LETTER REPORT
TASK 8: FINAL ANALYSIS
EAA BASIN DATA EVALUATION (PHASE II)
(CONTRACT # ST061287-WO03)

FINAL LETTER REPORT

PHASE II, TASK 8
FINAL ANALYSIS
EAA BASIN DATA EVALUATION

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1.0 OBJECTIVES AND SCOPE

The primary objective of the Phase II of this project is to develop a basin level data evaluation (flows, load, concentrations, and rainfall) for trends, changes, and significance that will help determine whether historical data supports characterization of a direct effect between inflow lake concentration and EAA Basin performance.

As part of the data compilation and statistical analysis the relative trends of total phosphorus concentrations from the lake and total phosphorus loads from the lake will be developed.

The technical tasks and deliverables of the project scope were documented in the Statement of Work (SOW), and are not repeated here. This letter report presents the activities completed under Task 8: Final Analysis and Report. The intent of this task is to determine if the temporal and spatial distribution of lake inflow TP concentration and load has a statistically significant connection or correlation with EAA runoff loads and if BMP performance is impacted. This task includes the following components of analysis.

- Trends of the flows, loads, and concentrations entering the EAA from the Lake
- Relate those trends, if feasible, to the EAA's performance on basin/sub-basin level

A draft copy of the report was prepared and submitted for review to the District on May 10, 2008. The review comments were discussed during a meeting on May 28, 2008. The written comments were provided to BPC Group on June 6, 2008. The report has been revised to incorporate these comments. A response to these comments is included in Appendix E of this report.

2.0 ASSUMPTIONS AND DATASET SELECTION

The datasets used for final analysis during this task were decided during Tasks 6 and 7. The details of the dataset selection are documented in the final report (Final Letter Report, Phase II, Task 6: Initial Data Analysis, EAA Basin Data Evaluation, April 2008). The report was prepared by BPC Group under Contract #ST061287-WO03 and delivered to the District on April 18, 2008. A copy of the Task 6 Report in its entirety is included in Appendix D. Following is a brief description of the assumptions and datasets used for completion of Task 8. The general assumptions that are inherent to the basis of analysis for the project are listed below. The assumptions specific to methods of analysis are described later in respective sections of this letter report.

- In accordance with the SOW, the data analyses were performed at hydrologic sub-basin level (not at station or structure level); however, in some instances a single structure may represent the outflow for a sub-basin. As detailed in the Task 6 Report (see Appendix D), the EAA basin constitutes sub-basins S2, S3, S5A, S6, S7, and S8. The sub-basins S2 and S3 are administrative sub-basins. For the purpose of this project, these sub-basins are designated as District sub-basins or sub-basins. The hydrologic sub-basins are defined as follows: a) hydrologic sub-basin S5A consisting of S5A sub-basin; b) hydrologic sub-basin S6/S7 consisting of S2, S6, and S7 sub-basins; and c) hydrologic sub-basin S8 consisting of S3 and S8 sub-basins. The hydrologic sub-basins are shown on Figure 2.1.

- For the purpose of this project, the hydrologic parameters (datasets) include only rainfall, flow, load, and concentration. Based on the initial data analysis documented in the Task 6 Report, the monthly event was selected for further analyses to develop interrelationship between various parameters. Similar to Task 6, the datasets were grouped in to four time periods: Base Period (WY 1980 through WY 1988), Pre-BMP Period (WY 1989 through WY 1994), BMP Period (WY 1996 through WY 2007), and Entire Period (WY 1980 through WY 2007). The final analyses were performed for hydrologic sub-basins for each time period as appropriate.

- Each dataset for a hydrologic sub-basin consisted of four sub-datasets as described below. The following definitions were reproduced from Task 6 Report.
  - **Inflow.** This is the flow coming into a particular hydrologic sub-basin from all sources, although primarily this originates from the Lake Okeechobee. This includes supplemental inflow and flow through.
  - **Flow Through.** This is the quantity of flow that enters the EAA canal system as a result of flow through operations. This is not a measured parameter; rather it is calculated from a conditional formula established by Rule 40E-63. The flow through amount is zero when there is a release from the Lake Okeechobee into the sub-basin and no sub-basin outflow. The estimated flow-through values for the sub-basins were provided by the District
  - **Supplemental Inflow.** This is the quantity of flow entering the sub-basin for supplemental water use including for irrigation purpose. The estimated supplemental inflow quantities for the sub-basins were not provided by the District. This was calculated during Task 6 for each hydrologic sub-basin by subtracting the flow through quantities from the corresponding sub-basin inflow values. The supplemental inflow loads were calculated during this task by subtracting the flow through loads from the corresponding sub-basin inflow load values. The supplemental inflow concentrations were calculated by dividing the supplemental inflow loads with the corresponding supplemental inflows for the sub-basin.
  - **Outflow.** This is the amount of flow being discharged from a hydrologic sub-basin at the hydrologic sub-basin outlet. This includes the flow through and runoff from the hydrologic sub-basin.

- Performance is defined as the measure of success in phosphorous reduction as measured by the EAA compliance model. It is neither the intent nor in the scope of this study to develop a predictive model for BMP reduction.

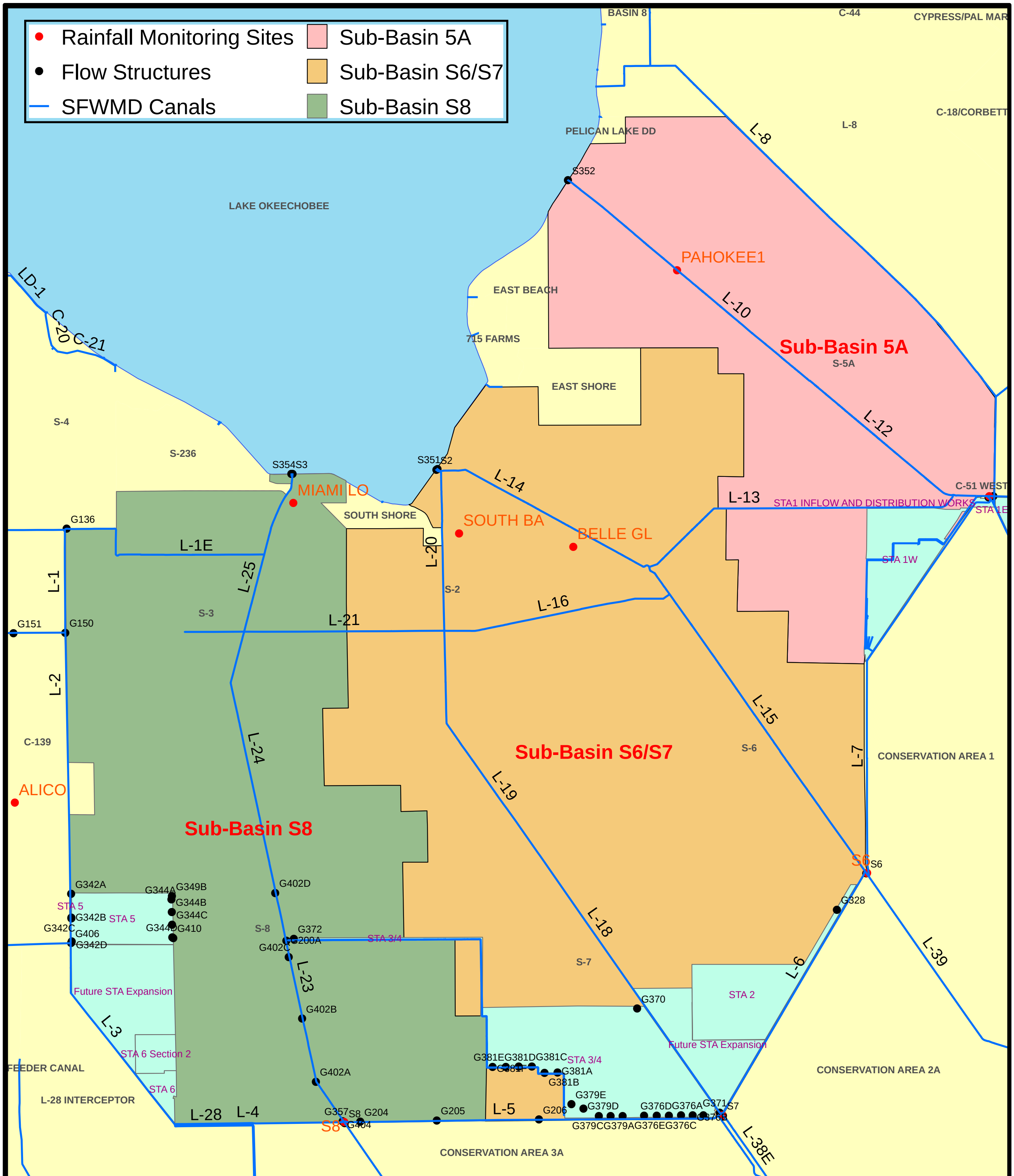
- During the Task 7 Meeting discussion with the District professionals, it was determined that the concentration of the rainfall would be considered zero for the purpose of this Task.

It was also determined that individual farm runoff data would not be used in this analysis because of the lack of data regarding irrigation flows and concentrations.

- For the purpose of this project, the following notations are used to represent the parameters discussed above.

Q_{in} = Inflow (total)	Q_{out} = Outflow
Q_{si} = Supplemental Inflow	Q_{thru} = Flow Through (inflow)
C_{in} = Inflow Concentration	C_{out} = Outflow Concentration
C_{si} = Supplemental Inflow Concentration	C_{thru} = Flow Through Concentration
L_{in} = Inflow Load	L_{out} = Outflow Load
L_{si} = Supplemental Inflow Load	L_{thru} = Flow Through Load
P_m = Rainfall	C_p = Rainfall Concentration

- All data have been converted to the following units. Only the following units have been utilized throughout this report.
  - **Flow:** kac-ft (kilo acre-foot)
  - **Load:** mt (metric ton)
  - **Rainfall:** in (inch)
  - **Concentration:** ppb (parts per billion)



Notes: S-2, S-3, S-5A, S-6, S-7 and S-8 are District Sub-Basins.
Sub-Basins S5A, S6/S7, S8 are Hydrologic Sub-basins

Source: South Florida Water Management District

N

0 17,500 35,000 70,000 Feet

BPC GROUP

Layout of Hydrologic Sub-Basins S5A, S6/S7, S8

FIGURE 2.1

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3.0 DATA ANALYSIS METHODOLOGY

3.1 Univariate Analysis

Task 6 report presents the results of preliminary statistical analyses performed on the monthly event datasets for the rainfall, flows (inflow, flow through, supplemental inflow, and outflow), concentrations (inflow, flow through, outflow), and loads (inflow, flow through, outflow) for the hydrologic sub-basins S5A, S6/S7, and S8. The analyses included univariate analyses on individual datasets separately for each hydrologic sub-basin. The following statistical analyses were performed on each dataset for each hydrologic sub-basin.

- Statistical Descriptor and Normality Tests
    - Mean, Median, Standard Error, Standard Deviation, Variance
    - Range, Minimum, Maximum, Quartiles
    - Kurtosis, Skewness, Confidence Interval
- Time Series Plots and Visual Trend Analysis
- Box-and-Whisker Plots

The above statistical analyses were performed on four time periods for each monthly event dataset. The four time periods are defined as:

- Base Period: WY 1980 through 1988
- Pre-BMP Period: WY 1989 through 1994
- BMP Period: WY 1996 through 2007
- Entire Period: WY 1980 through 2007

Water Year 1995 is considered a transition year and is not included in this analysis. Individuals interested in the results of univariate analyses on the above datasets are referred to the Task 6 Report (Final Letter Report, Phase II, Task 6: Initial Data Analysis, EAA Basin Data Evaluation, April 2008), a copy of which is included in Appendix D.

3.2 Statistical Analysis Methodology

The interrelationships between various parameters including trend and regression analyses are performed during this task. As indicated earlier, the analyses under the SOW included a) evaluation of trends of the flows, loads, and concentrations entering the EAA from the Lake, and b) development of potential relations between these trends, where feasible, to the EAA's performance at hydrologic sub-basin level. The following statistical analyses were performed to fulfill the project goals.

3.2.1 Trend Analysis

Trend analyses were performed on the monthly datasets using cumulative plots, double-mass plots, and moving average plots, as described below. The scope of work included analyses of only the inflow from lake; however, the analyses presented in this report include all inflows (inflow from lake, flow through, and supplemental inflow), outflow, and rainfall, as appropriate.

- Cumulative Plot. This is a plot of cumulative values of a specific parameter over the entire period of record (WY 1980 through 2007). The plot is used to infer visual trends of the dataset over the period of analysis by observing the changes in slope of the trend line. The rate of slope changes over a time period indicates the relative trend of the dataset. For the purpose of this project, all flows (inflow, outflow, flow through, and supplemental inflow) for a specific hydrologic sub-basin are plotted in the same graph for direct visual comparison of potential breaks and slope changes in data trends. Similarly, all loads (inflow, outflow, flow through, and supplemental inflow) are plotted in one graph for inferences. The cumulative concentration plots are not appropriate for this type of analyses, and therefore, are not prepared.

- Double-Mass Plot. This is a plot of one component of a specific parameter against other components of the same parameter. This is helpful in interpretation of general trend of the monthly concentration values. The general shift of the concentration plots among the time periods provides an insight into the temporal variation of the parameters for the spatial locations. For the purpose of this project, outflow, flow through, and supplemental inflow concentrations are plotted against inflow concentrations in the same graph for each hydrologic sub-basin separately. Separate plots have been prepared for each time period (entire period, base period, pre-BMP period, and BMP period). The wet and dry season datasets were also plotted.

- Moving Average Trend. Another way of visually analyzing the trend of a dataset is to plot the data along with moving average values for a specific parameter. For the purpose of this project, entire period of record for the lake inflow was sub-divided into 12 monthly sub-datasets with each sub-dataset corresponding to one calendar month. For example, each inflow dataset for the month of April contains values for a specific parameter corresponding to the month of April for all 28 years (WY 1980 through 2007). One plot was generated for each monthly subset for supplemental inflows (flow, load, and concentration). This is helpful in determining relative trend of monthly contribution in a dataset. As a standard of practice, 5-year moving average plots were considered for this project.

