

This river segment follows the flow of the Appomattox River, a tributary of the James River. The gage is located in Chesterfield County, VA (Lat 37°13'30", Long 77°28'32") approximately 0.2 miles south of Matoaca, VA. Drainage area is 1,342 sq. miles. This gage started taking data in 1969 and is still taking data. Flow regulated by Appomattox Water Authority at Lake Chesdin, capacity 36,000 acre-ft, 2.8 mi upstream. Records do not include flow of Upper Appomattox Canal of city of Petersburg which diverts around station. The average daily discharge change between scenario 1 and scenario 2 for the 20 year timespan was 9.34579%, with 20% of its rolling three month time spans above 20% difference.

Table 1: Monthly Low Flows

	Scenario 1	Scenario 2	Pct. Difference
Jan. Low Flow	166	186	12.05
Feb. Low Flow	234	244	4.27
Mar. Low Flow	336	369	9.82
Apr. Low Flow	661	697	5.45
May Low Flow	830	914	10.12
Jun. Low Flow	816	824	0.98
Jul. Low Flow	526	526	0
Aug. Low Flow	366	378	3.28
Sep. Low Flow	242	242	0
Oct. Low Flow	191	197	3.14
Nov. Low Flow	186	192	3.23
Dec. Low Flow	172	176	2.33

Table 2: Monthly Average Flows

	Scenario 1	Scenario 2	Pct. Difference
Overall Mean Flow	1070	1170	9.35
Jan. Mean Flow	1710	1890	10.53
Feb. Mean Flow	2050	2210	7.8
Mar. Mean Flow	2420	2520	4.13
Apr. Mean Flow	1630	1730	6.13
May Mean Flow	1020	1080	5.88
Jun. Mean Flow	522	546	4.6
Jul. Mean Flow	328	373	13.72
Aug. Mean Flow	301	357	18.6
Sep. Mean Flow	497	615	23.74
Oct. Mean Flow	533	625	17.26
Nov. Mean Flow	804	930	15.67
Dec. Mean Flow	1060	1220	15.09

Table 3: Monthly High Flows

	Scenario 1	Scenario 2	Pct. Difference
Jan. High Flow	594	854	43.77
Feb. High Flow	1500	1940	29.33
Mar. High Flow	1730	2270	31.21
Apr. High Flow	4400	4950	12.5
May High Flow	3940	4940	25.38
Jun. High Flow	5340	5680	6.37
Jul. High Flow	4540	4780	5.29
Aug. High Flow	2080	2660	27.88
Sep. High Flow	691	730	5.64
Oct. High Flow	410	584	42.44
Nov. High Flow	376	558	48.4
Dec. High Flow	380	570	50

Table 4: Period Low Flows

	Scenario 1	Scenario 2	Pct. Difference
Min. 1 Day Min	55.7	60.6	8.8
Med. 1 Day Min	128	158	23.44
Min. 3 Day Min	55.9	60.8	8.77
Med. 3 Day Min	130	158	21.54
Min. 7 Day Min	56.1	61.1	8.91
Med. 7 Day Min	135	160	18.52
Min. 30 Day Min	59.3	63.5	7.08
Med. 30 Day Min	156	173	10.9
Min. 90 Day Min	66.7	83.6	25.34
Med. 90 Day Min	226	262	15.93
7Q10	73.6	79.4	7.88
Year of 90-Day Min. Flow	1999	1999	0
Drought Year Mean	597.18	739.03	23.75
Mean Baseflow	9150	11200	22.4

Table 5: Period High Flows

	Scenario 1	Scenario 2	Pct. Difference
Max. 1 Day Max	15000	15000	0
Med. 1 Day Max	11200	13200	17.86
Max. 3 Day Max	15000	15000	0
Med. 3 Day Max	9400	10700	13.83
Max. 7 Day Max	13800	14400	4.35
Med. 7 Day Max	6580	6900	4.86
Max. 30 Day Max	7600	8390	10.39
Med. 30 Day Max	2950	3140	6.44
Max. 90 Day Max	5640	6120	8.51
Med. 90 Day Max	1980	2050	3.54

