02077500 vs. OD2_8830_8710

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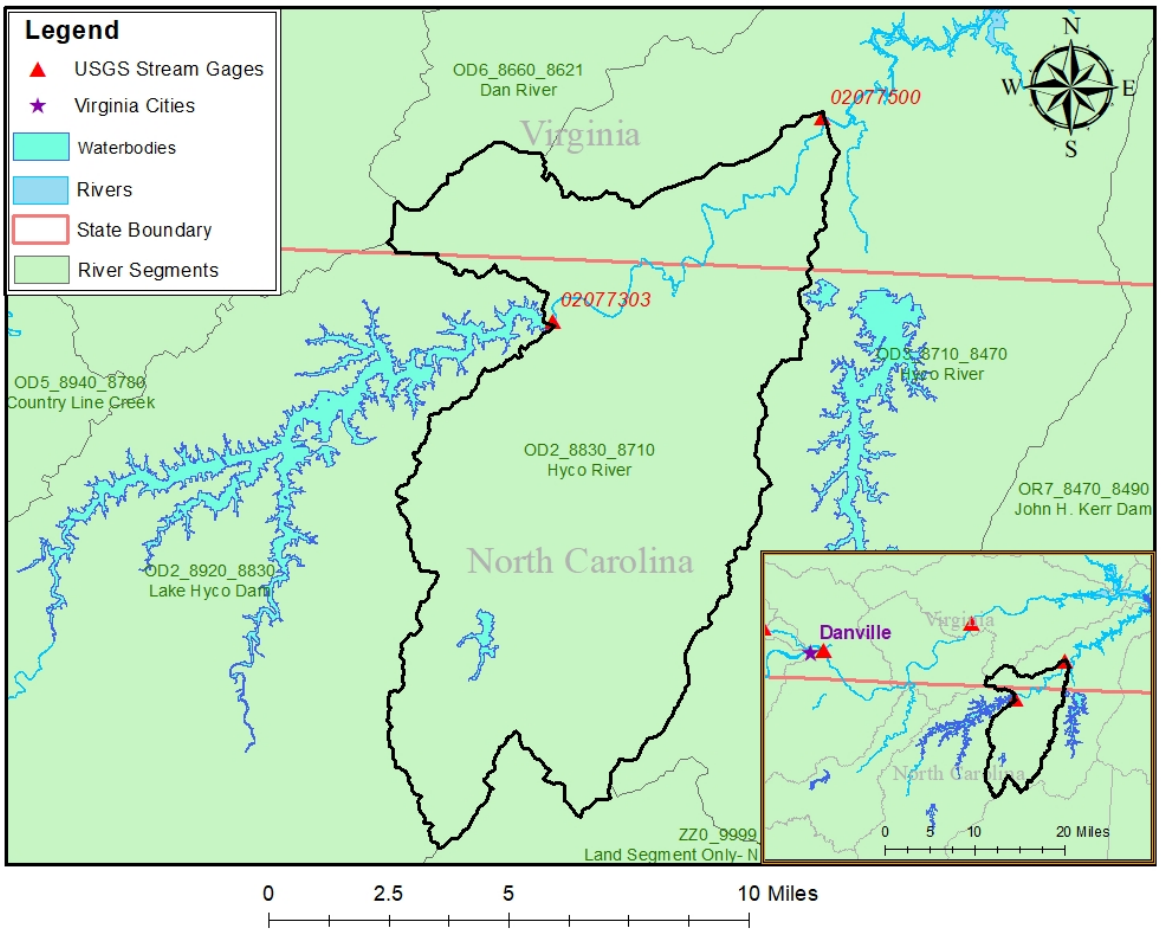

This river segment follows part of the flow of the Hyco River, a tributary of the Dan River. The gage is located in Halifax County, VA (Lat 3635'16", Long 7853'56") approximately 30 miles east of Danville, VA. Drainage area is 288 sq. miles. This gage started taking data in 1929 but was decommissioned in March of 2014. There is a small diurnal fluctuation caused by a gristmill approximately 15 miles upstream that will likely effect low-flow conditions. The Hyco Lake is 15.7 miles upstream which is home to the Roxboro Stream Electric Generating Plant and Afterbay Reservoir. The average daily discharge error between the model and gage data for the 20 year timespan was -2.67%, with 52.9% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	21	8.4	60
Feb. Low Flow	26	69.8	-168
Mar. Low Flow	35	106	-203
Apr. Low Flow	50	177	-254
May Low Flow	101	269	-166
Jun. Low Flow	116	225	-94
Jul. Low Flow	96	210	-119
Aug. Low Flow	36	31.1	13.6
Sep. Low Flow	26	35.1	-35
Oct. Low Flow	21	18.3	12.9
Nov. Low Flow	24	6.39	73.4
Dec. Low Flow	20.9	7.71	63.1