- Time Series Trend. For the purpose of this project, this included time series plots for the parameters of interest for each sub-basin, and completion of non-parametric test such as Mann-Kendall test (Kendall Tau Trend), which also estimates Sen Slope to identify the degree of change in the trend. This analysis was performed on the entire dataset for supplemental inflow, flow through, and outflow parameters (flow, load, and concentration) for each sub-basin. A copy of the report including time series plots is included in Appendix D.

- Box Plot. The Box plots along with the summary statistics for the datasets were presented in Task 6 Report, a copy of which is included in Appendix D of this report.

These analyses were completed for each hydrologic sub-basin separately for four time periods, as appropriate. The results are presented in Section 4.0 of this letter report.

3.2.2 Regression and Correlation Analysis

As indicated earlier, the analyses presented in this report include all inflows (inflow from lake, flow through, and supplemental inflow), outflow, and rainfall, as appropriate. The following description presents the methodology implemented to relate the inflow parameters for each sub-basin with the outflow parameters.

- Correlation Analysis. A correlation analysis was performed to evaluate the linear association among the independent parameters. The correlation coefficients between two parameters were computed, and the results were used to identify the independent parameters for regression analyses. The correlation analyses were conducted for inflows (inflow, supplemental inflow, and flow through), concentrations (inflow, supplemental inflow, and flow through), and loads (inflow, supplemental inflow, and flow through). The inflow values for flow and load are expected to be highly correlated (Collinear) with supplemental inflow and flow through values, since the inflow equals to sum of flow through and supplemental inflow values.

- Regression Analysis. A sequence of multiple regression analyses was performed on the seasonal datasets for each hydrologic sub-basin. The regression analyses were performed to develop potential relationship to relate the Lake Okeechobee flow and concentration/load. Based on various regression parameters used to evaluate the interrelationships, several regression models were developed using the following functional relationships amongst the flow, concentration, and load parameters.

  $Q_{out} = f\,(Q_{thru}, Q_{si}, P_m)$ — Q_{in} was removed due to collinearity
  $C_{out} = f\,(C_{thru}, C_{si}, C_p)$ — C_{in} was removed due to collinearity
  $L_{out} = f\,(L_{thru}, L_{si}, L_p)$ — L_{in} was removed due to collinearity
  $L_{out} = f\,(Q_{thru}, Q_{si}, P_m, C_{thru}, C_{si}, C_p)$

  The concentration of rainfall (C_p) in the above regression models is shown for the purpose of consistent format. As indicated earlier in the assumptions, the rainfall concentration values are considered zero and, therefore, the term C_p will drop out from the regression relationships. The regression analyses were completed on the linear seasonal datasets as described below. Datasets were not transformed during this task.

- Seasonal Dataset Preparation. Regression analyses were performed on the monthly event datasets to develop potential interrelationship between various parameters. The dataset for the entire period had wide spread on the range of values that prevented from obtaining meaningful relationships amongst the hydrologic parameters. For the purpose of this project, the dataset was divided into two seasons, wet season extending from May through October and the dry season extending from November through April. This approach inherently accounts for monthly and seasonal variations in all parameters. Furthermore, each seasonal (wet or dry) dataset was divided into four time periods (base period, pre-BMP period, BMP period, and entire period) as indicated in Section 2 of this report. All further analyses were then separately conducted for four periods on the dry and wet season monthly datasets.

These analyses were completed for each hydrologic sub-basin separately, and the results and discussion are presented in Section 4.0 of this letter report.

4.0 RESULTS AND DISCUSSION

4.1 Hydrologic Sub-Basin S5A

4.1.1 Trend Analyses

Cumulative Plot: Figure 4.1 presents the cumulative plots of flows (inflow, outflow, flow through, supplemental inflow) and loads (inflow, outflow, flow through, supplemental inflow) for hydrologic sub-basin S5A. The plot represents the entire period of records (WY 1980 through WY 2007) consisting of 336 monthly records for each dataset. The slope of a cumulative plot represents the rate of change in values for the parameter being plotted. The following visual trends are observed from this figure.

- The slopes of the cumulative trend lines for all flow components (Q_{out}, Q_{in}, Q_{thru}, and Q_{si}) have become steeper upwards since WY 1992. In other words, all flow components have increased since WY 1992 although at different rates. The upward slope outflow line is higher than the inflow line. There is a change in this increasing trend in WY 2003. The change in the outflow may be attributed to the change in flow through.
- The slopes of the cumulative trend lines for all load components (L_{out}, L_{in}, L_{thru}, and L_{si}) have also increased similar to flow components. However, the slopes of cumulative load plots are less steep than the slopes of cumulative flow plots, and the rate of increase in outflow load is significantly higher than the inflow load. This indicates that the load is reduced despite an increase in flow volume during the BMP period. Also, L_{si} has leveled off since WY1995 and even decreased during the BMP period.

Double Mass Plot: Figures 4.2a through 4.2c present the double-mass plots of concentration for this hydrologic sub-basin. The outflow concentration (C_{out}), supplemental inflow concentration (C_{si}), and flow through concentration (C_{thru}) are plotted along ordinate (y-axis) against inflow concentration (C_{in}) values along abscissa (x-axis). Separate plots are presented for each time period including the wet and dry seasons. The following trends are observed from these figures.

- Amongst all concentration values, C_{si} values are closest to C_{in} values which lie almost along the 45^o line. These plots indicate that the supplemental inflow concentrations are highly correlated to or collinear with inflow concentrations.
- The observed trend from these plots demonstrates that C_{out} values are consistently a) higher than C_{in} during base period, b) closer to 45^o line (nearly equal to C_{in} values) during Pre-BMP period, and c) less than C_{in} values during BMP period. This visual observation may qualitatively be interpreted as that the BMP has been effective in the hydrologic sub-basin. On the other hand, this may partially be attributed to the higher outflow (Q_{out}) values since WY 1992 as discussed above.

- Little difference was observed between the wet season and dry season plots, which are similar to the plot for entire period.

Moving Average and Time Series Trends: Time series plots of the monthly values for supplemental inflow, flow through, and outflow parameters (flow, load, and concentration) for the entire period are presented in Appendix A. Mann-Kendall (Kendall Tau Trend) tests were performed on the time series plots. The results are summarized in the following table (Table 4.1). As shown on this Table, no trend was observed in the trend analysis with small values of Sen's slope for all the parameters.

Table 4.1 Mann-Kendall Test Summary for Hydrologic Sub-Basin S5A

Parameter	Monthly Records	Kendall-K	Z	Trend	Sen Slope
Flow-Q_{si}	336	-49	-0.02	Insignificant	0.000
Flow-Q_{thru}	336	9964	5.07	Insignificant	0.000
Flow-Q_{out}	336	3982	1.93	Insignificant	0.020
Load-L_{si}	336	8403	4.08	Insignificant	0.003
Load-L_{thru}	336	11530	5.88	Insignificant	0.000
Load-L_{out}	336	2124	1.03	Insignificant	0.001
Concentration-C_{si}	336	20492	9.96	Insignificant	0.470
Concentration-C_{thru}	336	16712	8.49	Insignificant	0.280
Concentration-C_{out}	336	-5691	-2.76	Insignificant	-0.110

For further evaluation of the data trends, 5-year moving average trend lines were plotted following the procedure outlined in Section 3.2.1. The moving average plots along with descriptive statistics of the datasets for each month are presented in Appendix A. The following table (Table 4.2) summarizes the visual trends observed from the 5-year moving average plots.

Table 4.2 5-yr Moving Average Trends: Monthly Data for Hydrologic Sub-Basin S5A

Month	Supplemental Inflow			Outflow		
	Concentration	Flow	Load	Concentration	Flow	Load
May	Upward	Insignificant	Upward	Upward	Insignificant	Insignificant
June	Upward	Downward	Insignificant	Insignificant	Upward	Insignificant
July	Upward	Downward	Upward	Upward	Upward	Insignificant
August	Upward	Upward	Upward	Insignificant	Upward	Upward
September	Upward	Upward	Upward	Insignificant	Upward	Insignificant
October	Upward	Downward	Upward	Insignificant	Insignificant	Insignificant
November	Upward	Insignificant	Upward	Insignificant	Upward	Upward
December	Upward	Downward	Insignificant	Insignificant	Upward	Upward
January	Upward	Upward	Upward	Downward	Insignificant	Downward
February	Upward	Insignificant	Upward	Downward	Downward	Downward
March	Upward	Upward	Upward	Downward	Downward	Downward
April	Upward	Upward	Upward	Downward	Downward	Downward

As can be seen from the above Table, the monthly visual trends of the parameters vary from one another with the following general trends.

- Upward trends of concentration and load for supplemental inflow.
- Inconsistent trend of flow for supplemental inflow.
- Insignificant to downward trends of concentration and load for outflow.
- Upward to insignificant trend of flow for outflow.

4.1.2 Correlation and Regression Analyses

Correlation Analyses: As indicated in Section 3.2 (Statistical Analysis Methodology), the correlation analyses were conducted for inflows (inflow, supplemental inflow, and flow through), concentrations (inflow, supplemental inflow, and flow through), and loads (inflow, supplemental inflow, and flow through). The inflow values for flow and load were highly correlated with supplemental inflow and flow through values. Similarly, the inflow concentration was highly correlated with supplemental concentration values. The scattered plot matrix resulting from the correlation analyses are included in Appendix A.

Regression Analyses: Based on the correlation analyses, the inflow parameters (Q_{in}, L_{in}, C_{in}) were removed from the regression analyses since they were collinear with supplemental inflow and flow through values. The remaining parameters were used to develop the regression models for dry seasons and wet seasons separately. Following is the list of regression model functional relationships analyzed for each season.

$Q_{out} = f\ (Q_{thru}, Q_{si}, P_m)$
$C_{out} = f\ (C_{thru}, C_{si}, C_p)$
$L_{out} = f\ (L_{thru}, L_{si}, L_p)$
$L_{out} = f\ (Q_{thru}, Q_{si}, P_m, C_{thru}, C_{si}, C_p)$

Dry Season: A total of 16 regression models (4 models for each time period) were analyzed and the results are summarized in Table 4.3. The residual plots for all the regression models are appended to Appendix A.

Based on the R^2 values, the most preferred regression models for the dry season dataset for this hydrologic sub-basin are the models for the entire period, which are summarized below.

Flow: $Q_{out} = 1.06\ Q_{thru} - 0.30\ Q_{si} + 7.34\ P_m - 2.85$ $R^2 = 0.86$
Load: $L_{out} = 0.19\ Q_{thru} - 0.05\ Q_{si} + 1.95\ P_m - 0.004\ C_{thru} - 0.91$ $R^2 = 0.68$

This indicates that about 86% of the outflow can be explainable with the supplemental inflow, flow through, and rainfall contributions. Similarly, about 68% of the outflow load can be explainable with the supplemental inflow, flow through, rainfall, and flow through concentration contributions. Based on P-values, all parameters are significant for the flow regression model for the dry season dataset, while only flow through and rainfall are significant for the load regression model. As can be seen from Table 4.3, none of the concentration regression models fitted well, and had low R^2 values. The regression models presented here may be interpreted as that for better account of the BMP performance, it is necessary to account for the farm practices (water management and landuse practices) in the model.

Table 4.3 Regression Analyses Results for Dry Season (Hydrologic Sub-Basin S5A)

Period of Analysis	Regression Model	Statistics
Base Period	$Q_{out} = 1.12\ Q_{thru} - 0.09\ Q_{si} + 7.38\ P_m - 3.42$	$R^2 = 0.82$, $AR^2 = 0.81$, SE = 7.47
	$C_{out} = 0.42\ C_{thru} + 0.04\ C_{si} + 133.62$	$R^2 = 0.07$, $AR^2 = 0.04$, SE = 86.56
	$L_{out} = -0.59\ L_{thru} - 0.68\ L_{si} + 4.54$	$R^2 = 0.02$, $AR^2 = 0$, SE = 5.80
	$L_{out} = 0.19\ Q_{thru} - 0.04\ Q_{si} + 2.03\ P_m + 0.005\ C_{thru} - 1.42$	$R^2 = 0.57$, $AR^2 = 0.53$, SE = 3.93
Pre-BMP Period	$Q_{out} = 1.00\ Q_{thru} - 0.30\ Q_{si} + 7.84\ P_m - 5.23$	$R^2 = 0.90$, $AR^2 = 0.90$, SE = 6.61
	$C_{out} = -0.17\ C_{thru} - 0.06\ C_{si} + 193.94$	$R^2 = 0.04$, $AR^2 = 0$, SE = 59.69
	$L_{out} = 1.21\ L_{thru} - 2.24\ L_{si} + 6.42$	$R^2 = 0.20$, $AR^2 = 0.15$, SE = 5.52
	$L_{out} = 0.1\ Q_{thru} + 0.007\ Q_{si} + 2.41\ P_m - 0.009\ C_{thru} - 0.009\ C_{si} - 0.75$	$R^2 = 0.80$, $AR^2 = 0.76$, SE = 2.90
BMP Period	$Q_{out} = 1.10\ Q_{thru} - 0.38\ Q_{si} + 6.26\ P_m - 0.72$	$R^2 = 0.87$, $AR^2 = 0.87$, SE = 6.40
	$C_{out} = -0.15\ C_{thru} + 0.05\ C_{si} + 149.53$	$R^2 = 0.05$, $AR^2 = 0.03$, SE = 65.32
	$L_{out} = 0.56\ L_{thru} - 0.87\ L_{si} + 4.57$	$R^2 = 0.29$, $AR^2 = 0.26$, SE = 3.76
	$L_{out} = 0.21\ Q_{thru} - 0.075\ Q_{si} + 1.60\ P_m - 0.006\ C_{thru} - 0.13$	$R^2 = 0.74$, $AR^2 = 0.72$, SE =2.31
Entire Period	$Q_{out} = 1.06\ Q_{thru} - 0.30\ Q_{si} + 7.34\ P_m - 2.85$	$R^2 = 0.86$, $AR^2 = 0.85$, SE = 7.40
	$C_{out} = -0.13\ C_{thru} + 0.03\ C_{si} + 160$	$R^2 = 0.03$, $AR^2 = 0.02$, SE =72.46
	$L_{out} = 0.62\ L_{thru} - 1.09\ L_{si} + 5.10$	$R^2 = 0.15$, $AR^2 = 0.14$, SE = 4.94
	$L_{out} = 0.19\ Q_{thru} - 0.05\ Q_{si} + 1.95\ P_m - 0.004\ C_{thru} - 0.91$	$R^2 = 0.68$, $AR^2 = 0.67$, SE = 3.03

Wet Season: A total of 16 regression models (4 models for each time period) were analyzed and the results are summarized in Table 4.4. The residual plots for all the regression models are appended to Appendix A.

