# Appendix for Model 03060106

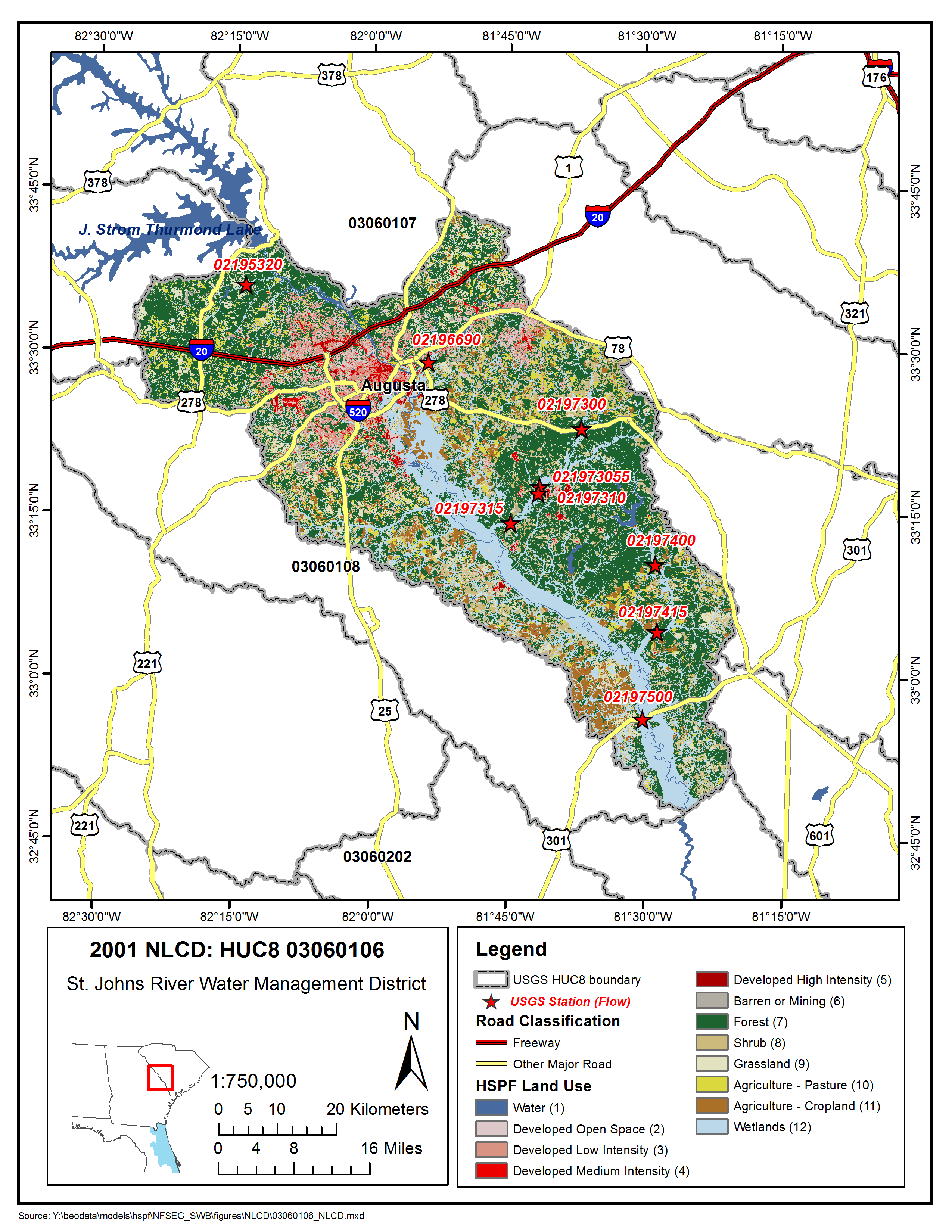


Figure 03060106-1: Land Cover from the National Land Cover Database.

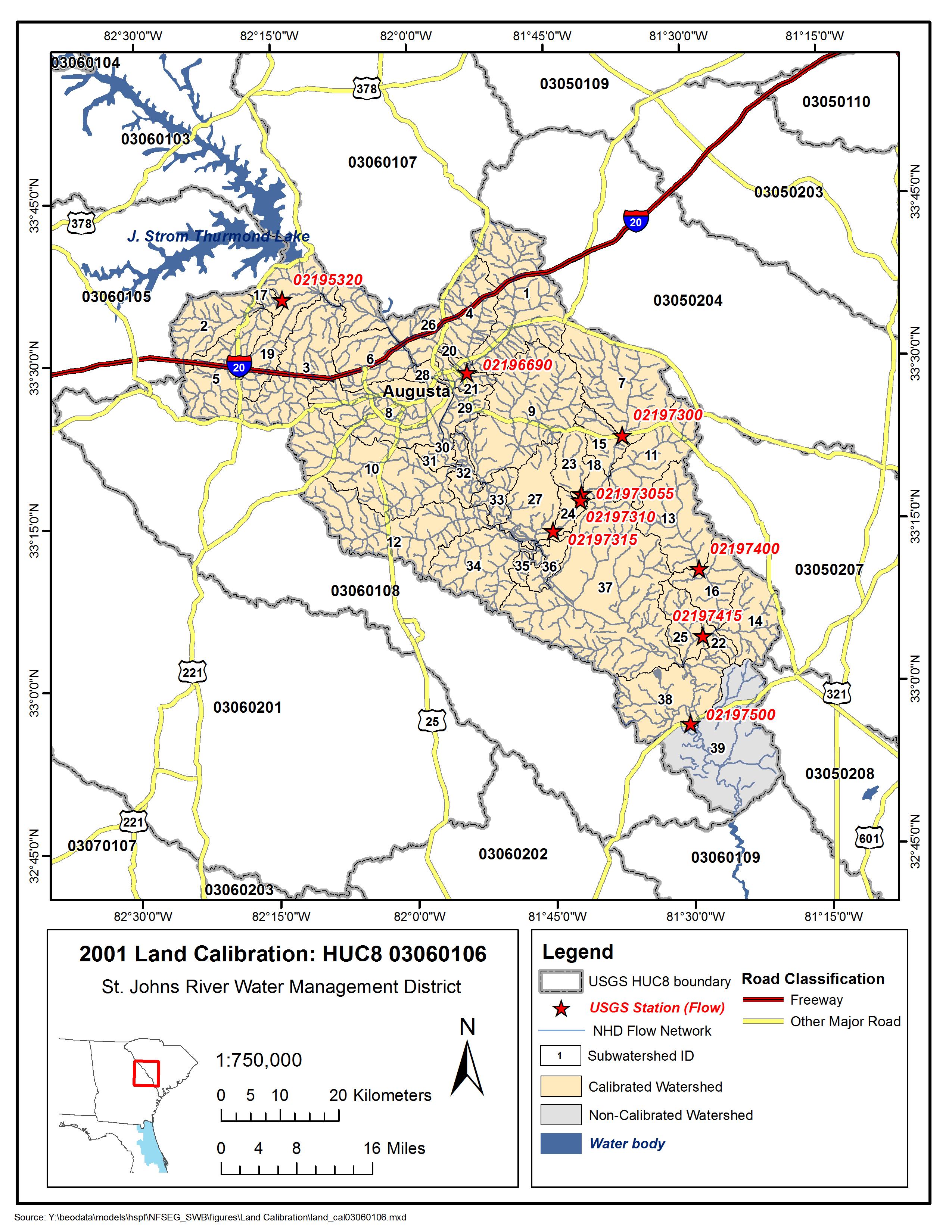


Figure 03060106-2: Calibrated sub-watersheds.

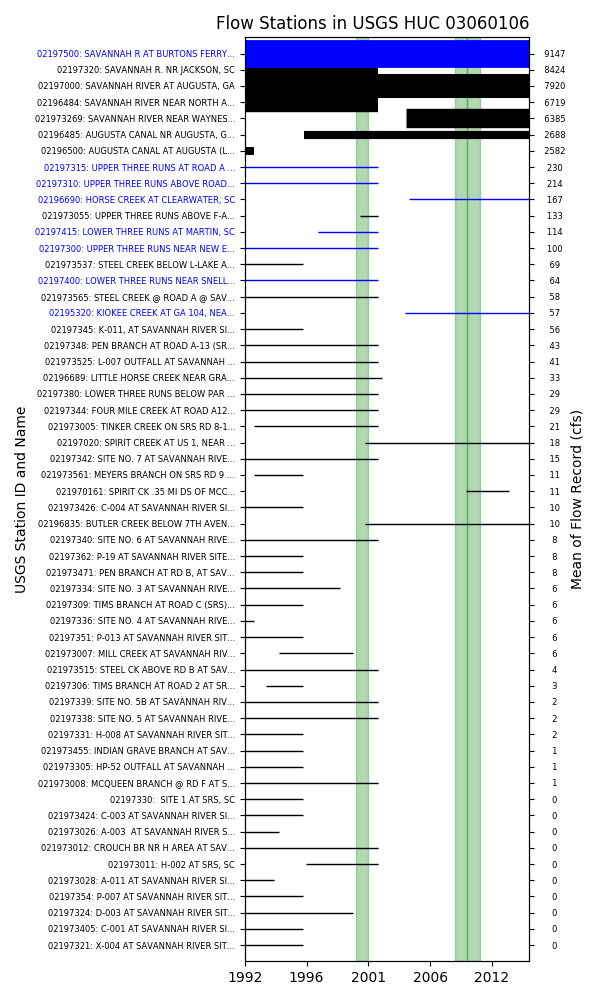


Figure 03060106-3: Station period of record. Blue color identifies gauges used for calibration.

## HSPF Reach 07, USGS Gauge 02197300

Table 03060106-1: Comparison Statistics Between HSPF Reach 07 and USGS Gauge 02197300.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | 7.39 |
| Standard error | 29.87 |
| Relative bias | 0.07 |
| Relative standard error | 1.44 |
| Nash-Sutcliffe coefficient | -1.06 |
| Kling-Gupta coefficient | 0.14 |
| Coefficient of efficiency | -0.23 |
| Index of agreement | 0.50 |

Table 03060106-2: Hydrologic Indices Between USGS Gauge 02197300 and HSPF Reach 07.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197300 | Simulated Reach 07 | Percent Difference |
| MA1: Mean, all daily flows | 101.31 | 108.62 | 7.21 |
| MA2: Median, all daily flows | 102.00 | 97.74 | -4.17 |
| MA3: CV, all daily flows | 20.39 | 15.70 | -23.01 |
| MA4: CV, log of all daily flows | 20.93 | 27.85 | 33.05 |
| MA5: Mean daily flow / median daily flow | 0.99 | 1.11 | 11.88 |
| MA9: (Q10 - Q90) / median daily flow | 0.59 | 0.80 | 35.32 |
| MA10: (Q20 - Q80) / median daily flow | 0.39 | 0.49 | 24.97 |
| MA11: (Q25 - Q75) / median daily flow | 0.30 | 0.38 | 26.38 |
| MA12: Mean monthly flow, January | 111.51 | 109.02 | -2.23 |
| MA13: Mean monthly flow, February | 110.01 | 125.13 | 13.74 |
| MA14: Mean monthly flow, March | 111.70 | 132.03 | 18.20 |
| MA15: Mean monthly flow, April | 100.94 | 128.13 | 26.93 |
| MA16: Mean monthly flow, May | 93.22 | 115.54 | 23.95 |
| MA17: Mean monthly flow, June | 95.13 | 106.61 | 12.07 |
| MA18: Mean monthly flow, July | 94.50 | 99.83 | 5.64 |
| MA19: Mean monthly flow, August | 96.42 | 95.34 | -1.12 |
| MA20: Mean monthly flow, September | 97.94 | 95.18 | -2.83 |
| MA21: Mean monthly flow, October | 89.91 | 90.93 | 1.14 |
| MA22: Mean monthly flow, November | 93.88 | 89.94 | -4.20 |
| MA23: Mean monthly flow, December | 95.70 | 90.01 | -5.94 |
| ML1: Mean minimum monthly flow, January | 94.92 | 96.93 | 2.12 |
| ML2: Mean minimum monthly flow, February | 97.00 | 118.64 | 22.30 |
| ML3: Mean minimum monthly flow, March | 97.08 | 125.62 | 29.40 |
| ML4: Mean minimum monthly flow, April | 91.00 | 122.18 | 34.27 |
| ML5: Mean minimum monthly flow, May | 84.00 | 109.07 | 29.85 |
| ML6: Mean minimum monthly flow, June | 81.58 | 101.34 | 24.22 |
| ML7: Mean minimum monthly flow, July | 80.33 | 95.93 | 19.42 |
| ML8: Mean minimum monthly flow, August | 82.08 | 91.16 | 11.06 |
| ML9: Mean minimum monthly flow, September | 83.17 | 91.35 | 9.84 |
| ML10: Mean minimum monthly flow, October | 89.36 | 94.87 | 6.16 |
| ML11: Mean minimum monthly flow, November | 94.27 | 94.29 | 0.01 |
| ML12: Mean minimum monthly flow, December | 94.64 | 95.32 | 0.72 |
| ML13: CV of minimum monthly flows | 20.15 | 33.41 | 65.86 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.78 | 0.75 | -3.11 |
| ML15: Mean minimum annual flow / mean annual flow | 0.75 | 0.73 | -2.31 |
| ML16: Median minimum annual flow / median annual flow | 0.79 | 0.75 | -5.84 |
| ML20: Ratio of baseflow volume to total flow volume | 0.92 | 0.99 | 8.19 |
| ML22: Mean annual minimum flow divided by catchment area | 0.76 | 0.78 | 2.71 |
| RA1: Mean of positive changes from one day to next (rise rate) | 13.82 | 0.70 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 175.87 | 185.94 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 7.32 | 0.31 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 198.80 | 104.99 |  |
| RA5: Ratio of days that are higher than previous day | 0.29 | 0.31 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.06 | 0.00 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.03 | 0.00 |  |
| RA8: Number of flow reversals from one day to the next | 119.42 | 29.00 |  |
| RA9: CV, number of flow reversals from one day to the next | 6.30 | 34.14 |  |

