# Appendix for Model 03060108

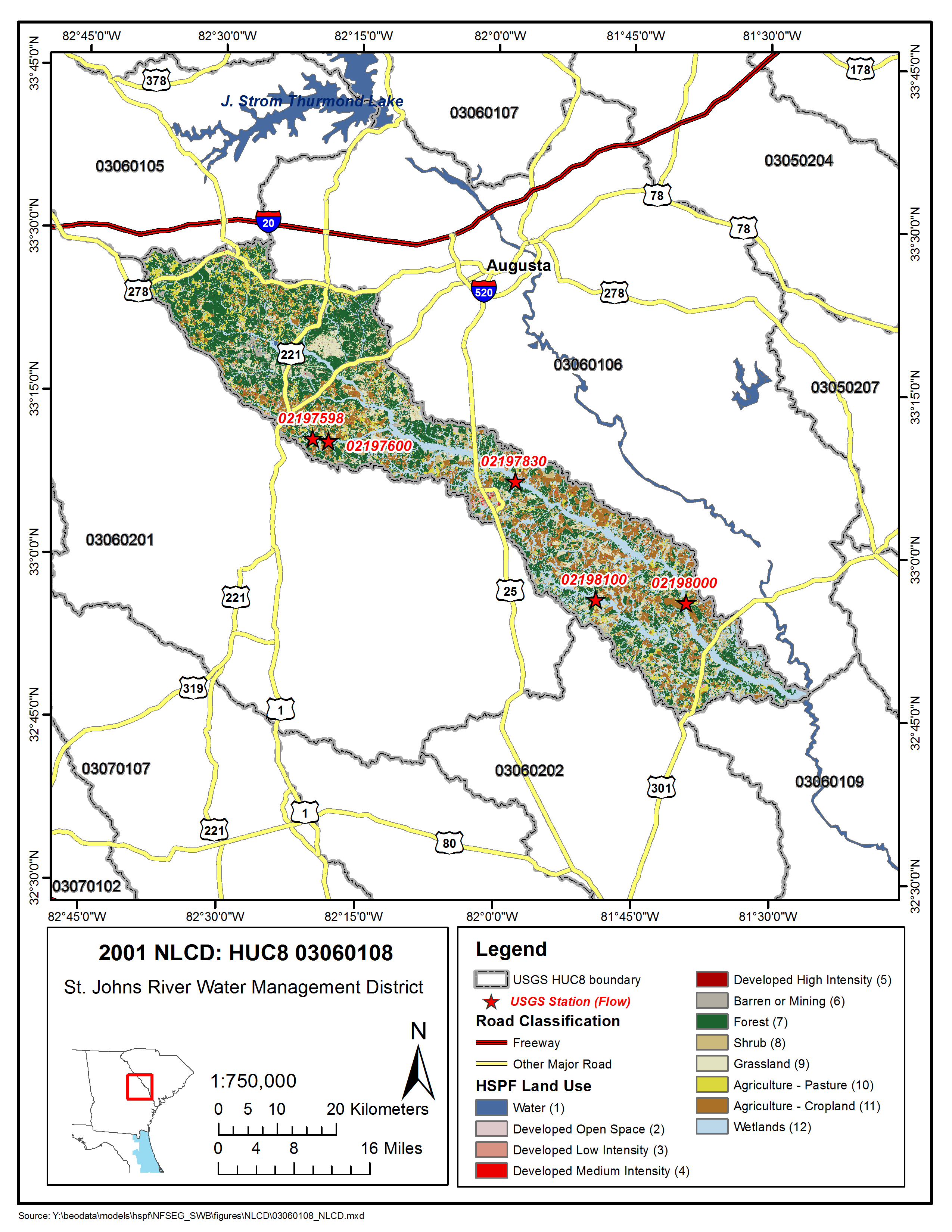


Figure 03060108-1: Land Cover from the National Land Cover Database.

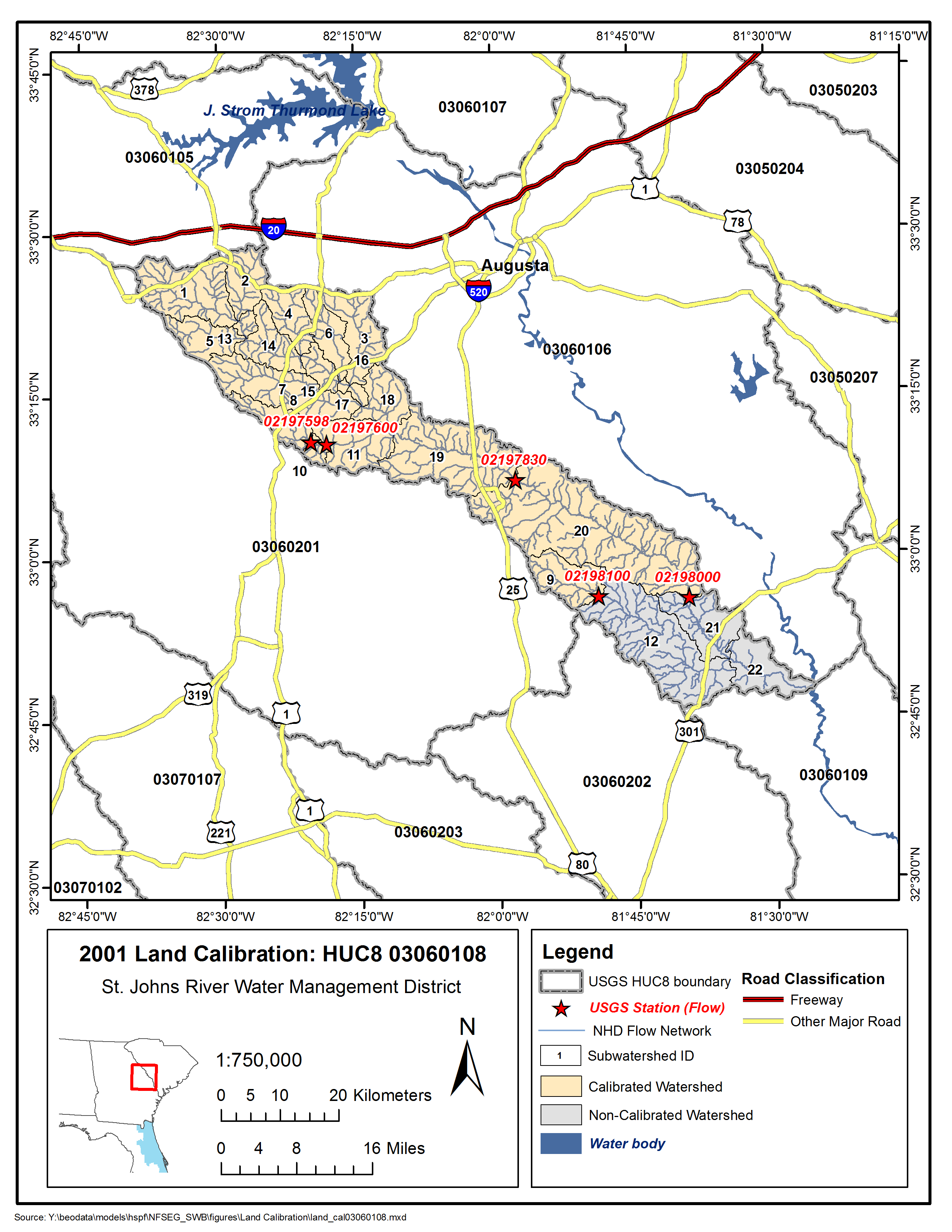


Figure 03060108-2: Calibrated sub-watersheds.