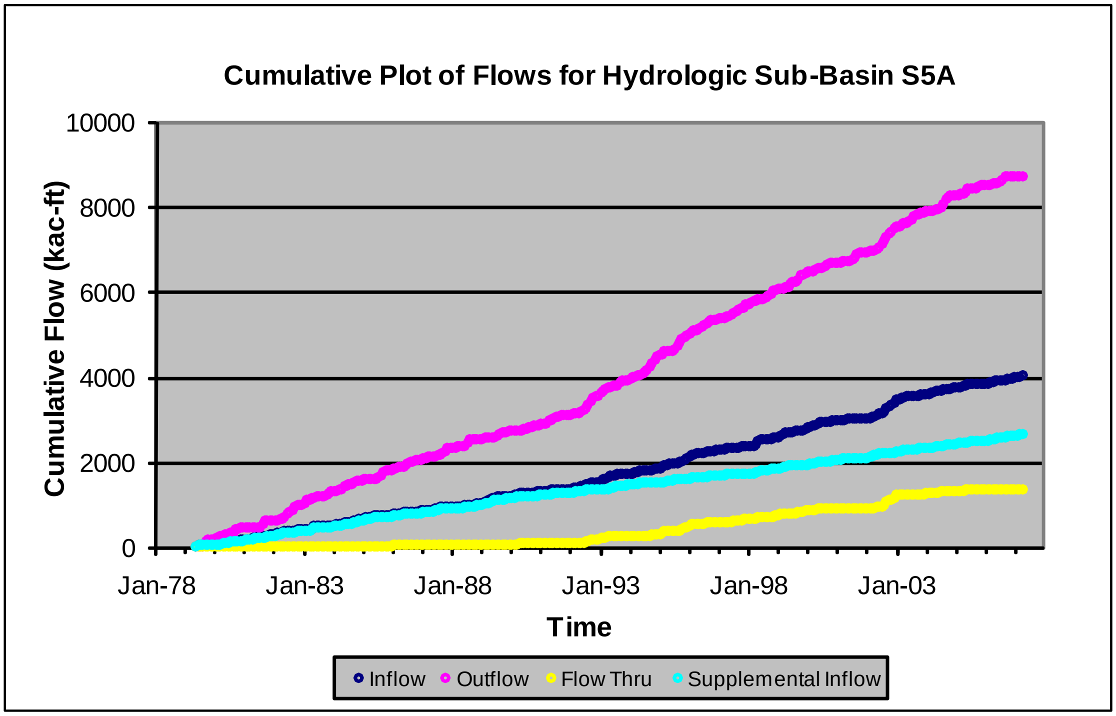
Based on the R^2 values, the most preferred regression models for the dry season dataset for this hydrologic sub-basin are the models for the entire period, which are summarized below.

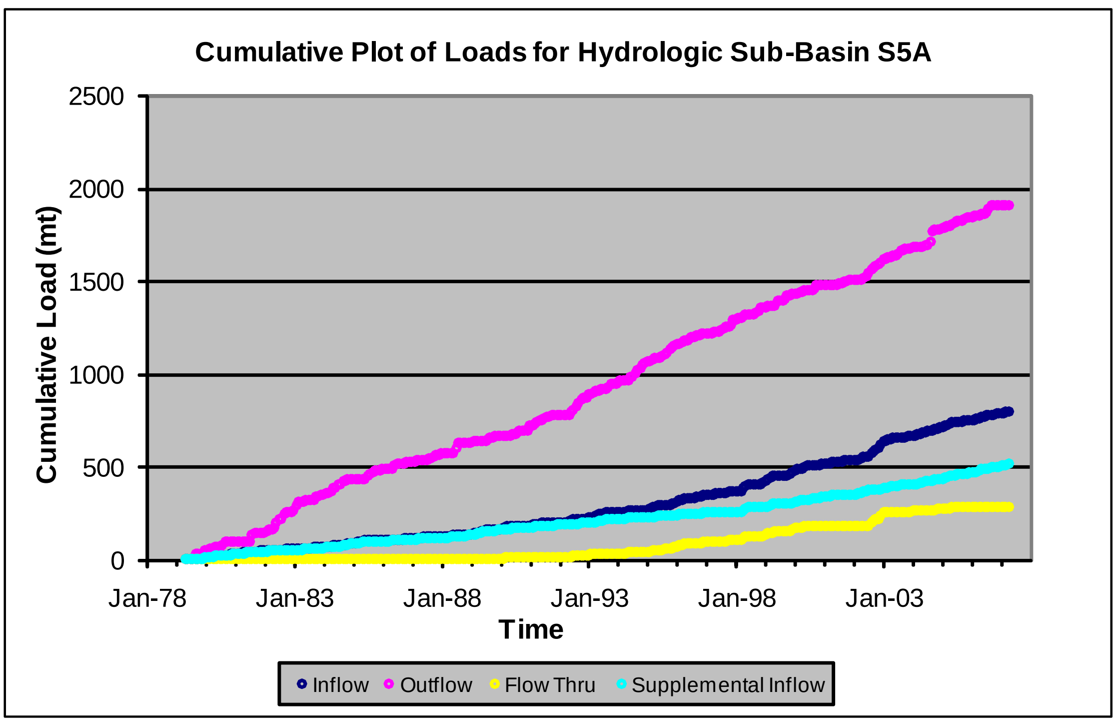
Flow: $Q_{out} = 1.16\ Q_{thru} - 0.44\ Q_{si} + 6.49\ P_m - 5.58$ $R^2 = 0.67$
Load: $L_{out} = 0.20\ Q_{thru} - 0.02\ Q_{si} + 1.76\ P_m - 0.001\ C_{thru} - 0.009\ C_{si} - 4.34$ $R^2 = 0.58$

This indicates that about 67% of the outflow can be explainable with the supplemental inflow, flow through, and rainfall contributions. Similarly, about 58% of the outflow load can be explainable with the supplemental inflow, flow through, rainfall, flow through concentration, and supplemental inflow concentration contributions. Based on P-values, all parameters are significant for the flow regression model for the wet season dataset, while supplemental inflow is insignificant for the load regression model. As can be seen from Table 4.4, none of the concentration regression models fitted well, and had low R^2 values. For this hydrologic sub-basin, the dry season regression models are similar to those of the wet season regression models. The regression models presented here may be interpreted as that for better account of the BMP performance, it is necessary to account for the farm practices (water management and landuse practices) in the model. Rainfall is a major factor for the regression models.

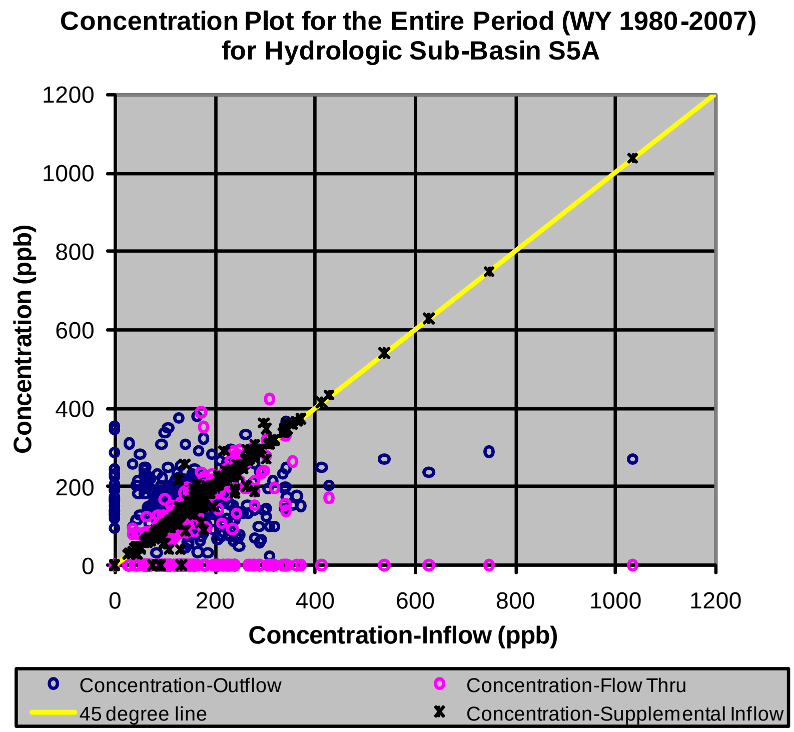
Table 4.4 Regression Analyses Results for Wet Season (Hydrologic Sub-Basin S5A)

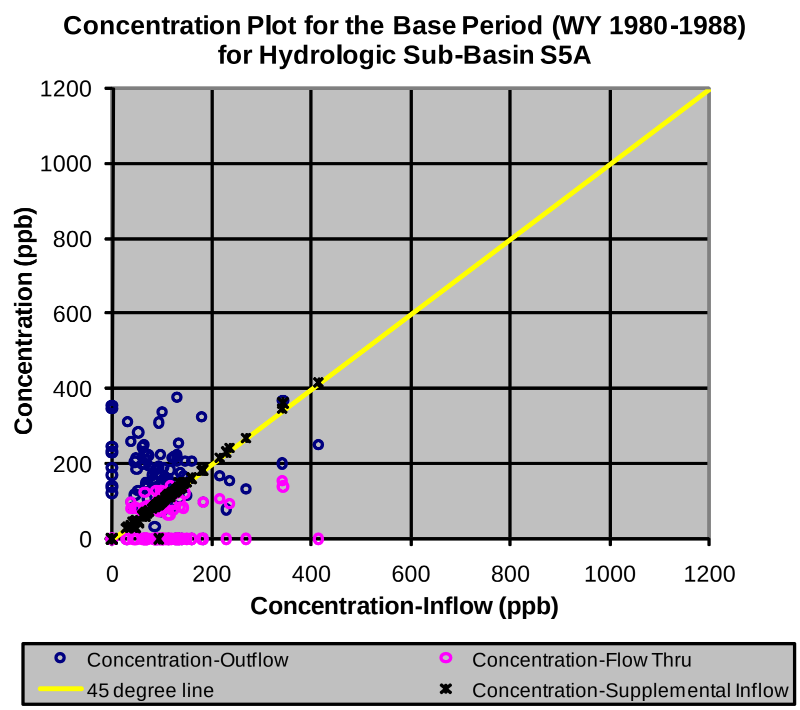
Period of Analysis	Regression Model	Statistics
Base Period	Q_{out} = -2.37 Q_{thru} – 0.39 Q_{si} + 5.88 P_m – 2.07	R^2 = 0.56, AR^2 = 0.54, SE = 18.38
	C_{out} = 0.04 C_{thru} - 0.39 C_{si} + 180.32	R^2 = 0.05, AR^2 = 0.01, SE = 92.35
	L_{out} = -8.22 L_{thru} – 2.25 L_{si} + 0 L_p + 9.73	R^2 = 0.17, AR^2 = 0.13, SE = 7.10
	L_{out} = - 1.30 Q_{thru} – 0.01 Q_{si} + 1.66 P_m - 0.004 C_{thru} –0.019 C_{si} +0.69	R^2 = 0.55, AR^2 = 0.50, SE = 5.40
Pre-BMP Period	Q_{out} = 1.00 Q_{thru} – 0.72 Q_{si} + 5.22 P_m – 3.05	R^2 = 0.70, AR^2 =0.68, SE = 15.20
	C_{out} = -0.18 C_{thru} + 0.21 C_{si} + 165.89	R^2 = 0.08, AR^2 =0.02, SE = 68.13
	L_{out} = 1.27 L_{thru} – 2.32 L_{si} + 9.82	R^2 = 0.27, AR^2 =0.23, SE = 6.14
	L_{out} = 0.12 Q_{thru} - 0.19 Q_{si} + 1.25 P_m - 0.01 C_{thru} – 0.02 C_{si} – 4.10	R^2 = 0.66, AR^2 =0.61, SE = 4.39
BMP Period	Q_{out} = 1.32 Q_{thru} – 0.09 Q_{si} + 8.06 P_m – 17.40	R^2 = 0.75, AR^2 =0.73, SE = 15.31
	C_{out} = -0.05 C_{thru} + 0.09 C_{si} + 131.93	R^2 = 0.12 AR^2 = 0.09, SE = 58.04
	L_{out} = 0.25 L_{thru} + 0.12 L_{si} + 7.28	R^2 = 0.007, AR^2 = 0, SE = 8.06
	L_{out} = 0.24 Q_{thru} + 0.11 Q_{si} + 2.16 P_m - 0.004 C_{thru} + 0.007 C_{si} – 8.39	R^2 = 0.66, AR^2 = 0.64, SE = 4.78
Entire Period	Q_{out} = 1.16 Q_{thru} – 0.44 Q_{si} + 6.49 P_m – 5.58	R^2 = 0.67, AR^2 = 0.66, SE = 16.63
	C_{out} = -0.14 C_{thru} + 0.11 C_{si} + 148.25	R^2 = 0.05, AR^2 = 0.04, SE =73.88
	L_{out} = 0.47 L_{thru} – 1.11 L_{si} + 8.64	R^2 = 0.05, AR^2 = 0.04, SE = 7.43
	L_{out} = 0.20 Q_{thru} - 0.02 Q_{si} + 1.76 P_m - 0.01 C_{thru} – 0.009 C_{si} – 4.34	R^2 = 0.58, AR^2 = 0.57, SE = 4.98





bpc GROUP	**Cumulative Plots of Flows and Loads for Hydrologic Sub-Basin S5A**	**FIGURE 4.1** FILE NUMBER 06008.03