Table 6: Non-Exceedance Flows

	Scenario 1	Scenario 2	Pct. Difference
1% Non-Exceedance	69.4	74.8	7.78
5% Non-Exceedance	116	144	24.14
50% Non-Exceedance	562	612	8.9
95% Non-Exceedance	3550	3860	8.73
99% Non-Exceedance	9150	11200	22.4
Sept. 10% Non-Exceedance	107	142	32.71

Fig. 1: Hydrograph

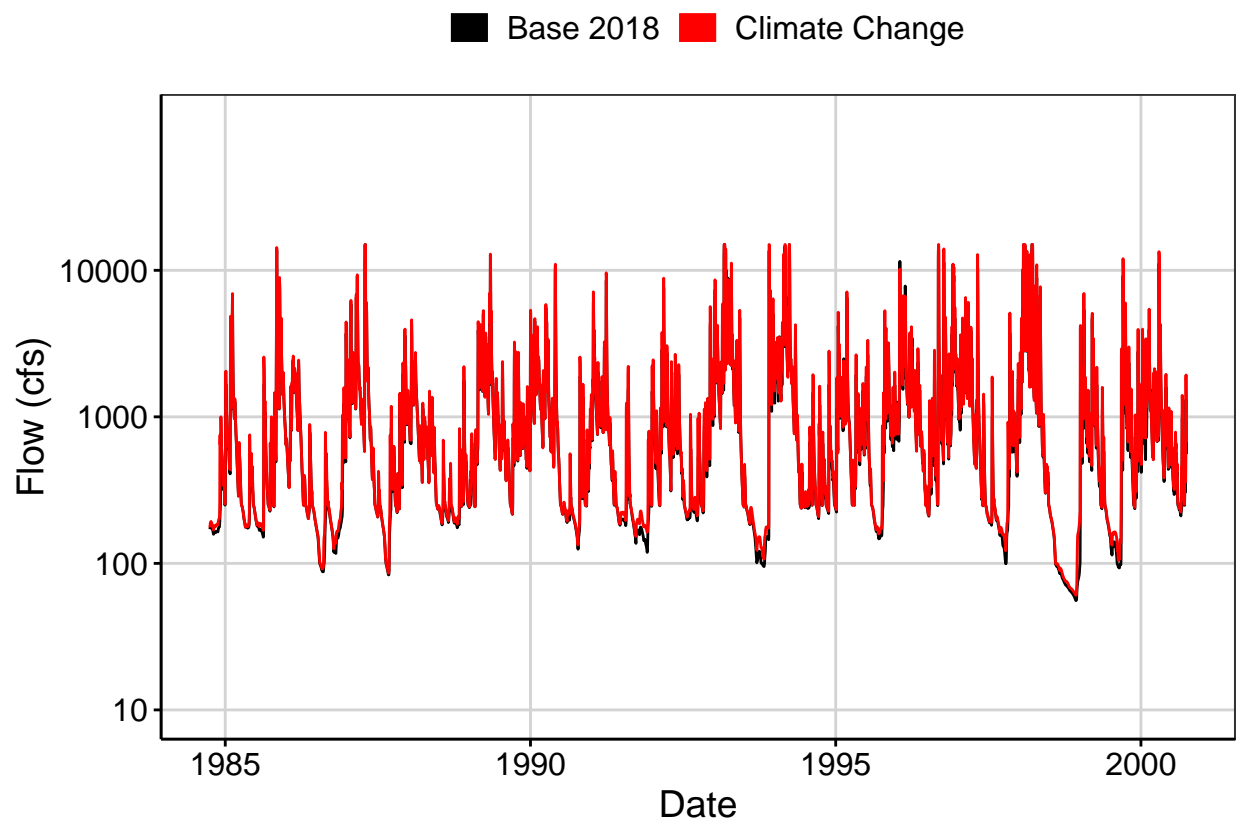


Fig. 2: Zoomed Hydrograph

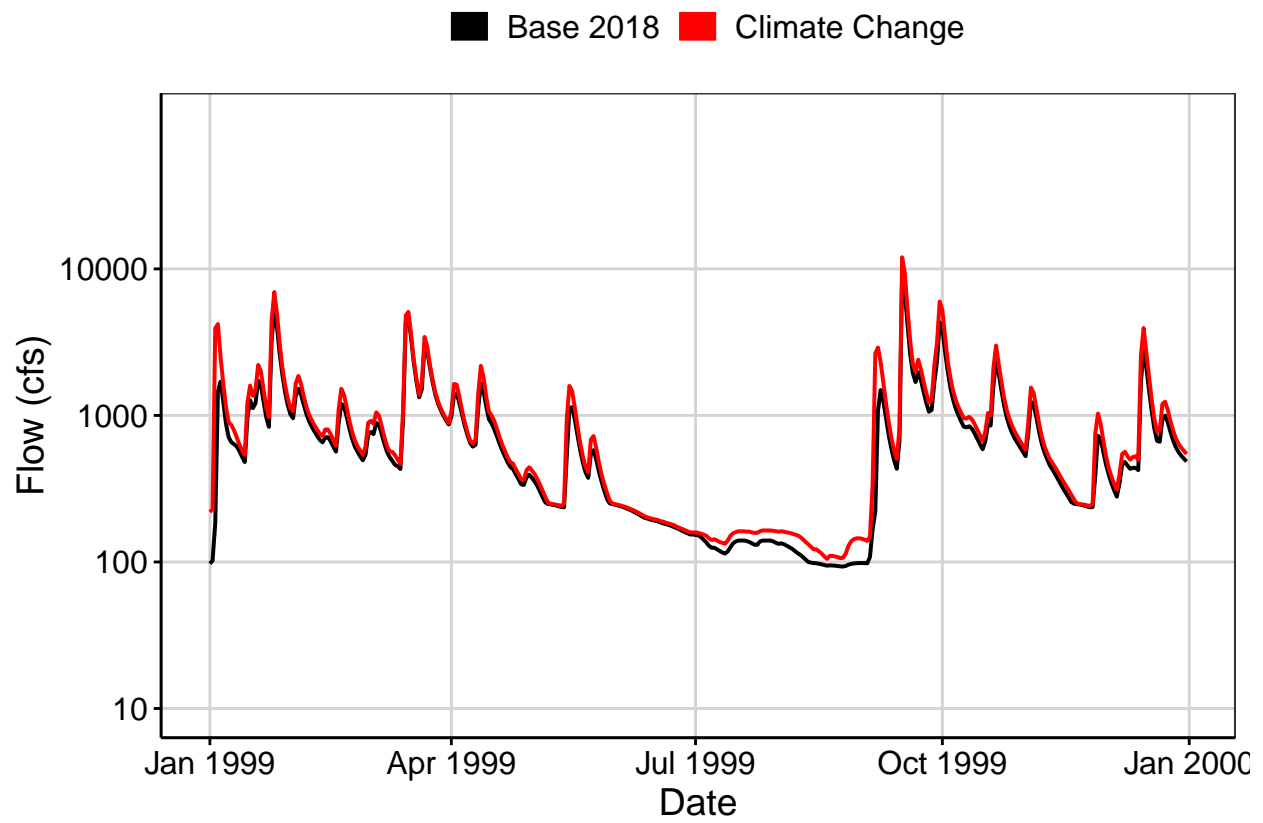