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	262	269	-2.67
Jan. Mean Flow	418	426	-1.91
Feb. Mean Flow	461	457	0.87
Mar. Mean Flow	634	601	5.21
Apr. Mean Flow	414	452	-9.18
May Mean Flow	201	177	11.9
Jun. Mean Flow	157	179	-14
Jul. Mean Flow	87.9	92.2	-4.89
Aug. Mean Flow	122	86.5	29.1
Sep. Mean Flow	176	208	-18.2
Oct. Mean Flow	112	165	-47.3
Nov. Mean Flow	144	163	-13.2
Dec. Mean Flow	224	230	-2.68

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	112	123	-9.82
Feb. High Flow	224	310	-38.4
Mar. High Flow	515	427	17.1
Apr. High Flow	1360	747	45.1
May High Flow	1410	813	42.3
Jun. High Flow	2100	1160	44.8
Jul. High Flow	1410	1040	26.2
Aug. High Flow	392	327	16.6
Sep. High Flow	138	121	12.3
Oct. High Flow	119	84.6	28.9
Nov. High Flow	102	186	-82.4
Dec. High Flow	130	130	0

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	2.5	0	100
Med. 1 Day Min	17	2.86	83.2
Min. 3 Day Min	2.97	0	100
Med. 3 Day Min	17.3	3.11	82
Min. 7 Day Min	3.43	0	100
Med. 7 Day Min	18	3.2	82.2
Min. 30 Day Min	4.64	0.16	96.6
Med. 30 Day Min	22.3	9.35	58.1
Min. 90 Day Min	10	3.57	64.3
Med. 90 Day Min	31.2	24.7	20.8
7Q10	7.29	0	100
Year of 90-Day Min. Flow	2002	1986	100
Drought Year Mean	21.5	52.6	-145
Mean Baseflow	75.9	149	-96.3

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	9240	13300	-43.9
Med. 1 Day Max	3930	3410	13.2
Max. 3 Day Max	7520	9540	-26.9
Med. 3 Day Max	3370	2170	35.6
Max. 7 Day Max	4470	5380	-20.4
Med. 7 Day Max	2390	1680	29.7
Max. 30 Day Max	2330	1880	19.3
Med. 30 Day Max	945	731	22.6
Max. 90 Day Max	1450	1180	18.6
Med. 90 Day Max	501	529	-5.59

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	7.6	0	100
5% Non-Exceedance	14	3.4	75.7
50% Non-Exceedance	65	151	-132
95% Non-Exceedance	1270	934	26.5
99% Non-Exceedance	3020	2060	31.8
Sept. 10% Non-Exceedance	1.01	14	-1290