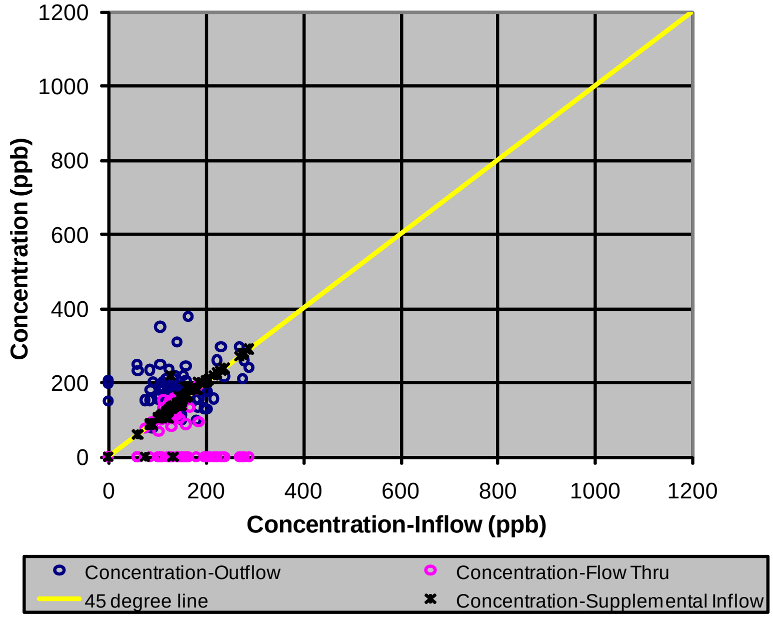
bpc GROUP

Double-Mass Plots of Concentrations for Hydrologic Sub-Basin S5A

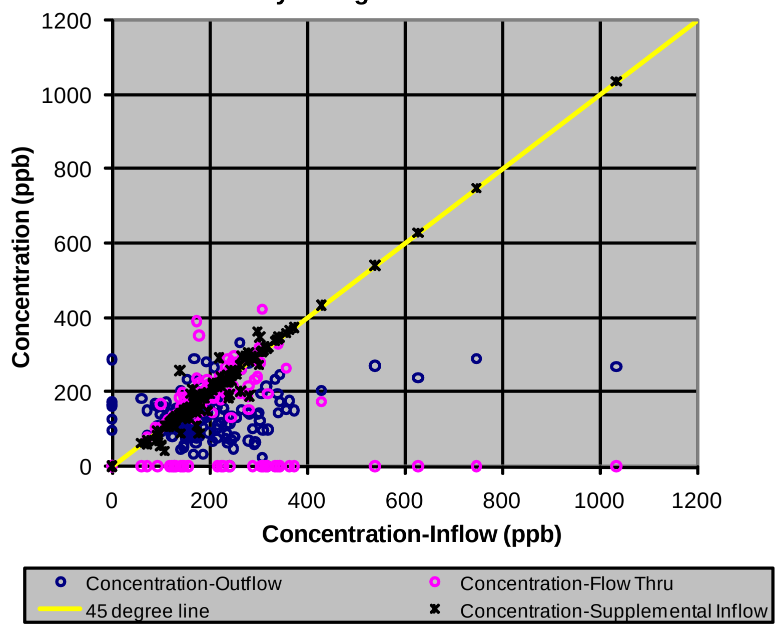
FIGURE 4.2a

FILE NUMBER 06008.03

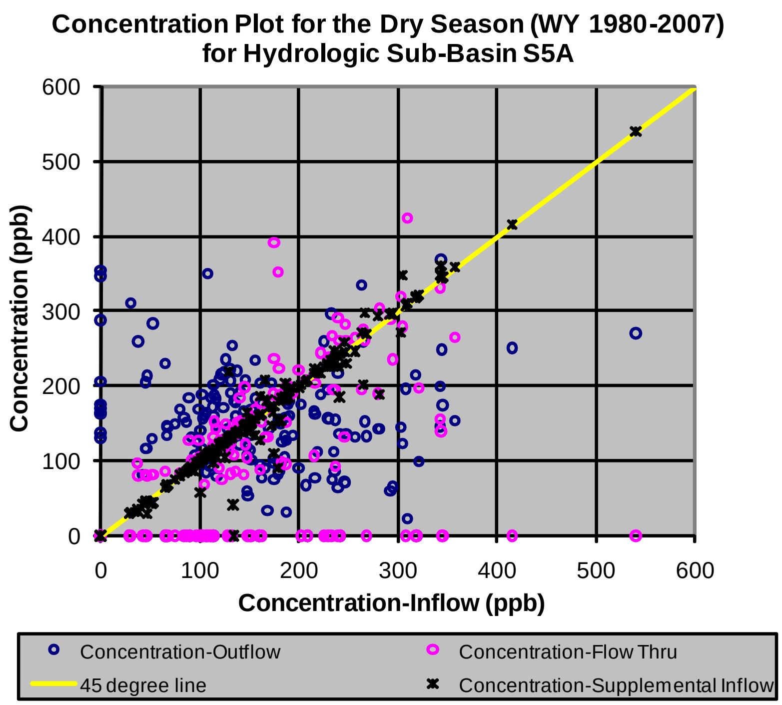
Concentration Plot for the Pre-BMP Period (WY 1989-1994) for Hydrologic Sub-Basin S5A

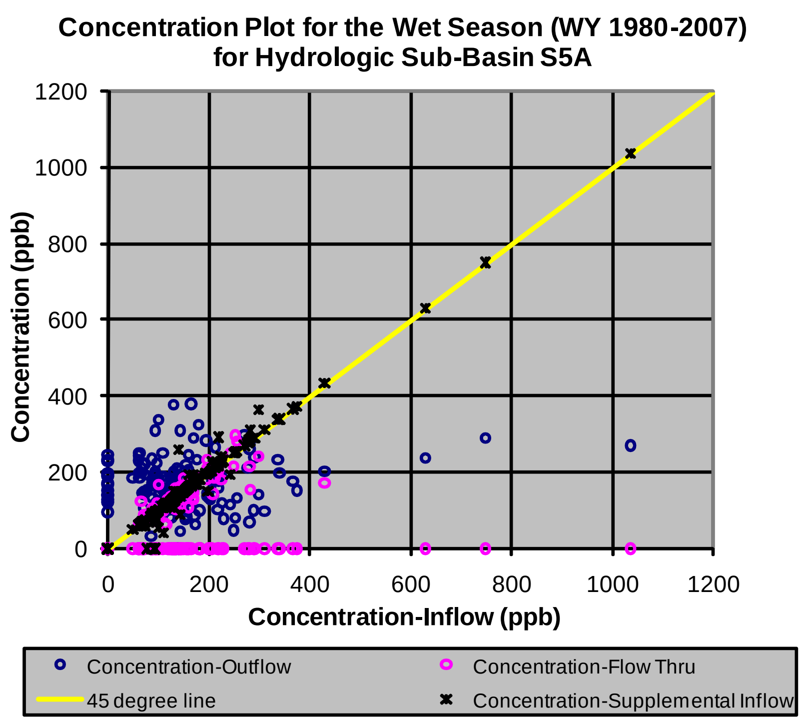


Concentration Plot for the BMP Period (WY 1996-2007) for Hydrologic Sub-Basin S5A



bpc GROUP	**Double-Mass Plots of Concentrations for Hydrologic Sub-Basin S5A**	**FIGURE 4.2b** FILE NUMBER 06008.03





bpc GROUP	**Double-Mass Plots of Dry and Wet Season Concentrations for Hydrologic Sub-Basin S5A**	**FIGURE 4.2c** FILE NUMBER 06008.03

4.2 Hydrologic Sub-Basin S6/S7

4.2.1 Trend Analyses

Cumulative Plot: Figure 4.3 presents the cumulative plots of flows (inflow, outflow, flow through, supplemental inflow) and loads (inflow, outflow, flow through, supplemental inflow) for hydrologic sub-basin S6/S7. The plot represents the entire period of records (WY 1980 through WY 2007) consisting of 336 monthly records for each dataset. The slope of a cumulative plot represents the rate of change in values for the parameter being plotted. The following trends are observed from this figure.

- The slopes of the cumulative trend lines for all flow components (Q_{out}, Q_{in}, Q_{thru}, and Q_{si}) have become steeper upwards since WY 1992. In other words, all flow components have increased since WY 1992 although at different rates. The upward slope outflow line is significantly higher than the inflow line. There is a change in this increasing trend in WY 2004.
- The slopes of the cumulative trend lines for all load components (L_{out}, L_{in}, L_{thru}, and L_{si}) have also increased similar to flow components. However, the slopes of cumulative load plots are less steep than the slopes of cumulative flow plots, and the rate of increase in outflow load is significantly higher than the inflow load. This indicates that the load is reduced despite an increase in flow volume during the BMP period. Also, L_{si} has leveled off since WY1999.

Double Mass Plot: Figures 4.4a through 4.4c present the double-mass plots of concentration for this hydrologic sub-basin. The outflow concentration (C_{out}), supplemental inflow concentration (C_{si}), and flow through concentration (C_{thru}) are plotted along ordinate (y-axis) against inflow concentration (C_{in}) values along abscissa (x-axis). Separate plots are presented for each time period including the wet and dry seasons. The following trends are observed from these figures.

- Amongst all concentration values, C_{si} values are closest to C_{in} values which lie almost along the 45^o line. These plots indicate that the supplemental inflow concentrations are highly correlated to or collinear with inflow concentrations.
- The observed trend from these plots demonstrates that C_{out} values are consistently a) higher than C_{in} during base period, b) closer to 45^o line (nearly equal to C_{in} values) during Pre-BMP period, and c) less than C_{in} values during BMP period. This visual observation may qualitatively be interpreted as that the BMP has been effective in the hydrologic sub-basin. On the other hand, this may partially be attributed to the higher outflow (Q_{out}) values since WY 1992 as discussed above.
- Little difference was observed between the wet season and dry season plots, which are similar to the plot for entire period.

Moving Average and Time Series Trends: Time series plots of the monthly values for supplemental inflow, flow through, and outflow parameters (flow, load, and concentration) for the entire period are presented in Appendix B. Mann-Kendall (Kendall Tau Trend) tests were performed on the time series plots. The results are summarized in the following table (Table 4.5). As shown on this Table, no trend was observed in the trend analysis with small values of Sen's slope for all the parameters.

Table 4.5 Mann-Kendall Test Summary for Hydrologic Sub-Basin S6/S7

Parameter	Monthly Records	Kendall-K	Z	Trend	Sen Slope
Flow-Q_{si}	336	7897	3.84	Insignificant	0.020
Flow-Q_{thru}	336	3654	1.83	Insignificant	0.000
Flow-Q_{out}	336	2339	1.14	Insignificant	0.014
Load-L_{si}	336	11266	5.48	Insignificant	0.003
Load-L_{thru}	336	5005	2.51	Insignificant	0.000
Load-L_{out}	336	421	0.20	Insignificant	0.000
Concentration-C_{si}	336	14888	7.25	Insignificant	0.190
Concentration-C_{thru}	336	11674	5.81	Insignificant	0.100
Concentration-C_{out}	336	-5066	-2.46	Insignificant	-0.060

For further evaluation of the data trends, 5-year moving average trend lines were plotted following the procedure outlined in Section 3.2.1. The moving average plots along with descriptive statistics of the datasets for each month are presented in Appendix B. The following table (Table 4.6) summarizes the visual trends observed from the 5-year moving average plots.

Table 4.6 5-yr Moving Average Trends: Monthly Data for Hydrologic Sub-Basin S6/S7

Month	Supplemental Inflow			Outflow		
	Concentration	Flow	Load	Concentration	Flow	Load
May	Upward	Insignificant	Upward	Downward	Downward	Downward
June	Upward	Downward	Upward	Downward	Insignificant	Downward
July	Upward	Upward	Upward	Insignificant	Upward	Upward
August	Upward	Upward	Upward	Downward	Upward	Downward
September	Upward	Upward	Upward	Downward	Insignificant	Insignificant
October	Insignificant	Upward	Upward	Insignificant	Upward	Upward
November	Upward	Upward	Upward	Downward	Insignificant	Downward
December	Upward	Upward	Upward	Upward	Insignificant	Insignificant
January	Upward	Upward	Upward	Downward	Insignificant	Insignificant
February	Upward	Upward	Upward	Insignificant	Insignificant	Insignificant
March	Upward	Upward	Upward	Insignificant	Downward	Downward
April	Upward	Upward	Upward	Downward	Insignificant	Downward

As can be seen from the above Table, the monthly visual trends of the parameters vary from one another with the following general trends.

- Upward trends of concentration and load for supplemental inflow.
- Upward trend of flow for supplemental inflow.
- Downward to insignificant trends of concentration and load for outflow.
- Insignificant trend of flow for outflow.

4.2.2 Correlation and Regression Analyses

Correlation Analyses: As indicated in Section 3.2 (Statistical Analysis Methodology), the correlation analyses were conducted for inflows (inflow, supplemental inflow, and flow through), concentrations (inflow, supplemental inflow, and flow through), and loads (inflow, supplemental inflow, and flow through). The inflow values for flow and load were highly correlated with supplemental inflow and flow through values. Similarly, the inflow concentration was highly correlated with supplemental concentration values. The scattered plot matrix resulting from the correlation analyses are included in Appendix B.

Regression Analyses: Based on the correlation analyses, the inflow parameters (Q_{in}, L_{in}, C_{in}) were removed from the regression analyses since they were collinear with supplemental inflow and flow through values. The remaining parameters were used to develop the regression models for dry seasons and wet seasons separately. Following is the list of regression model functional relationships analyzed for each season.

$Q_{out} = f\ (Q_{thru}, Q_{si}, P_m)$
$C_{out} = f\ (C_{thru}, C_{si}, C_p)$
$L_{out} = f\ (L_{thru}, L_{si}, L_p)$
$L_{out} = f\ (Q_{thru}, Q_{si}, P_m, C_{thru}, C_{si}, C_p)$

Dry Season: A total of 16 regression models (4 models for each time period) were analyzed and the results are summarized in Table 4.7. The residual plots for all the regression models are appended to Appendix B.

Based on the R^2 values, the most preferred regression models for the dry season dataset for this hydrologic sub-basin are the models for the entire period, which are summarized below.

