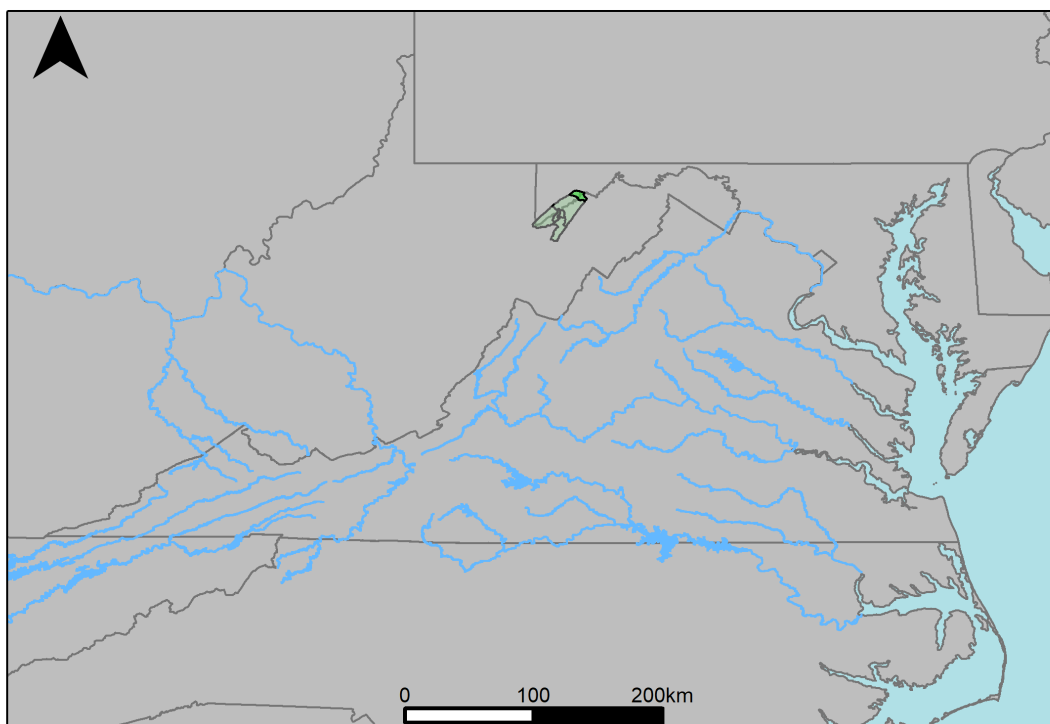


River Segment YP3_6700_6670: USGS Gage 01671020 vs. VA Hydro Run 120



This river segment follows part of the flow of the North Anna River at Hart Corner near Doswell, VA. Gage 01671020 is located in Hanover County, VA (Lat 37° 51' 00", Long 77° 25' 41") approximately 2.1 miles east of Doswell, VA. Drainage area is 462 sq. miles. This gage started taking data in 1979 and has been taking data periodically until now. Diversion at a point 0.8 mi upstream from station since 1973. Maximum discharge, 12,000 cfs, from rating curve extended above 10,100 cfs. The average daily discharge change between scenario 1 and scenario 2 for the 20 year timespan was -7.44976%, with 57.5% of its rolling three month time spans above 20% difference.

Table 1: Monthly Low Flows

	Scen. 1	Scen. 2	Pct. Difference
Jan. Low Flow	51.7	19	-63.2
Feb. Low Flow	65	40.2	-38.2
Mar. Low Flow	94	175	85.7
Apr. Low Flow	143	193	35.2
May Low Flow	190	212	11.8
Jun. Low Flow	221	194	-12.4
Jul. Low Flow	141	182	29.3
Aug. Low Flow	93.5	94.3	0.9
Sep. Low Flow	70.2	32.1	-54.4
Oct. Low Flow	53.6	12.2	-77.1
Nov. Low Flow	48.5	23.7	-51.1
Dec. Low Flow	46	8.58	-81.4

Table 2: Monthly Average Flows

	Scen. 1	Scen. 2	Pct. Difference
Overall Mean Flow	366	339	-7.45
Jan. Mean Flow	495	508	2.66
Feb. Mean Flow	569	579	1.66
Mar. Mean Flow	698	661	-5.24
Apr. Mean Flow	506	479	-5.5
May Mean Flow	458	339	-25.9
Jun. Mean Flow	273	206	-24.5
Jul. Mean Flow	139	116	-16.8
Aug. Mean Flow	120	108	-10.2
Sep. Mean Flow	192	172	-10.7
Oct. Mean Flow	163	177	8.63
Nov. Mean Flow	339	282	-16.8
Dec. Mean Flow	451	451	0.06

Table 3: Monthly High Flows

	Scen. 1	Scen. 2	Pct. Difference
Jan. High Flow	239	196	-18
Feb. High Flow	799	489	-38.8
Mar. High Flow	877	894	1.91
Apr. High Flow	1600	1070	-33.4
May High Flow	1440	756	-47.7
Jun. High Flow	2470	1500	-39.1
Jul. High Flow	1680	1280	-23.3
Aug. High Flow	1010	674	-33.2
Sep. High Flow	720	296	-58.9
Oct. High Flow	234	193	-17.5
Nov. High Flow	142	194	36.7
Dec. High Flow	128	195	52.3

Table 4: Period Low Flows

	Scen. 1	Scen. 2	Pct. Difference
Min. 1 Day Min	7.58	0	-100
Med. 1 Day Min	41.6	2.39	-94.3
Min. 3 Day Min	9.01	0	-100
Med. 3 Day Min	42.4	2.7	-93.6
Min. 7 Day Min	12.7	0	-100
Med. 7 Day Min	43.1	3.21	-92.5
Min. 30 Day Min	17.3	0	-100
Med. 30 Day Min	48.7	8.73	-82.1
Min. 90 Day Min	30.4	2.52	-91.7
Med. 90 Day Min	71	60.6	-14.7
7Q10	27.9	0	-100
Year of 90-Day Min. Flow	2010	2000	-0.3
Drought Year Mean	201	12.9	-93.6
Mean Baseflow	150	162	7.44