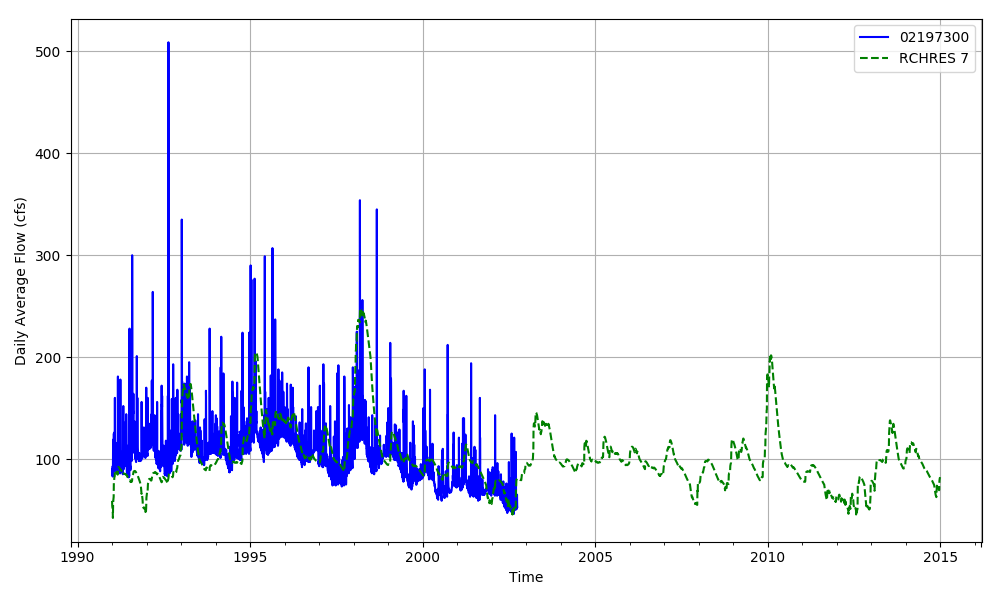


Figure 03060106-4: Daily flow for HSFP reach 07 and USGS station 02197300.

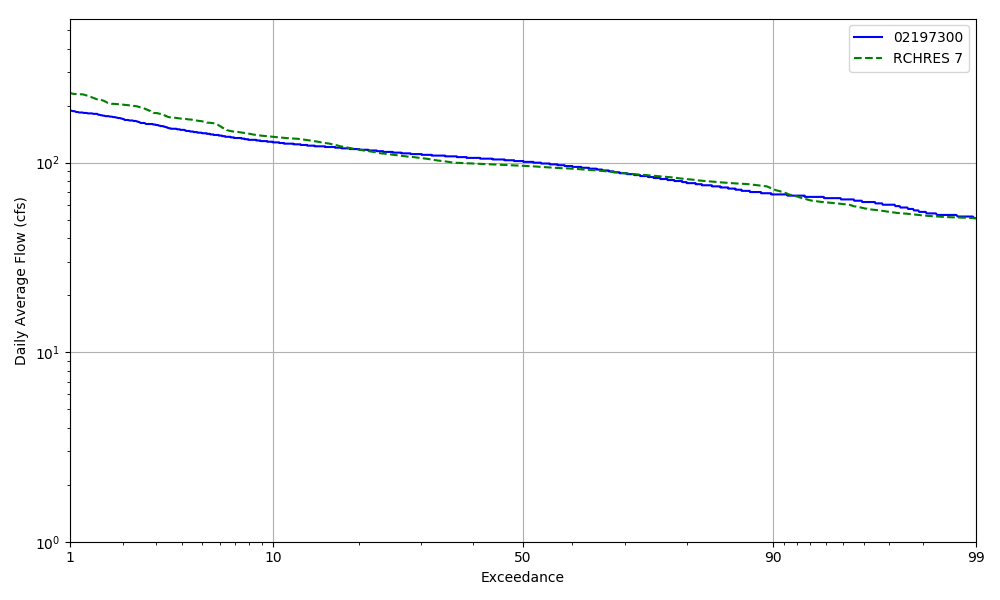


Figure 03060106-5: Daily exceedance for HSFP reach 07 and USGS station 02197300.

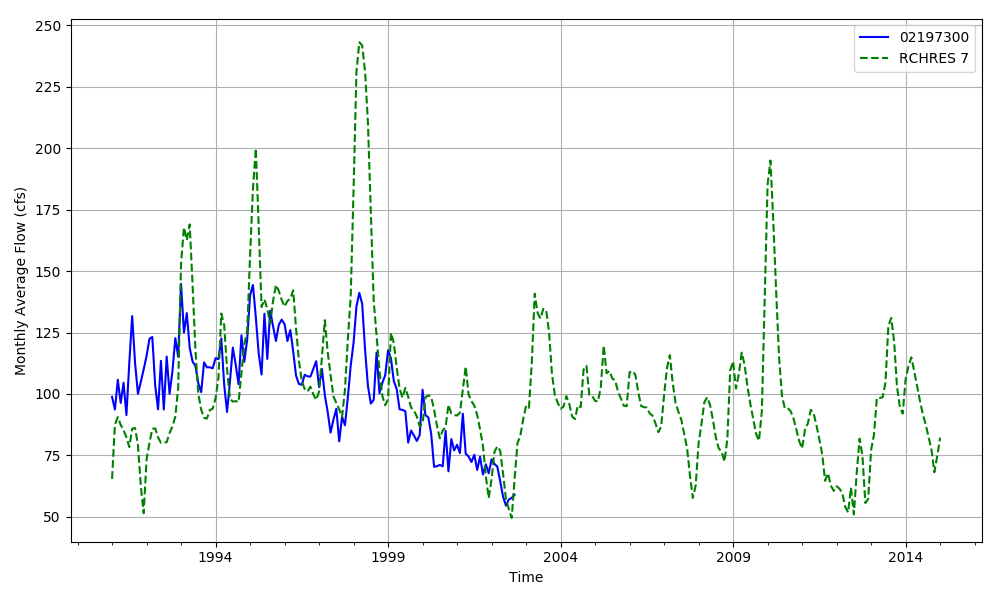


Figure 03060106-6: Monthly flow for HSFP reach 07 and USGS station 02197300.

## HSPF Reach 13, USGS Gauge 02197400

Table 03060106-3: Comparison Statistics Between HSPF Reach 13 and USGS Gauge 02197400.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -5.58 |
| Standard error | 37.74 |
| Relative bias | -0.08 |
| Relative standard error | 0.79 |
| Nash-Sutcliffe coefficient | 0.37 |
| Kling-Gupta coefficient | 0.49 |
| Coefficient of efficiency | 0.28 |
| Index of agreement | 0.59 |

Table 03060106-4: Hydrologic Indices Between USGS Gauge 02197400 and HSPF Reach 13.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197400 | Simulated Reach 13 | Percent Difference |
| MA1: Mean, all daily flows | 70.08 | 64.47 | -8.01 |
| MA2: Median, all daily flows | 53.00 | 51.33 | -3.15 |
| MA3: CV, all daily flows | 62.46 | 44.58 | -28.62 |
| MA4: CV, log of all daily flows | 64.63 | 46.90 | -27.44 |
| MA5: Mean daily flow / median daily flow | 1.32 | 1.26 | -5.02 |
| MA9: (Q10 - Q90) / median daily flow | 2.02 | 1.55 | -23.12 |
| MA10: (Q20 - Q80) / median daily flow | 1.11 | 0.87 | -21.98 |
| MA11: (Q25 - Q75) / median daily flow | 0.87 | 0.66 | -23.70 |
| MA12: Mean monthly flow, January | 85.67 | 85.60 | -0.08 |
| MA13: Mean monthly flow, February | 88.79 | 83.57 | -5.88 |
| MA14: Mean monthly flow, March | 98.95 | 81.16 | -17.97 |
| MA15: Mean monthly flow, April | 68.20 | 59.85 | -12.24 |
| MA16: Mean monthly flow, May | 54.99 | 49.35 | -10.24 |
| MA17: Mean monthly flow, June | 58.78 | 52.87 | -10.05 |
| MA18: Mean monthly flow, July | 52.06 | 47.62 | -8.53 |
| MA19: Mean monthly flow, August | 65.10 | 53.22 | -18.25 |
| MA20: Mean monthly flow, September | 62.68 | 51.40 | -18.00 |
| MA21: Mean monthly flow, October | 48.56 | 55.14 | 13.55 |
| MA22: Mean monthly flow, November | 55.73 | 54.46 | -2.29 |
| MA23: Mean monthly flow, December | 60.01 | 61.58 | 2.62 |
| ML1: Mean minimum monthly flow, January | 57.82 | 59.24 | 2.47 |
| ML2: Mean minimum monthly flow, February | 67.00 | 61.24 | -8.59 |
| ML3: Mean minimum monthly flow, March | 70.27 | 59.36 | -15.52 |
| ML4: Mean minimum monthly flow, April | 46.27 | 51.03 | 10.27 |
| ML5: Mean minimum monthly flow, May | 42.33 | 43.84 | 3.57 |
| ML6: Mean minimum monthly flow, June | 33.17 | 40.26 | 21.40 |
| ML7: Mean minimum monthly flow, July | 30.67 | 40.58 | 32.33 |
| ML8: Mean minimum monthly flow, August | 35.00 | 40.83 | 16.66 |
| ML9: Mean minimum monthly flow, September | 31.33 | 40.09 | 27.94 |
| ML10: Mean minimum monthly flow, October | 30.64 | 42.05 | 37.27 |
| ML11: Mean minimum monthly flow, November | 42.36 | 46.31 | 9.30 |
| ML12: Mean minimum monthly flow, December | 43.64 | 52.38 | 20.04 |
| ML13: CV of minimum monthly flows | 61.49 | 36.14 | -41.23 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.42 | 0.66 | 58.42 |
| ML15: Mean minimum annual flow / mean annual flow | 0.36 | 0.58 | 60.27 |
| ML16: Median minimum annual flow / median annual flow | 0.45 | 0.68 | 51.03 |
| ML20: Ratio of baseflow volume to total flow volume | 0.72 | 0.82 | 12.53 |
| ML22: Mean annual minimum flow divided by catchment area | 0.22 | 0.35 | 57.02 |
| RA1: Mean of positive changes from one day to next (rise rate) | 22.66 | 7.71 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 191.05 | 233.46 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 10.44 | 3.25 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 250.62 | 200.90 |  |
| RA5: Ratio of days that are higher than previous day | 0.27 | 0.30 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.14 | 0.03 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.06 | 0.02 |  |
| RA8: Number of flow reversals from one day to the next | 100.33 | 85.67 |  |
| RA9: CV, number of flow reversals from one day to the next | 16.23 | 14.20 |  |

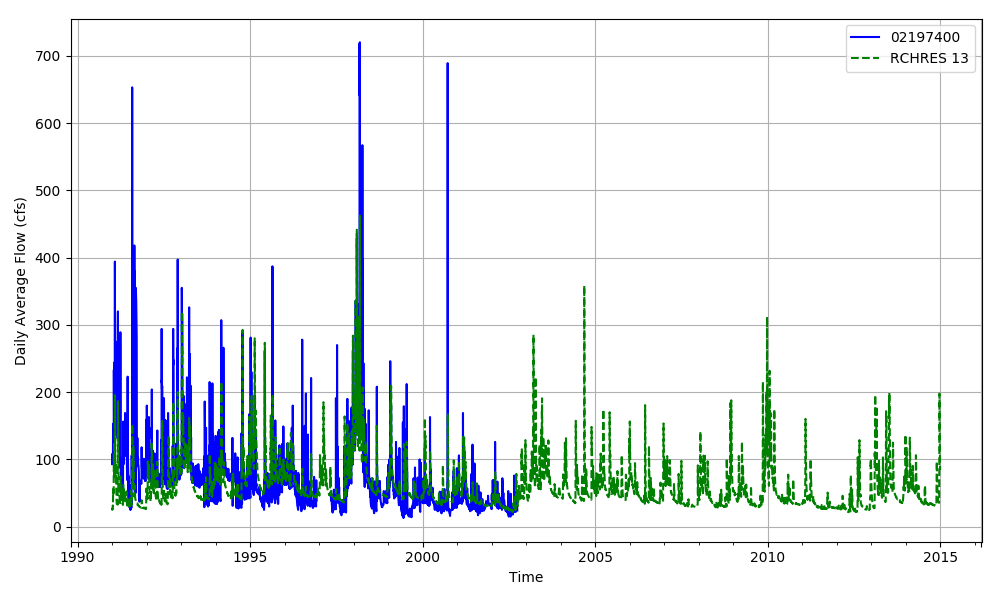


Figure 03060106-7: Daily flow for HSFP reach 13 and USGS station 02197400.