Flow: $Q_{out} = 0.76\ Q_{thru} - 0.42\ Q_{si} + 14.43\ P_m - 6.88$ $R^2 = 0.88$
Load: $L_{out} = 0.06\ Q_{thru} - 0.004\ Q_{si} + 2.76\ P_m - 0.003\ C_{thru} - 0.009\ C_{si} - 3.74$ $R^2 = 0.63$

This indicates that about 88% of the outflow can be explainable with the supplemental inflow, flow through, and rainfall contributions. Similarly, about 63% of the outflow load can be explainable with the supplemental inflow, flow through, rainfall, flow through concentration, and supplemental inflow concentration contributions. Based on P-values, all parameters are significant for the flow regression model for the dry season dataset, while only flow through and rainfall are significant for the load regression model. As can be seen from Table 4.7, none of the concentration regression models fitted well, and had low R^2 values. The regression models presented here may be interpreted as that for better account of the BMP performance, it is necessary to account for the farm practices (water management and landuse practices) in the model.

Table 4.7 Regression Analyses Results for Dry Season (Hydrologic Sub-Basin S6/S7)

Period of Analysis	Regression Model	Statistics
Base Period	$Q_{out} = 0.32\ Q_{thru} - 0.08\ Q_{si} + 12.83\ P_m - 5.84$	$R^2 = 0.78$, $AR^2 = 0.77$, SE = 13.08
	$C_{out} = -0.06\ C_{thru} - 0.04\ C_{si} + 102.86$	$R^2 = 0.004$, $AR^2 = 0$, SE = 84.64
	$L_{out} = 1.04\ L_{thru} - 0.84\ L_{si} + 3.65$	$R^2 = 0.07$, $AR^2 = 0.03$, SE = 4.94
	$L_{out} = 0.06\ Q_{thru} + 0.02\ Q_{si} + 2.11\ P_m - 0.014\ C_{thru} + 0.01\ C_{si} - 2.11$	$R^2 = 0.61$, $AR^2 = 0.57$, SE = 3.27
Pre-BMP Period	$Q_{out} = 0.79\ Q_{thru} - 1.01\ Q_{si} + 15.13\ P_m - 4.74$	$R^2 = 0.79$, $AR^2 = 0.77$, SE = 21.74
	$C_{out} = 0.52\ C_{thru} - 0.22\ C_{si} + 59.74$	$R^2 = 0.18$, $AR^2 = 0.13$, SE = 41.22
	$L_{out} = 0.77\ L_{thru} - 2.06\ L_{si} + 5.57$	$R^2 = 0.11$, $AR^2 = 0.06$, SE = 8.88
	$L_{out} = 0.04\ Q_{thru} - 0.03\ Q_{si} + 3.80\ P_m - 0.025\ C_{thru} + 0.007\ C_{si} - 4.08$	$R^2 = 0.61$, $AR^2 = 0.54$, SE = 6.16
BMP Period	$Q_{out} = 0.79\ Q_{thru} - 0.04\ Q_{si} + 13.66\ P_m - 9.26$	$R^2 = 0.77$, $AR^2 = 0.76$, SE = 13.23
	$C_{out} = 0.06\ C_{thru} + 0.12\ C_{si} + 70.40$	$R^2 = 0.03$, $AR^2 = 0$, SE = 84.77
	$L_{out} = 0.33\ L_{thru} - 0.21\ L_{si} + 3.06$	$R^2 = 0.02$, $AR^2 = 0$, SE = 5.01
	$L_{out} = 0.09\ Q_{thru} + 0.04\ Q_{si} + 2.67\ P_m - 0.005\ C_{thru} + 0.01\ C_{si} - 4.51$	$R^2 = 0.68$, $AR^2 = 0.65$, SE =2.95
Entire Period	$Q_{out} = 0.76\ Q_{thru} - 0.42\ Q_{si} + 14.43\ P_m - 6.88$	$R^2 = 0.88$, $AR^2 = 0.77$, SE = 17.36
	$C_{out} = 0.08\ C_{thru} + 0.01\ C_{si} + 2.17$	$R^2 = 0.01$, $AR^2 = 0$, SE =76.13
	$L_{out} = 0.60\ L_{thru} - 0.56\ L_{si} + 3.90$	$R^2 = 0.05$, $AR^2 = 0.04$, SE = 6.42
	$L_{out} = 0.06\ Q_{thru} + 0.004\ Q_{si} + 2.76\ P_m - 0.003\ C_{thru} + 0.009\ C_{si} - 3.74$	$R^2 = 0.63$, $AR^2 = 0.62$, SE = 4.03

Wet Season: A total of 16 regression models (4 models for each time period) were analyzed and the results are summarized in Table 4.8. The residual plots for all the regression models are appended to Appendix B.

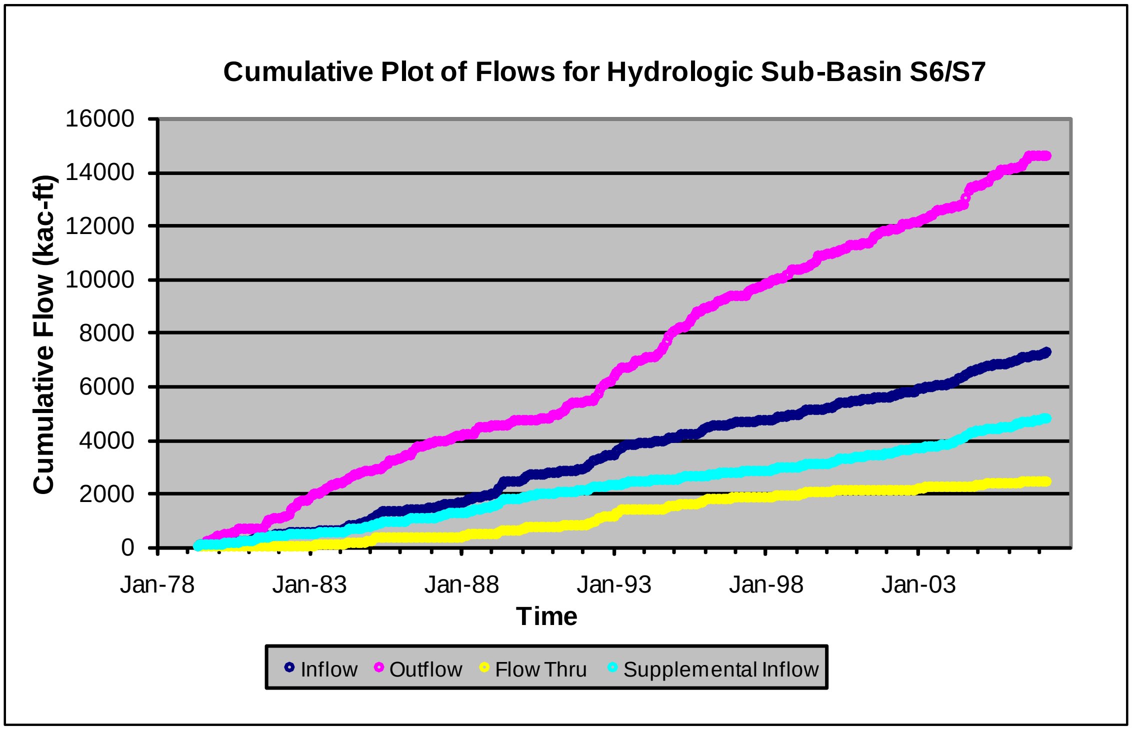
Based on the R^2 values, the most preferred regression models for the dry season dataset for this hydrologic sub-basin are the models for the entire period, which are summarized below.

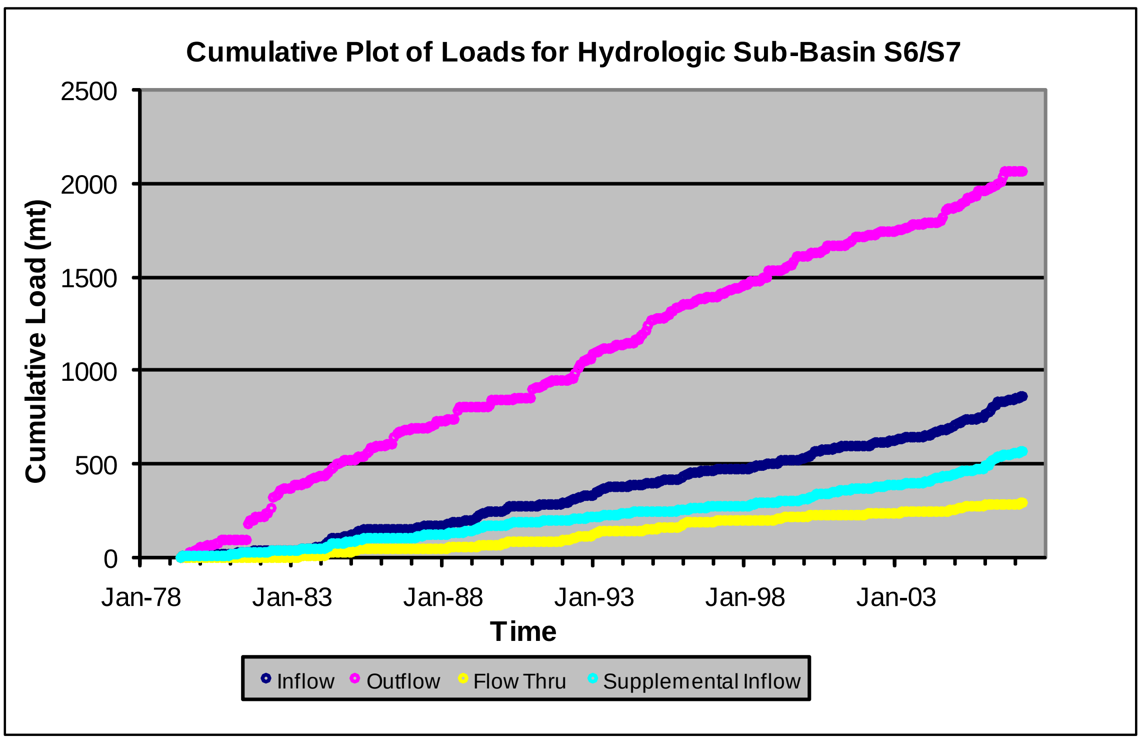
Flow: $Q_{out} = 0.98\ Q_{thru} - 0.13\ Q_{si} + 13.62\ P_m - 22.81$ $R^2 = 0.57$
Load: $L_{out} = 0.15\ Q_{thru} - 0.007\ Qsi + 2.55\ P_m - 0.003\ C_{thru} + 0.002\ C_{si} - 6.814$ $R^2 = 0.47$

This indicates that only about 57% of the outflow can be explainable with the supplemental inflow, flow through, and rainfall contributions. Similarly, only about 47% of the outflow load can be explainable with the supplemental inflow, flow through, rainfall, flow through concentration, and supplemental inflow concentration contributions. Based on P-values, flow through and rainfall are significant factors for both the flow and regression models for the wet season dataset, while supplemental inflow is insignificant for both regression models. As can be seen from Table 4.8, none of the concentration regression models fitted well, and had low R^2 values. For this hydrologic sub-basin, the dry season regression models have better fits than those of the wet season regression models. The regression models presented here may be interpreted as that for better account of the BMP performance, it is necessary to account for the farm practices (water management and landuse practices) in the model. Rainfall is a major factor for the regression models.

Table 4.8 Regression Analyses Results for Wet Season (Hydrologic Sub-Basin S6/S7)

Period of Analysis	Regression Model	Statistics
Base Period	Q_{out} = 1.41 Q_{thru} – 0.69 Q_{si} + 12.85 P_m – 12.72	R^2 = 0.75, AR^2 = 0.74, SE = 25.18
	C_{out} = 0.03 C_{thru} + 0.16 C_{si} + 112.24	R^2 = 0.02, AR^2 =0, SE = 65.22
	L_{out} = - 1.93 L_{thru} – 0.95 L_{si} + 11.51	R^2 = 0.03, AR^2 =0, SE = 14.42
	L_{out} = 0.47 Q_{thru} - 0.09 Q_{si} + 4.06 P_m + 0.005 C_{thru} + 0.029 C_{si} – 13.83	R^2 = 0.67, AR^2 =0.64, SE = 8.62
Pre-BMP Period	Q_{out} = 1.34 Q_{thru} – 0.84 Q_{si} + 9.69 P_m – 0.88	R^2 = 0.67, AR^2 =0.64, SE = 31.27
	C_{out} = - 0.20 C_{thru} + 0.20 C_{si} + 99.39	R^2 = 0.01, AR^2 =0, SE = 57.99
	L_{out} = 2.42 L_{thru} – 2.34 L_{si} + 9.34	R^2 = 0.25, AR^2 =0.21, SE = 9.05
	L_{out} = 0.23 Q_{thru} - 0.09 Q_{si} + 2.13 P_m - 0.053 C_{thru} + 0.045 C_{si} – 5.42	R^2 = 0.57, AR^2 =0.50, SE = 7.17
BMP Period	Q_{out} = -1.04 Q_{thru} + 0.89 Q_{si} + 14.24 P_m –32.47	R^2 = 0.56, AR^2 =0.54, SE = 36.37
	C_{out} = 0.03 C_{thru} + 0.25 C_{si} + 68.61	R^2 = 0.20, AR^2 = 0.18, SE = 32.93
	L_{out} = - 2.50 L_{thru} + 0.15 L_{si} + 8.56	R^2 = 0.05, AR^2 = 0.02, SE = 7.64
	L_{out} = - 0.06 Q_{thru} + 0.08 Q_{si} + 1.64 P_m - 0.02 C_{thru} + 0.027 C_{si} – 4.43	R^2 = 0.42, AR^2 = 0.37, SE =6.11
Entire Period	Q_{out} = 0.98 Q_{thru} – 0.13 Q_{si} + 13.62 P_m – 22.81	R^2 = 0.57, AR^2 = 0.57, SE = 34.66
	C_{out} = 0.06 C_{thru} + 0.04 C_{si} + 97.64	R^2 = 0.01, AR^2 = 0, SE =52.36
	L_{out} = 1.27 L_{thru} – 1.10 L_{si} + 9.88	R^2 = 0.05, AR^2 = 0.04, SE =10.50
	L_{out} = 0.15 Q_{thru} - 0.007 Q_{si} + 2.55 P_m - 0.003 C_{thru} + 0.002 C_{si} – 6.81	R^2 = 0.47, AR^2 = 0.46, SE = 7.89