Table 5: Period High Flows

	Scen. 1	Scen. 2	Pct. Difference
Max. 1 Day Max	10900	9800	-10.1
Med. 1 Day Max	4670	3490	-25.4
Max. 3 Day Max	9350	7740	-17.2
Med. 3 Day Max	3920	2900	-25.9
Max. 7 Day Max	5690	5250	-7.68
Med. 7 Day Max	2540	2030	-20
Max. 30 Day Max	3130	3060	-2.18
Med. 30 Day Max	1170	943	-19.1
Max. 90 Day Max	2060	2030	-1.84
Med. 90 Day Max	732	632	-13.6

Table 6: Non-Exceedance Flows

	Scen. 1	Scen. 2	Pct. Difference
1% Non-Exceedance	32.3	0	-100
5% Non-Exceedance	40.3	2.95	-92.7
50% Non-Exceedance	145	193	33.4
95% Non-Exceedance	1360	1230	-9.77
99% Non-Exceedance	3380	2870	-15
Sept. 10% Non-Exceedance	39	1.51	-96.1

Fig. 1: Hydrograph

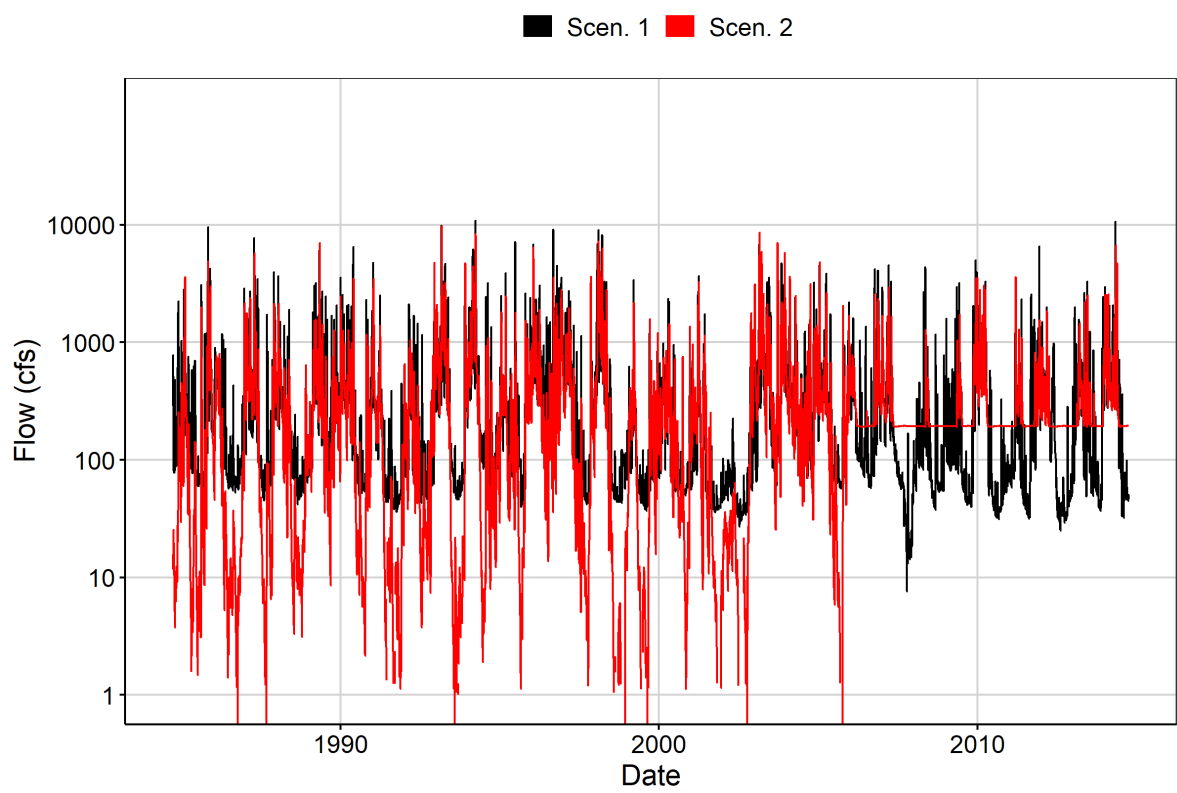


Fig. 2: Zoomed Hydrograph

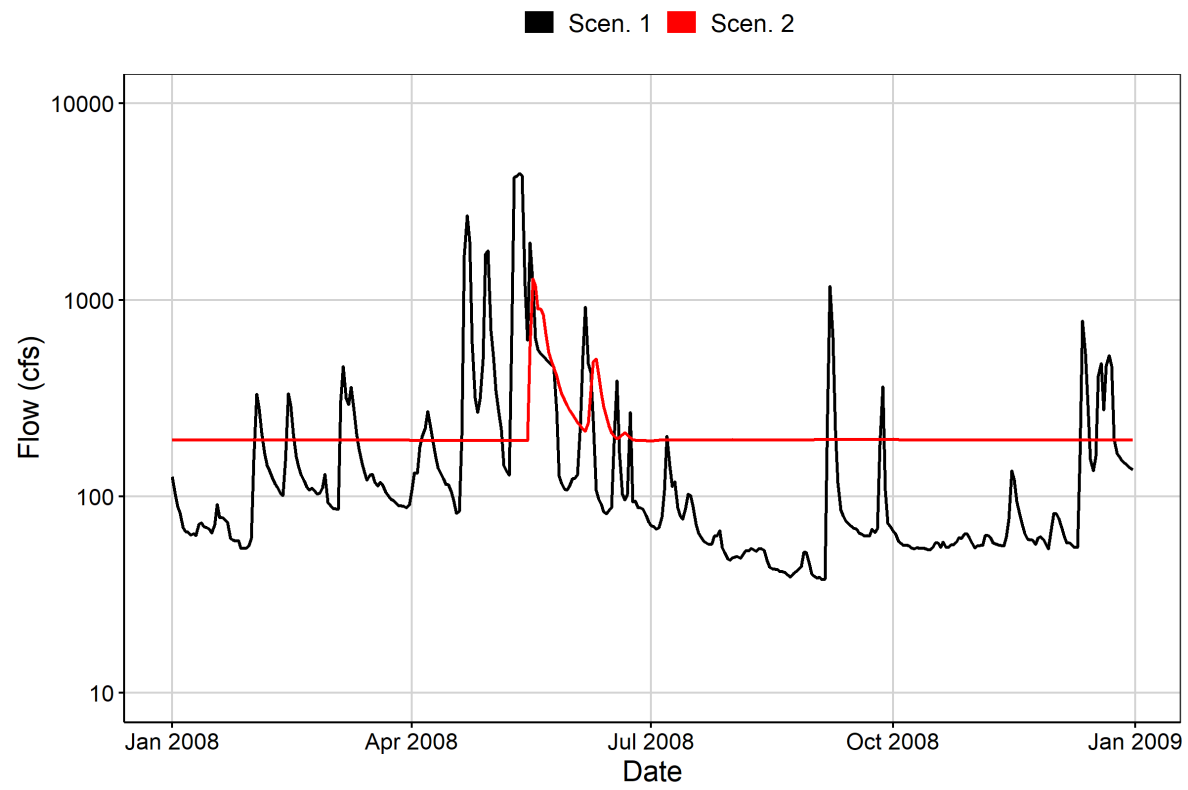


Fig. 3: Flow Exceedance

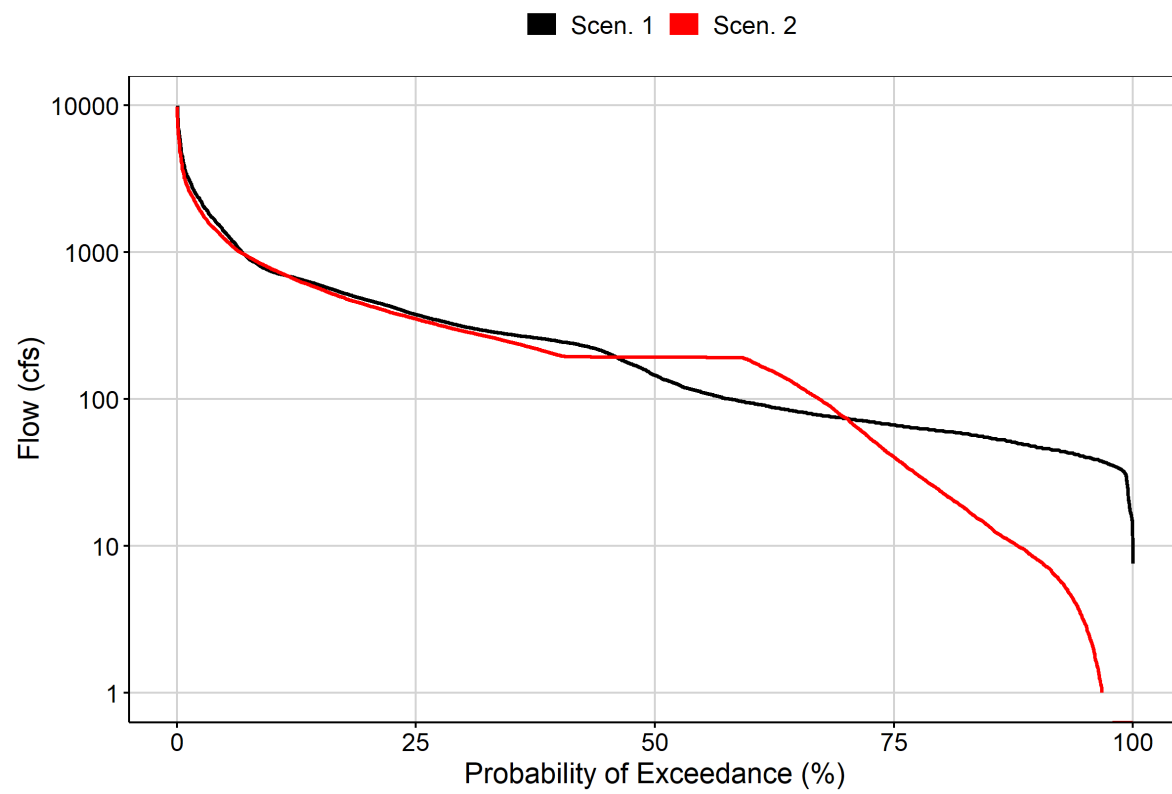


Fig. 4: Baseflow