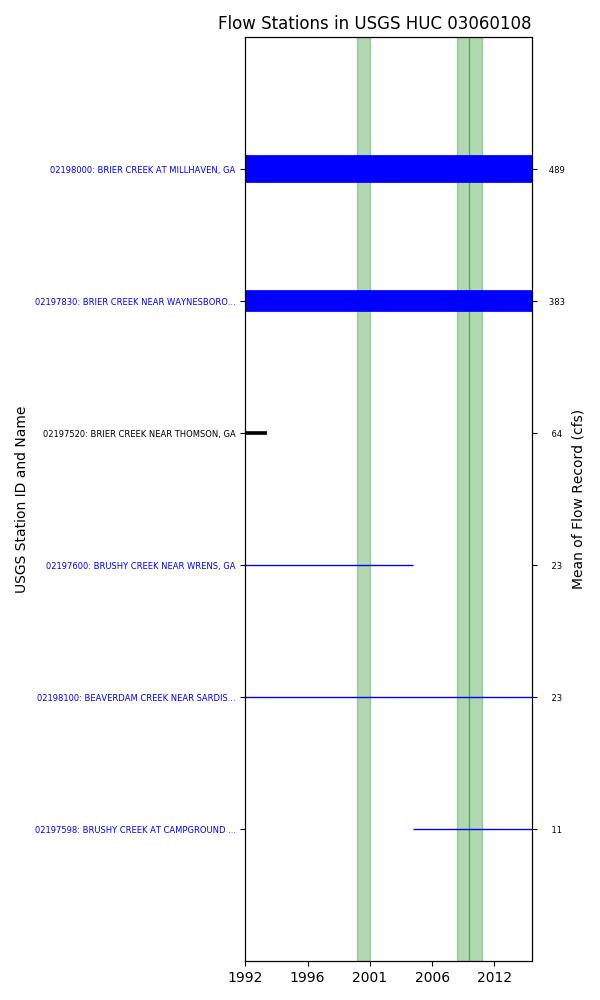


Figure 03060108-3: Station period of record. Blue color identifies gauges used for calibration.

## HSPF Reach 08, USGS Gauge 02197598

Table 03060108-1: Comparison Statistics Between HSPF Reach 08 and USGS Gauge 02197598.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | 2.65 |
| Standard error | 7.29 |
| Relative bias | 0.23 |
| Relative standard error | 0.87 |
| Nash-Sutcliffe coefficient | 0.25 |
| Kling-Gupta coefficient | 0.43 |
| Coefficient of efficiency | 0.32 |
| Index of agreement | 0.72 |

Table 03060108-2: Hydrologic Indices Between USGS Gauge 02197598 and HSPF Reach 08.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197598 | Simulated Reach 08 | Percent Difference |
| MA1: Mean, all daily flows | 11.47 | 13.97 | 21.77 |
| MA2: Median, all daily flows | 7.80 | 8.41 | 7.81 |
| MA3: CV, all daily flows | 118.51 | 117.74 | -0.65 |
| MA4: CV, log of all daily flows | 71.17 | 87.59 | 23.08 |
| MA5: Mean daily flow / median daily flow | 1.47 | 1.66 | 12.94 |
| MA9: (Q10 - Q90) / median daily flow | 2.19 | 2.65 | 20.84 |
| MA10: (Q20 - Q80) / median daily flow | 1.23 | 1.40 | 13.72 |
| MA11: (Q25 - Q75) / median daily flow | 1.04 | 1.12 | 8.05 |
| MA12: Mean monthly flow, January | 13.19 | 18.54 | 40.62 |
| MA13: Mean monthly flow, February | 13.74 | 19.21 | 39.89 |
| MA14: Mean monthly flow, March | 14.49 | 19.69 | 35.90 |
| MA15: Mean monthly flow, April | 11.09 | 11.94 | 7.69 |
| MA16: Mean monthly flow, May | 6.21 | 7.77 | 25.17 |
| MA17: Mean monthly flow, June | 10.32 | 9.37 | -9.18 |
| MA18: Mean monthly flow, July | 8.45 | 9.35 | 10.64 |
| MA19: Mean monthly flow, August | 8.72 | 8.49 | -2.65 |
| MA20: Mean monthly flow, September | 5.44 | 6.38 | 17.40 |
| MA21: Mean monthly flow, October | 6.54 | 8.04 | 22.88 |
| MA22: Mean monthly flow, November | 8.20 | 9.94 | 21.28 |
| MA23: Mean monthly flow, December | 13.83 | 19.01 | 37.47 |
| ML1: Mean minimum monthly flow, January | 9.72 | 12.47 | 28.27 |
| ML2: Mean minimum monthly flow, February | 9.07 | 10.21 | 12.46 |
| ML3: Mean minimum monthly flow, March | 9.36 | 10.91 | 16.48 |
| ML4: Mean minimum monthly flow, April | 6.35 | 8.39 | 32.11 |
| ML5: Mean minimum monthly flow, May | 4.33 | 6.01 | 38.67 |
| ML6: Mean minimum monthly flow, June | 3.40 | 5.32 | 56.17 |
| ML7: Mean minimum monthly flow, July | 4.08 | 5.55 | 35.94 |
| ML8: Mean minimum monthly flow, August | 3.71 | 5.10 | 37.64 |
| ML9: Mean minimum monthly flow, September | 3.28 | 4.99 | 52.14 |
| ML10: Mean minimum monthly flow, October | 4.09 | 5.08 | 24.22 |
| ML11: Mean minimum monthly flow, November | 6.01 | 6.10 | 1.45 |
| ML12: Mean minimum monthly flow, December | 7.18 | 8.01 | 11.62 |
| ML13: CV of minimum monthly flows | 65.35 | 68.69 | 5.10 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.32 | 0.41 | 28.49 |
| ML15: Mean minimum annual flow / mean annual flow | 0.23 | 0.30 | 28.59 |
| ML16: Median minimum annual flow / median annual flow | 0.31 | 0.34 | 7.84 |
| ML20: Ratio of baseflow volume to total flow volume | 0.58 | 0.58 | -1.00 |
| ML22: Mean annual minimum flow divided by catchment area | 0.03 | 0.04 | 44.34 |
| RA1: Mean of positive changes from one day to next (rise rate) | 6.69 | 7.25 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 287.22 | 349.79 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 3.48 | 3.30 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 302.48 | 372.50 |  |
| RA5: Ratio of days that are higher than previous day | 0.31 | 0.31 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.16 | 0.07 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.10 | 0.07 |  |
| RA8: Number of flow reversals from one day to the next | 101.90 | 105.10 |  |
| RA9: CV, number of flow reversals from one day to the next | 36.62 | 37.52 |  |

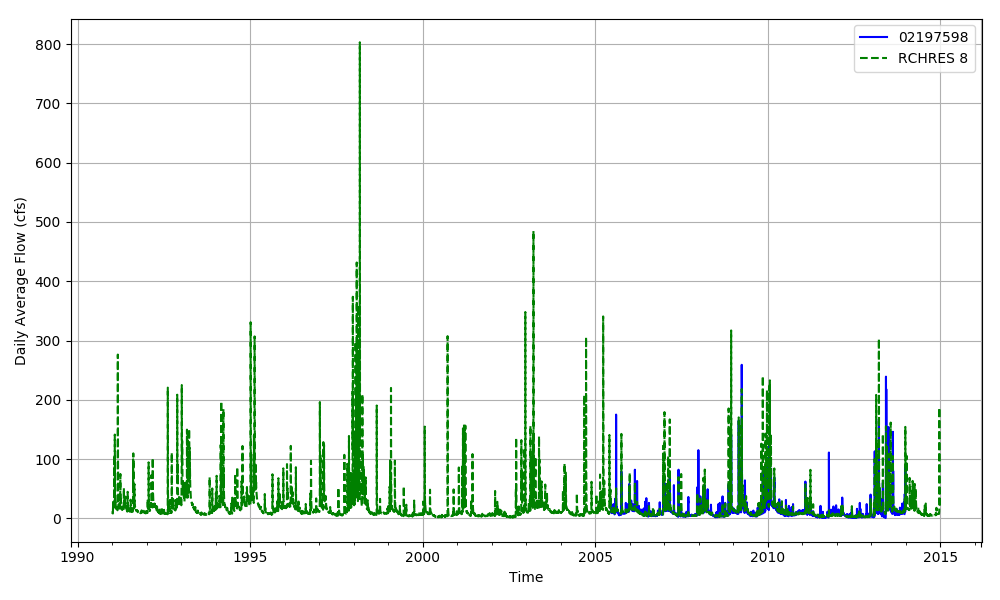


Figure 03060108-4: Daily flow for HSFP reach 08 and USGS station 02197598.