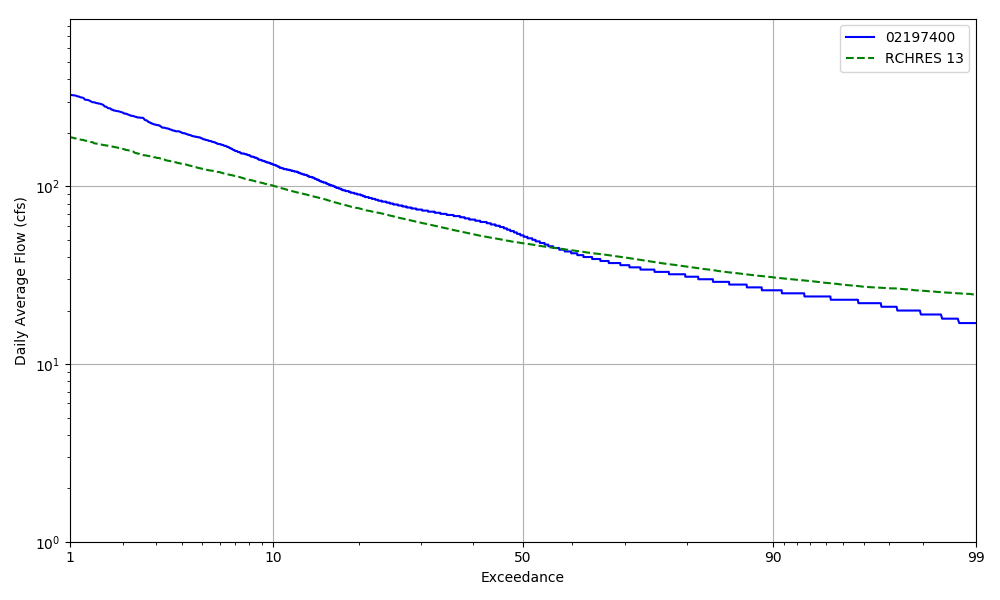


Figure 03060106-8: Daily exceedance for HSFP reach 13 and USGS station 02197400.

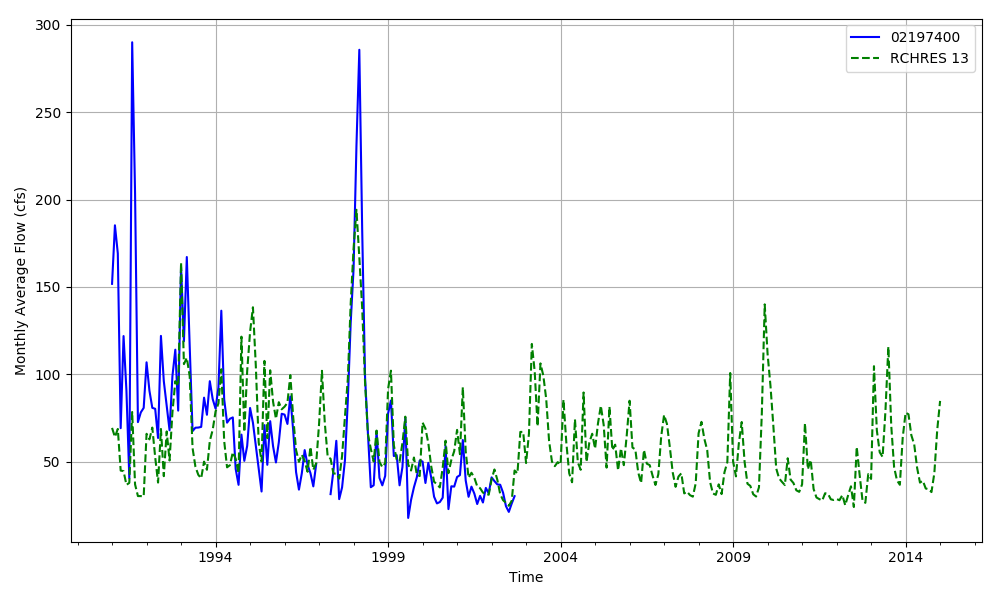


Figure 03060106-9: Monthly flow for HSFP reach 13 and USGS station 02197400.

## HSPF Reach 17, USGS Gauge 02195320

Table 03060106-5: Comparison Statistics Between HSPF Reach 17 and USGS Gauge 02195320.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -4.67 |
| Standard error | 29.46 |
| Relative bias | -0.08 |
| Relative standard error | 0.37 |
| Nash-Sutcliffe coefficient | 0.86 |
| Kling-Gupta coefficient | 0.78 |
| Coefficient of efficiency | 0.72 |
| Index of agreement | 0.85 |

Table 03060106-6: Hydrologic Indices Between USGS Gauge 02195320 and HSPF Reach 17.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02195320 | Simulated Reach 17 | Percent Difference |
| MA1: Mean, all daily flows | 57.44 | 52.76 | -8.15 |
| MA2: Median, all daily flows | 15.00 | 19.22 | 28.12 |
| MA3: CV, all daily flows | 250.19 | 247.00 | -1.28 |
| MA4: CV, log of all daily flows | 142.95 | 113.52 | -20.58 |
| MA5: Mean daily flow / median daily flow | 3.83 | 2.75 | -28.31 |
| MA9: (Q10 - Q90) / median daily flow | 8.11 | 4.97 | -38.72 |
| MA10: (Q20 - Q80) / median daily flow | 4.20 | 3.16 | -24.75 |
| MA11: (Q25 - Q75) / median daily flow | 3.12 | 2.43 | -22.19 |
| MA12: Mean monthly flow, January | 84.23 | 76.15 | -9.60 |
| MA13: Mean monthly flow, February | 93.10 | 80.68 | -13.34 |
| MA14: Mean monthly flow, March | 143.37 | 114.94 | -19.83 |
| MA15: Mean monthly flow, April | 70.28 | 63.38 | -9.81 |
| MA16: Mean monthly flow, May | 20.85 | 30.12 | 44.51 |
| MA17: Mean monthly flow, June | 17.63 | 28.30 | 60.51 |
| MA18: Mean monthly flow, July | 27.80 | 28.12 | 1.16 |
| MA19: Mean monthly flow, August | 28.59 | 32.13 | 12.37 |
| MA20: Mean monthly flow, September | 6.40 | 11.53 | 80.12 |
| MA21: Mean monthly flow, October | 11.94 | 18.96 | 58.84 |
| MA22: Mean monthly flow, November | 41.63 | 27.57 | -33.79 |
| MA23: Mean monthly flow, December | 92.92 | 75.52 | -18.73 |
| ML1: Mean minimum monthly flow, January | 39.68 | 43.08 | 8.57 |
| ML2: Mean minimum monthly flow, February | 38.39 | 39.21 | 2.13 |
| ML3: Mean minimum monthly flow, March | 27.39 | 48.02 | 75.31 |
| ML4: Mean minimum monthly flow, April | 22.98 | 35.58 | 54.86 |
| ML5: Mean minimum monthly flow, May | 9.33 | 18.92 | 102.77 |
| ML6: Mean minimum monthly flow, June | 5.90 | 12.99 | 120.06 |
| ML7: Mean minimum monthly flow, July | 6.91 | 9.96 | 44.15 |
| ML8: Mean minimum monthly flow, August | 5.27 | 10.51 | 99.34 |
| ML9: Mean minimum monthly flow, September | 2.44 | 6.92 | 183.96 |
| ML10: Mean minimum monthly flow, October | 3.50 | 5.09 | 45.21 |
| ML11: Mean minimum monthly flow, November | 6.19 | 8.36 | 34.92 |
| ML12: Mean minimum monthly flow, December | 19.76 | 20.09 | 1.65 |
| ML13: CV of minimum monthly flows | 139.88 | 119.51 | -14.56 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.10 | 0.28 | 182.70 |
| ML15: Mean minimum annual flow / mean annual flow | 0.03 | 0.11 | 257.57 |
| ML16: Median minimum annual flow / median annual flow | 0.06 | 0.25 | 337.10 |
| ML20: Ratio of baseflow volume to total flow volume | 0.37 | 0.50 | 35.76 |
| ML22: Mean annual minimum flow divided by catchment area | 0.02 | 0.04 | 160.07 |
| RA1: Mean of positive changes from one day to next (rise rate) | 52.59 | 47.93 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 481.79 | 420.26 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 23.56 | 24.71 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 554.77 | 565.39 |  |
| RA5: Ratio of days that are higher than previous day | 0.28 | 0.34 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.15 | 0.09 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.11 | 0.06 |  |
| RA8: Number of flow reversals from one day to the next | 78.40 | 143.80 |  |
| RA9: CV, number of flow reversals from one day to the next | 27.63 | 30.18 |  |

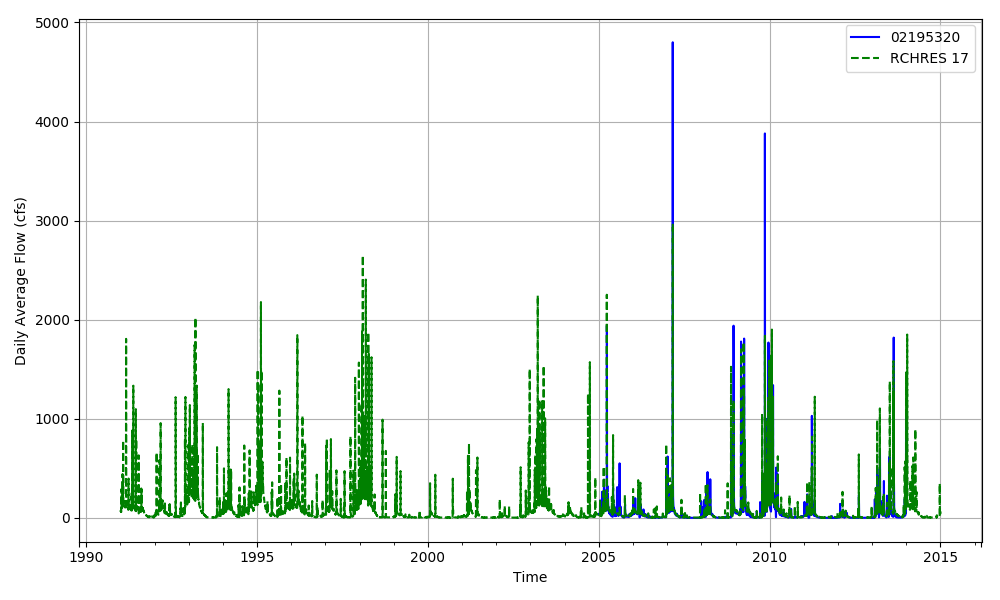


Figure 03060106-10: Daily flow for HSFP reach 17 and USGS station 02195320.

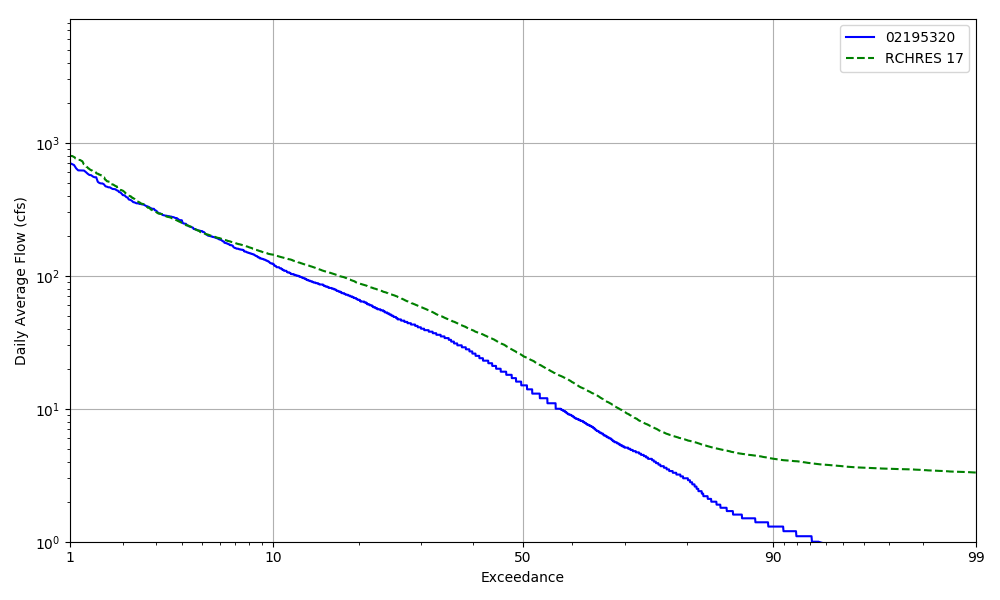


Figure 03060106-11: Daily exceedance for HSFP reach 17 and USGS station 02195320.