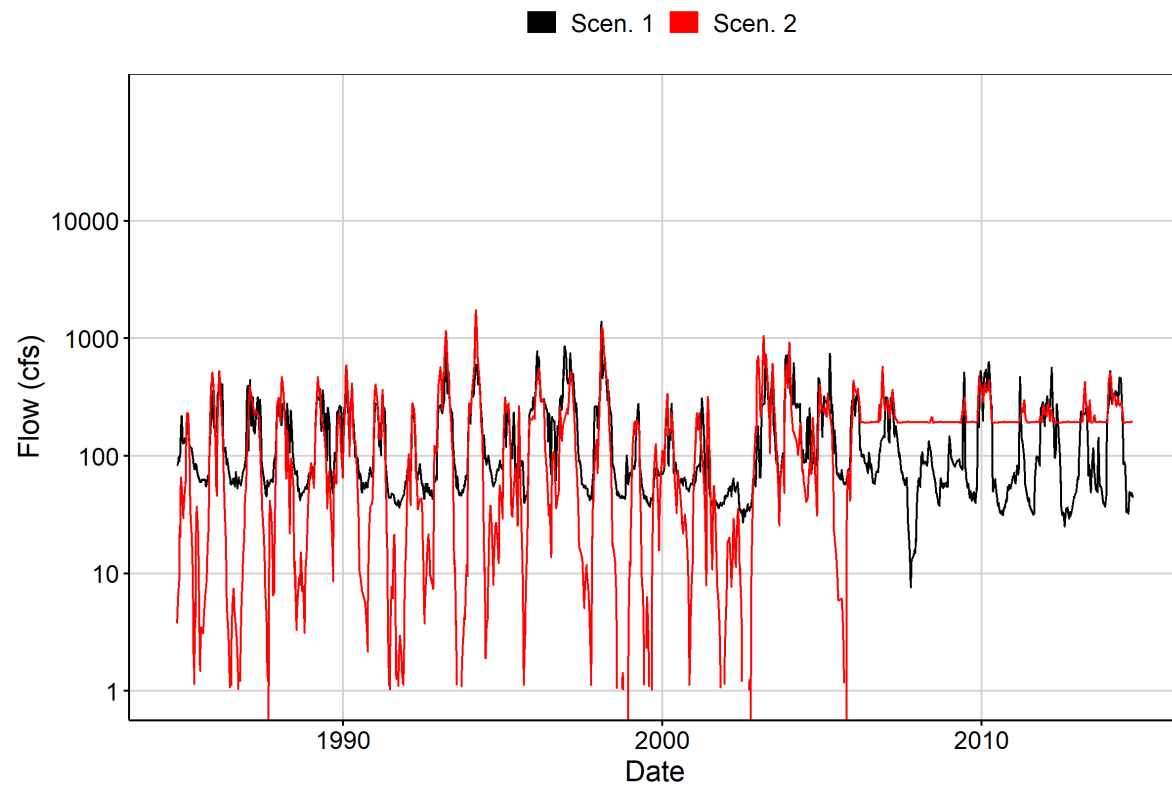


Fig. 5: Combined Baseflow

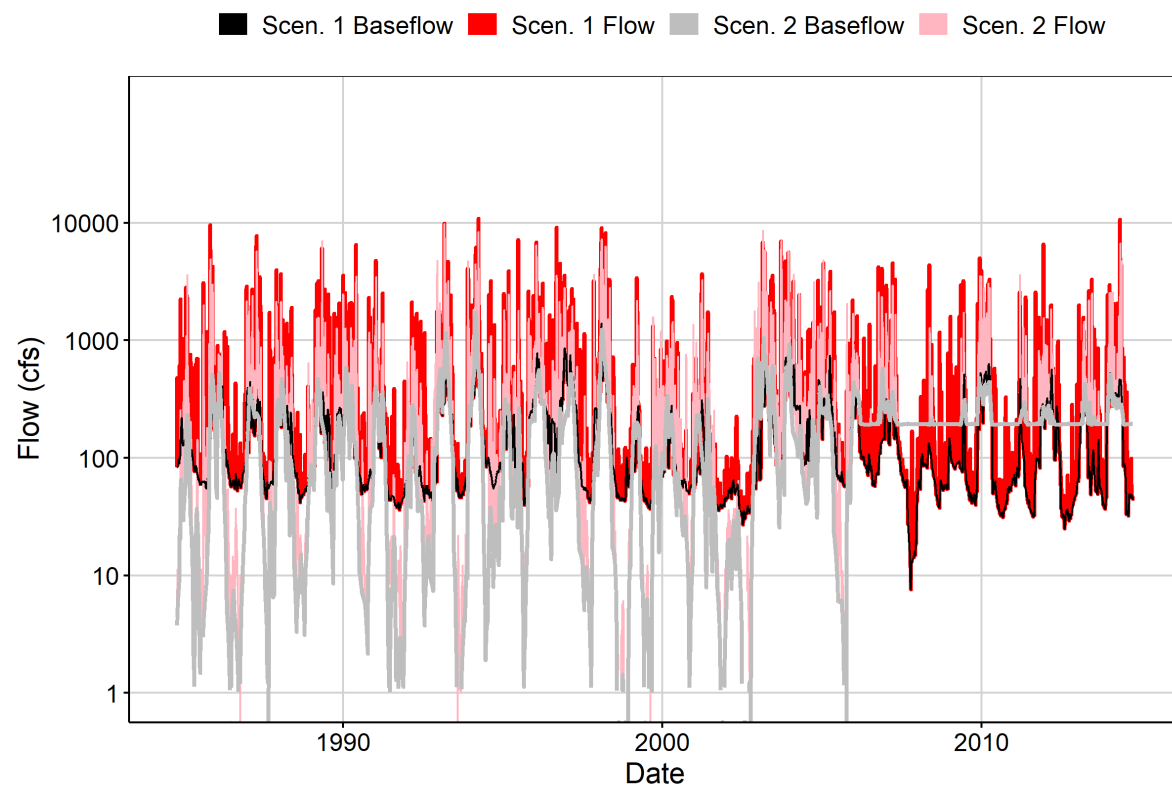


Fig. 6: Largest Difference Period

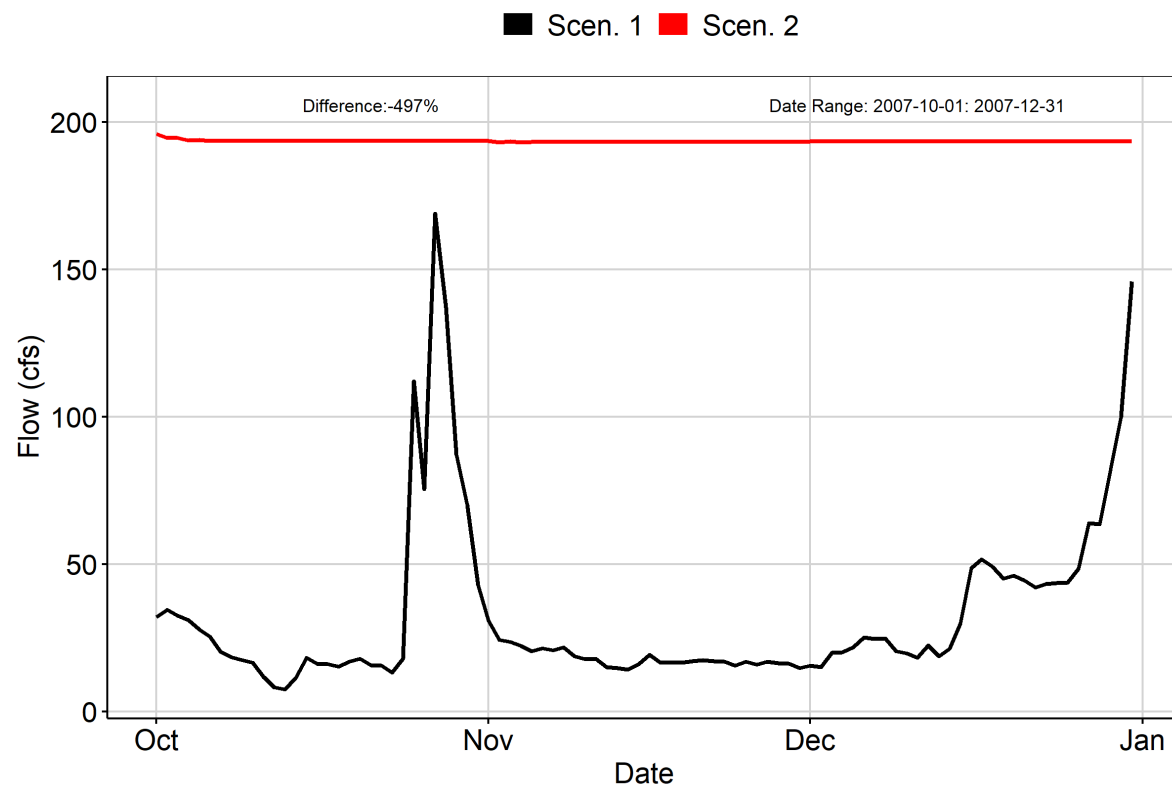


Fig. 7: Second Largest Difference Period

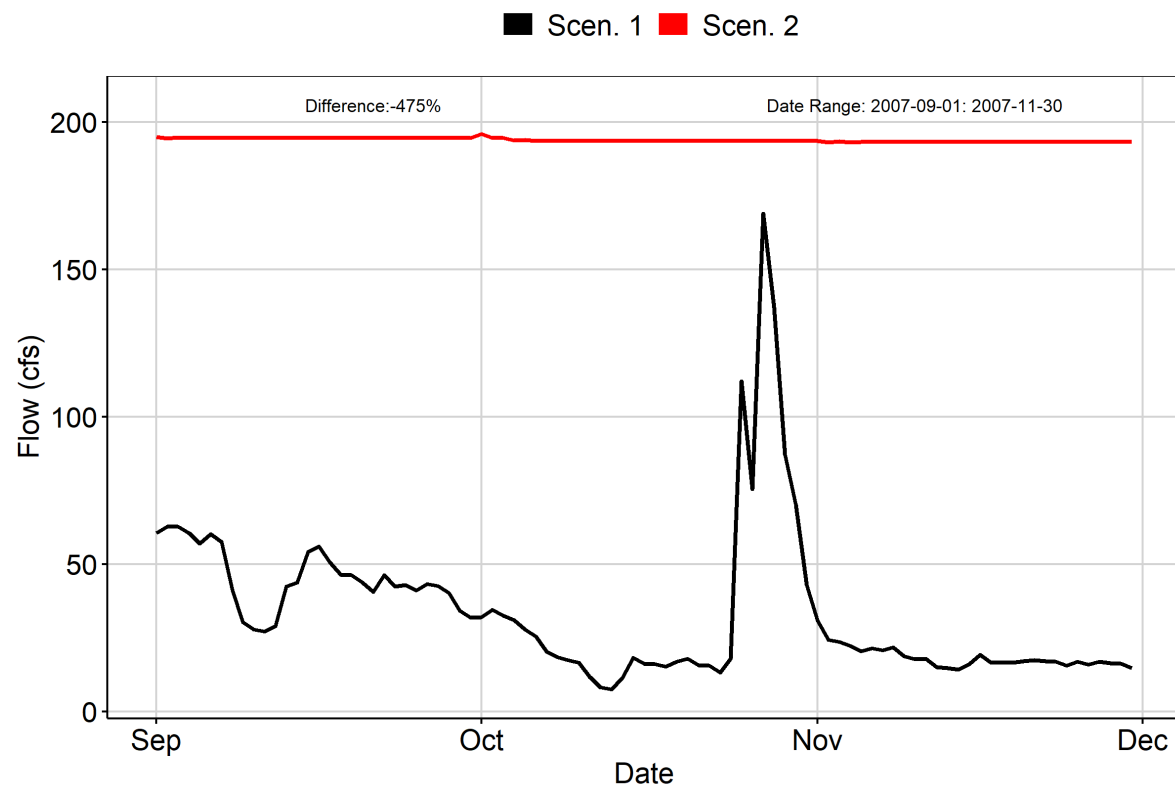