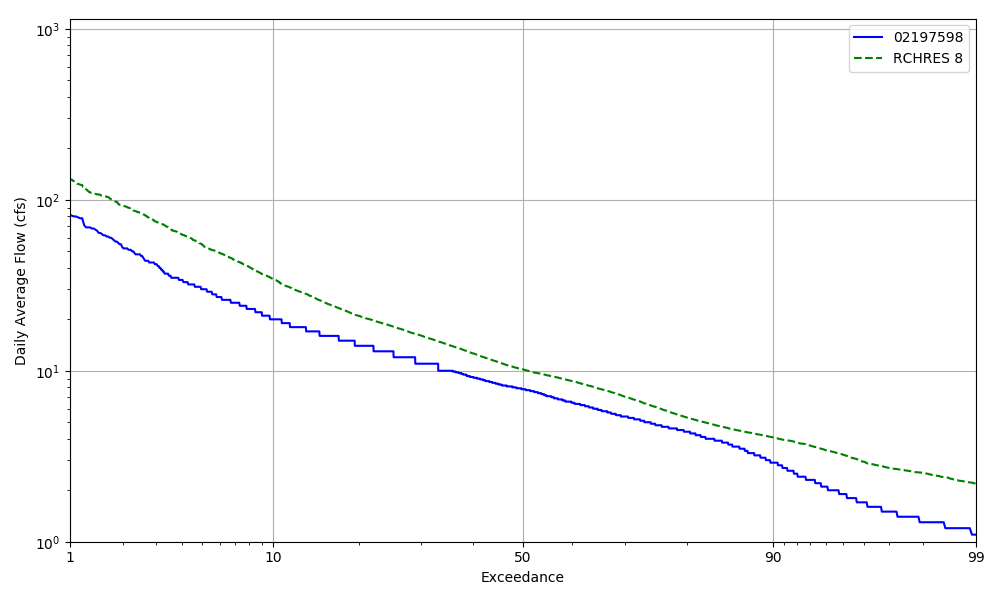


Figure 03060108-5: Daily exceedance for HSFP reach 08 and USGS station 02197598.

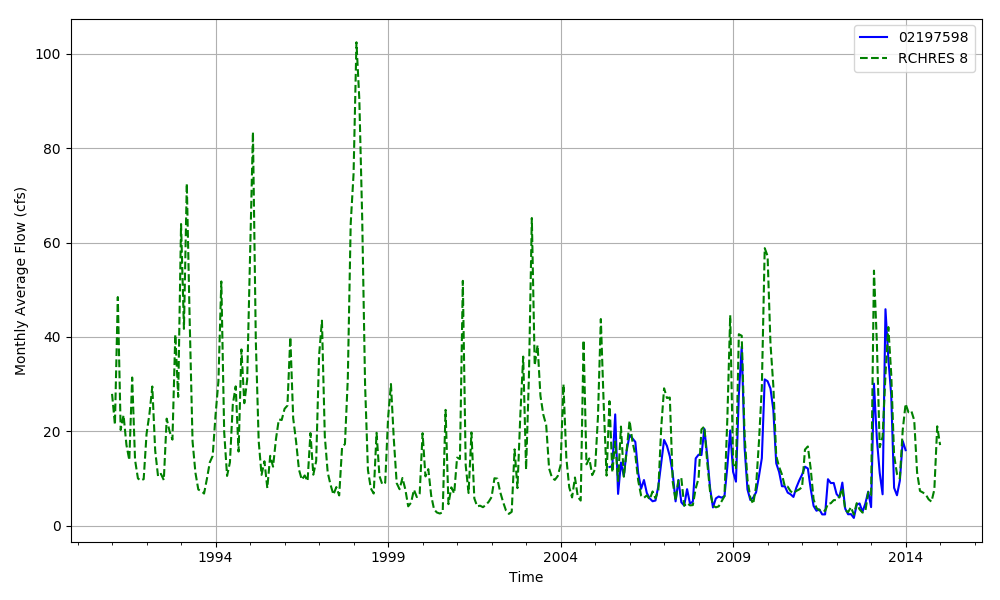


Figure 03060108-6: Monthly flow for HSFP reach 08 and USGS station 02197598.

## HSPF Reach 09, USGS Gauge 02198100

Table 03060108-3: Comparison Statistics Between HSPF Reach 09 and USGS Gauge 02198100.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -7.03 |
| Standard error | 26.15 |
| Relative bias | -0.29 |
| Relative standard error | 0.69 |
| Nash-Sutcliffe coefficient | 0.52 |
| Kling-Gupta coefficient | 0.33 |
| Coefficient of efficiency | 0.49 |
| Index of agreement | 0.67 |

Table 03060108-4: Hydrologic Indices Between USGS Gauge 02198100 and HSPF Reach 09.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02198100 | Simulated Reach 09 | Percent Difference |
| MA1: Mean, all daily flows | 24.61 | 17.60 | -28.48 |
| MA2: Median, all daily flows | 6.40 | 11.70 | 82.82 |
| MA3: CV, all daily flows | 213.54 | 92.33 | -56.76 |
| MA4: CV, log of all daily flows | 140.91 | 80.01 | -43.22 |
| MA5: Mean daily flow / median daily flow | 3.84 | 1.50 | -60.88 |
| MA9: (Q10 - Q90) / median daily flow | 7.47 | 2.50 | -66.58 |
| MA10: (Q20 - Q80) / median daily flow | 3.16 | 1.33 | -57.99 |
| MA11: (Q25 - Q75) / median daily flow | 2.17 | 1.06 | -51.02 |
| MA12: Mean monthly flow, January | 37.35 | 24.00 | -35.76 |
| MA13: Mean monthly flow, February | 50.55 | 27.52 | -45.57 |
| MA14: Mean monthly flow, March | 59.05 | 29.26 | -50.44 |
| MA15: Mean monthly flow, April | 27.72 | 18.06 | -34.86 |
| MA16: Mean monthly flow, May | 13.80 | 12.18 | -11.77 |
| MA17: Mean monthly flow, June | 13.32 | 12.92 | -3.00 |
| MA18: Mean monthly flow, July | 16.25 | 12.77 | -21.46 |
| MA19: Mean monthly flow, August | 16.38 | 12.93 | -21.08 |
| MA20: Mean monthly flow, September | 6.89 | 10.30 | 49.51 |
| MA21: Mean monthly flow, October | 10.17 | 11.92 | 17.22 |
| MA22: Mean monthly flow, November | 11.29 | 13.01 | 15.21 |
| MA23: Mean monthly flow, December | 22.04 | 18.79 | -14.77 |
| ML1: Mean minimum monthly flow, January | 11.23 | 13.38 | 19.11 |
| ML2: Mean minimum monthly flow, February | 15.23 | 14.96 | -1.77 |
| ML3: Mean minimum monthly flow, March | 14.87 | 14.68 | -1.28 |
| ML4: Mean minimum monthly flow, April | 8.19 | 12.11 | 47.97 |
| ML5: Mean minimum monthly flow, May | 4.94 | 8.68 | 75.59 |
| ML6: Mean minimum monthly flow, June | 3.93 | 7.30 | 85.85 |
| ML7: Mean minimum monthly flow, July | 4.01 | 7.51 | 87.13 |
| ML8: Mean minimum monthly flow, August | 4.29 | 7.73 | 80.19 |
| ML9: Mean minimum monthly flow, September | 3.73 | 7.68 | 106.14 |
| ML10: Mean minimum monthly flow, October | 3.97 | 8.00 | 101.74 |
| ML11: Mean minimum monthly flow, November | 5.91 | 9.80 | 65.70 |
| ML12: Mean minimum monthly flow, December | 7.82 | 11.66 | 49.04 |
| ML13: CV of minimum monthly flows | 105.64 | 62.54 | -40.80 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.42 | 0.45 | 7.39 |
| ML15: Mean minimum annual flow / mean annual flow | 0.21 | 0.36 | 71.13 |
| ML16: Median minimum annual flow / median annual flow | 0.44 | 0.42 | -3.65 |
| ML20: Ratio of baseflow volume to total flow volume | 0.37 | 0.67 | 81.87 |
| ML22: Mean annual minimum flow divided by catchment area | 0.03 | 0.06 | 95.64 |
| RA1: Mean of positive changes from one day to next (rise rate) | 21.95 | 4.87 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 428.23 | 389.11 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 10.47 | 2.67 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 590.15 | 347.17 |  |
| RA5: Ratio of days that are higher than previous day | 0.28 | 0.35 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.13 | 0.04 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.09 | 0.05 |  |
| RA8: Number of flow reversals from one day to the next | 97.50 | 124.50 |  |
| RA9: CV, number of flow reversals from one day to the next | 17.98 | 20.61 |  |