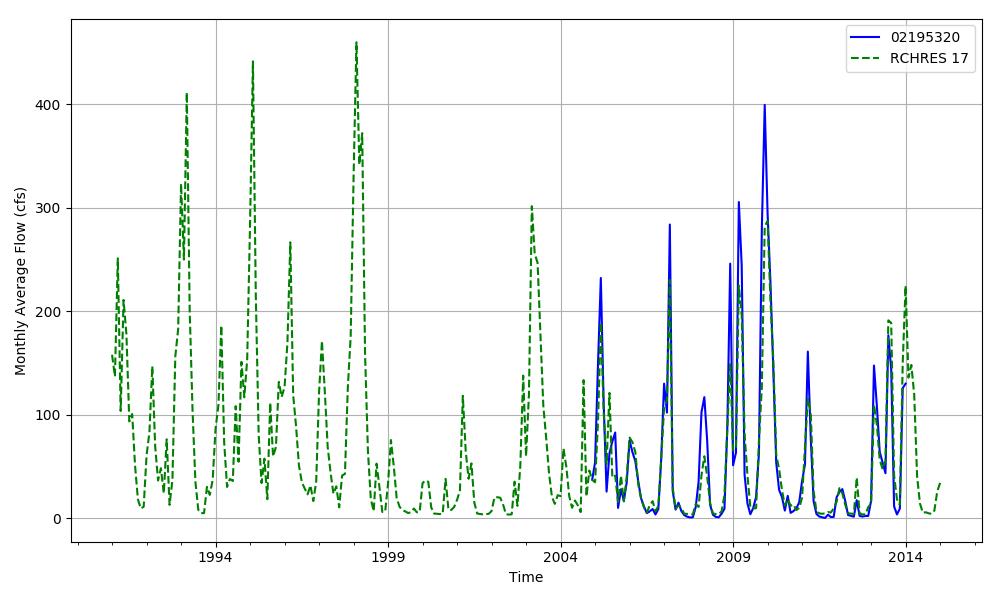


Figure 03060106-12: Monthly flow for HSFP reach 17 and USGS station 02195320.

## HSPF Reach 18, USGS Gauge 0219730B

Table 03060106-7: Comparison Statistics Between HSPF Reach 18 and USGS Gauge 0219730B.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -7.68 |
| Standard error | 21.47 |
| Relative bias | -0.06 |
| Relative standard error | 0.94 |
| Nash-Sutcliffe coefficient | 0.11 |
| Kling-Gupta coefficient | 0.61 |
| Coefficient of efficiency | 0.01 |
| Index of agreement | 0.52 |

Table 03060106-8: Hydrologic Indices Between USGS Gauge 0219730B and HSPF Reach 18.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 0219730B | Simulated Reach 18 | Percent Difference |
| MA1: Mean, all daily flows | 133.36 | 125.13 | -6.17 |
| MA2: Median, all daily flows | 128.00 | 126.36 | -1.28 |
| MA3: CV, all daily flows | 31.32 | 14.48 | -53.77 |
| MA4: CV, log of all daily flows | 20.04 | 18.70 | -6.71 |
| MA5: Mean daily flow / median daily flow | 1.04 | 0.99 | -4.95 |
| MA9: (Q10 - Q90) / median daily flow | 0.59 | 0.51 | -12.61 |
| MA10: (Q20 - Q80) / median daily flow | 0.34 | 0.37 | 10.26 |
| MA11: (Q25 - Q75) / median daily flow | 0.27 | 0.33 | 22.64 |
| MA12: Mean monthly flow, January | 82.65 | 61.16 | -26.00 |
| MA13: Mean monthly flow, February | 82.02 | 71.49 | -12.84 |
| MA14: Mean monthly flow, March | 83.02 | 68.97 | -16.93 |
| MA15: Mean monthly flow, April | 70.85 | 62.01 | -12.48 |
| MA16: Mean monthly flow, May | 126.99 | 133.27 | 4.94 |
| MA17: Mean monthly flow, June | 124.68 | 129.37 | 3.76 |
| MA18: Mean monthly flow, July | 137.32 | 122.70 | -10.65 |
| MA19: Mean monthly flow, August | 109.90 | 116.39 | 5.90 |
| MA20: Mean monthly flow, September | 124.87 | 134.41 | 7.64 |
| MA21: Mean monthly flow, October | 58.03 | 62.75 | 8.13 |
| MA22: Mean monthly flow, November | 66.60 | 56.14 | -15.71 |
| MA23: Mean monthly flow, December | 68.19 | 51.17 | -24.97 |
| ML1: Mean minimum monthly flow, January | 132.00 | 99.50 | -24.62 |
| ML2: Mean minimum monthly flow, February | 134.00 | 115.59 | -13.74 |
| ML3: Mean minimum monthly flow, March | 139.00 | 127.15 | -8.53 |
| ML4: Mean minimum monthly flow, April | 110.00 | 116.93 | 6.30 |
| ML5: Mean minimum monthly flow, May | 107.50 | 126.28 | 17.47 |
| ML6: Mean minimum monthly flow, June | 103.50 | 120.90 | 16.81 |
| ML7: Mean minimum monthly flow, July | 97.50 | 115.02 | 17.97 |
| ML8: Mean minimum monthly flow, August | 89.50 | 108.14 | 20.83 |
| ML9: Mean minimum monthly flow, September | 99.00 | 107.55 | 8.64 |
| ML10: Mean minimum monthly flow, October | 110.00 | 120.86 | 9.87 |
| ML11: Mean minimum monthly flow, November | 124.00 | 105.61 | -14.83 |
| ML12: Mean minimum monthly flow, December | 130.00 | 99.88 | -23.17 |
| ML13: CV of minimum monthly flows | 17.04 | 20.45 | 20.03 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.70 | 0.78 | 11.25 |
| ML15: Mean minimum annual flow / mean annual flow | 0.66 | 0.77 | 17.37 |
| ML16: Median minimum annual flow / median annual flow | 0.70 | 0.78 | 11.25 |
| ML20: Ratio of baseflow volume to total flow volume | 0.86 | 0.95 | 9.50 |
| ML22: Mean annual minimum flow divided by catchment area | 0.90 | 1.04 | 16.20 |
| RA1: Mean of positive changes from one day to next (rise rate) | 19.64 | 5.37 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 170.32 | 200.14 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 10.89 | 2.00 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 177.68 | 150.60 |  |
| RA5: Ratio of days that are higher than previous day | 0.32 | 0.27 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.06 | 0.01 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.04 | 0.01 |  |
| RA8: Number of flow reversals from one day to the next | 80.00 | 80.50 |  |
| RA9: CV, number of flow reversals from one day to the next | 47.73 | 41.28 |  |

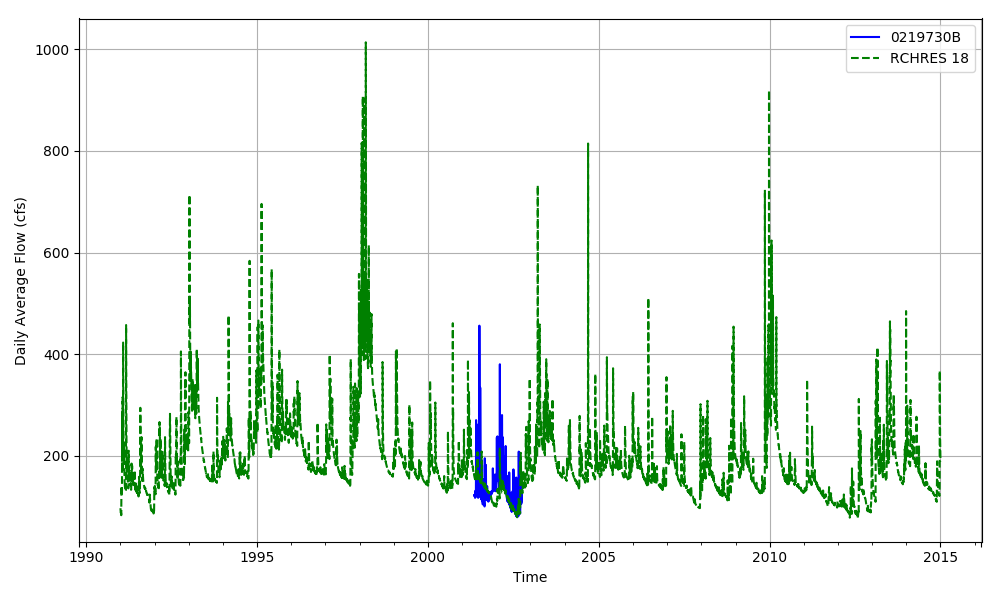


Figure 03060106-13: Daily flow for HSFP reach 18 and USGS station 0219730B.

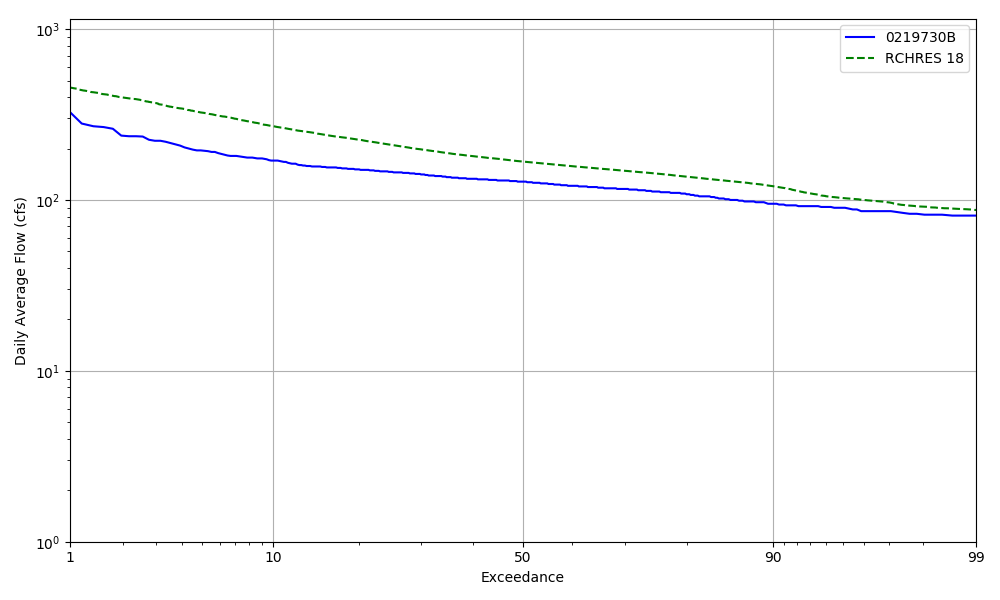


Figure 03060106-14: Daily exceedance for HSFP reach 18 and USGS station 0219730B.

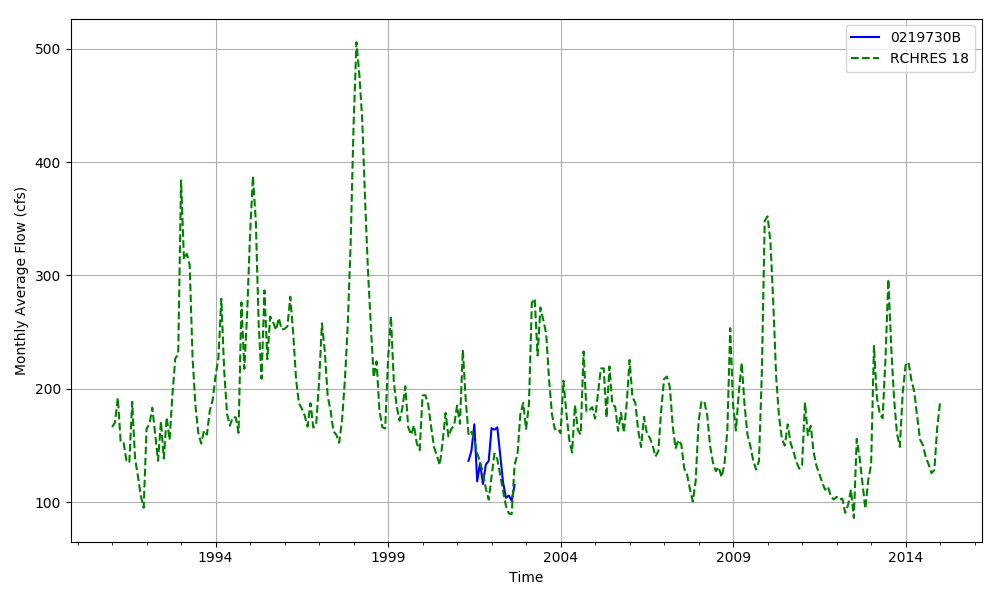


Figure 03060106-15: Monthly flow for HSFP reach 18 and USGS station 0219730B.