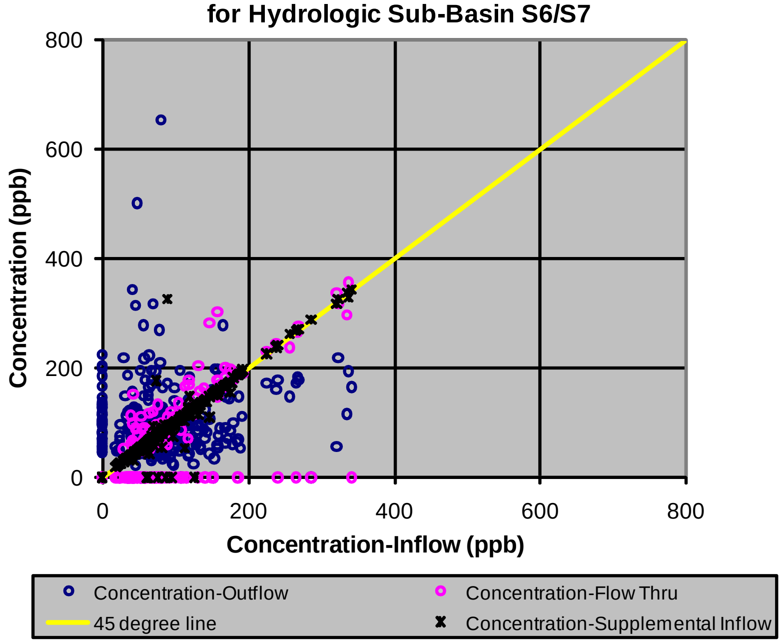
bpc GROUP

Cumulative Plots of Flows and Loads for Hydrologic Sub-Basin S6/S7

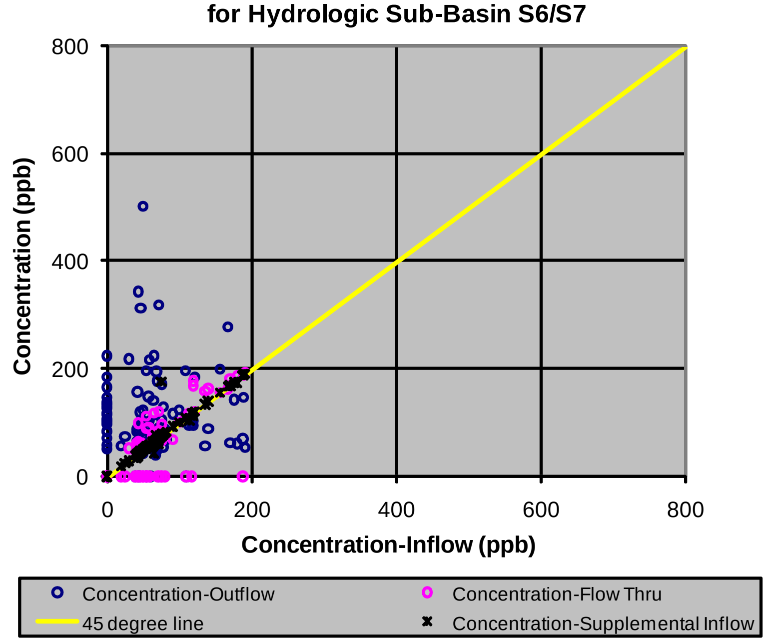
FIGURE 4.3

FILE NUMBER 06008.03

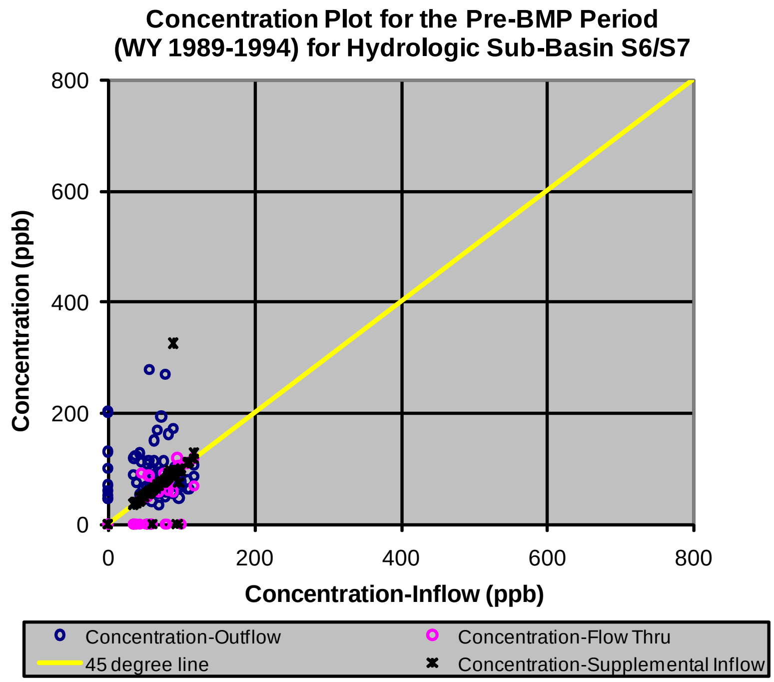
Concentration Plot for the Entire Period (WY 1980-2007) for Hydrologic Sub-Basin S6/S7

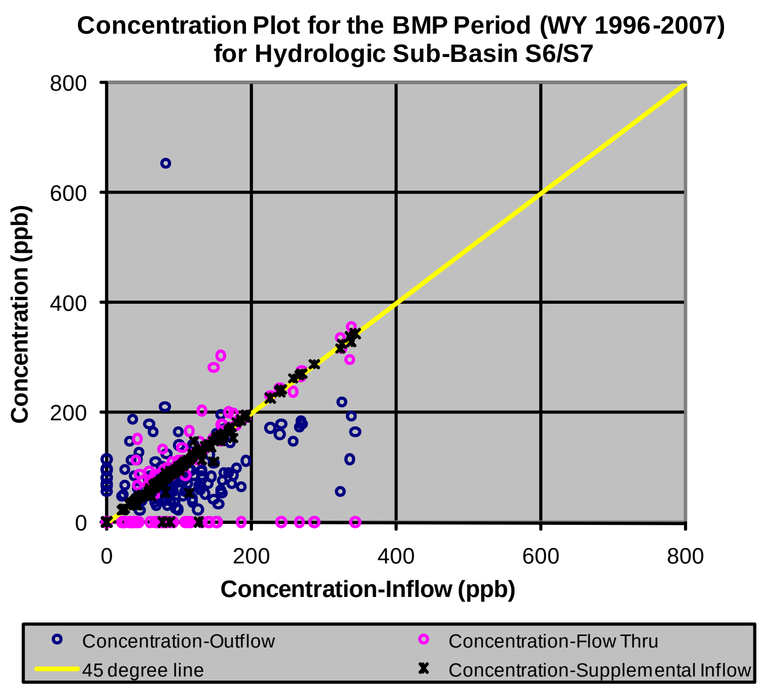


Concentration Plot for the Base Period (WY 1980-1988) for Hydrologic Sub-Basin S6/S7



bpc GROUP	**Double-Mass Plots of Concentrations for Hydrologic Sub-Basin S6/S7**	**FIGURE 4.4a** FILE NUMBER 06008.03

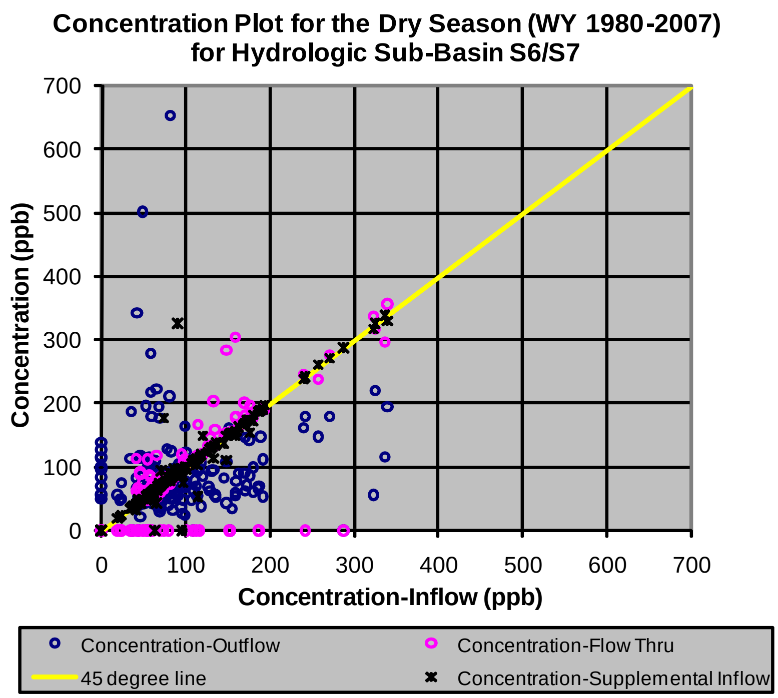


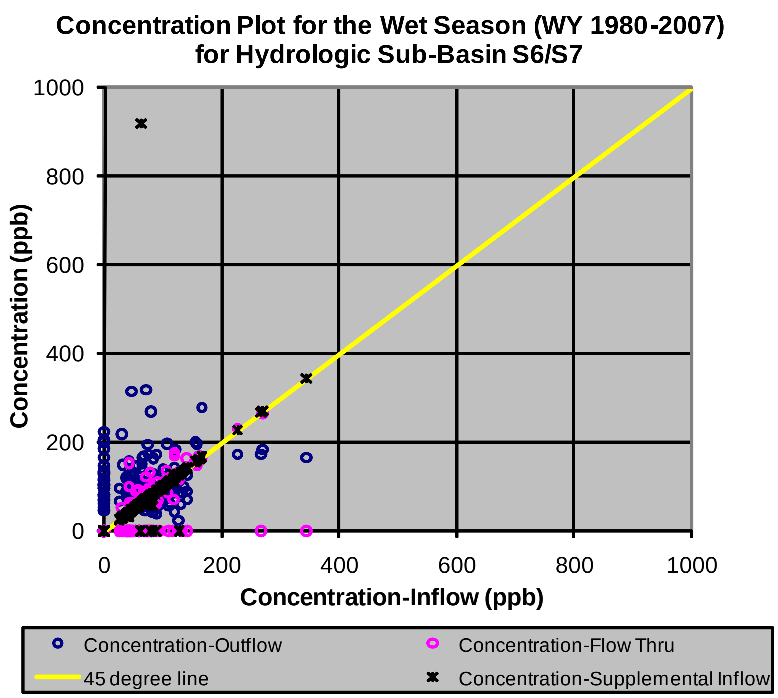


Double-Mass Plots of Concentrations for Hydrologic Sub-Basin S6/S7

FIGURE 4.4b

FILE NUMBER 06008.03





bpc GROUP	**Double-Mass Plots of Dry and Wet Season Concentrations for Hydrologic Sub-Basin S6/S7**	**FIGURE 4.4c** FILE NUMBER 06008.03

4.3 Hydrologic Sub-Basin S8

4.3.1 Trend Analyses

Cumulative Plot: Figure 4.5 presents the cumulative plots of flows (inflow, outflow, flow through, supplemental inflow) and loads (inflow, outflow, flow through, supplemental inflow) for hydrologic sub-basin S8. The plot represents the entire period of records (WY 1980 through WY 2007) consisting of 336 monthly records for each dataset. The slope of a cumulative plot represents the rate of change in values for the parameter being plotted. The following trends are observed from this figure.

- The slopes of the cumulative trend lines for all flow components (Q_{out}, Q_{in}, Q_{thru}, and Q_{si}) have become steeper upwards since WY 1992. In other words, all flow components have increased since WY 1992 although at different rates. The upward slope outflow line is significantly higher than the inflow line. There is a change in this increasing trend in WY 2004.
- The slopes of the cumulative trend lines for all load components (L_{out}, L_{in}, L_{thru}, and L_{si}) have also increased similar to flow components. However, the slopes of cumulative load plots are less steep than the slopes of cumulative flow plots, and the rate of increase in outflow load is slightly higher than the inflow load. This indicates that the load is reduced despite an increase in flow volume during the BMP period. Also, L_{si} has leveled off since WY1995 and even decreased during the BMP period.

Double Mass Plot: Figures 4.6a through 4.6c present the double-mass plots of concentration for this hydrologic sub-basin. The outflow concentration (C_{out}), supplemental inflow concentration (C_{si}), and flow through concentration (C_{thru}) are plotted along ordinate (y-axis) against inflow concentration (C_{in}) values along abscissa (x-axis). Separate plots are presented for each time period including the wet and dry seasons. The following trends are observed from these figures.

- Amongst all concentration values, C_{si} values are closest to C_{in} values which lie almost along the 45^o line. These plots indicate that the supplemental inflow concentrations are highly correlated to or collinear with inflow concentrations.
- The observed trend from these plots demonstrates that C_{out} values are consistently a) higher than C_{in} during base period, b) closer to 45^o line (nearly equal to C_{in} values) during Pre-BMP period, and c) less than C_{in} values during BMP period. This visual observation may qualitatively be interpreted as that the BMP has been effective in the hydrologic sub-basin. On the other hand, this may partially be attributed to the higher outflow (Q_{out}) values since WY 1992 as discussed above.
- Little difference was observed between the wet season and dry season plots, which are similar to the plot for entire period.

Moving Average and Time Series Trends: Time series plots of the monthly values for supplemental inflow, flow through, and outflow parameters (flow, load, and concentration) for the entire period are presented in Appendix C. Mann-Kendall (Kendall Tau Trend) tests were performed on the time series plots. The results are summarized in the following table (Table 4.9). As shown on this Table, no trend was observed in the trend analysis with small values of Sen's slope for all the parameters.

Table 4.9 Mann-Kendall Test Summary for Hydrologic Sub-Basin S8

Parameter	Monthly Records	Kendall-K	Z	Trend	Sen Slope
Flow-Q_{si}	336	13336	6.48	Insignificant	0.040
Flow-Q_{thru}	336	6775	3.33	Insignificant	0.001
Flow-Q_{out}	336	-443	-0.21	Insignificant	-0.002
Load-L_{si}	336	16483	8.01	Insignificant	0.005
Load-L_{thru}	336	9911	4.88	Insignificant	0.000
Load-L_{out}	336	-4662	-2.26	Insignificant	-0.004
Concentration-C_{si}	336	11671	5.67	Insignificant	0.130
Concentration-C_{thru}	336	19481	9.55	Insignificant	0.250
Concentration-C_{out}	336	-11114	-5.40	Insignificant	-0.160

For further evaluation of the data trends, 5-year moving average trend lines were plotted following the procedure outlined in Section 3.2.1. The moving average plots along with descriptive statistics of the datasets for each month are presented in Appendix C. The following table (Table 4.10) summarizes the visual trends observed from the 5-year moving average plots.