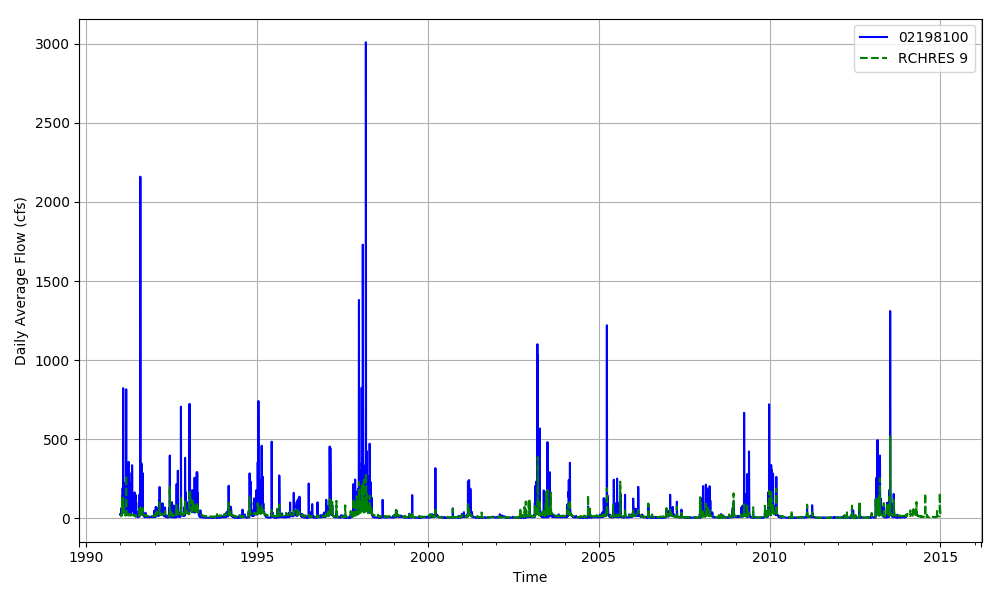


Figure 03060108-7: Daily flow for HSFP reach 09 and USGS station 02198100.

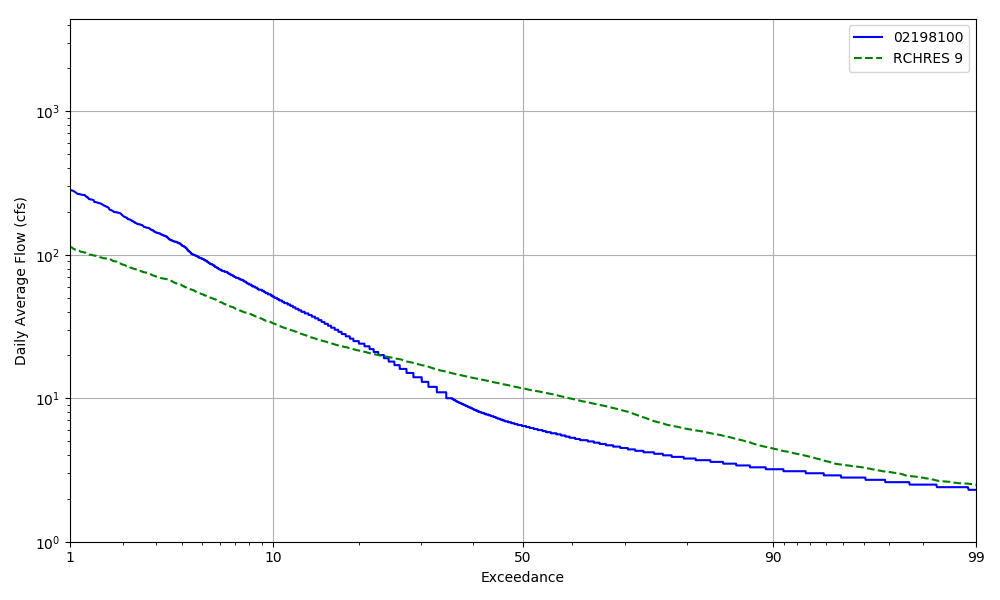


Figure 03060108-8: Daily exceedance for HSFP reach 09 and USGS station 02198100.

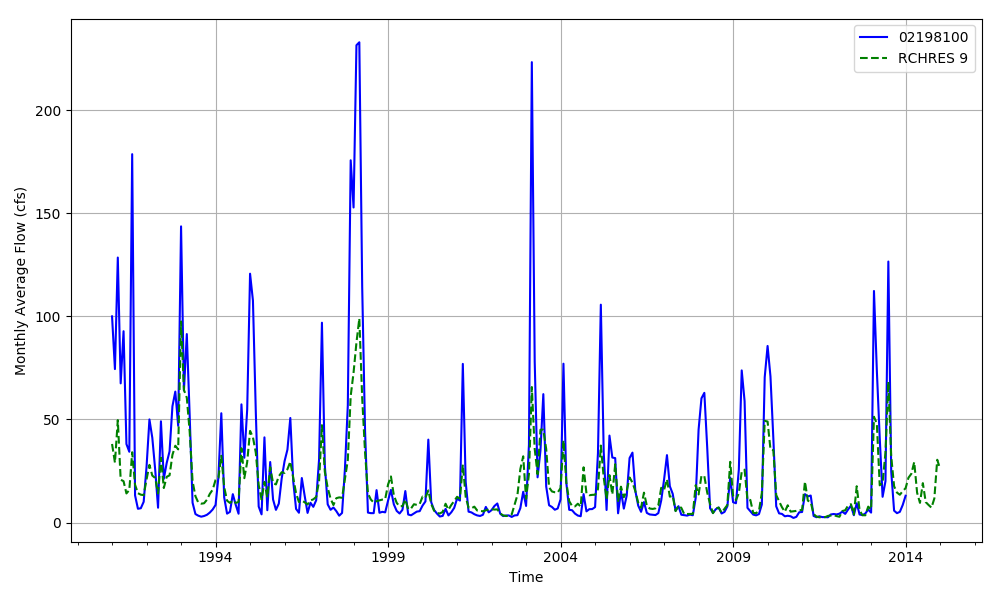


Figure 03060108-9: Monthly flow for HSFP reach 09 and USGS station 02198100.