## HSPF Reach 20, USGS Gauge 02196690

Table 03060106-9: Comparison Statistics Between HSPF Reach 20 and USGS Gauge 02196690.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -15.45 |
| Standard error | 31.29 |
| Relative bias | -0.09 |
| Relative standard error | 0.56 |
| Nash-Sutcliffe coefficient | 0.68 |
| Kling-Gupta coefficient | 0.85 |
| Coefficient of efficiency | 0.47 |
| Index of agreement | 0.76 |

Table 03060106-10: Hydrologic Indices Between USGS Gauge 02196690 and HSPF Reach 20.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02196690 | Simulated Reach 20 | Percent Difference |
| MA1: Mean, all daily flows | 165.49 | 150.14 | -9.27 |
| MA2: Median, all daily flows | 145.00 | 128.30 | -11.52 |
| MA3: CV, all daily flows | 45.27 | 50.18 | 10.84 |
| MA4: CV, log of all daily flows | 35.71 | 33.14 | -7.20 |
| MA5: Mean daily flow / median daily flow | 1.14 | 1.17 | 2.54 |
| MA9: (Q10 - Q90) / median daily flow | 1.07 | 0.95 | -10.88 |
| MA10: (Q20 - Q80) / median daily flow | 0.63 | 0.59 | -6.45 |
| MA11: (Q25 - Q75) / median daily flow | 0.48 | 0.46 | -2.69 |
| MA12: Mean monthly flow, January | 175.51 | 165.07 | -5.95 |
| MA13: Mean monthly flow, February | 154.57 | 148.14 | -4.16 |
| MA14: Mean monthly flow, March | 157.74 | 144.97 | -8.10 |
| MA15: Mean monthly flow, April | 154.81 | 143.35 | -7.40 |
| MA16: Mean monthly flow, May | 125.58 | 115.03 | -8.40 |
| MA17: Mean monthly flow, June | 162.45 | 131.40 | -19.11 |
| MA18: Mean monthly flow, July | 138.79 | 122.91 | -11.44 |
| MA19: Mean monthly flow, August | 140.89 | 126.20 | -10.43 |
| MA20: Mean monthly flow, September | 109.11 | 104.39 | -4.33 |
| MA21: Mean monthly flow, October | 118.55 | 109.33 | -7.77 |
| MA22: Mean monthly flow, November | 142.02 | 123.57 | -12.99 |
| MA23: Mean monthly flow, December | 187.13 | 169.01 | -9.68 |
| ML1: Mean minimum monthly flow, January | 114.67 | 149.55 | 30.42 |
| ML2: Mean minimum monthly flow, February | 133.25 | 134.37 | 0.84 |
| ML3: Mean minimum monthly flow, March | 148.75 | 140.66 | -5.44 |
| ML4: Mean minimum monthly flow, April | 128.67 | 130.84 | 1.69 |
| ML5: Mean minimum monthly flow, May | 105.56 | 111.13 | 5.28 |
| ML6: Mean minimum monthly flow, June | 96.33 | 106.35 | 10.40 |
| ML7: Mean minimum monthly flow, July | 96.00 | 111.58 | 16.22 |
| ML8: Mean minimum monthly flow, August | 105.67 | 108.41 | 2.60 |
| ML9: Mean minimum monthly flow, September | 96.89 | 103.96 | 7.30 |
| ML10: Mean minimum monthly flow, October | 99.89 | 100.87 | 0.98 |
| ML11: Mean minimum monthly flow, November | 115.11 | 104.40 | -9.31 |
| ML12: Mean minimum monthly flow, December | 140.56 | 117.82 | -16.17 |
| ML13: CV of minimum monthly flows | 31.01 | 26.42 | -14.81 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.55 | 0.71 | 29.31 |
| ML15: Mean minimum annual flow / mean annual flow | 0.49 | 0.62 | 27.41 |
| ML16: Median minimum annual flow / median annual flow | 0.55 | 0.74 | 33.29 |
| ML20: Ratio of baseflow volume to total flow volume | 0.77 | 0.84 | 8.46 |
| ML22: Mean annual minimum flow divided by catchment area | 0.83 | 0.93 | 12.29 |
| RA1: Mean of positive changes from one day to next (rise rate) | 30.34 | 34.56 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 182.61 | 317.58 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 17.80 | 13.13 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 179.73 | 350.10 |  |
| RA5: Ratio of days that are higher than previous day | 0.35 | 0.28 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.06 | 0.05 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.05 | 0.02 |  |
| RA8: Number of flow reversals from one day to the next | 102.80 | 98.70 |  |
| RA9: CV, number of flow reversals from one day to the next | 31.05 | 36.00 |  |

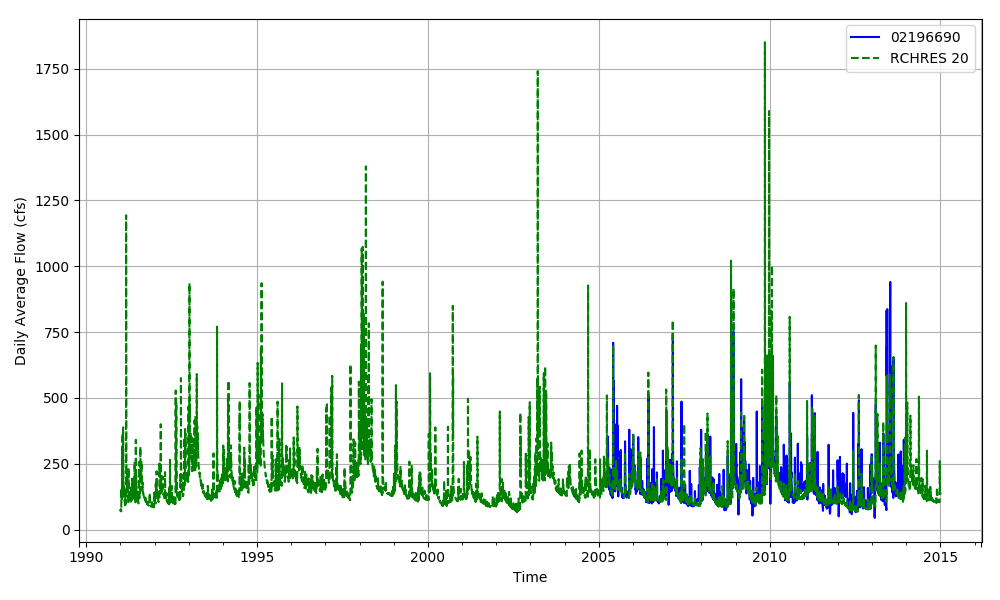


Figure 03060106-16: Daily flow for HSFP reach 20 and USGS station 02196690.

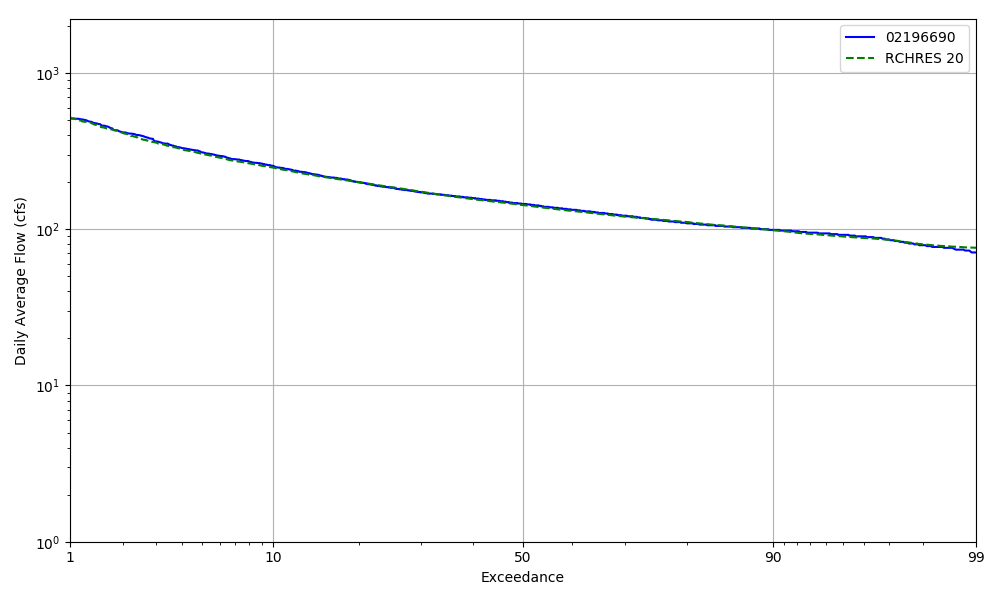


Figure 03060106-17: Daily exceedance for HSFP reach 20 and USGS station 02196690.

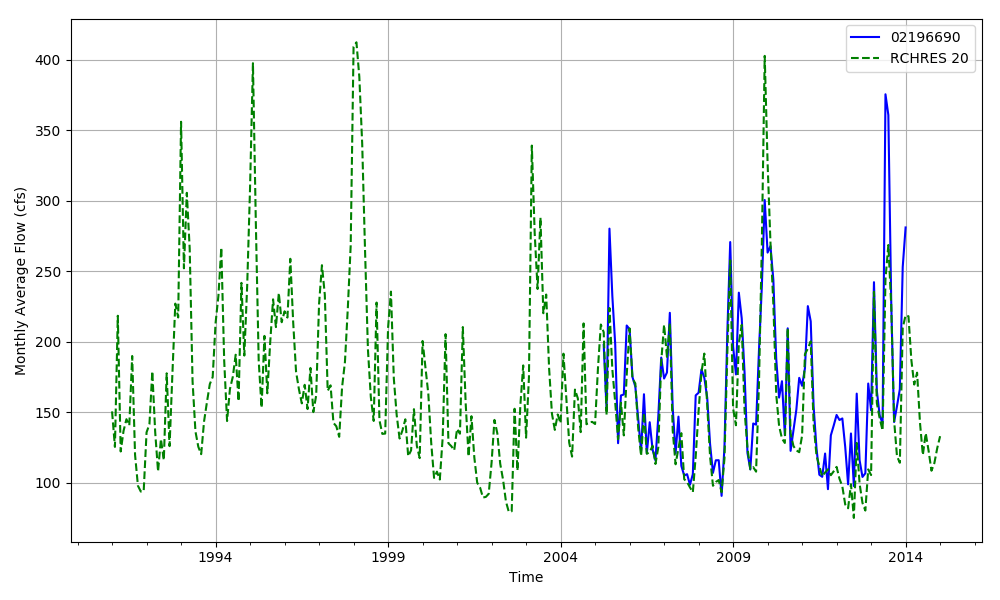


Figure 03060106-18: Monthly flow for HSFP reach 20 and USGS station 02196690.

## HSPF Reach 22, USGS Gauge 02197415

Table 03060106-11: Comparison Statistics Between HSPF Reach 22 and USGS Gauge 02197415.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | 33.24 |
| Standard error | 46.90 |
| Relative bias | 0.29 |
| Relative standard error | 0.47 |
| Nash-Sutcliffe coefficient | 0.78 |
| Kling-Gupta coefficient | 0.69 |
| Coefficient of efficiency | 0.35 |
| Index of agreement | 0.65 |

Table 03060106-12: Hydrologic Indices Between USGS Gauge 02197415 and HSPF Reach 22.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197415 | Simulated Reach 22 | Percent Difference |
| MA1: Mean, all daily flows | 114.06 | 147.25 | 29.10 |
| MA2: Median, all daily flows | 79.00 | 113.94 | 44.23 |
| MA3: CV, all daily flows | 74.68 | 51.45 | -31.11 |
| MA4: CV, log of all daily flows | 72.14 | 52.44 | -27.31 |
| MA5: Mean daily flow / median daily flow | 1.44 | 1.29 | -10.49 |
| MA9: (Q10 - Q90) / median daily flow | 2.25 | 1.70 | -24.34 |
| MA10: (Q20 - Q80) / median daily flow | 0.94 | 0.70 | -25.51 |
| MA11: (Q25 - Q75) / median daily flow | 0.72 | 0.50 | -30.75 |
| MA12: Mean monthly flow, January | 164.35 | 217.34 | 32.24 |
| MA13: Mean monthly flow, February | 178.16 | 222.09 | 24.66 |
| MA14: Mean monthly flow, March | 198.26 | 202.21 | 1.99 |
| MA15: Mean monthly flow, April | 145.27 | 150.81 | 3.81 |
| MA16: Mean monthly flow, May | 87.18 | 119.82 | 37.44 |
| MA17: Mean monthly flow, June | 77.73 | 113.02 | 45.39 |
| MA18: Mean monthly flow, July | 82.37 | 117.42 | 42.56 |
| MA19: Mean monthly flow, August | 57.73 | 104.78 | 81.50 |
| MA20: Mean monthly flow, September | 82.08 | 136.02 | 65.72 |
| MA21: Mean monthly flow, October | 54.52 | 89.16 | 63.55 |
| MA22: Mean monthly flow, November | 66.23 | 84.04 | 26.89 |
| MA23: Mean monthly flow, December | 135.99 | 158.80 | 16.78 |
| ML1: Mean minimum monthly flow, January | 108.00 | 139.91 | 29.55 |
| ML2: Mean minimum monthly flow, February | 121.80 | 145.91 | 19.79 |
| ML3: Mean minimum monthly flow, March | 120.00 | 137.01 | 14.18 |
| ML4: Mean minimum monthly flow, April | 78.80 | 122.09 | 54.93 |
| ML5: Mean minimum monthly flow, May | 60.60 | 101.70 | 67.82 |
| ML6: Mean minimum monthly flow, June | 51.20 | 92.73 | 81.11 |
| ML7: Mean minimum monthly flow, July | 47.60 | 93.40 | 96.23 |
| ML8: Mean minimum monthly flow, August | 42.20 | 89.06 | 111.03 |
| ML9: Mean minimum monthly flow, September | 49.00 | 92.16 | 88.09 |
| ML10: Mean minimum monthly flow, October | 57.50 | 99.54 | 73.11 |
| ML11: Mean minimum monthly flow, November | 66.00 | 94.76 | 43.57 |
| ML12: Mean minimum monthly flow, December | 85.20 | 115.27 | 35.29 |
| ML13: CV of minimum monthly flows | 68.23 | 41.94 | -38.53 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.43 | 0.68 | 57.69 |
| ML15: Mean minimum annual flow / mean annual flow | 0.39 | 0.59 | 52.29 |
| ML16: Median minimum annual flow / median annual flow | 0.42 | 0.71 | 69.39 |
| ML20: Ratio of baseflow volume to total flow volume | 0.71 | 0.81 | 14.16 |
| ML22: Mean annual minimum flow divided by catchment area | 0.41 | 0.83 | 103.13 |
| RA1: Mean of positive changes from one day to next (rise rate) | 34.44 | 23.08 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 259.72 | 334.10 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 18.62 | 9.42 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 312.48 | 302.77 |  |
| RA5: Ratio of days that are higher than previous day | 0.32 | 0.29 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.10 | 0.02 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.05 | 0.02 |  |
| RA8: Number of flow reversals from one day to the next | 106.60 | 94.60 |  |
| RA9: CV, number of flow reversals from one day to the next | 9.18 | 11.55 |  |