Table 4.10 5-yr Moving Average Trends: Monthly Data for Hydrologic Sub-Basin S8

Month	Supplemental Inflow			Outflow		
	Concentration	Flow	Load	Concentration	Flow	Load
May	Upward	Insignificant	Upward	Downward	Downward	Downward
June	Downward	Upward	Insignificant	Downward	Upward	Downward
July	Downward	Upward	Upward	Downward	Upward	Insignificant
August	Insignificant	Upward	Upward	Downward	Upward	Downward
September	Upward	Upward	Upward	Downward	Upward	Insignificant
October	Upward	Upward	Upward	Downward	Insignificant	Downward
November	Upward	Upward	Upward	Downward	Insignificant	Downward
December	Upward	Upward	Upward	Insignificant	Insignificant	Insignificant
January	Upward	Upward	Upward	Insignificant	Insignificant	Insignificant
February	Upward	Upward	Upward	Insignificant	Downward	Downward
March	Upward	Upward	Upward	Downward	Downward	Downward
April	Upward	Upward	Upward	Downward	Downward	Downward

As can be seen from the above Table, the monthly visual trends of the parameters vary from one another with the following general trends.

- Upward trends of concentration and load for supplemental inflow.
- Upward trend of flow for supplemental inflow.
- Downward to insignificant trends of concentration and load for outflow.

- Downward to insignificant trends of flow for outflow for most of the months except for June to September during which the general trend of flow is upward.

4.3.2 Correlation and Regression Analyses

Correlation Analyses: As indicated in Section 3.2 (Statistical Analysis Methodology), the correlation analyses were conducted for inflows (inflow, supplemental inflow, and flow through), concentrations (inflow, supplemental inflow, and flow through), and loads (inflow, supplemental inflow, and flow through). The inflow values for flow and load were highly correlated with supplemental inflow and flow through values. Similarly, the inflow concentration was highly correlated with supplemental concentration values. The scattered plot matrix resulting from the correlation analyses are included in Appendix C.

Regression Analyses: Based on the correlation analyses, the inflow parameters (Q_{in}, L_{in}, C_{in}) were removed from the regression analyses since they were collinear with supplemental inflow and flow through values. The remaining parameters were used to develop the regression models for dry seasons and wet seasons separately. Following is the list of regression model functional relationships analyzed for each season.

$Q_{out} = f\ (Q_{thru}, Q_{si}, P_m)$
$C_{out} = f\ (C_{thru}, C_{si}, C_p)$
$L_{out} = f\ (L_{thru}, L_{si}, L_p)$
$L_{out} = f\ (Q_{thru}, Q_{si}, P_m, C_{thru}, C_{si}, C_p)$

Dry Season: A total of 16 regression models (4 models for each time period) were analyzed and the results are summarized in Table 4.9. The residual plots for all the regression models are appended to Appendix C.

Based on the R^2 values, the most preferred regression models for the dry season dataset for this hydrologic sub-basin are the models for the entire period, which are summarized below.

Flow: $Q_{out} = 0.97\ Q_{thru} + 0.08\ Q_{si} + 8.40\ P_m – 0.52$ $R^2 = 0.69$
Load: $L_{out} = 0.12\ Q_{thru} + 0.01\ Q_{si} + 1.25\ P_m - 0.02\ C_{thru} - 0.03\ C_{si} – 1.62$ $R^2 = 0.61$

This indicates that about 69% of the outflow can be explainable with the supplemental inflow, flow through, and rainfall contributions. Similarly, about 61% of the outflow load can be explainable with the supplemental inflow, flow through, rainfall, flow through concentration, and supplemental inflow concentration contributions. Based on P-values, flow through and rainfall parameters are significant for the flow regression model for the dry season dataset, while only supplemental inflow is insignificant for the load regression model. As can be seen from Table 4.9, none of the concentration regression models fitted well, and had low R^2 values except for the BMP period regression model. The regression models presented here may be interpreted as that for better account of the BMP performance, it is necessary to account for the farm practices (water management and landuse practices) in the model.

Table 4.9 Regression Analyses Results for Dry Season (Hydrologic Sub-Basin S8)

Period of Analysis	Regression Model	Statistics
Base Period	$Q_{out} = 1.86\ Q_{thru} - 0.36\ Q_{si} + 7.20\ P_m + 4.91$	$R^2 = 0.76$, $AR^2 = 0.75$, SE = 11.05
	$C_{out} = 0.35\ C_{thru} + 0.76\ C_{si} + 42.40$	$R^2 = 0.16$, $AR^2 = 0.13$, SE = 61.92
	$L_{out} = 1.29\ L_{thru} + 2.42\ L_{si} + 1.50$	$R^2 = 0.31$, $AR^2 = 0.28$, SE = 4.06
	$L_{out} = 0.25\ Q_{thru} - 0.03\ Q_{si} + 0.86\ P_m - 0.017\ C_{thru} + 0.07\ C_{si} - 2.70$	$R^2 = 0.66$, $AR^2 = 0.62$, SE = 2.95
Pre-BMP Period	$Q_{out} = 1.00\ Q_{thru} + 0.030\ Q_{si} + 6.31\ P_m + 4.79$	$R^2 = 0.72$, $AR^2 = 0.70$, SE = 15.51
	$C_{out} = -0.06\ C_{thru} + 0.94\ C_{si} + 19.24$	$R^2 = 0.19$, $AR^2 = 0.14$, SE = 47.05
	$L_{out} = 1.09\ L_{thru} + 1.22\ L_{si} + 1.19$	$R^2 = 0.32$, $AR^2 = 0.28$, SE = 3.69
	$L_{out} = 0.1\ Q_{thru} - 0.04\ Q_{si} + 1.24\ P_m - 0.02\ C_{thru} + 0.05\ C_{si} - 1.96$	$R^2 = 0.68$, $AR^2 = 0.63$, SE = 2.65
BMP Period	$Q_{out} = 0.21\ Q_{thru} + 0.38\ Q_{si} + 8.27\ P_m - 4.43$	$R^2 = 0.67$, $AR^2 = 0.66$, SE = 11.31
	$C_{out} = 0.01\ C_{thru} + 0.52\ C_{si} + 17.83$	$R^2 = 0.53$, $AR^2 = 0.51$, SE = 28.39
	$L_{out} = -0.52\ L_{thru} + 1.24\ L_{si} - 0.16$	$R^2 = 0.27$, $AR^2 = 0.25$, SE = 2.45
	$L_{out} = 0.03\ Q_{thru} + 0.04\ Q_{si} + 1.13\ P_m - 0.005\ C_{thru} + 0.02\ C_{si} - 2.67$	$R^2 = 0.63$, $AR^2 = 0.60$, SE =1.79
Entire Period	$Q_{out} = 0.97\ Q_{thru} + 0.08\ Q_{si} + 8.40\ P_m - 0.52$	$R^2 = 0.69$, $AR^2 = 0.68$, SE = 13.31
	$C_{out} = -0.19\ C_{thru} + 0.55\ C_{si} + 53.74$	$R^2 = 0.15$, $AR^2 = 0.14$, SE =50.80
	$L_{out} = 0.51\ L_{thru} - 0.87\ L_{si} + 1.42$	$R^2 = 0.14$, $AR^2 = 0.13$, SE = 3.83
	$L_{out} = 0.12\ Q_{thru} + 0.01\ Q_{si} + 1.25\ P_m - 0.02\ C_{thru} - 0.03\ C_{si} - 1.62$	$R^2 = 0.61$, $AR^2 = 0.60$, SE = 2.58

Wet Season: A total of 16 regression models (4 models for each time period) were analyzed and the results are summarized in Table 4.10. The residual plots for all the regression models are appended to Appendix C.

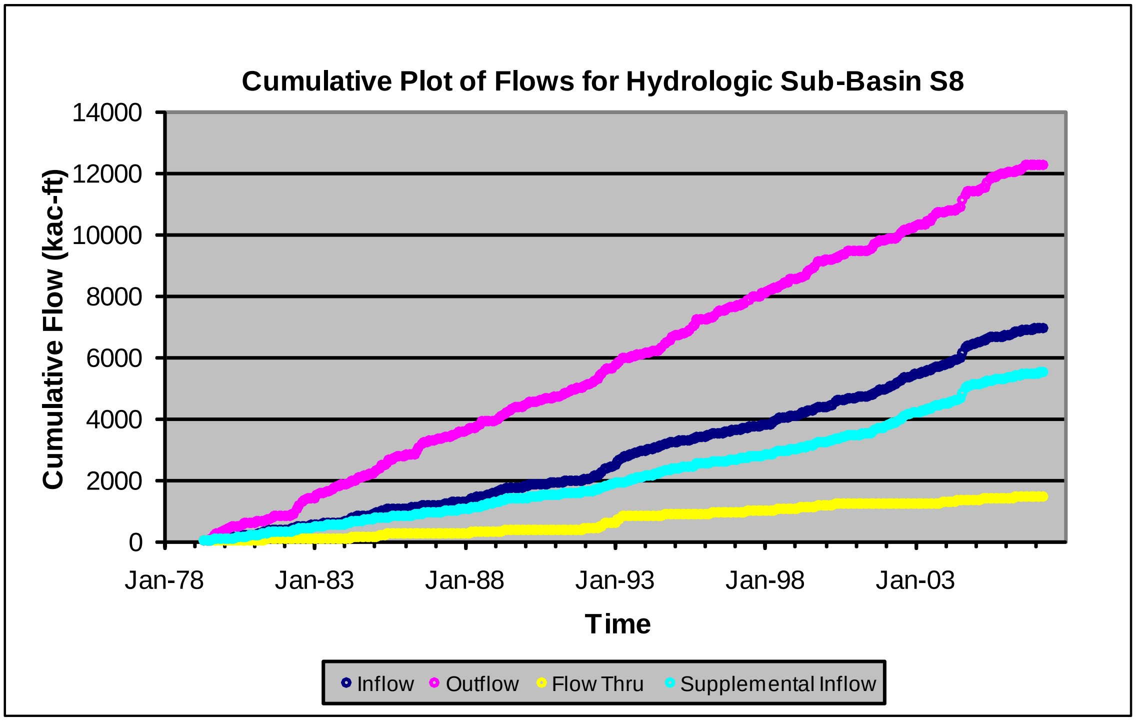
Based on the R^2 values, the most preferred regression models for the dry season dataset for this hydrologic sub-basin are the models for the entire period, which are summarized below.

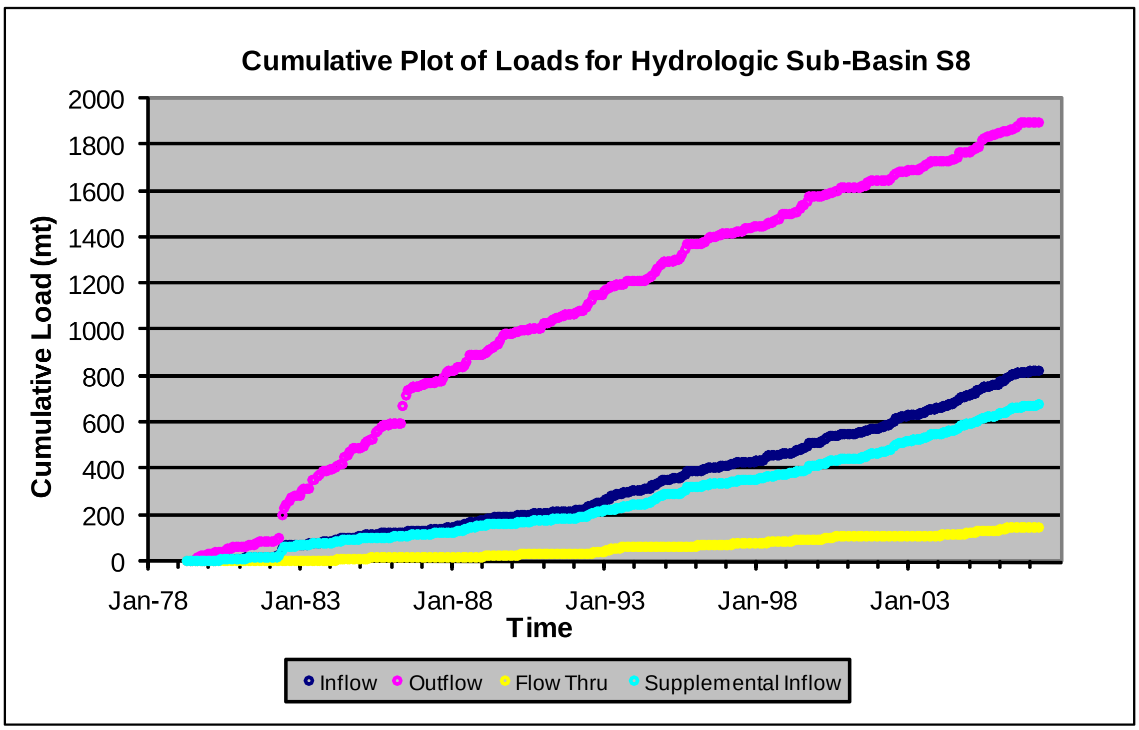
Flow: $Q_{out} = 0.34\ Q_{thru} + 0.76\ Q_{si} + 7.62\ P_m - 9.91$ $R^2 = 0.57$
Load: $L_{out} = 0.05\ Q_{thru} + 0.02\ Qsi + 1.28\ P_m - 0.04\ C_{thru} + 0.07\ C_{si} - 4.76$ $R^2 = 0.45$

This indicates that only about 57% of the outflow can be explainable with the supplemental inflow, flow through, and rainfall contributions. Similarly, only about 45% of the outflow load can be explainable with the supplemental inflow, flow through, rainfall, flow through concentration, and supplemental inflow concentration contributions. The flow regression model for the BMP period and load regression model for base period had better fits with R^2 values of 0.82 and 0.65, respectively. Based on P-values, supplemental inflow and rainfall parameters are significant for the flow regression model, and flow through is insignificant. For all other hydrologic sub-basins, flow through was significant in the flow regression model. The rainfall, flow through concentration, and supplemental inflow concentration were significant for the load regression model for the wet season dataset, while the supplemental inflow and flow through parameters were insignificant for this model. As can be seen from Table 4.10, none of the concentration regression models fitted well, and had low R^2 values. For this hydrologic sub-basin, the dry season regression models have better fits than those of the wet season regression models. The regression models presented here may be interpreted as that for better account of the BMP performance, it is necessary to account for the farm practices (water management and landuse practices) in the model. Rainfall is a major factor for the regression models.