## HSPF Reach 10, USGS Gauge 02197600

Table 03060108-5: Comparison Statistics Between HSPF Reach 10 and USGS Gauge 02197600.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | 0.08 |
| Standard error | 11.89 |
| Relative bias | 0.00 |
| Relative standard error | 0.56 |
| Nash-Sutcliffe coefficient | 0.69 |
| Kling-Gupta coefficient | 0.85 |
| Coefficient of efficiency | 0.52 |
| Index of agreement | 0.77 |

Table 03060108-6: Hydrologic Indices Between USGS Gauge 02197600 and HSPF Reach 10.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197600 | Simulated Reach 10 | Percent Difference |
| MA1: Mean, all daily flows | 24.60 | 24.58 | -0.10 |
| MA2: Median, all daily flows | 15.00 | 14.11 | -5.90 |
| MA3: CV, all daily flows | 138.12 | 126.76 | -8.22 |
| MA4: CV, log of all daily flows | 78.16 | 87.51 | 11.96 |
| MA5: Mean daily flow / median daily flow | 1.64 | 1.74 | 6.17 |
| MA9: (Q10 - Q90) / median daily flow | 2.53 | 3.10 | 22.75 |
| MA10: (Q20 - Q80) / median daily flow | 1.29 | 1.57 | 22.39 |
| MA11: (Q25 - Q75) / median daily flow | 0.95 | 1.18 | 24.52 |
| MA12: Mean monthly flow, January | 35.01 | 35.07 | 0.16 |
| MA13: Mean monthly flow, February | 40.57 | 43.10 | 6.24 |
| MA14: Mean monthly flow, March | 41.49 | 49.85 | 20.15 |
| MA15: Mean monthly flow, April | 25.51 | 26.29 | 3.02 |
| MA16: Mean monthly flow, May | 20.71 | 16.65 | -19.59 |
| MA17: Mean monthly flow, June | 20.15 | 17.31 | -14.12 |
| MA18: Mean monthly flow, July | 15.07 | 11.23 | -25.48 |
| MA19: Mean monthly flow, August | 18.20 | 13.74 | -24.50 |
| MA20: Mean monthly flow, September | 16.34 | 17.44 | 6.74 |
| MA21: Mean monthly flow, October | 15.33 | 15.45 | 0.79 |
| MA22: Mean monthly flow, November | 17.98 | 18.86 | 4.90 |
| MA23: Mean monthly flow, December | 20.02 | 22.34 | 11.58 |
| ML1: Mean minimum monthly flow, January | 14.39 | 14.73 | 2.40 |
| ML2: Mean minimum monthly flow, February | 18.45 | 18.48 | 0.20 |
| ML3: Mean minimum monthly flow, March | 16.57 | 18.58 | 12.15 |
| ML4: Mean minimum monthly flow, April | 13.75 | 13.24 | -3.72 |
| ML5: Mean minimum monthly flow, May | 10.36 | 8.98 | -13.35 |
| ML6: Mean minimum monthly flow, June | 9.25 | 8.52 | -7.87 |
| ML7: Mean minimum monthly flow, July | 7.69 | 6.49 | -15.58 |
| ML8: Mean minimum monthly flow, August | 7.35 | 6.61 | -10.09 |
| ML9: Mean minimum monthly flow, September | 7.83 | 6.84 | -12.67 |
| ML10: Mean minimum monthly flow, October | 10.02 | 8.51 | -15.04 |
| ML11: Mean minimum monthly flow, November | 11.48 | 10.93 | -4.81 |
| ML12: Mean minimum monthly flow, December | 13.06 | 13.88 | 6.25 |
| ML13: CV of minimum monthly flows | 59.26 | 67.95 | 14.66 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.33 | 0.30 | -7.55 |
| ML15: Mean minimum annual flow / mean annual flow | 0.23 | 0.21 | -10.25 |
| ML16: Median minimum annual flow / median annual flow | 0.32 | 0.30 | -6.37 |
| ML20: Ratio of baseflow volume to total flow volume | 0.55 | 0.55 | -0.67 |
| ML22: Mean annual minimum flow divided by catchment area | 0.06 | 0.05 | -12.54 |
| RA1: Mean of positive changes from one day to next (rise rate) | 15.39 | 11.45 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 328.19 | 368.94 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 9.09 | 5.82 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 383.97 | 358.29 |  |
| RA5: Ratio of days that are higher than previous day | 0.31 | 0.34 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.15 | 0.13 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.11 | 0.10 |  |
| RA8: Number of flow reversals from one day to the next | 113.33 | 143.27 |  |
| RA9: CV, number of flow reversals from one day to the next | 18.95 | 16.33 |  |

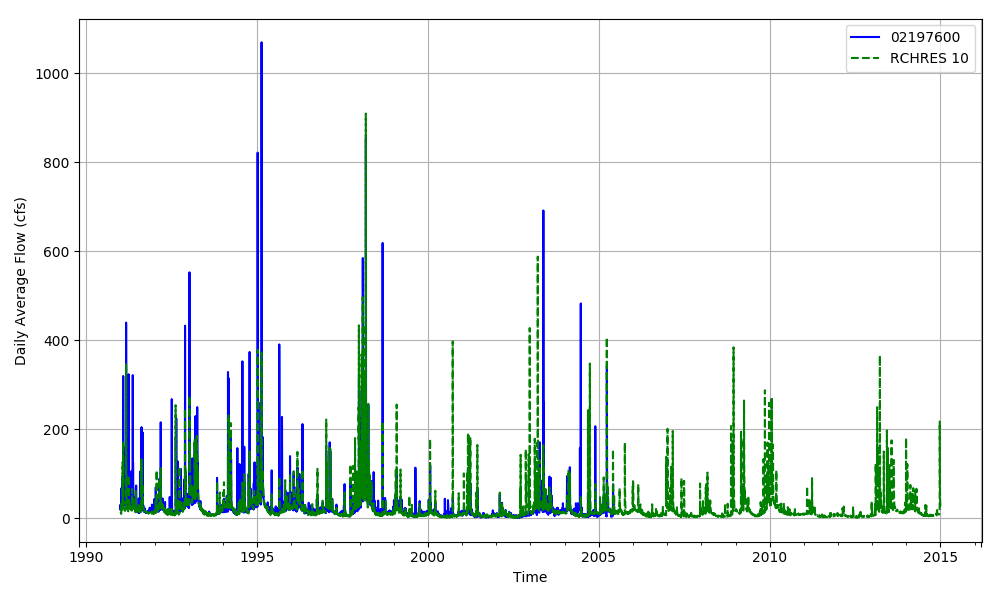


Figure 03060108-10: Daily flow for HSFP reach 10 and USGS station 02197600.

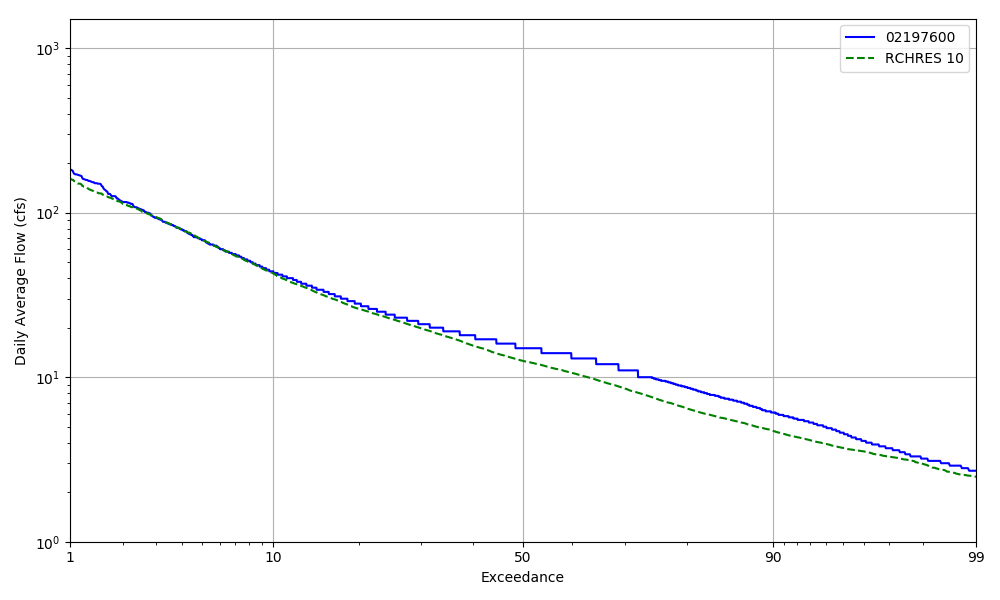


Figure 03060108-11: Daily exceedance for HSFP reach 10 and USGS station 02197600.