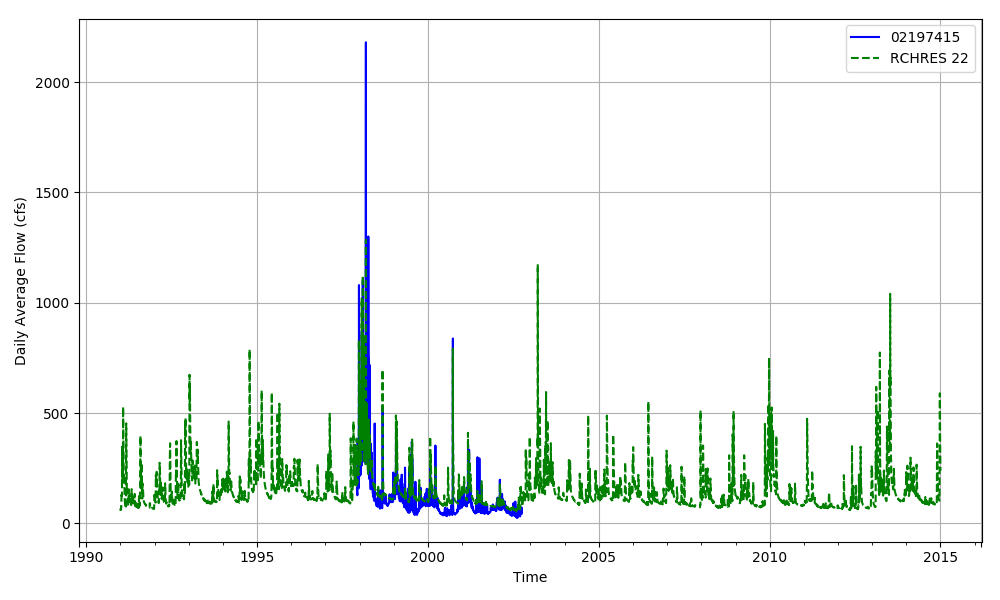


Figure 03060106-19: Daily flow for HSFP reach 22 and USGS station 02197415.

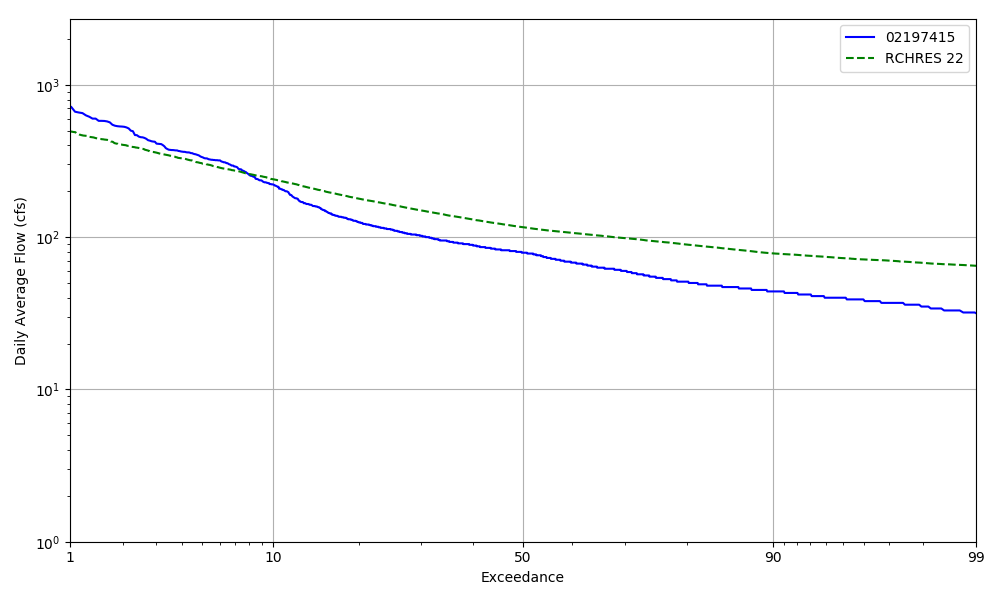


Figure 03060106-20: Daily exceedance for HSFP reach 22 and USGS station 02197415.

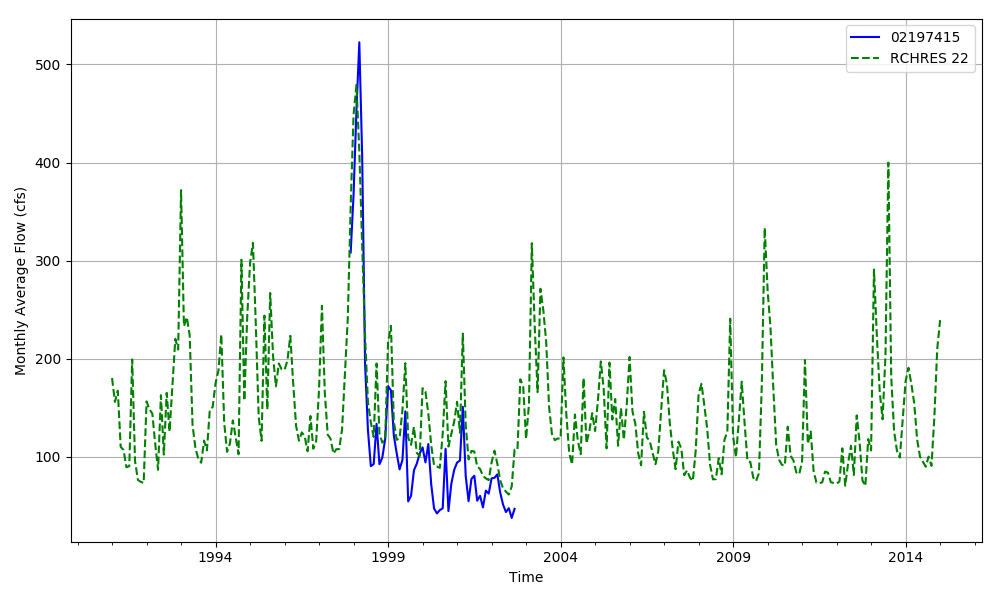


Figure 03060106-21: Monthly flow for HSFP reach 22 and USGS station 02197415.

## HSPF Reach 23, USGS Gauge 02197310

Table 03060106-13: Comparison Statistics Between HSPF Reach 23 and USGS Gauge 02197310.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -3.41 |
| Standard error | 45.53 |
| Relative bias | -0.02 |
| Relative standard error | 0.68 |
| Nash-Sutcliffe coefficient | 0.54 |
| Kling-Gupta coefficient | 0.77 |
| Coefficient of efficiency | 0.36 |
| Index of agreement | 0.68 |

Table 03060106-14: Hydrologic Indices Between USGS Gauge 02197310 and HSPF Reach 23.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197310 | Simulated Reach 23 | Percent Difference |
| MA1: Mean, all daily flows | 218.08 | 214.31 | -1.73 |
| MA2: Median, all daily flows | 196.00 | 192.16 | -1.96 |
| MA3: CV, all daily flows | 43.02 | 26.45 | -38.52 |
| MA4: CV, log of all daily flows | 35.54 | 30.07 | -15.39 |
| MA5: Mean daily flow / median daily flow | 1.11 | 1.12 | 0.23 |
| MA9: (Q10 - Q90) / median daily flow | 1.03 | 0.90 | -12.75 |
| MA10: (Q20 - Q80) / median daily flow | 0.58 | 0.55 | -4.76 |
| MA11: (Q25 - Q75) / median daily flow | 0.43 | 0.44 | 2.56 |
| MA12: Mean monthly flow, January | 270.46 | 265.63 | -1.79 |
| MA13: Mean monthly flow, February | 228.78 | 239.06 | 4.50 |
| MA14: Mean monthly flow, March | 237.30 | 243.27 | 2.52 |
| MA15: Mean monthly flow, April | 195.31 | 204.63 | 4.77 |
| MA16: Mean monthly flow, May | 165.17 | 174.03 | 5.37 |
| MA17: Mean monthly flow, June | 180.79 | 174.53 | -3.46 |
| MA18: Mean monthly flow, July | 181.62 | 163.07 | -10.21 |
| MA19: Mean monthly flow, August | 184.04 | 170.58 | -7.31 |
| MA20: Mean monthly flow, September | 181.28 | 169.26 | -6.63 |
| MA21: Mean monthly flow, October | 168.64 | 172.80 | 2.47 |
| MA22: Mean monthly flow, November | 179.34 | 172.21 | -3.98 |
| MA23: Mean monthly flow, December | 211.79 | 198.22 | -6.41 |
| ML1: Mean minimum monthly flow, January | 191.92 | 201.21 | 4.84 |
| ML2: Mean minimum monthly flow, February | 192.55 | 214.25 | 11.27 |
| ML3: Mean minimum monthly flow, March | 191.82 | 219.63 | 14.50 |
| ML4: Mean minimum monthly flow, April | 171.82 | 199.04 | 15.84 |
| ML5: Mean minimum monthly flow, May | 149.00 | 176.15 | 18.22 |
| ML6: Mean minimum monthly flow, June | 144.55 | 165.22 | 14.30 |
| ML7: Mean minimum monthly flow, July | 137.18 | 164.17 | 19.67 |
| ML8: Mean minimum monthly flow, August | 142.00 | 163.68 | 15.27 |
| ML9: Mean minimum monthly flow, September | 144.73 | 161.52 | 11.60 |
| ML10: Mean minimum monthly flow, October | 159.50 | 171.63 | 7.60 |
| ML11: Mean minimum monthly flow, November | 179.80 | 179.54 | -0.14 |
| ML12: Mean minimum monthly flow, December | 186.64 | 190.43 | 2.03 |
| ML13: CV of minimum monthly flows | 25.37 | 27.97 | 10.23 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.66 | 0.71 | 7.21 |
| ML15: Mean minimum annual flow / mean annual flow | 0.60 | 0.67 | 12.01 |
| ML16: Median minimum annual flow / median annual flow | 0.66 | 0.70 | 6.84 |
| ML20: Ratio of baseflow volume to total flow volume | 0.81 | 0.92 | 13.55 |
| ML22: Mean annual minimum flow divided by catchment area | 1.31 | 1.45 | 10.34 |
| RA1: Mean of positive changes from one day to next (rise rate) | 49.10 | 18.17 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 166.29 | 218.14 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 26.21 | 6.22 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 194.66 | 217.67 |  |
| RA5: Ratio of days that are higher than previous day | 0.32 | 0.26 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.09 | 0.02 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.04 | 0.01 |  |
| RA8: Number of flow reversals from one day to the next | 104.25 | 93.08 |  |
| RA9: CV, number of flow reversals from one day to the next | 22.55 | 24.67 |  |

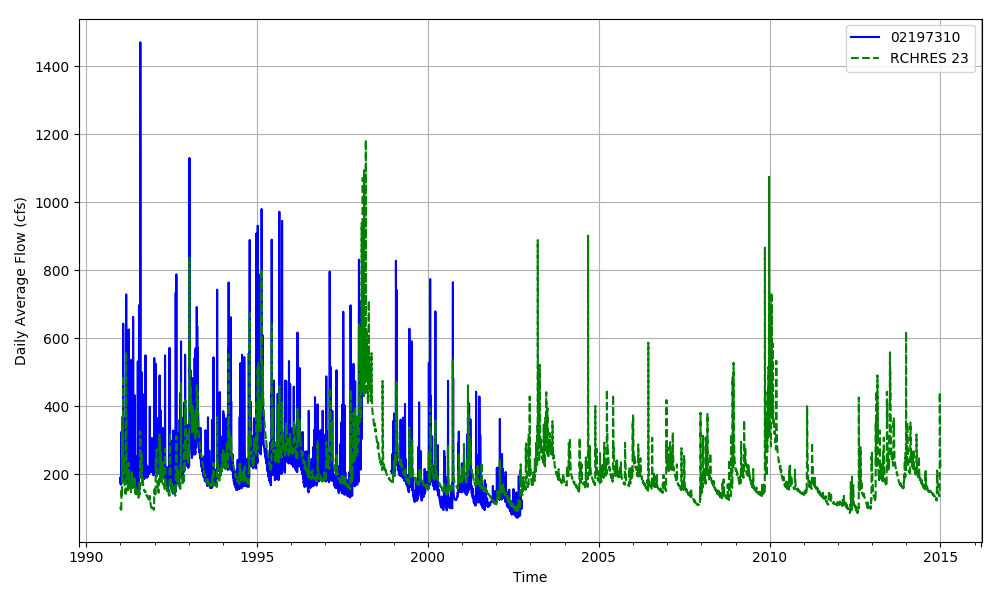


Figure 03060106-22: Daily flow for HSFP reach 23 and USGS station 02197310.

