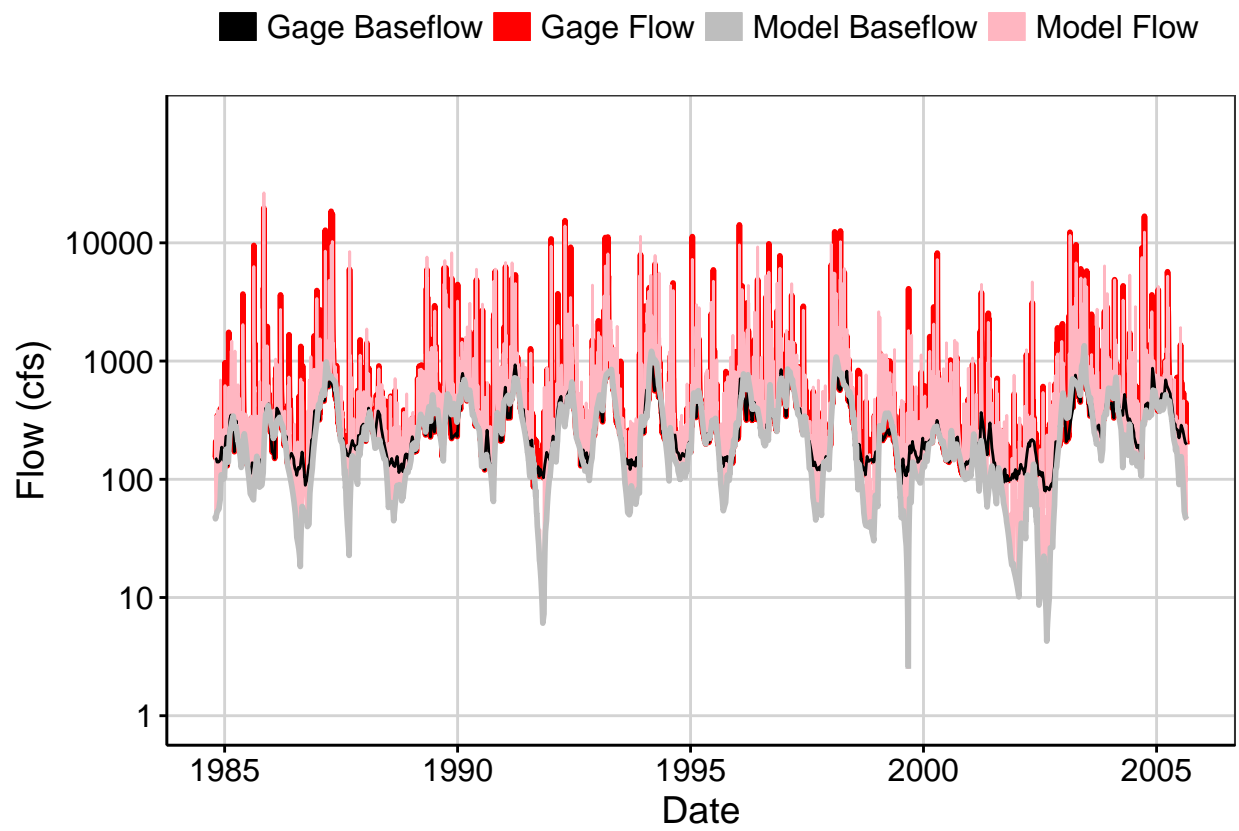




Fig. 6: Largest Error Segment

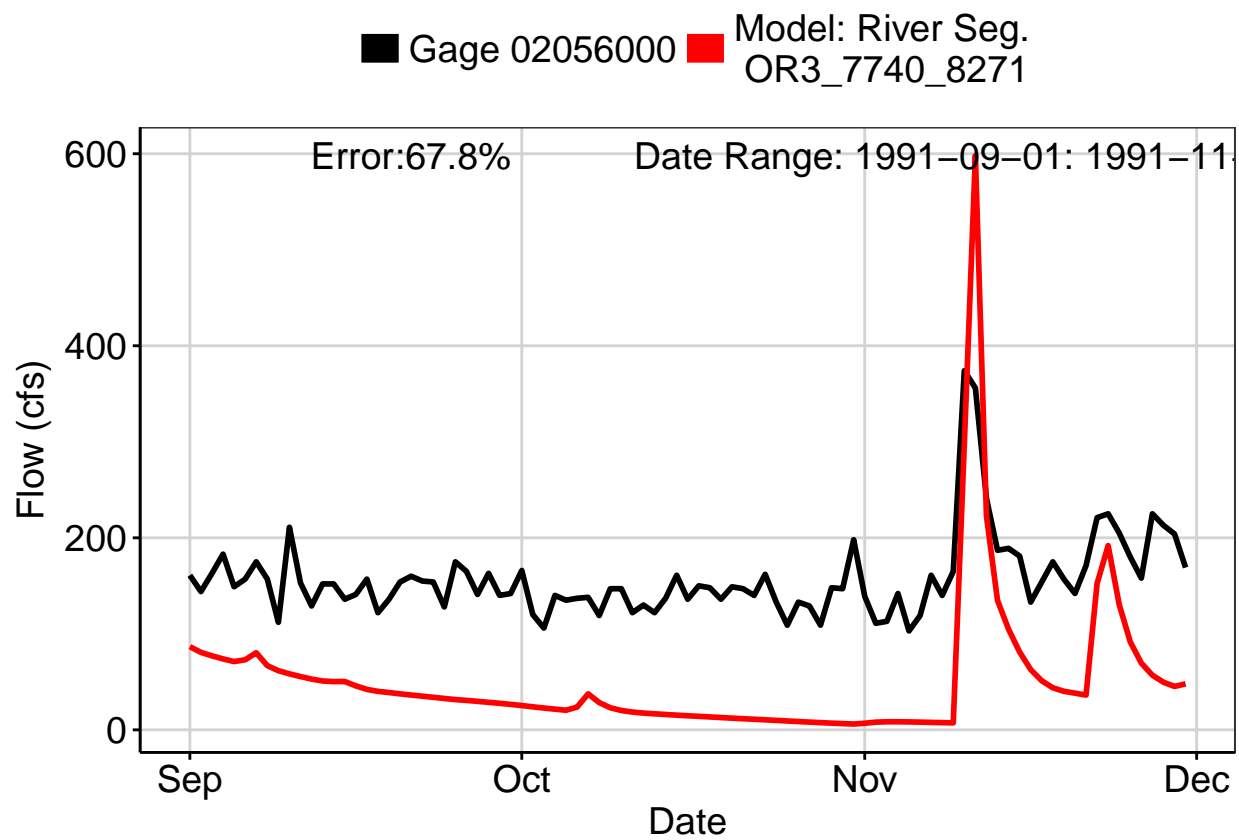