Fig. 8: Third Largest Difference Period

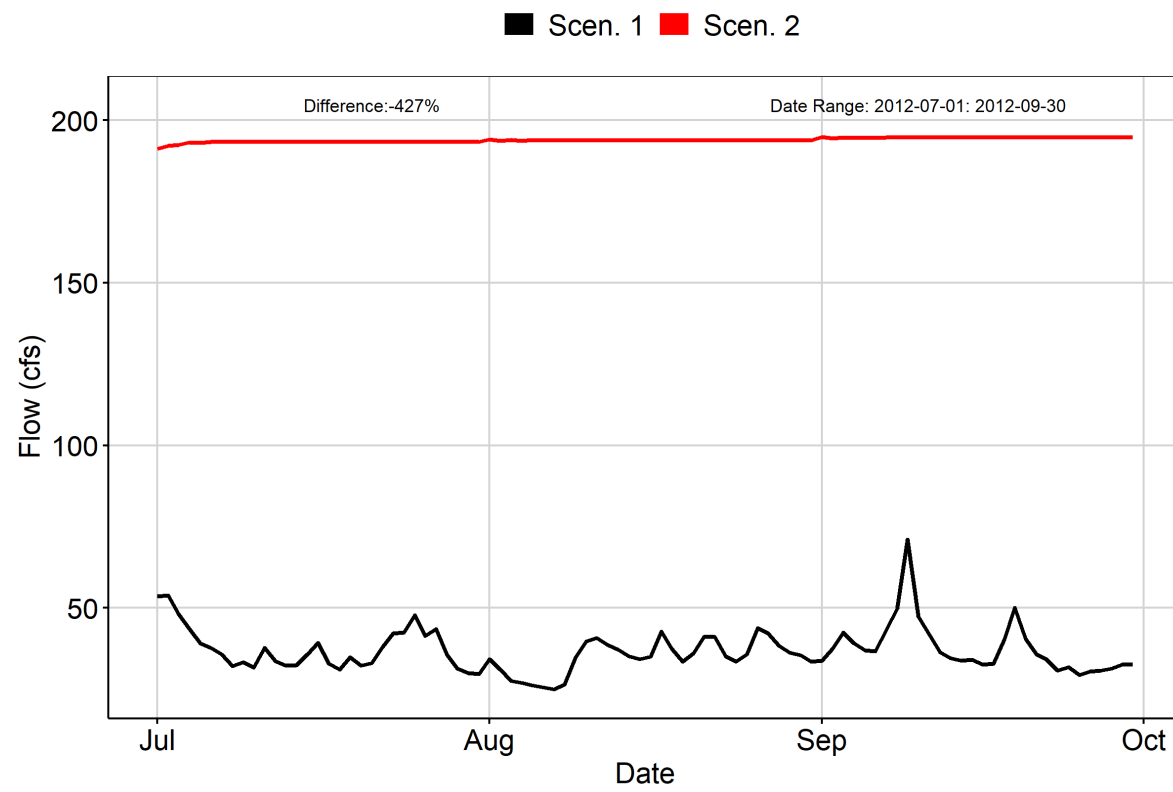


Fig. 9A: Residuals Plot

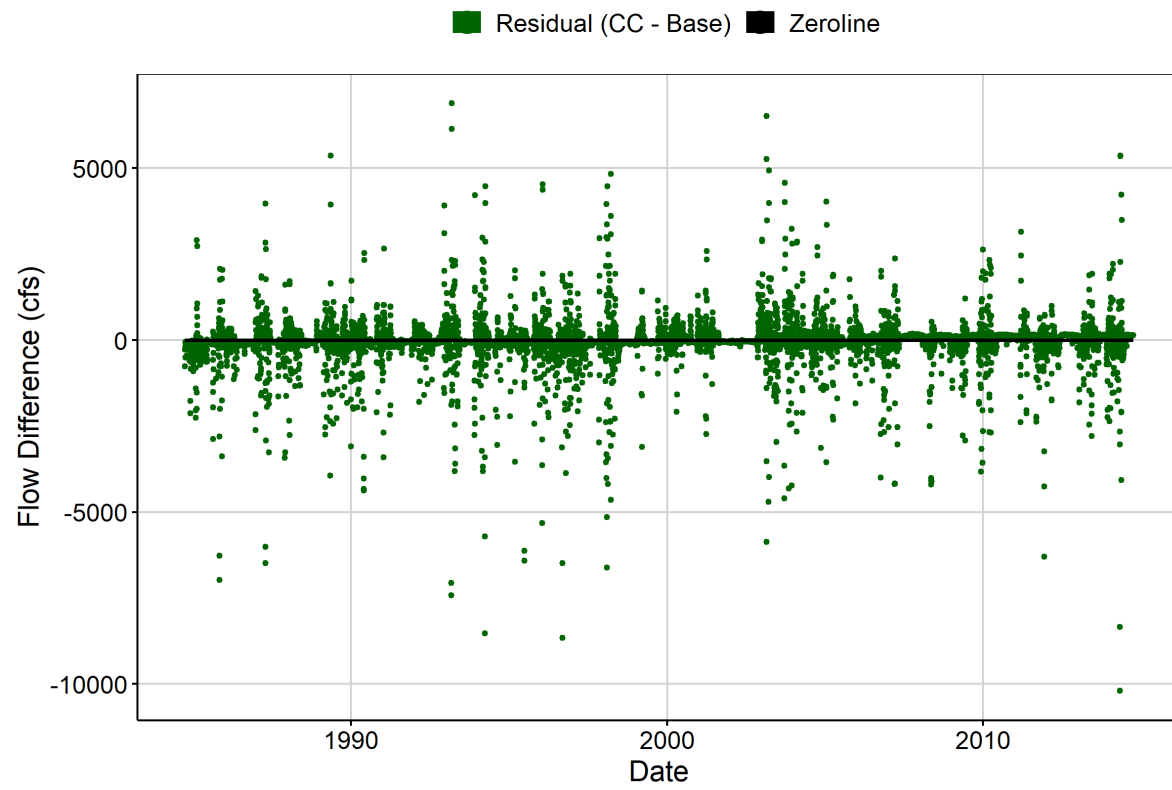


Fig. 9B: Area Weighted Residuals Plot

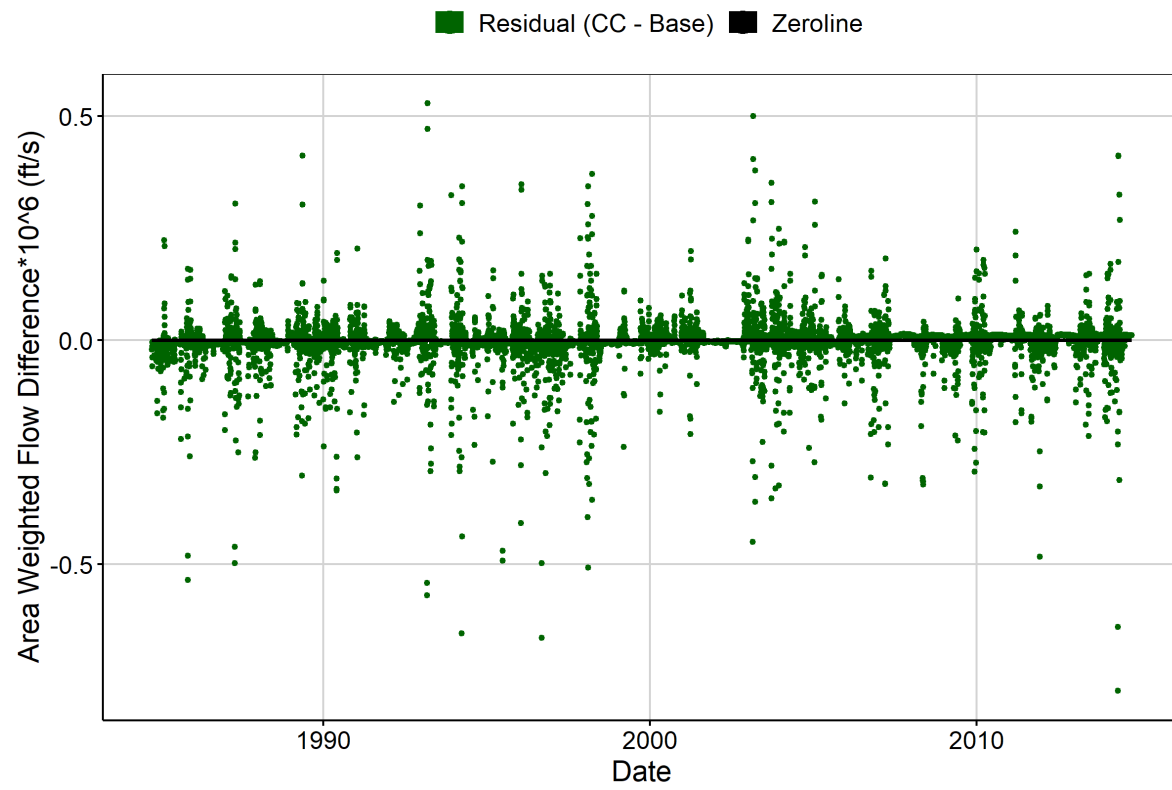


Fig. 10: VA Hydro Scen. 1 Runit Values (Outliers Excluded)