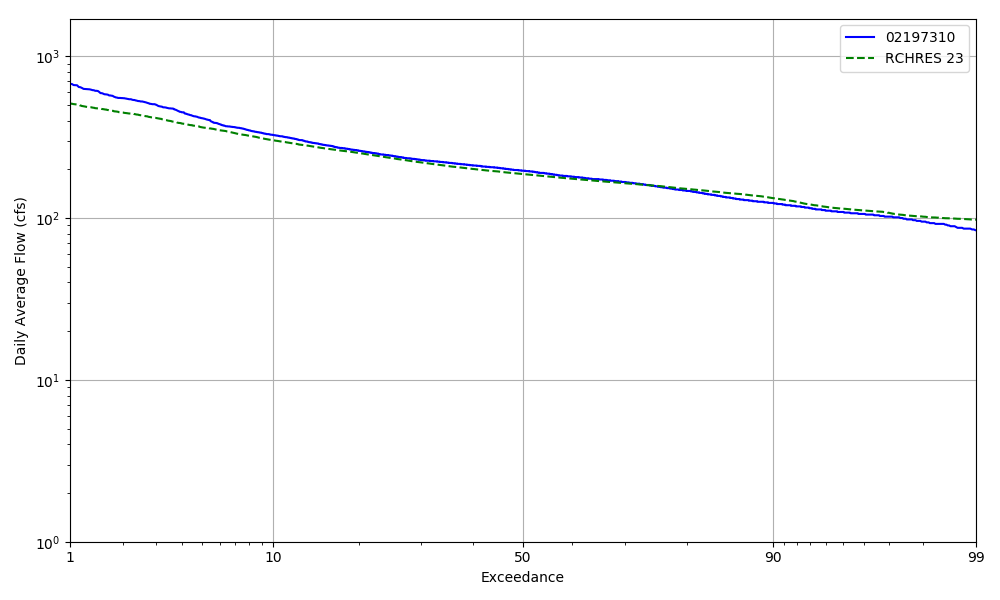


Figure 03060106-23: Daily exceedance for HSFP reach 23 and USGS station 02197310.

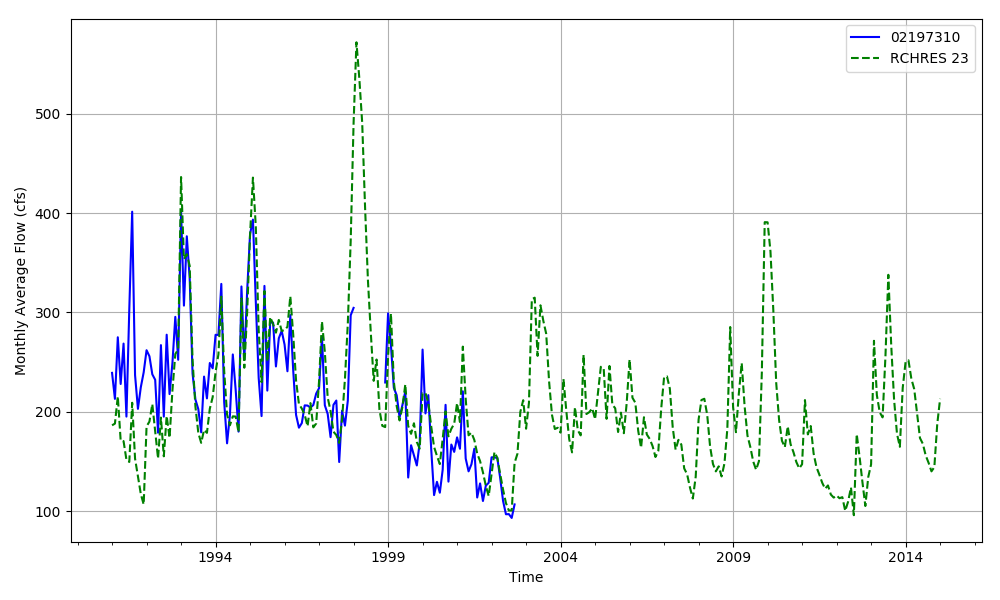


Figure 03060106-24: Monthly flow for HSFP reach 23 and USGS station 02197310.

## HSPF Reach 24, USGS Gauge 02197315

Table 03060106-15: Comparison Statistics Between HSPF Reach 24 and USGS Gauge 02197315.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | 1.79 |
| Standard error | 56.26 |
| Relative bias | 0.01 |
| Relative standard error | 0.73 |
| Nash-Sutcliffe coefficient | 0.47 |
| Kling-Gupta coefficient | 0.73 |
| Coefficient of efficiency | 0.31 |
| Index of agreement | 0.67 |

Table 03060106-16: Hydrologic Indices Between USGS Gauge 02197315 and HSPF Reach 24.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197315 | Simulated Reach 24 | Percent Difference |
| MA1: Mean, all daily flows | 234.43 | 236.07 | 0.70 |
| MA2: Median, all daily flows | 210.00 | 204.93 | -2.42 |
| MA3: CV, all daily flows | 37.72 | 28.68 | -23.95 |
| MA4: CV, log of all daily flows | 35.89 | 34.33 | -4.34 |
| MA5: Mean daily flow / median daily flow | 1.12 | 1.15 | 3.20 |
| MA9: (Q10 - Q90) / median daily flow | 1.08 | 1.03 | -4.53 |
| MA10: (Q20 - Q80) / median daily flow | 0.61 | 0.60 | -2.37 |
| MA11: (Q25 - Q75) / median daily flow | 0.46 | 0.48 | 4.08 |
| MA12: Mean monthly flow, January | 294.68 | 289.82 | -1.65 |
| MA13: Mean monthly flow, February | 285.20 | 304.53 | 6.78 |
| MA14: Mean monthly flow, March | 293.96 | 304.21 | 3.48 |
| MA15: Mean monthly flow, April | 239.92 | 256.29 | 6.82 |
| MA16: Mean monthly flow, May | 196.16 | 215.59 | 9.91 |
| MA17: Mean monthly flow, June | 202.21 | 210.87 | 4.28 |
| MA18: Mean monthly flow, July | 201.31 | 193.70 | -3.78 |
| MA19: Mean monthly flow, August | 206.98 | 198.39 | -4.15 |
| MA20: Mean monthly flow, September | 205.43 | 198.88 | -3.19 |
| MA21: Mean monthly flow, October | 192.94 | 199.46 | 3.38 |
| MA22: Mean monthly flow, November | 212.21 | 197.29 | -7.03 |
| MA23: Mean monthly flow, December | 226.45 | 209.41 | -7.52 |
| ML1: Mean minimum monthly flow, January | 218.00 | 211.30 | -3.07 |
| ML2: Mean minimum monthly flow, February | 220.50 | 241.84 | 9.68 |
| ML3: Mean minimum monthly flow, March | 217.33 | 244.33 | 12.42 |
| ML4: Mean minimum monthly flow, April | 188.83 | 223.96 | 18.60 |
| ML5: Mean minimum monthly flow, May | 157.58 | 197.61 | 25.40 |
| ML6: Mean minimum monthly flow, June | 150.08 | 183.06 | 21.98 |
| ML7: Mean minimum monthly flow, July | 141.58 | 177.21 | 25.17 |
| ML8: Mean minimum monthly flow, August | 147.75 | 173.51 | 17.44 |
| ML9: Mean minimum monthly flow, September | 152.42 | 171.72 | 12.67 |
| ML10: Mean minimum monthly flow, October | 171.91 | 179.38 | 4.35 |
| ML11: Mean minimum monthly flow, November | 196.55 | 186.64 | -5.04 |
| ML12: Mean minimum monthly flow, December | 205.73 | 198.66 | -3.44 |
| ML13: CV of minimum monthly flows | 27.89 | 32.72 | 17.33 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.62 | 0.70 | 13.52 |
| ML15: Mean minimum annual flow / mean annual flow | 0.57 | 0.65 | 13.88 |
| ML16: Median minimum annual flow / median annual flow | 0.61 | 0.70 | 14.22 |
| ML20: Ratio of baseflow volume to total flow volume | 0.82 | 0.91 | 10.41 |
| ML22: Mean annual minimum flow divided by catchment area | 1.33 | 1.50 | 12.87 |
| RA1: Mean of positive changes from one day to next (rise rate) | 40.37 | 23.83 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 167.07 | 247.55 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 23.58 | 8.09 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 183.12 | 273.67 |  |
| RA5: Ratio of days that are higher than previous day | 0.35 | 0.25 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.07 | 0.02 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.04 | 0.01 |  |
| RA8: Number of flow reversals from one day to the next | 106.58 | 96.75 |  |
| RA9: CV, number of flow reversals from one day to the next | 7.28 | 12.45 |  |

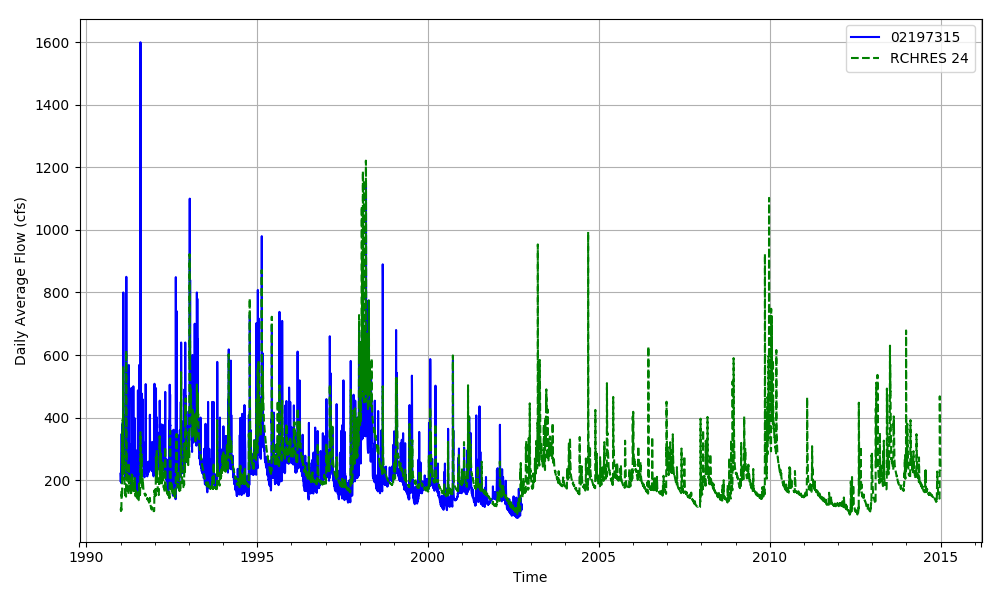


Figure 03060106-25: Daily flow for HSFP reach 24 and USGS station 02197315.

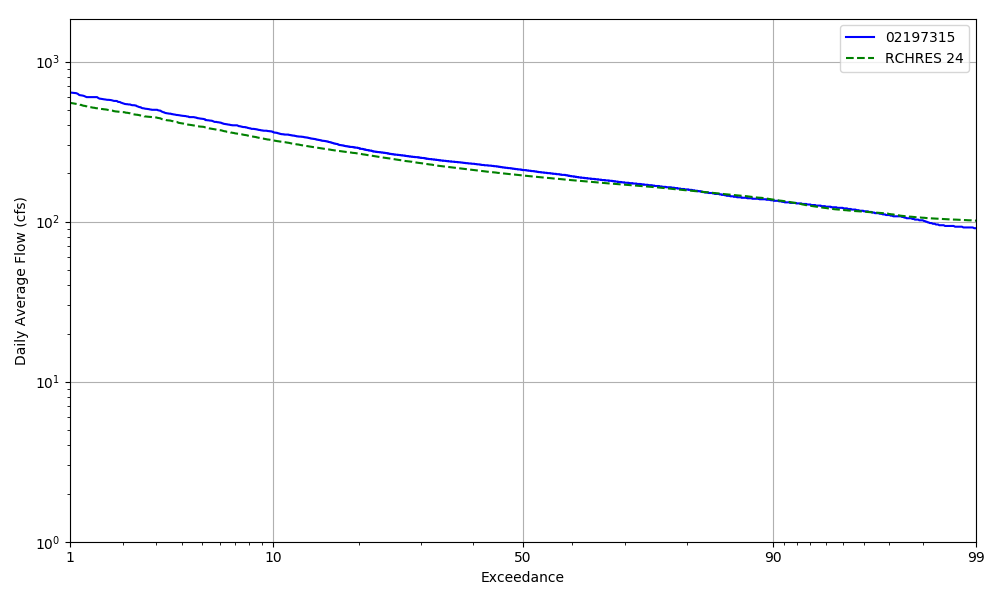


Figure 03060106-26: Daily exceedance for HSFP reach 24 and USGS station 02197315.