Fig. 1: Hydrograph

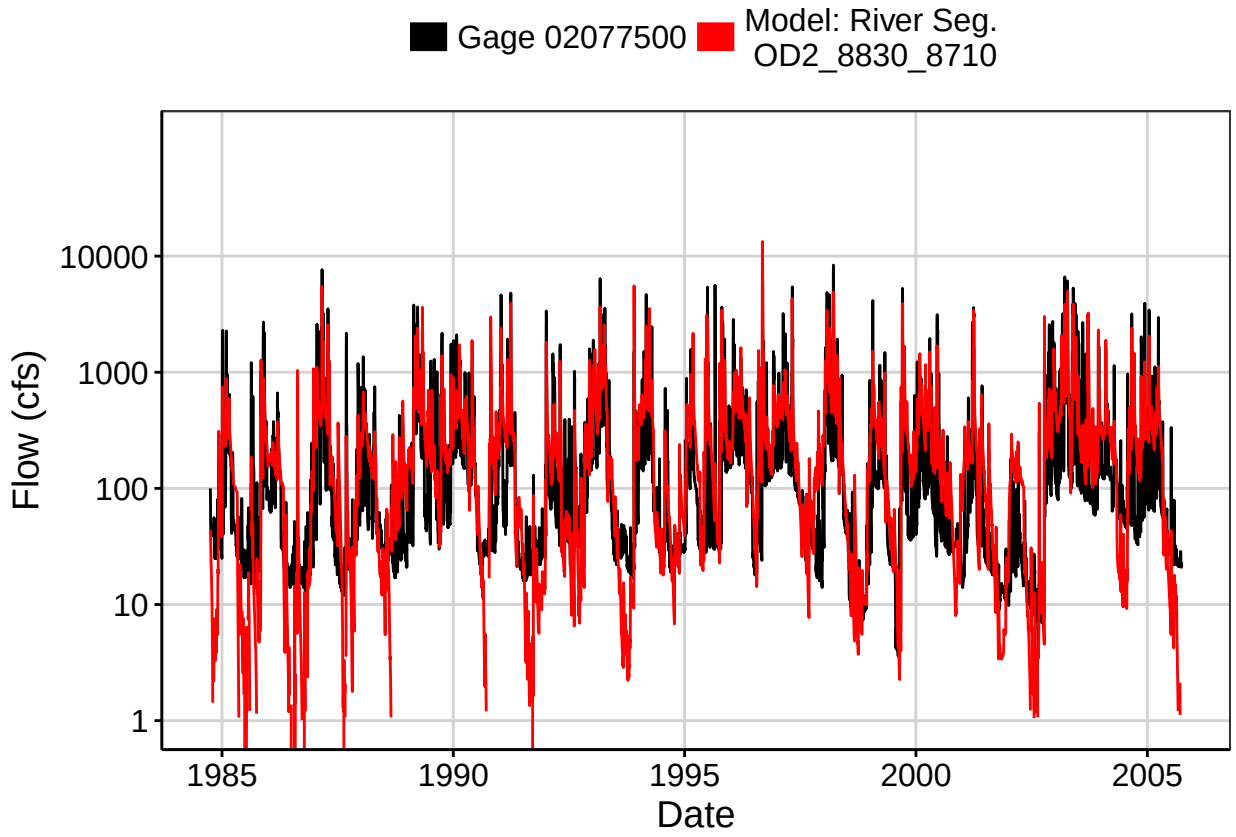

Fig. 2: Zoomed Hydrograph