Fig. 7: Second Largest Error Segment

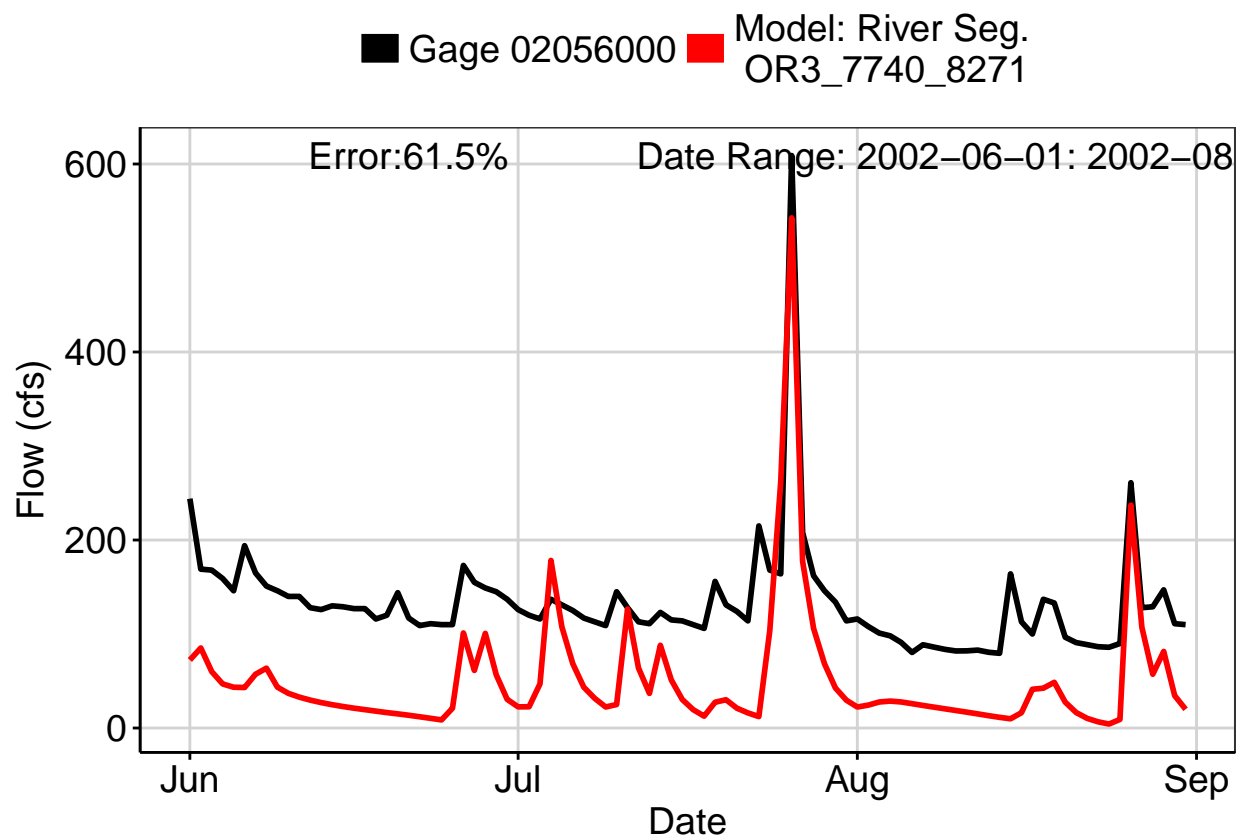