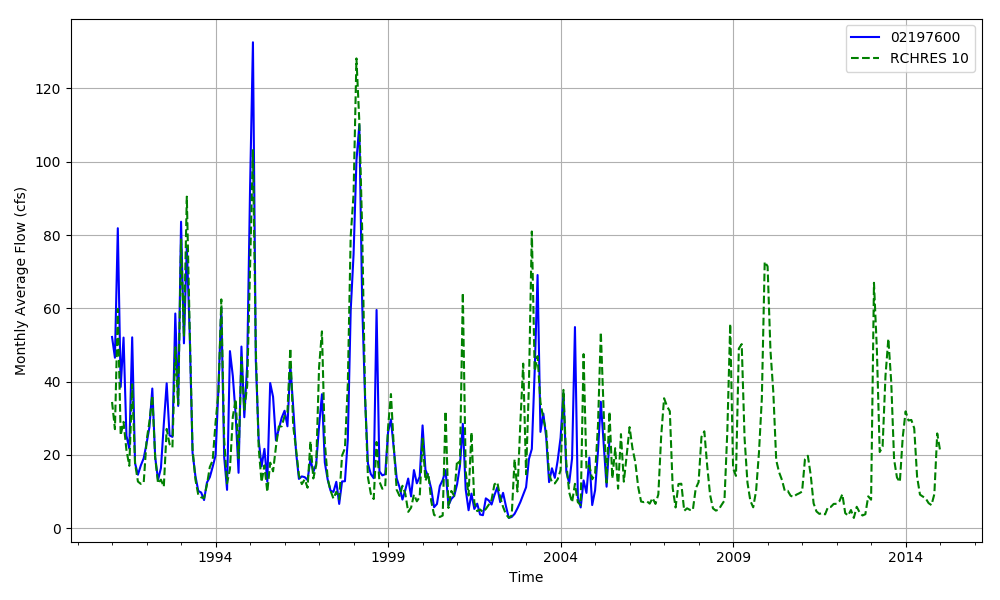


Figure 03060108-12: Monthly flow for HSFP reach 10 and USGS station 02197600.

## HSPF Reach 19, USGS Gauge 02197830

Table 03060108-7: Comparison Statistics Between HSPF Reach 19 and USGS Gauge 02197830.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -41.07 |
| Standard error | 117.72 |
| Relative bias | -0.10 |
| Relative standard error | 0.37 |
| Nash-Sutcliffe coefficient | 0.87 |
| Kling-Gupta coefficient | 0.88 |
| Coefficient of efficiency | 0.68 |
| Index of agreement | 0.84 |

Table 03060108-8: Hydrologic Indices Between USGS Gauge 02197830 and HSPF Reach 19.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197830 | Simulated Reach 19 | Percent Difference |
| MA1: Mean, all daily flows | 582.93 | 490.53 | -15.85 |
| MA2: Median, all daily flows | 471.50 | 374.72 | -20.53 |
| MA3: CV, all daily flows | 36.37 | 42.63 | 17.20 |
| MA4: CV, log of all daily flows | 61.17 | 64.21 | 4.97 |
| MA5: Mean daily flow / median daily flow | 1.24 | 1.31 | 5.88 |
| MA9: (Q10 - Q90) / median daily flow | 1.89 | 1.99 | 5.45 |
| MA10: (Q20 - Q80) / median daily flow | 1.22 | 1.09 | -10.69 |
| MA11: (Q25 - Q75) / median daily flow | 1.00 | 0.88 | -12.40 |
| MA12: Mean monthly flow, January | 453.87 | 416.83 | -8.16 |
| MA13: Mean monthly flow, February | 316.06 | 252.06 | -20.25 |
| MA14: Mean monthly flow, March | 437.60 | 396.38 | -9.42 |
| MA15: Mean monthly flow, April | 286.53 | 226.65 | -20.90 |
| MA16: Mean monthly flow, May | 166.29 | 142.04 | -14.58 |
| MA17: Mean monthly flow, June | 142.90 | 116.36 | -18.57 |
| MA18: Mean monthly flow, July | 151.97 | 100.60 | -33.80 |
| MA19: Mean monthly flow, August | 200.19 | 166.29 | -16.93 |
| MA20: Mean monthly flow, September | 116.29 | 106.77 | -8.18 |
| MA21: Mean monthly flow, October | 164.99 | 152.45 | -7.60 |
| MA22: Mean monthly flow, November | 205.35 | 174.15 | -15.20 |
| MA23: Mean monthly flow, December | 238.72 | 185.60 | -22.25 |
| ML1: Mean minimum monthly flow, January | 458.40 | 369.20 | -19.46 |
| ML2: Mean minimum monthly flow, February | 493.75 | 410.03 | -16.96 |
| ML3: Mean minimum monthly flow, March | 576.50 | 490.51 | -14.92 |
| ML4: Mean minimum monthly flow, April | 395.25 | 363.67 | -7.99 |
| ML5: Mean minimum monthly flow, May | 284.25 | 258.66 | -9.00 |
| ML6: Mean minimum monthly flow, June | 181.50 | 202.70 | 11.68 |
| ML7: Mean minimum monthly flow, July | 187.75 | 181.72 | -3.21 |
| ML8: Mean minimum monthly flow, August | 216.50 | 205.93 | -4.88 |
| ML9: Mean minimum monthly flow, September | 184.00 | 198.83 | 8.06 |
| ML10: Mean minimum monthly flow, October | 201.50 | 203.64 | 1.06 |
| ML11: Mean minimum monthly flow, November | 288.00 | 273.32 | -5.10 |
| ML12: Mean minimum monthly flow, December | 444.25 | 388.51 | -12.55 |
| ML13: CV of minimum monthly flows | 52.95 | 49.92 | -5.72 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.15 | 0.22 | 50.54 |
| ML15: Mean minimum annual flow / mean annual flow | 0.12 | 0.17 | 41.29 |
| ML16: Median minimum annual flow / median annual flow | 0.11 | 0.14 | 34.30 |
| ML20: Ratio of baseflow volume to total flow volume | 0.65 | 0.69 | 7.22 |
| ML22: Mean annual minimum flow divided by catchment area | 50000.72 | 50000.85 | 0.00 |
| RA1: Mean of positive changes from one day to next (rise rate) | 107.54 | 113.48 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 188.45 | 331.39 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 72.20 | 50.18 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 189.72 | 298.18 |  |
| RA5: Ratio of days that are higher than previous day | 0.40 | 0.31 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.08 | 0.05 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.07 | 0.04 |  |
| RA8: Number of flow reversals from one day to the next | 40.80 | 30.80 |  |
| RA9: CV, number of flow reversals from one day to the next | 118.50 | 124.01 |  |

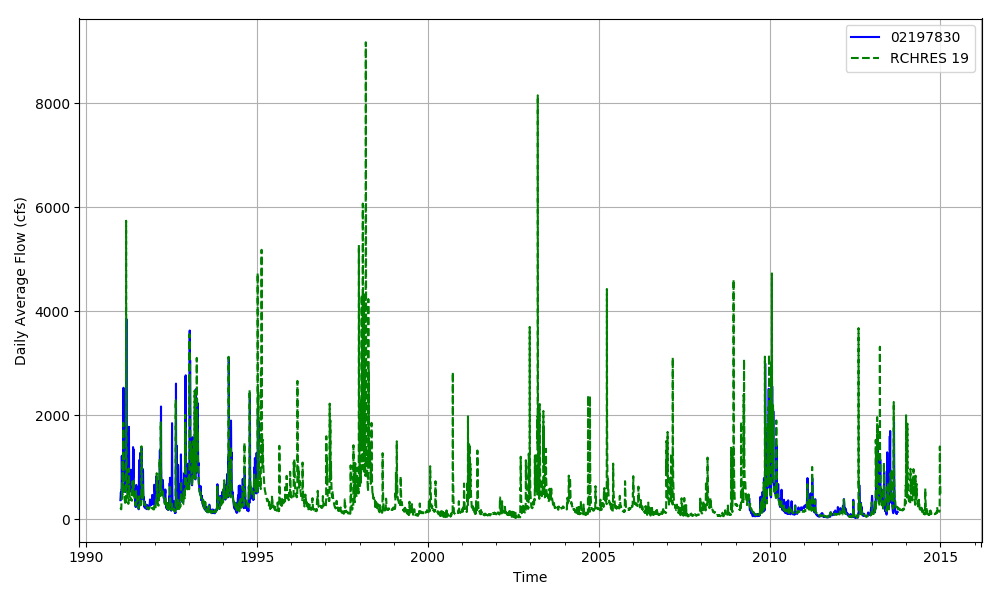


Figure 03060108-13: Daily flow for HSFP reach 19 and USGS station 02197830.