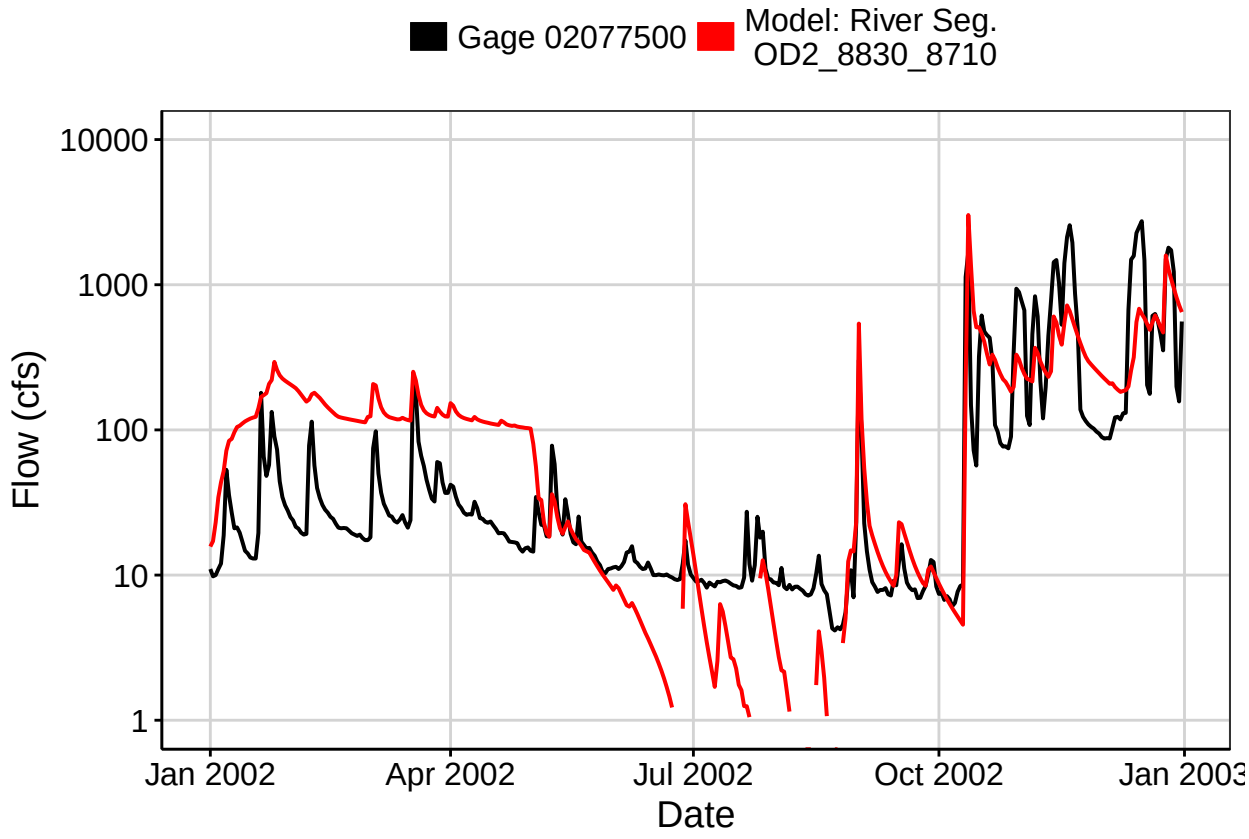

Fig. 3: Flow Exceedance

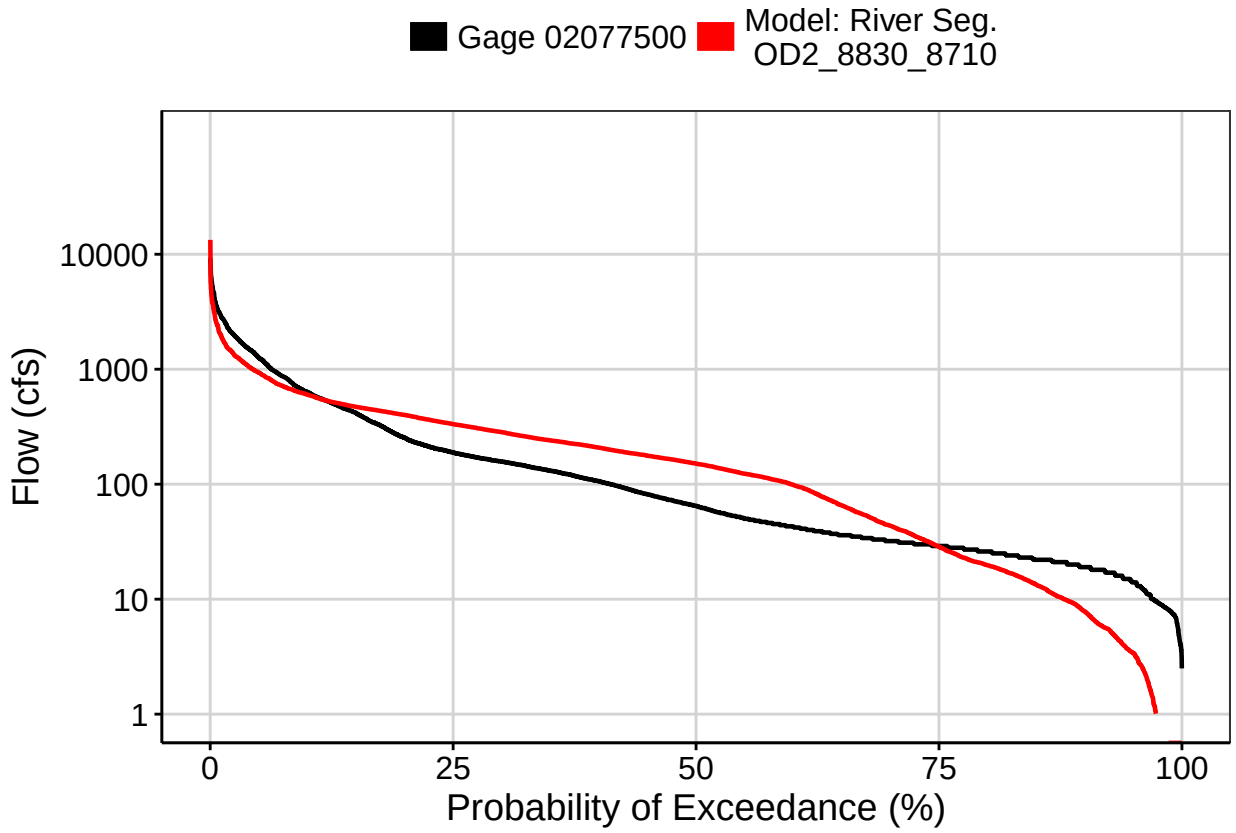