Fig. 8: Third Largest Error Segment

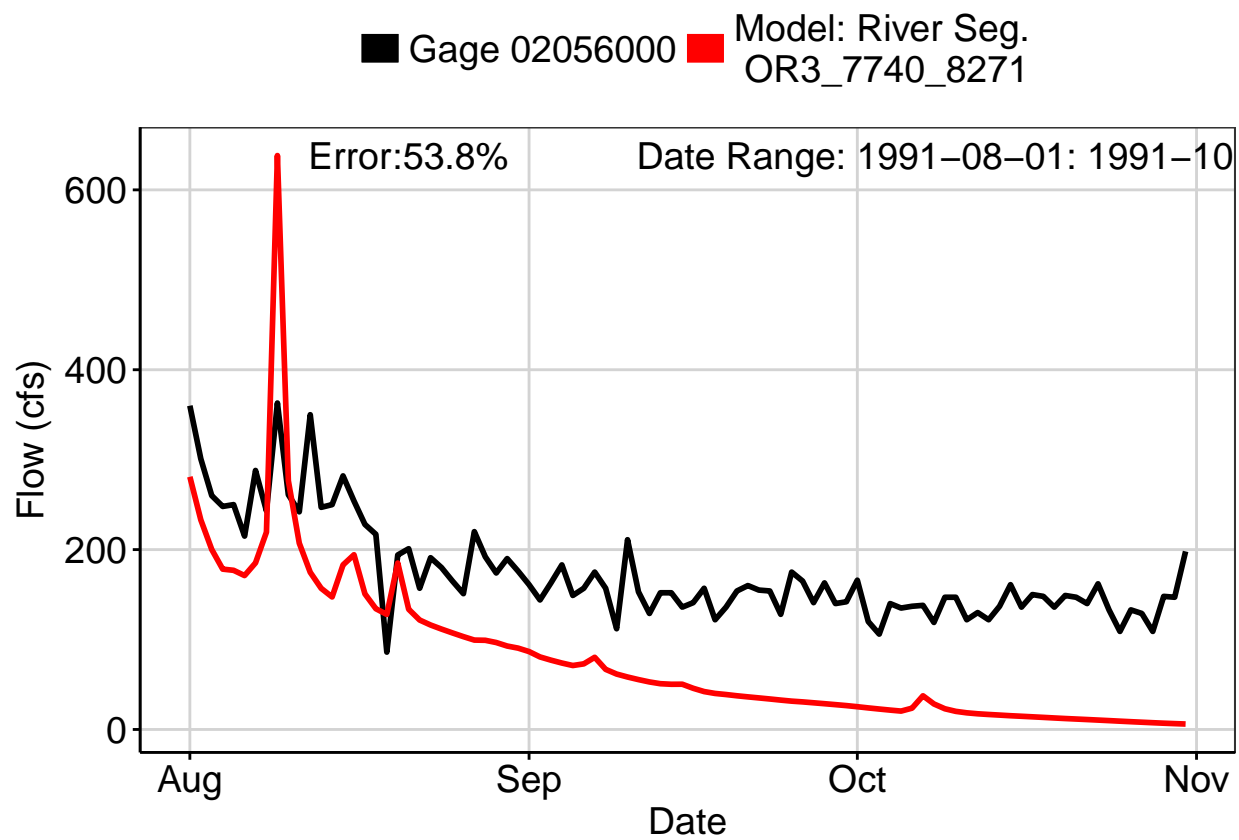


Fig. 9: Residuals Plot