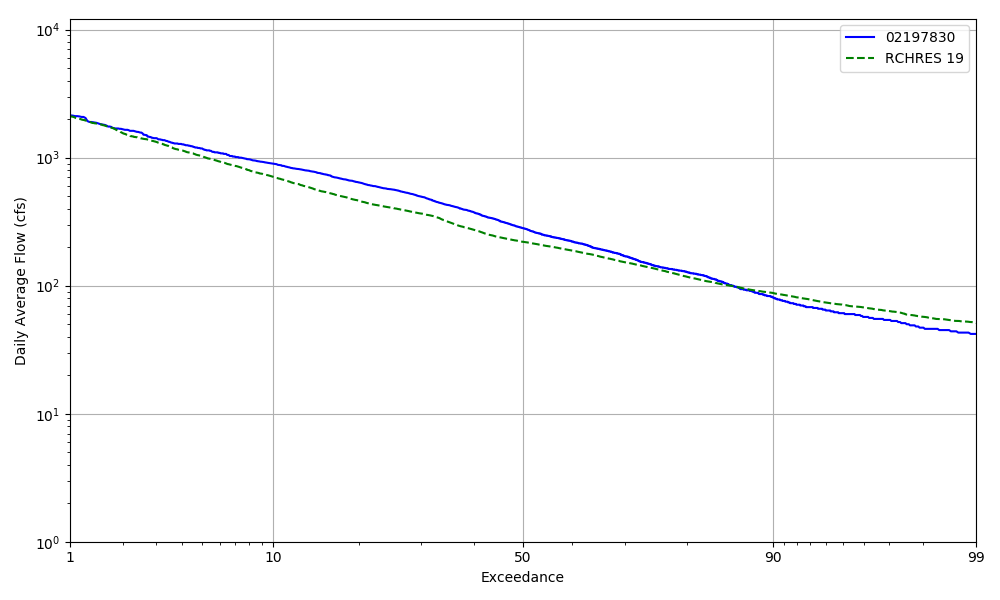


Figure 03060108-14: Daily exceedance for HSFP reach 19 and USGS station 02197830.

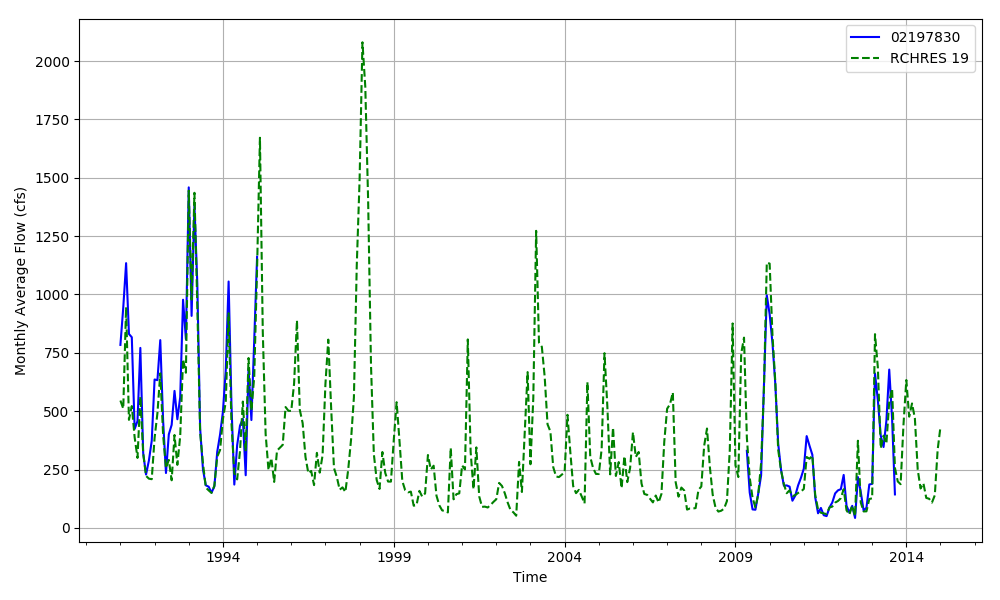


Figure 03060108-15: Monthly flow for HSFP reach 19 and USGS station 02197830.

## HSPF Reach 20, USGS Gauge 02198000

Table 03060108-9: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02198000.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -33.80 |
| Standard error | 128.02 |
| Relative bias | -0.07 |
| Relative standard error | 0.31 |
| Nash-Sutcliffe coefficient | 0.90 |
| Kling-Gupta coefficient | 0.92 |
| Coefficient of efficiency | 0.72 |
| Index of agreement | 0.86 |

Table 03060108-10: Hydrologic Indices Between USGS Gauge 02198000 and HSPF Reach 20.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02198000 | Simulated Reach 20 | Percent Difference |
| MA1: Mean, all daily flows | 505.75 | 471.54 | -6.77 |
| MA2: Median, all daily flows | 349.00 | 303.88 | -12.93 |
| MA3: CV, all daily flows | 78.73 | 88.02 | 11.79 |
| MA4: CV, log of all daily flows | 77.86 | 76.98 | -1.13 |
| MA5: Mean daily flow / median daily flow | 1.45 | 1.55 | 7.08 |
| MA9: (Q10 - Q90) / median daily flow | 2.76 | 2.71 | -1.75 |
| MA10: (Q20 - Q80) / median daily flow | 1.62 | 1.51 | -7.14 |
| MA11: (Q25 - Q75) / median daily flow | 1.25 | 1.16 | -7.28 |
| MA12: Mean monthly flow, January | 730.44 | 671.10 | -8.12 |
| MA13: Mean monthly flow, February | 809.04 | 758.39 | -6.26 |
| MA14: Mean monthly flow, March | 919.76 | 869.97 | -5.41 |
| MA15: Mean monthly flow, April | 637.39 | 536.63 | -15.81 |
| MA16: Mean monthly flow, May | 352.06 | 345.59 | -1.84 |
| MA17: Mean monthly flow, June | 338.66 | 321.84 | -4.97 |
| MA18: Mean monthly flow, July | 310.60 | 248.90 | -19.86 |
| MA19: Mean monthly flow, August | 325.81 | 291.53 | -10.52 |
| MA20: Mean monthly flow, September | 264.50 | 278.90 | 5.45 |
| MA21: Mean monthly flow, October | 294.85 | 302.88 | 2.72 |
| MA22: Mean monthly flow, November | 355.42 | 354.25 | -0.33 |
| MA23: Mean monthly flow, December | 537.46 | 505.89 | -5.88 |
| ML1: Mean minimum monthly flow, January | 460.04 | 391.73 | -14.85 |
| ML2: Mean minimum monthly flow, February | 501.48 | 432.47 | -13.76 |
| ML3: Mean minimum monthly flow, March | 542.61 | 459.00 | -15.41 |
| ML4: Mean minimum monthly flow, April | 350.17 | 349.70 | -0.14 |
| ML5: Mean minimum monthly flow, May | 207.83 | 244.68 | 17.73 |
| ML6: Mean minimum monthly flow, June | 162.78 | 205.53 | 26.26 |
| ML7: Mean minimum monthly flow, July | 163.30 | 182.75 | 11.91 |
| ML8: Mean minimum monthly flow, August | 160.87 | 186.12 | 15.69 |
| ML9: Mean minimum monthly flow, September | 141.22 | 182.44 | 29.19 |
| ML10: Mean minimum monthly flow, October | 177.96 | 209.04 | 17.47 |
| ML11: Mean minimum monthly flow, November | 244.30 | 255.55 | 4.60 |
| ML12: Mean minimum monthly flow, December | 359.57 | 327.53 | -8.91 |
| ML13: CV of minimum monthly flows | 74.55 | 69.14 | -7.26 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.30 | 0.41 | 39.53 |
| ML15: Mean minimum annual flow / mean annual flow | 0.23 | 0.32 | 39.21 |
| ML16: Median minimum annual flow / median annual flow | 0.28 | 0.40 | 41.69 |
| ML20: Ratio of baseflow volume to total flow volume | 0.68 | 0.70 | 3.22 |
| ML22: Mean annual minimum flow divided by catchment area | 1.11 | 1.41 | 26.39 |
| RA1: Mean of positive changes from one day to next (rise rate) | 79.44 | 103.73 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 236.84 | 414.45 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 54.35 | 46.82 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 230.71 | 373.48 |  |
| RA5: Ratio of days that are higher than previous day | 0.40 | 0.31 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.06 | 0.03 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.05 | 0.03 |  |
| RA8: Number of flow reversals from one day to the next | 89.50 | 62.25 |  |
| RA9: CV, number of flow reversals from one day to the next | 19.14 | 18.80 |  |