Fig. 4: Baseflow

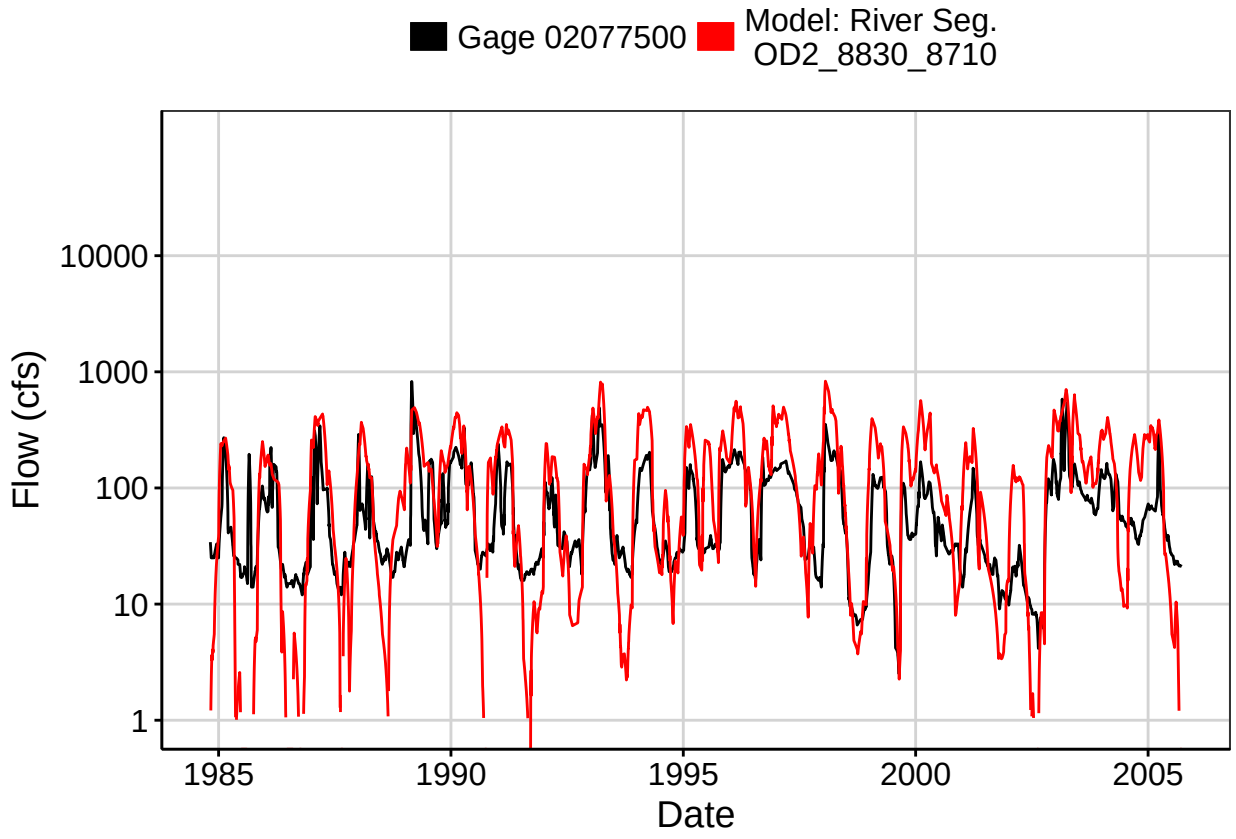

Fig. 5: Combined Baseflow