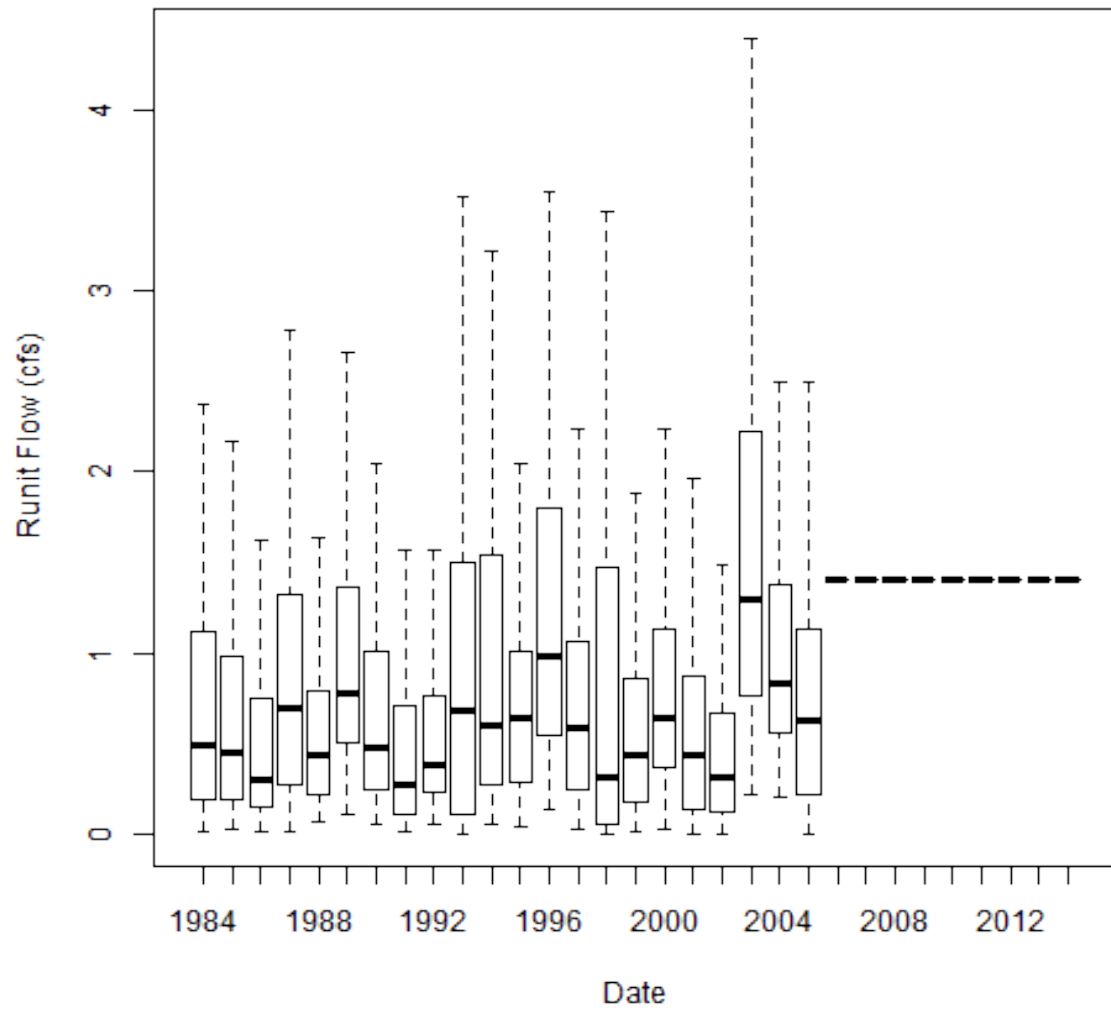


Fig. 11: Smallest Difference Period

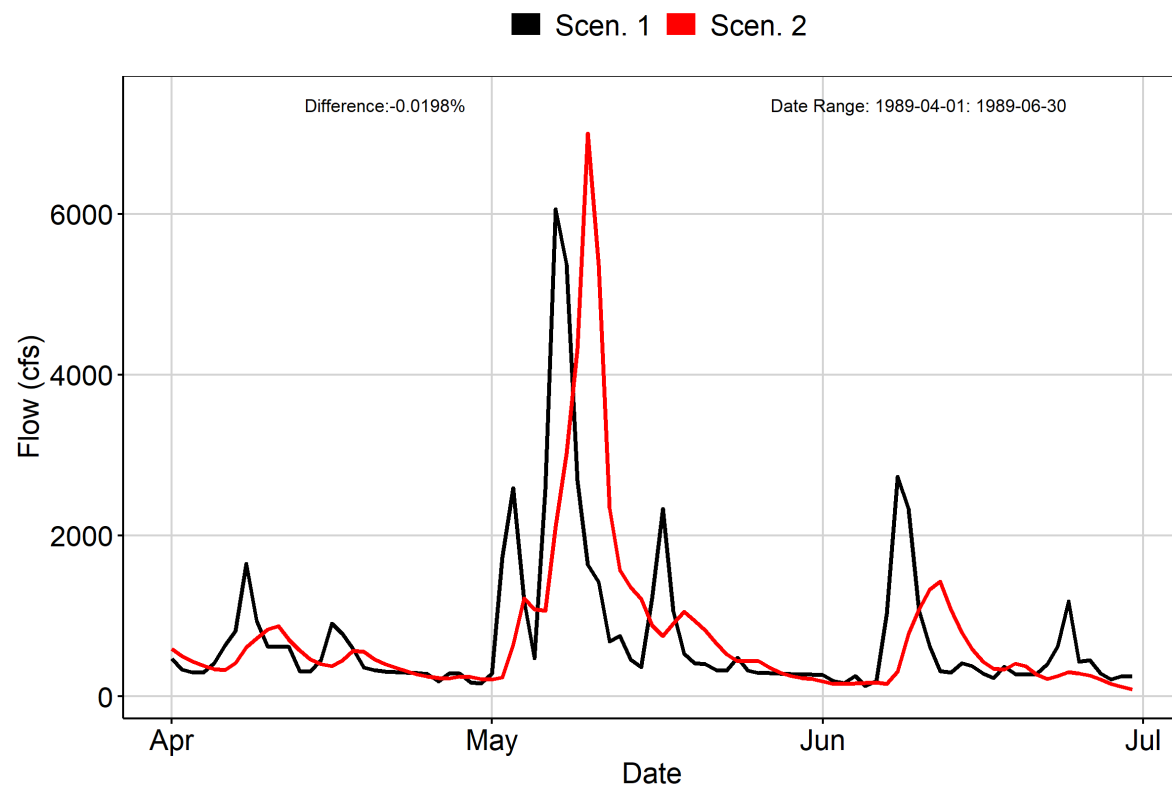