Fig. 3: Flow Exceedance

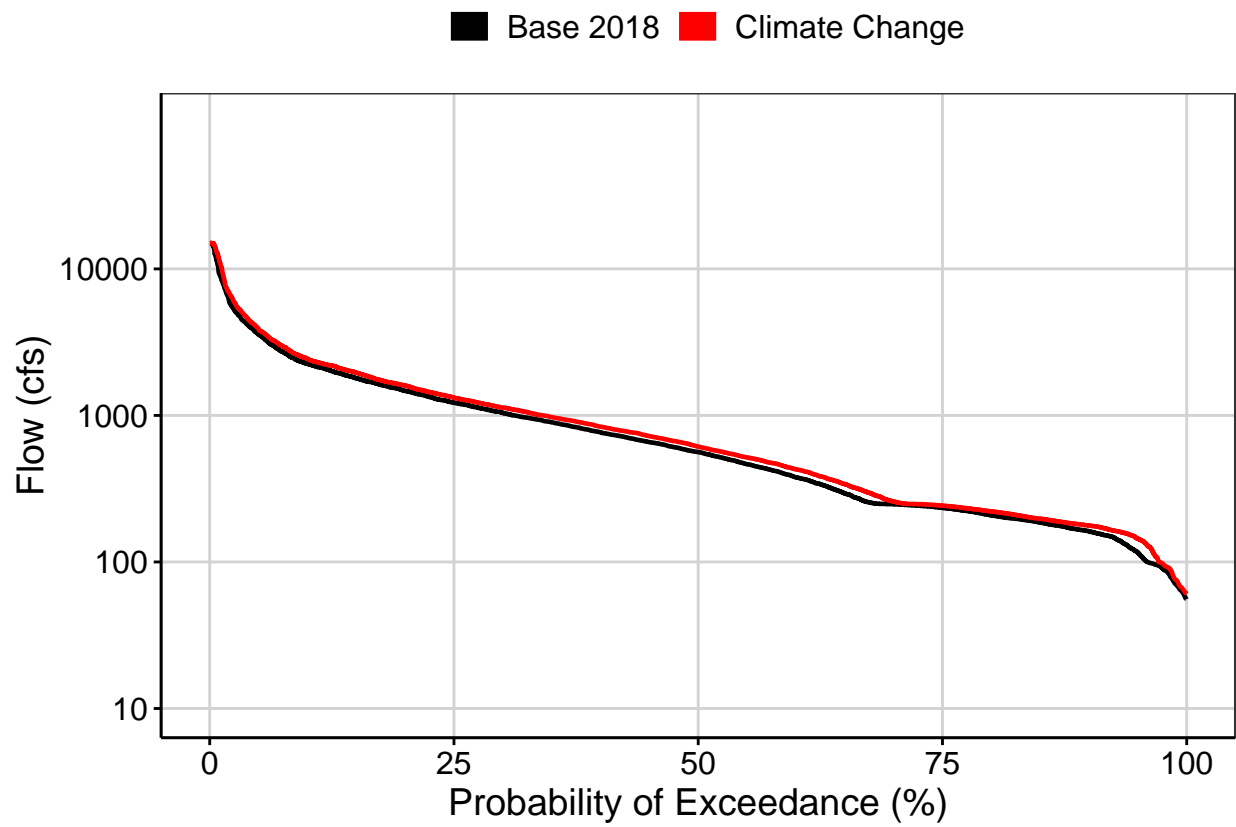


Fig. 4: Baseflow

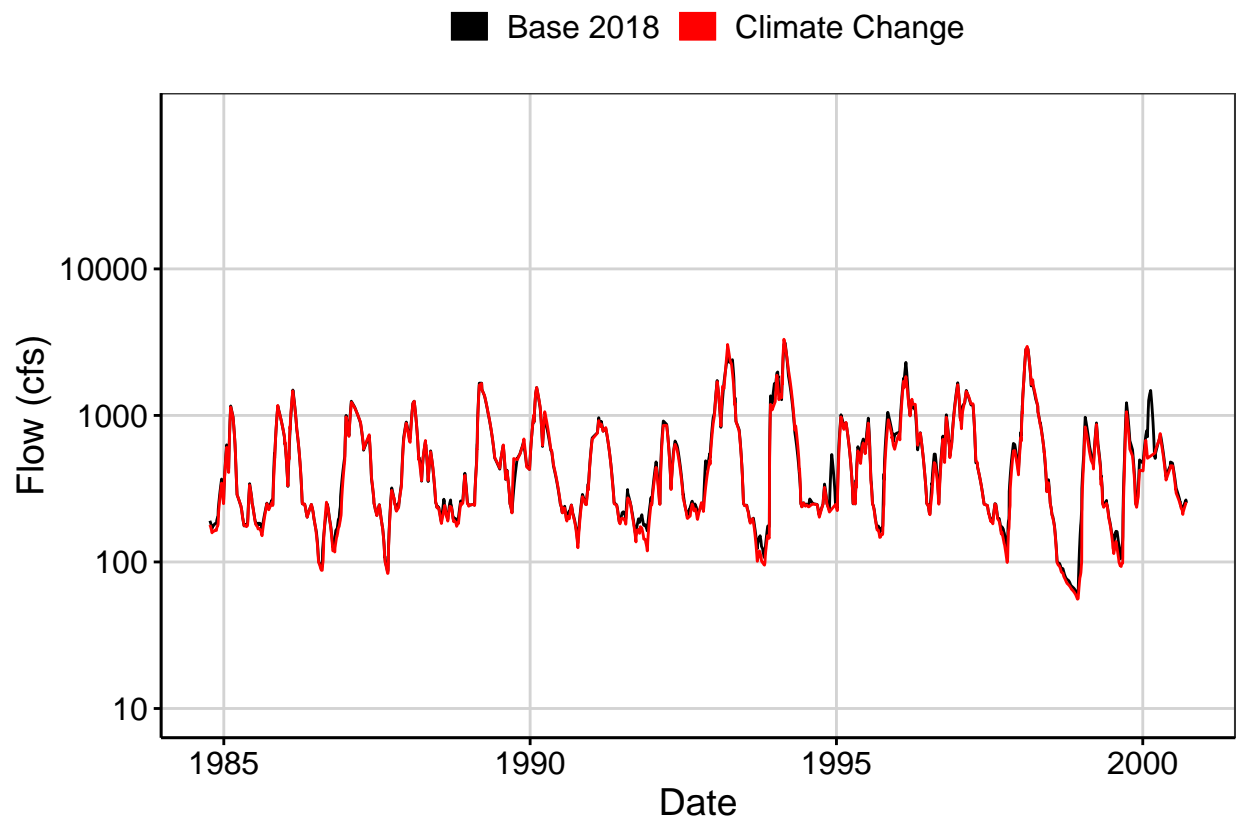