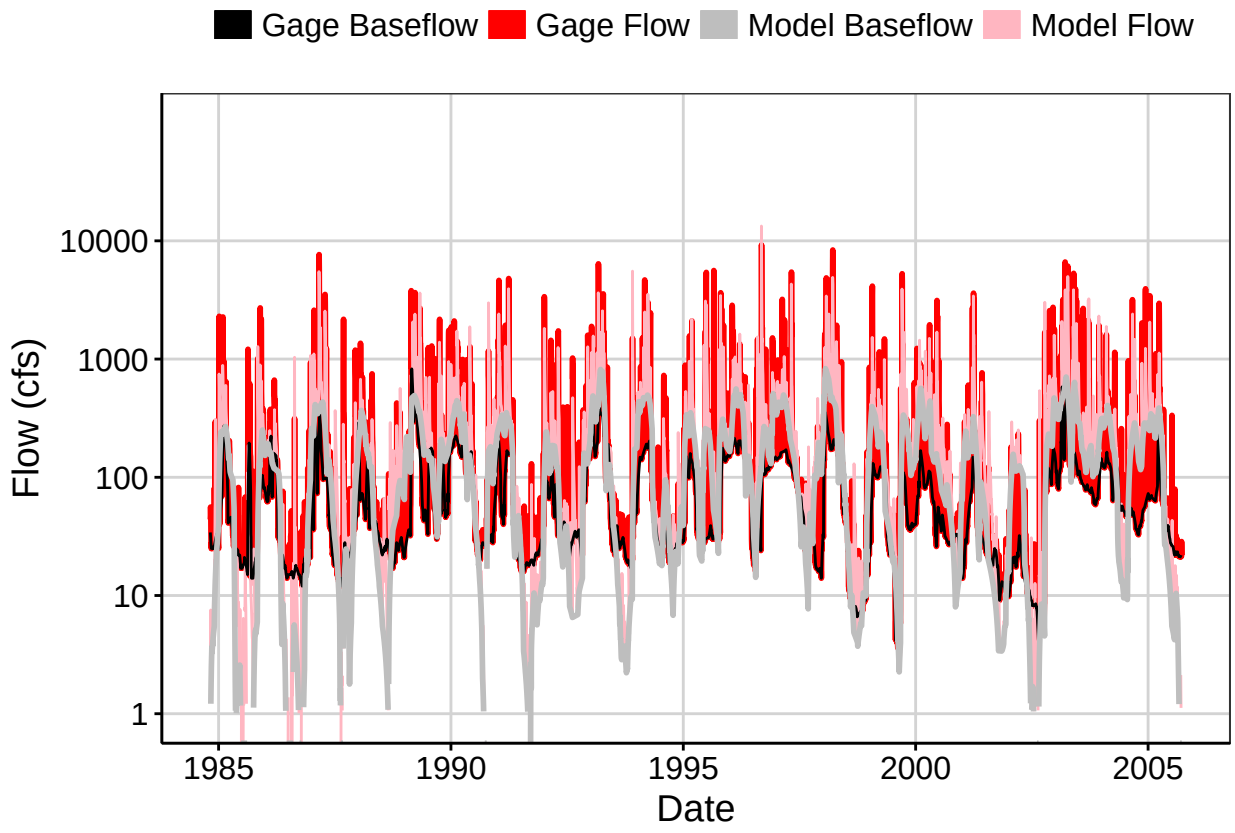

Fig. 6: Largest Error Segment

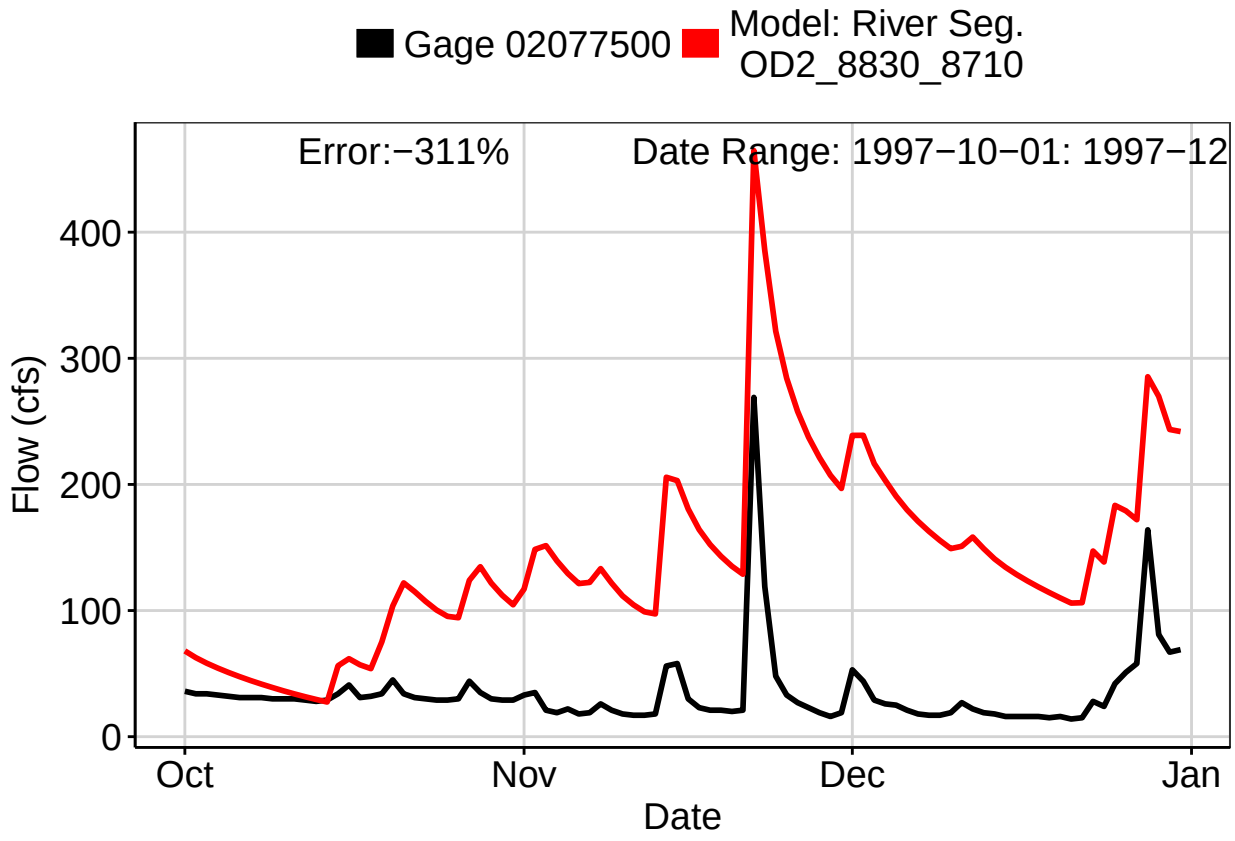