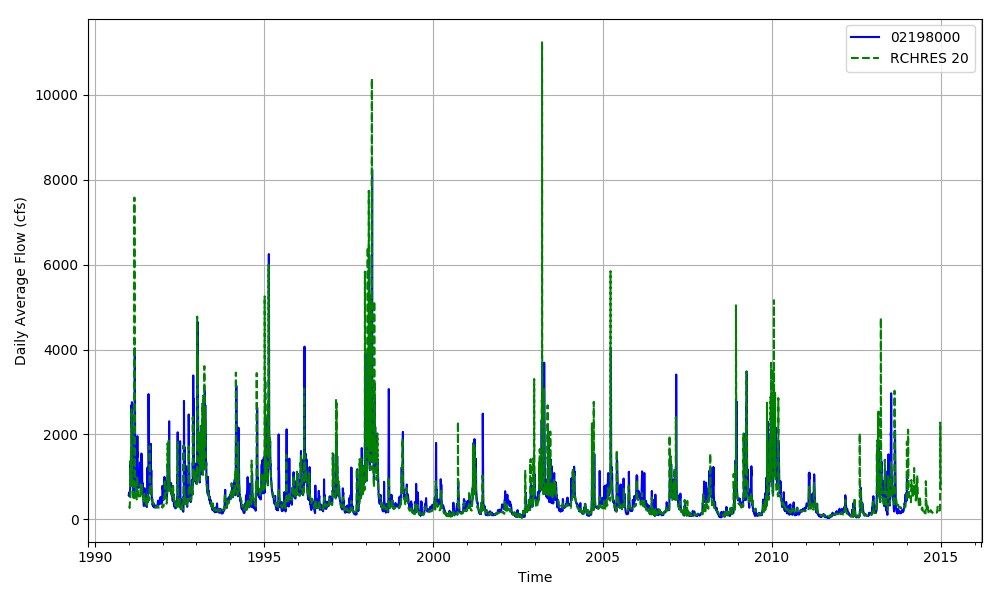


Figure 03060108-16: Daily flow for HSFP reach 20 and USGS station 02198000.

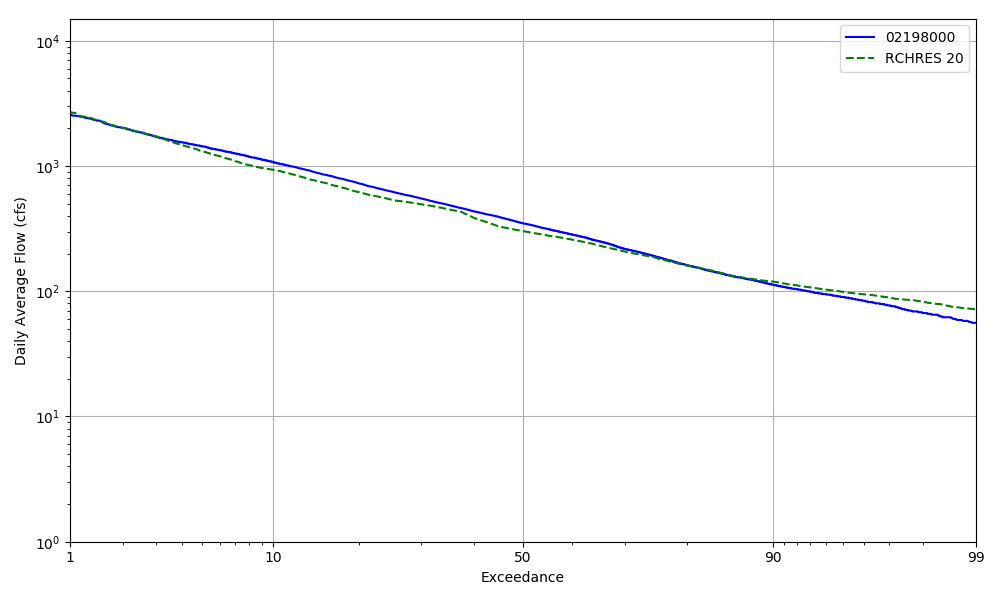


Figure 03060108-17: Daily exceedance for HSFP reach 20 and USGS station 02198000.

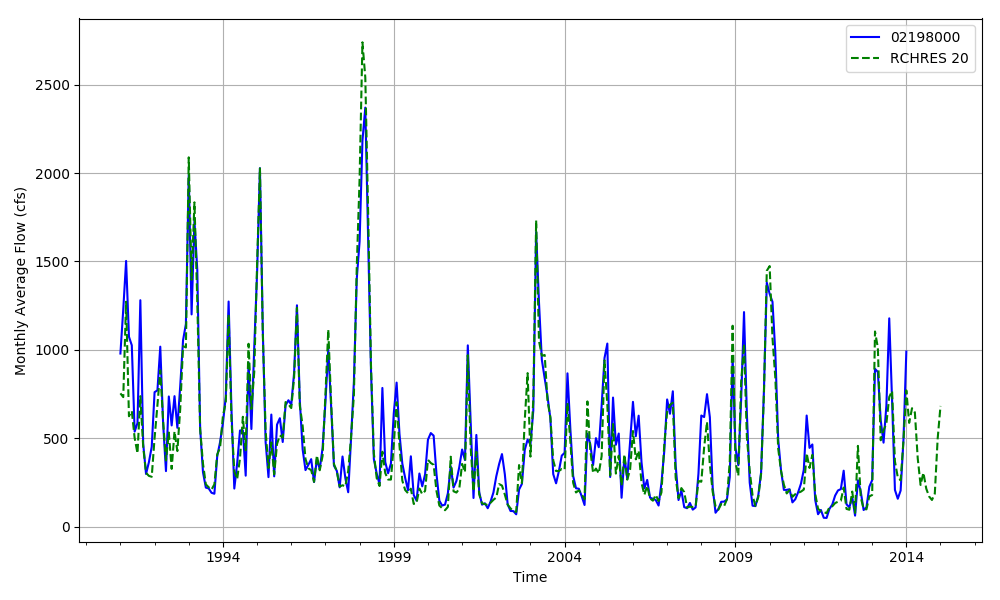


Figure 03060108-18: Monthly flow for HSFP reach 20 and USGS station 02198000.