Fig. 5: Combined Baseflow

Base 2018 Baseflow Base 2018 Flow Climate Change Baseflow Climate

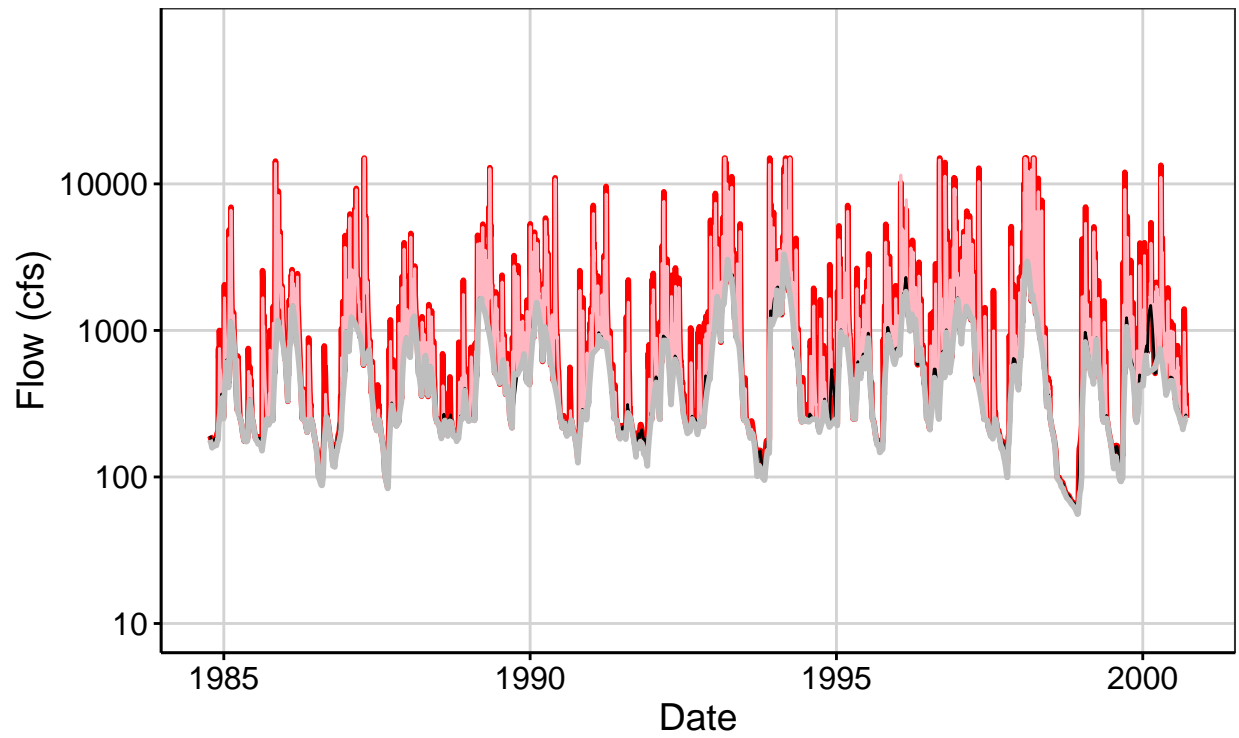