Fig. 7: Second Largest Error Segment

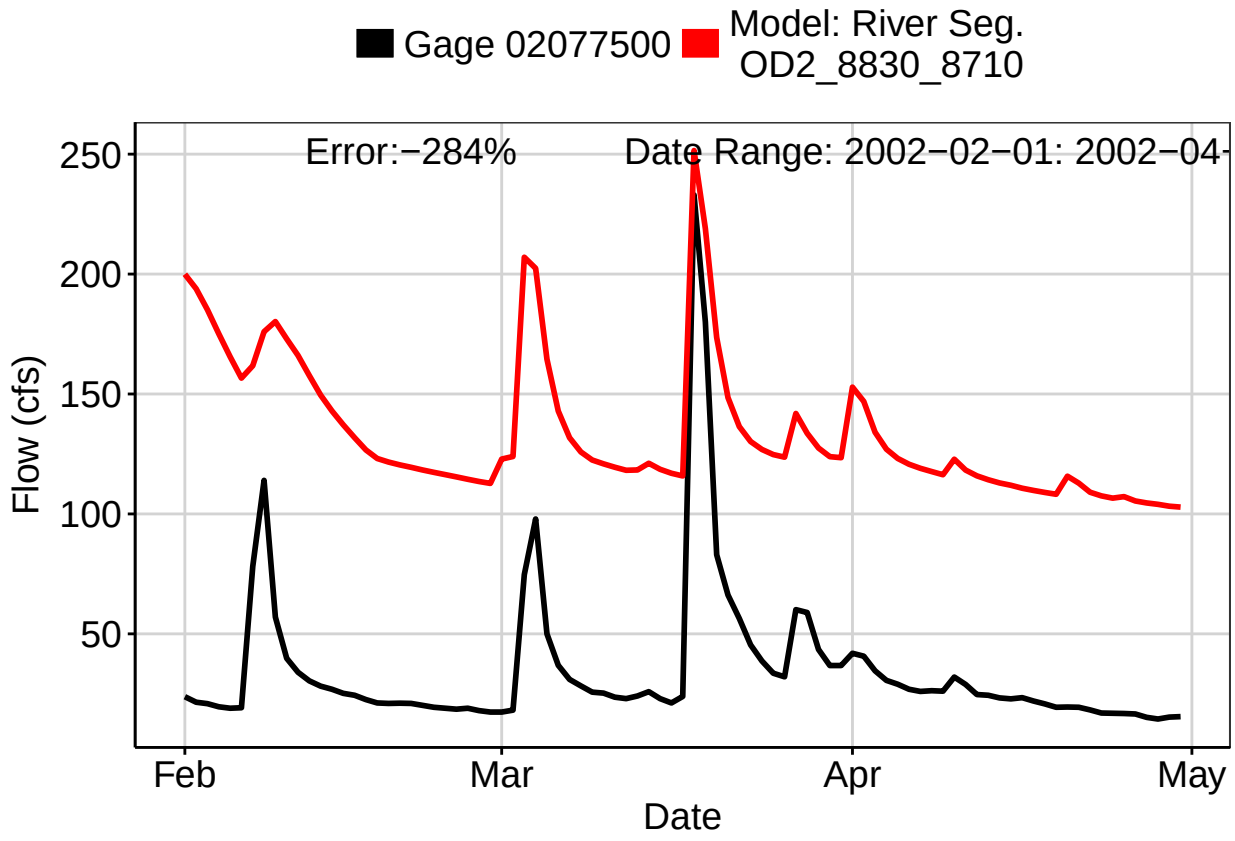