Fig. 12: Second Smallest Difference Period

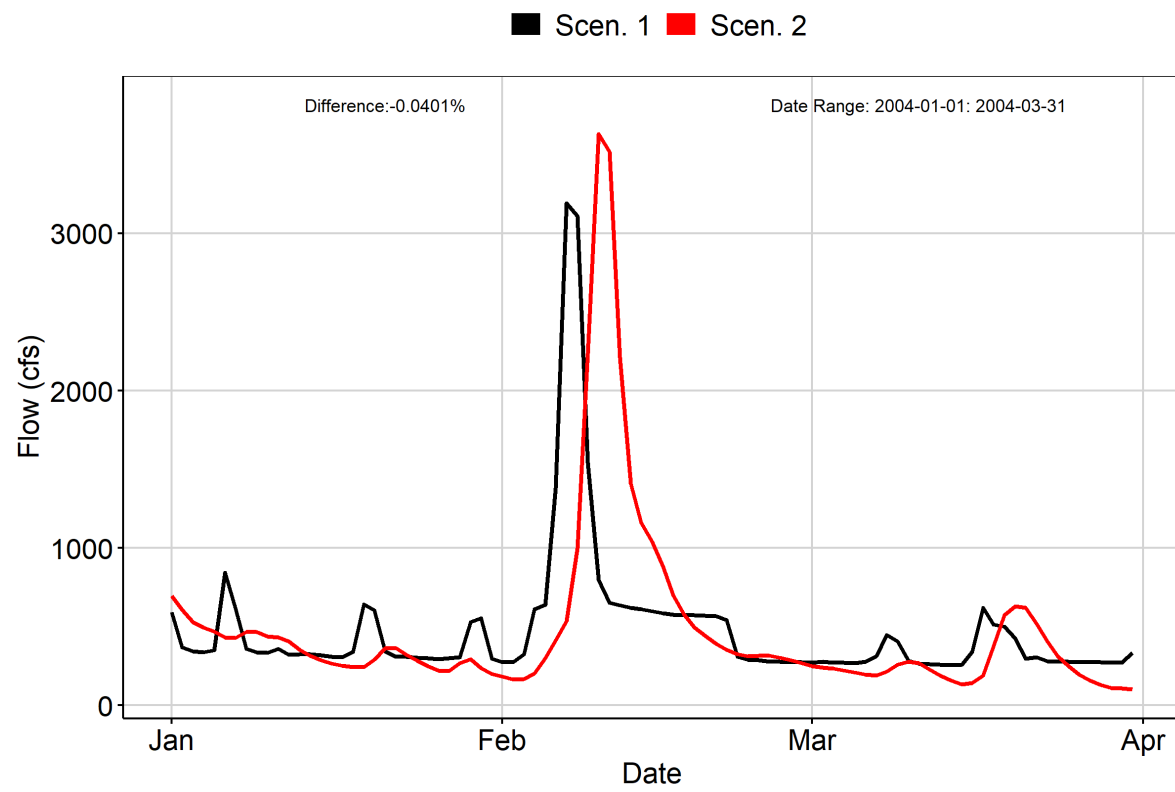


Fig. 13: Third Smallest Difference Period