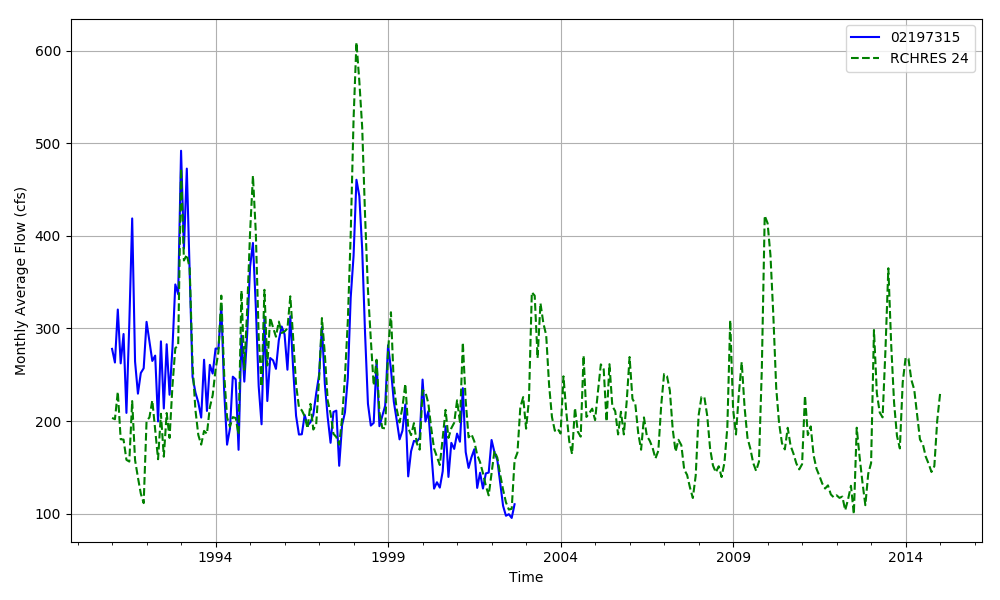


Figure 03060106-27: Monthly flow for HSFP reach 24 and USGS station 02197315.

## HSPF Reach 38, USGS Gauge 02197500

Table 03060106-17: Comparison Statistics Between HSPF Reach 38 and USGS Gauge 02197500.

|  |  |
| --- | --- |
| Statistic | Value |
| Bias | -6034.38 |
| Standard error | 7291.96 |
| Relative bias | -0.65 |
| Relative standard error | 1.20 |
| Nash-Sutcliffe coefficient | -0.44 |
| Kling-Gupta coefficient | 0.11 |
| Coefficient of efficiency | -0.37 |
| Index of agreement | 0.43 |

Table 03060106-18: Hydrologic Indices Between USGS Gauge 02197500 and HSPF Reach 38.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydrologic Index and description (Olden and Poff, 2003) | Observed 02197500 | Simulated Reach 38 | Percent Difference |
| MA1: Mean, all daily flows | 9252.00 | 3220.48 | -65.19 |
| MA2: Median, all daily flows | 6550.00 | 2093.46 | -68.04 |
| MA3: CV, all daily flows | 45.07 | 66.60 | 47.79 |
| MA4: CV, log of all daily flows | 64.02 | 75.01 | 17.16 |
| MA5: Mean daily flow / median daily flow | 1.41 | 1.54 | 8.91 |
| MA9: (Q10 - Q90) / median daily flow | 2.18 | 3.37 | 54.89 |
| MA10: (Q20 - Q80) / median daily flow | 1.04 | 1.79 | 72.73 |
| MA11: (Q25 - Q75) / median daily flow | 0.70 | 1.38 | 97.69 |
| MA12: Mean monthly flow, January | 10036.79 | 4175.90 | -58.39 |
| MA13: Mean monthly flow, February | 11202.22 | 4607.45 | -58.87 |
| MA14: Mean monthly flow, March | 12175.82 | 5297.60 | -56.49 |
| MA15: Mean monthly flow, April | 9820.99 | 3804.78 | -61.26 |
| MA16: Mean monthly flow, May | 7940.23 | 2695.59 | -66.05 |
| MA17: Mean monthly flow, June | 7337.72 | 2437.35 | -66.78 |
| MA18: Mean monthly flow, July | 7967.15 | 2059.76 | -74.15 |
| MA19: Mean monthly flow, August | 7888.94 | 2066.52 | -73.80 |
| MA20: Mean monthly flow, September | 6186.90 | 1735.12 | -71.95 |
| MA21: Mean monthly flow, October | 6751.73 | 2056.83 | -69.54 |
| MA22: Mean monthly flow, November | 6866.44 | 2140.53 | -68.83 |
| MA23: Mean monthly flow, December | 8758.88 | 2958.37 | -66.22 |
| ML1: Mean minimum monthly flow, January | 7964.78 | 3104.92 | -61.02 |
| ML2: Mean minimum monthly flow, February | 9030.00 | 3227.15 | -64.26 |
| ML3: Mean minimum monthly flow, March | 8230.91 | 3565.71 | -56.68 |
| ML4: Mean minimum monthly flow, April | 6802.73 | 2803.81 | -58.78 |
| ML5: Mean minimum monthly flow, May | 6212.27 | 2039.05 | -67.18 |
| ML6: Mean minimum monthly flow, June | 5636.82 | 1694.67 | -69.94 |
| ML7: Mean minimum monthly flow, July | 5718.18 | 1515.34 | -73.50 |
| ML8: Mean minimum monthly flow, August | 6446.36 | 1424.60 | -77.90 |
| ML9: Mean minimum monthly flow, September | 5294.09 | 1267.92 | -76.05 |
| ML10: Mean minimum monthly flow, October | 5163.48 | 1338.83 | -74.07 |
| ML11: Mean minimum monthly flow, November | 5289.55 | 1517.31 | -71.31 |
| ML12: Mean minimum monthly flow, December | 7187.73 | 2058.43 | -71.36 |
| ML13: CV of minimum monthly flows | 61.41 | 83.13 | 35.37 |
| ML14: Mean minimum daily flow / mean median annual flow | 0.68 | 0.50 | -25.89 |
| ML15: Mean minimum annual flow / mean annual flow | 0.59 | 0.39 | -33.76 |
| ML16: Median minimum annual flow / median annual flow | 0.69 | 0.53 | -23.40 |
| ML20: Ratio of baseflow volume to total flow volume | 0.81 | 0.76 | -6.65 |
| ML22: Mean annual minimum flow divided by catchment area | 47.12 | 10.98 | -76.70 |
| RA1: Mean of positive changes from one day to next (rise rate) | 607.75 | 399.66 |  |
| RA2: CV, mean of positive changes from one day to next (rise rate) | 123.71 | 455.00 |  |
| RA3: Mean of negative changes from one day to next (fall rate) | 559.00 | 215.23 |  |
| RA4: CV, mean of negative changes from one day to next (fall rate) | 132.93 | 479.46 |  |
| RA5: Ratio of days that are higher than previous day | 0.47 | 0.33 |  |
| RA6: Median of difference in log of flows over two consecutive days of rising | 0.04 | 0.04 |  |
| RA7: Median of difference in log of flows over two consecutive days of falling | 0.03 | 0.03 |  |
| RA8: Number of flow reversals from one day to the next | 108.88 | 55.83 |  |
| RA9: CV, number of flow reversals from one day to the next | 31.28 | 33.26 |  |

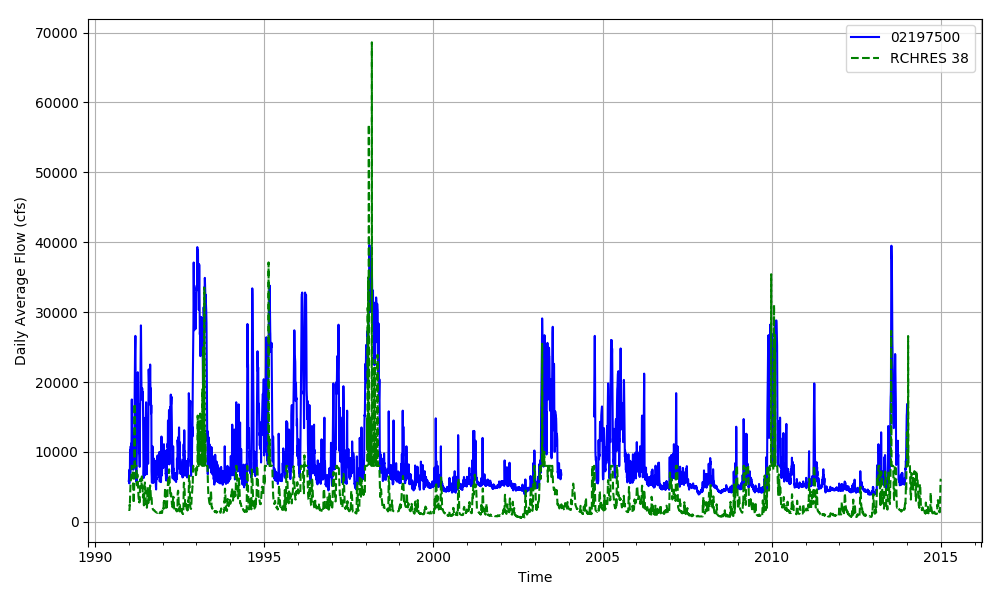


Figure 03060106-28: Daily flow for HSFP reach 38 and USGS station 02197500.

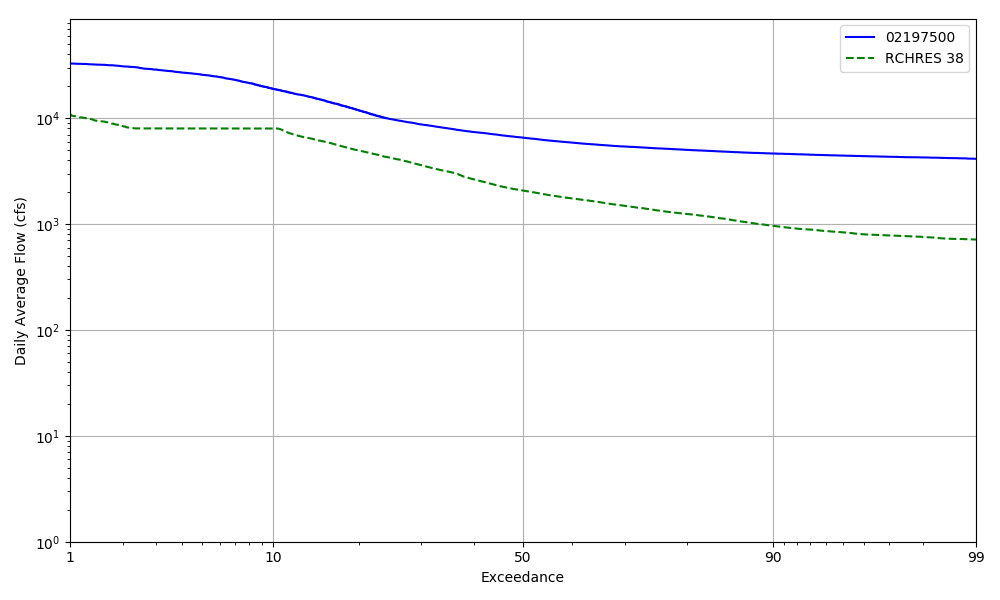


Figure 03060106-29: Daily exceedance for HSFP reach 38 and USGS station 02197500.

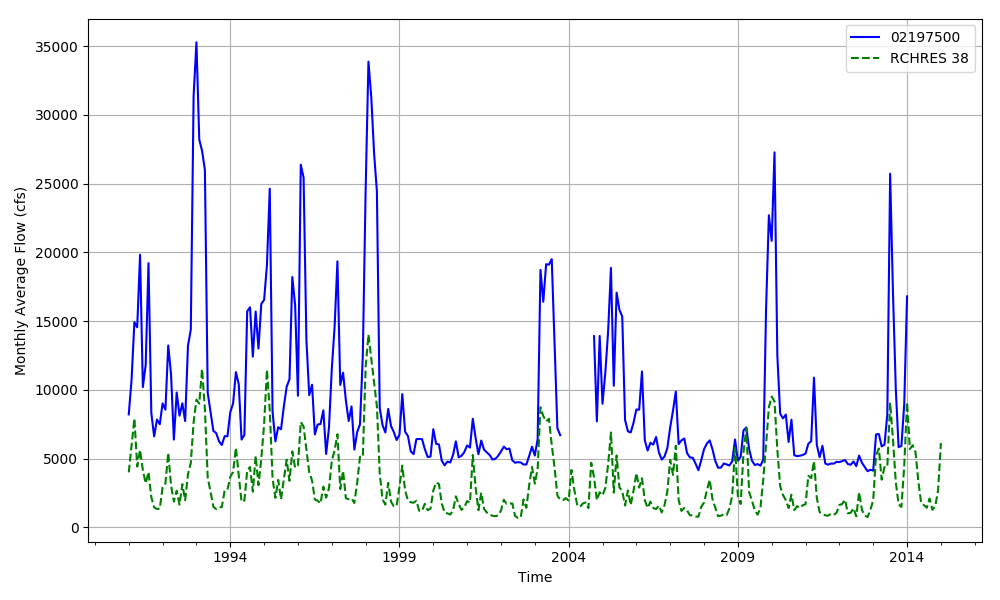


Figure 03060106-30: Monthly flow for HSFP reach 38 and USGS station 02197500.