Fig. 8: Third Largest Error Segment

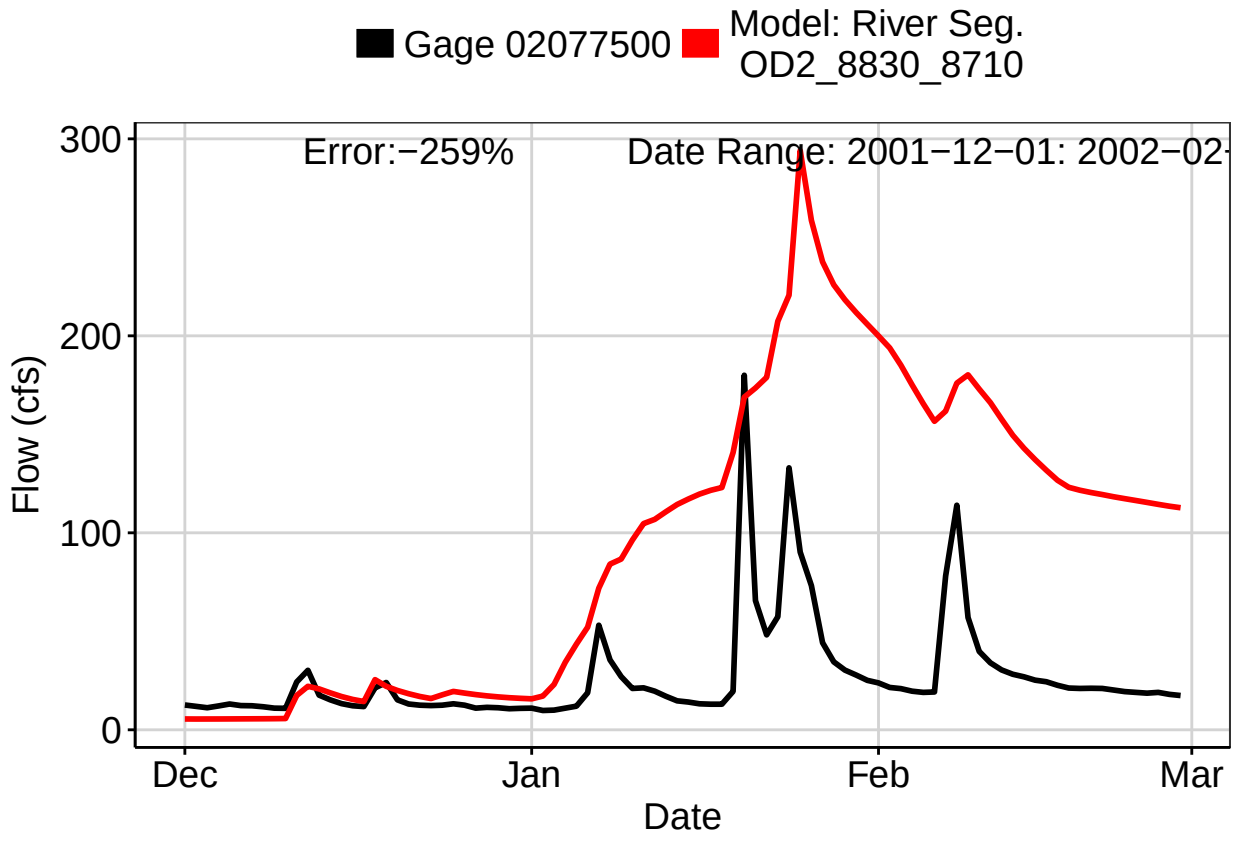

Fig. 9: Residuals Plot