Fig. 6: Largest Difference Segment

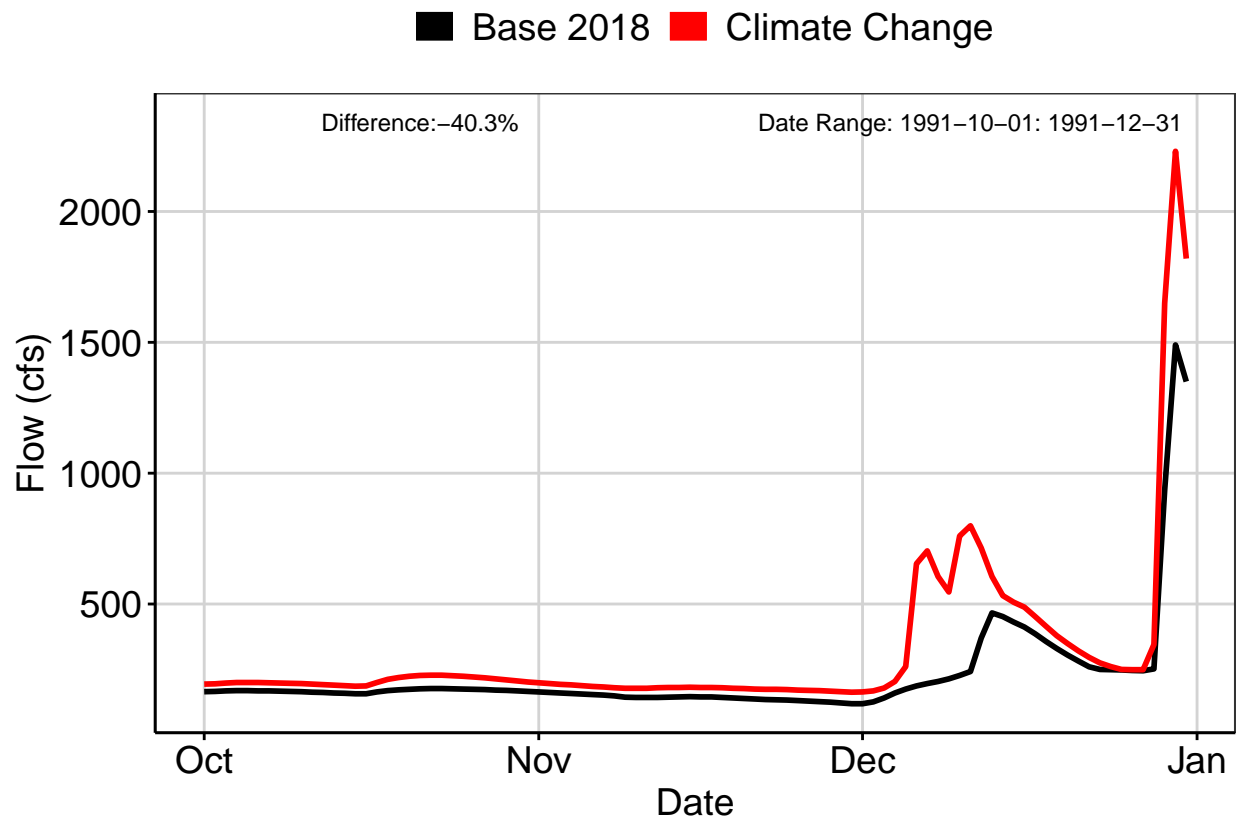


Fig. 7: Second Largest Difference Segment

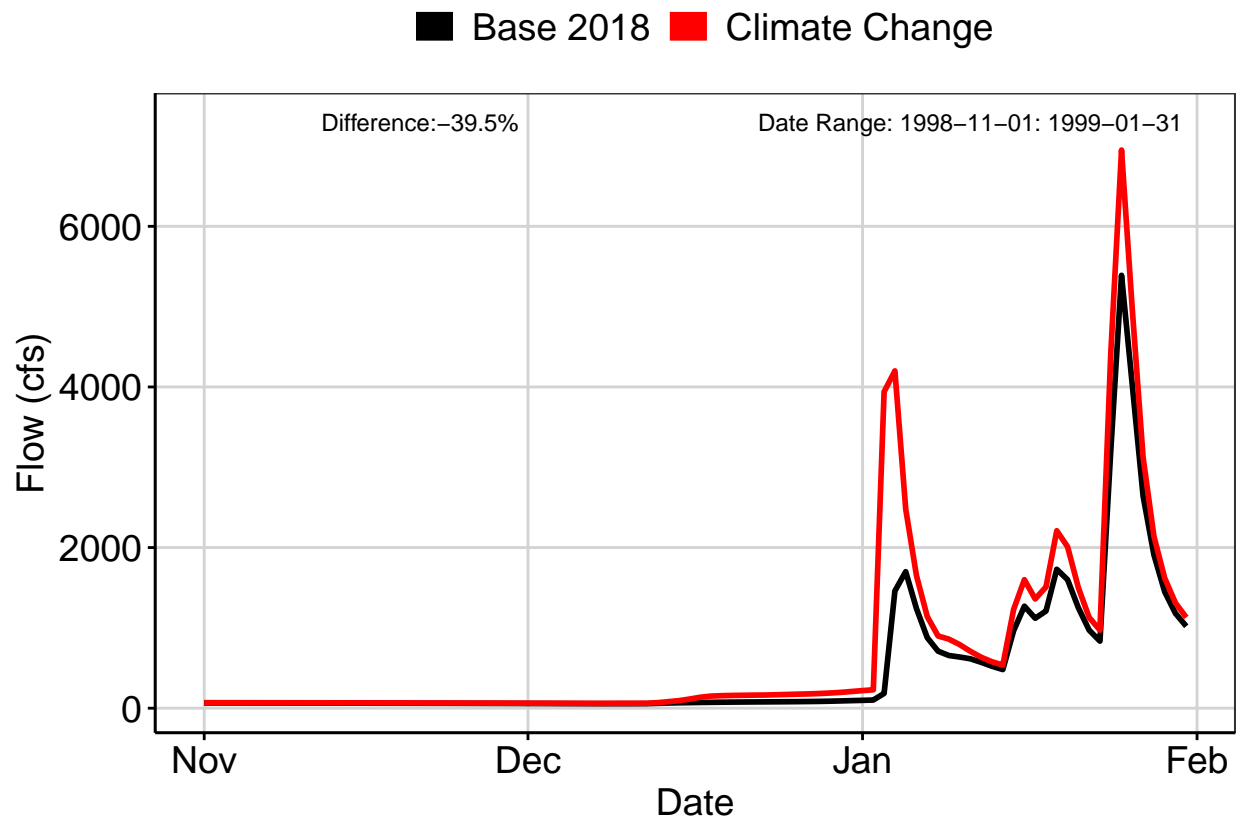


Fig. 8: Third Largest Difference Segment

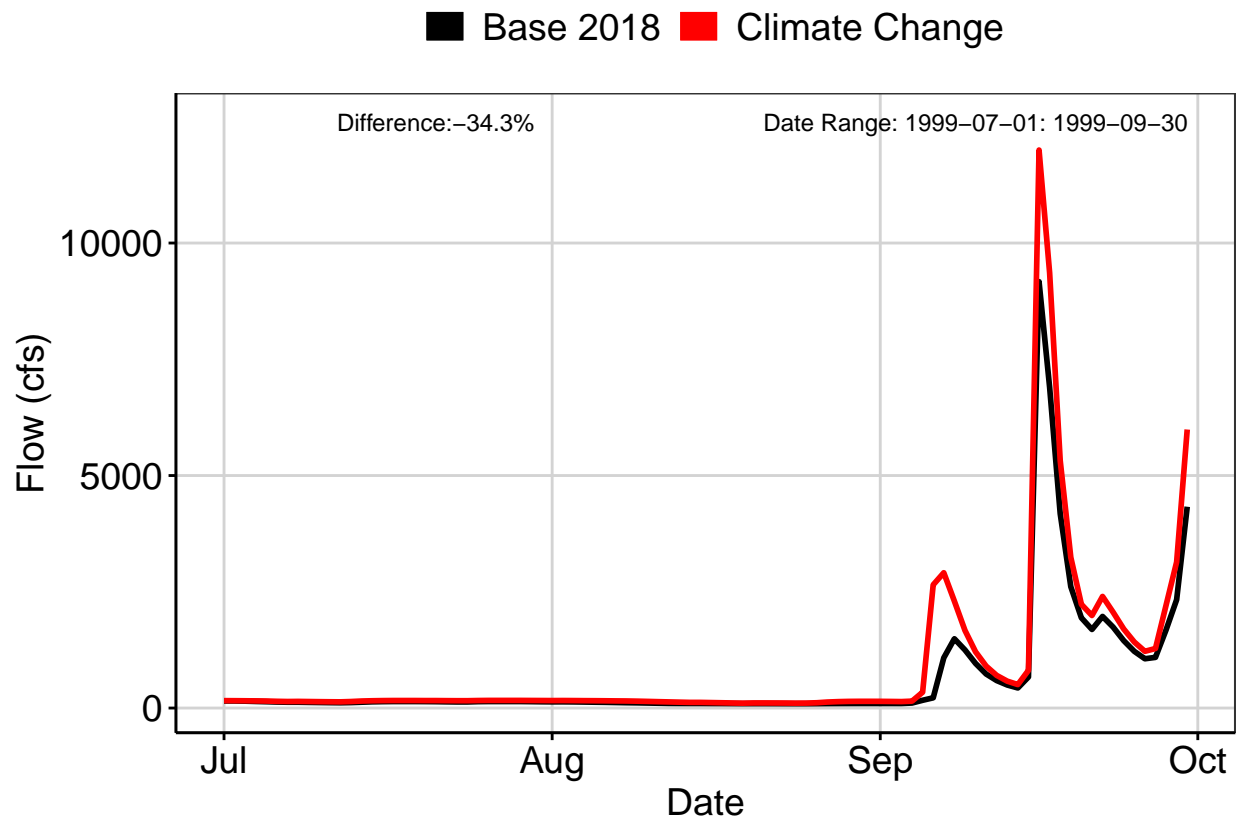


Fig. 9: Residuals Plot