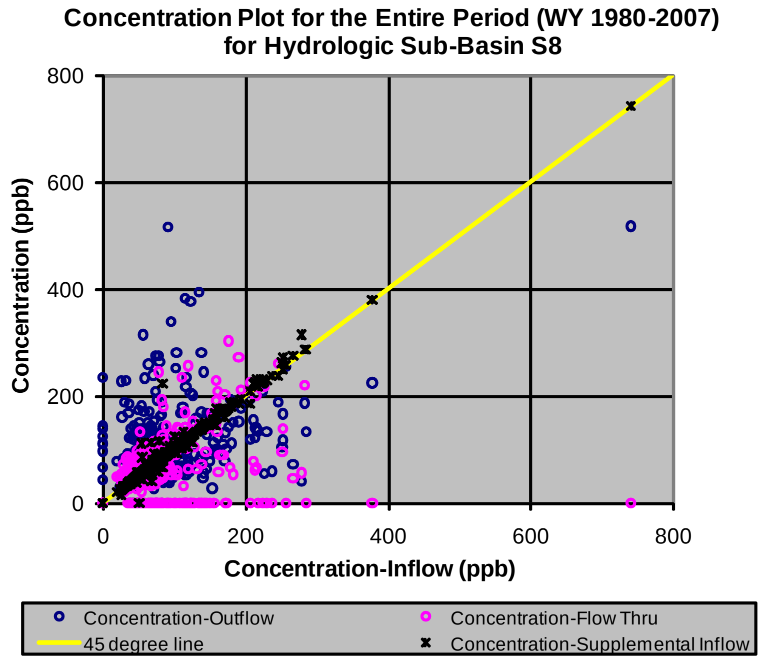
Table 4.10 Regression Analyses Results for Wet Season (Hydrologic Sub-Basin S8)

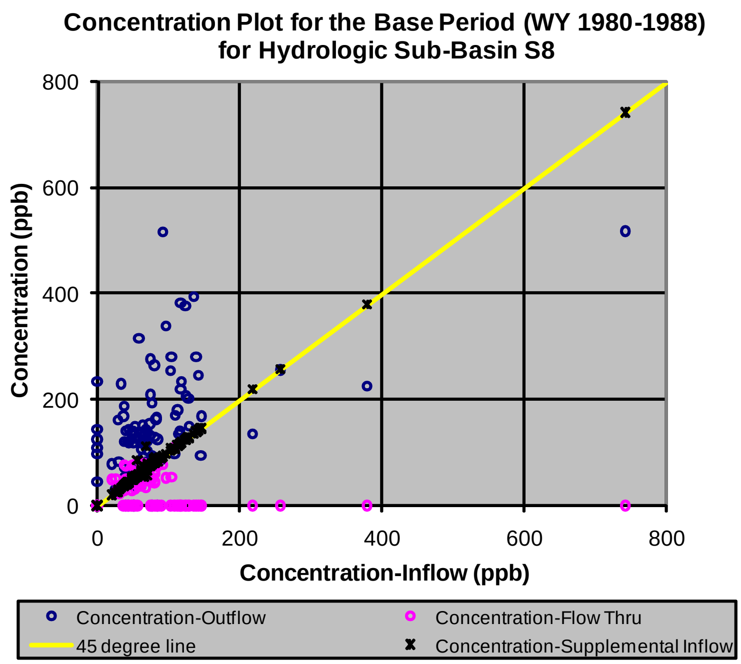
Period of Analysis	Regression Model	Statistics
Base Period	Q_{out} = -0.99 Q_{thru} – 0.13 Q_{si} + 6.99 P_m – 11.54	R^2 = 0.34, AR^2 = 0.30, SE = 30.09
	C_{out} = 0.10 C_{thru} - 0.57 C_{si} + 114.34	R^2 = 0.30, AR^2 = 0.26, SE = 97.90
	L_{out} = -6.00 L_{thru} + 3.02 L_{si} + 7.16	R^2 = 0.47, AR^2 = 0.45, SE = 13.04
	L_{out} = - 0.30 Q_{thru} – 0.11 Q_{si} + 1.89 P_m + 0.026 C_{thru} + 0.11 C_{si} – 6.89	R^2 = 0.65, AR^2 = 0.62, SE = 10.89
Pre-BMP Period	Q_{out} = 1.28 Q_{thru} + 0.22 Q_{si} + 5.15 P_m + 0.11	R^2 = 0.65, AR^2 =0.62, SE = 19.02
	C_{out} = -0.04 C_{thru} + 0.04 C_{si} + 124.25	R^2 = 0.004, AR^2 =0, SE = 61.16
	L_{out} = 1.95 L_{thru} + 1.25 L_{si} + 3.82	R^2 = 0.23, AR^2 =0.19, SE = 6.33
	L_{out} = 0.17 Q_{thru} + 0.10 Q_{si} + 0.94 P_m – 0.07 C_{thru} + 0.002 C_{si} + 1.53	R^2 = 0.50, AR^2 =0.41, SE = 5.38
BMP Period	Q_{out} = -0.31 Q_{thru} + 0.88 Q_{si} + 8.63 P_m – 17.76	R^2 = 0.82, AR^2 =0.81, SE = 19.95
	C_{out} = 0.08 C_{thru} + 0.20 C_{si} + 57.85	R^2 = 0.20 AR^2 = 0.18, SE = 30.15
	L_{out} = -1.19 L_{thru} + 1.35 L_{si} + 2.40	R^2 = 0.49, AR^2 = 0.47, SE = 4.35
	L_{out} = -0.02 Q_{thru} + 0.07 Q_{si} + 1.00 P_m - 0.005 C_{thru} + 0.035 C_{si} – 5.95	R^2 = 0.64, AR^2 = 0.61, SE = 3.74
Entire Period	Q_{out} = 0.34 Q_{thru} + 0.76 Q_{si} + 7.62 P_m – 9.91	R^2 = 0.57, AR^2 = 0.57, SE = 26.35
	C_{out} = -0.27 C_{thru} + 0.35 C_{si} + 101.61	R^2 = 0.16, AR^2 = 0.15, SE =75.53
	L_{out} = -2.12 L_{thru} + 1.93 L_{si} + 3.88	R^2 = 0.31, AR^2 = 0.30, SE = 9.55
	L_{out} = 0.05 Q_{thru} + 0.02 Q_{si} + 1.28 P_m - 0.04 C_{thru} + 0.07 C_{si} – 4.76	R^2 = 0.45, AR^2 = 0.43, SE = 8.62





bpc GROUP	**Cumulative Plots of Flows and Loads for Hydrologic Sub-Basin S8**	**FIGURE 4.5** FILE NUMBER 06008.03





bpc GROUP

Double-Mass Plots of Concentrations for Hydrologic Sub-Basin S8

FIGURE 4.6a

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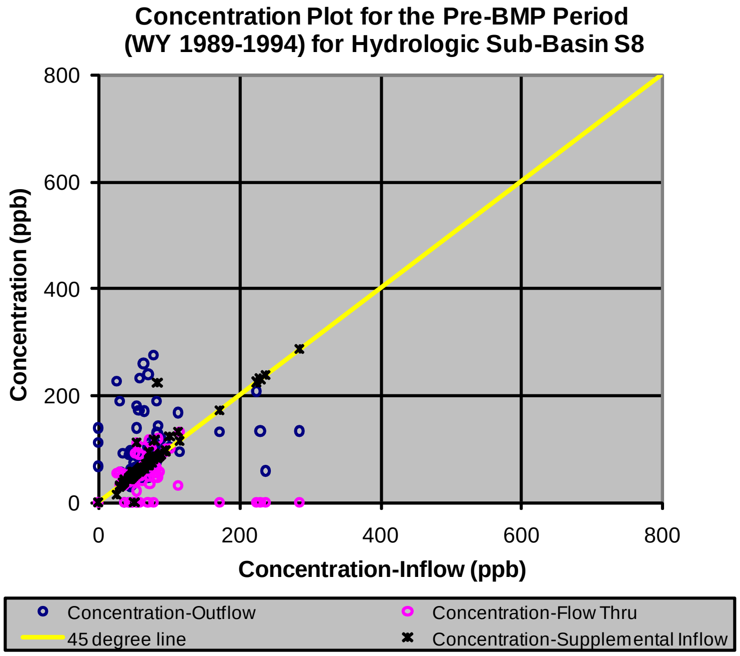

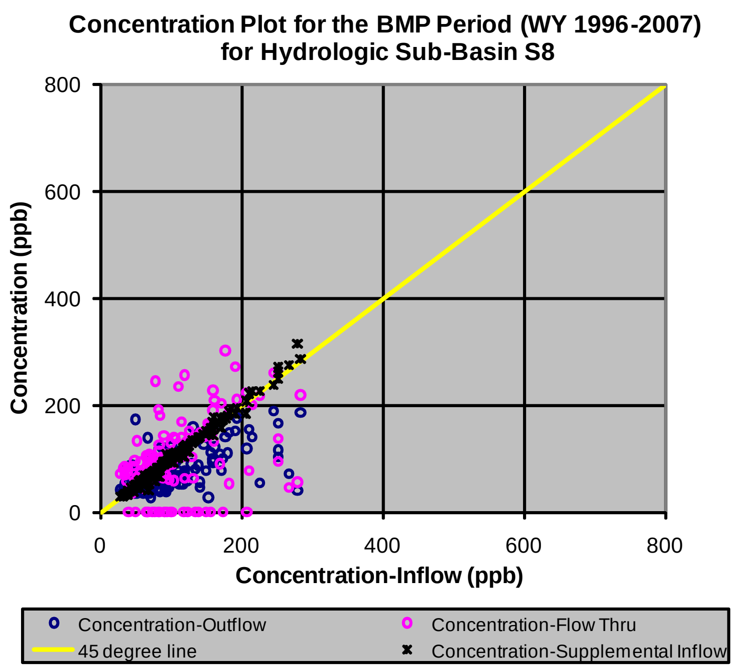

bpc GROUP

Double-Mass Plots of Concentrations for Hydrologic Sub-Basin S8

FIGURE 4.6b

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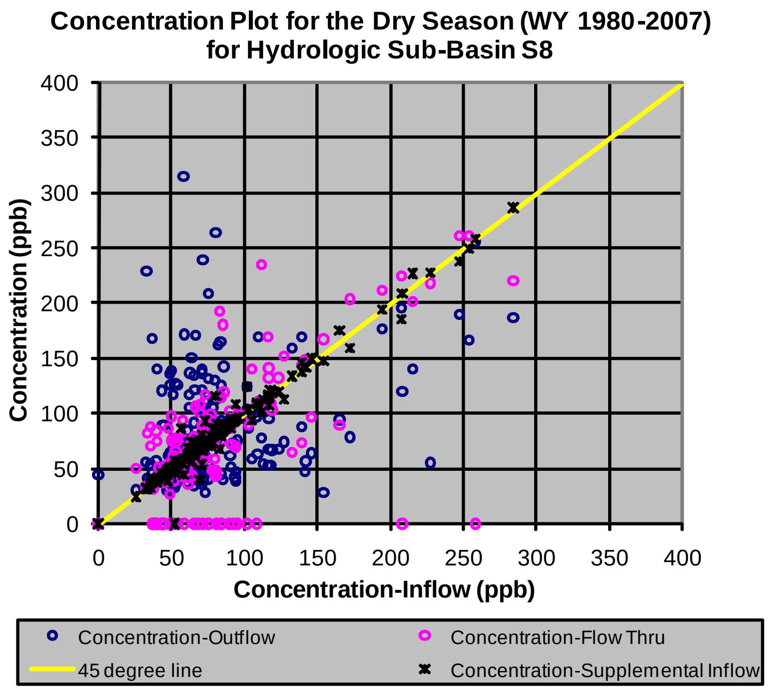
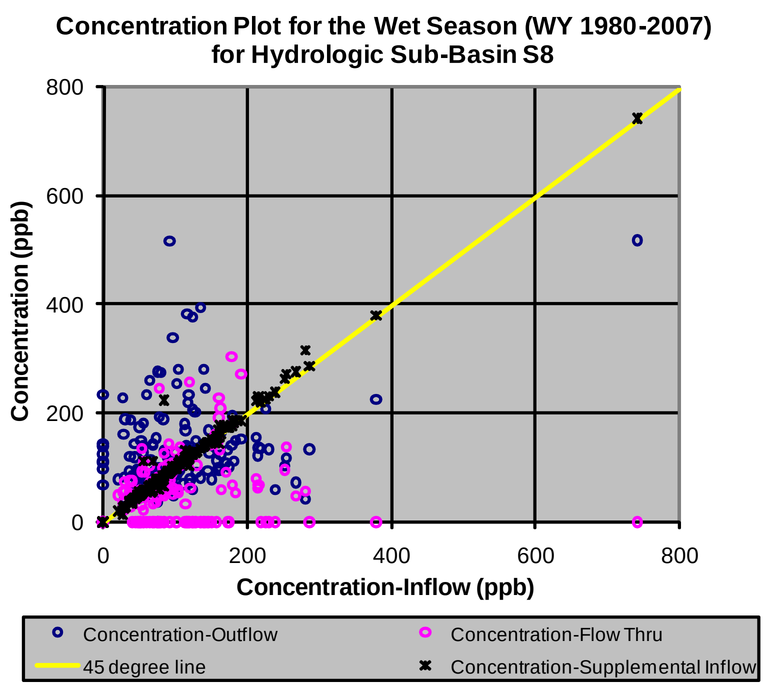




bpc GROUP

Double-Mass Plots of Dry and Wet Season Concentrations for Hydrologic Sub-Basin S8

FIGURE 4.6c

FILE NUMBER 06008.03

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

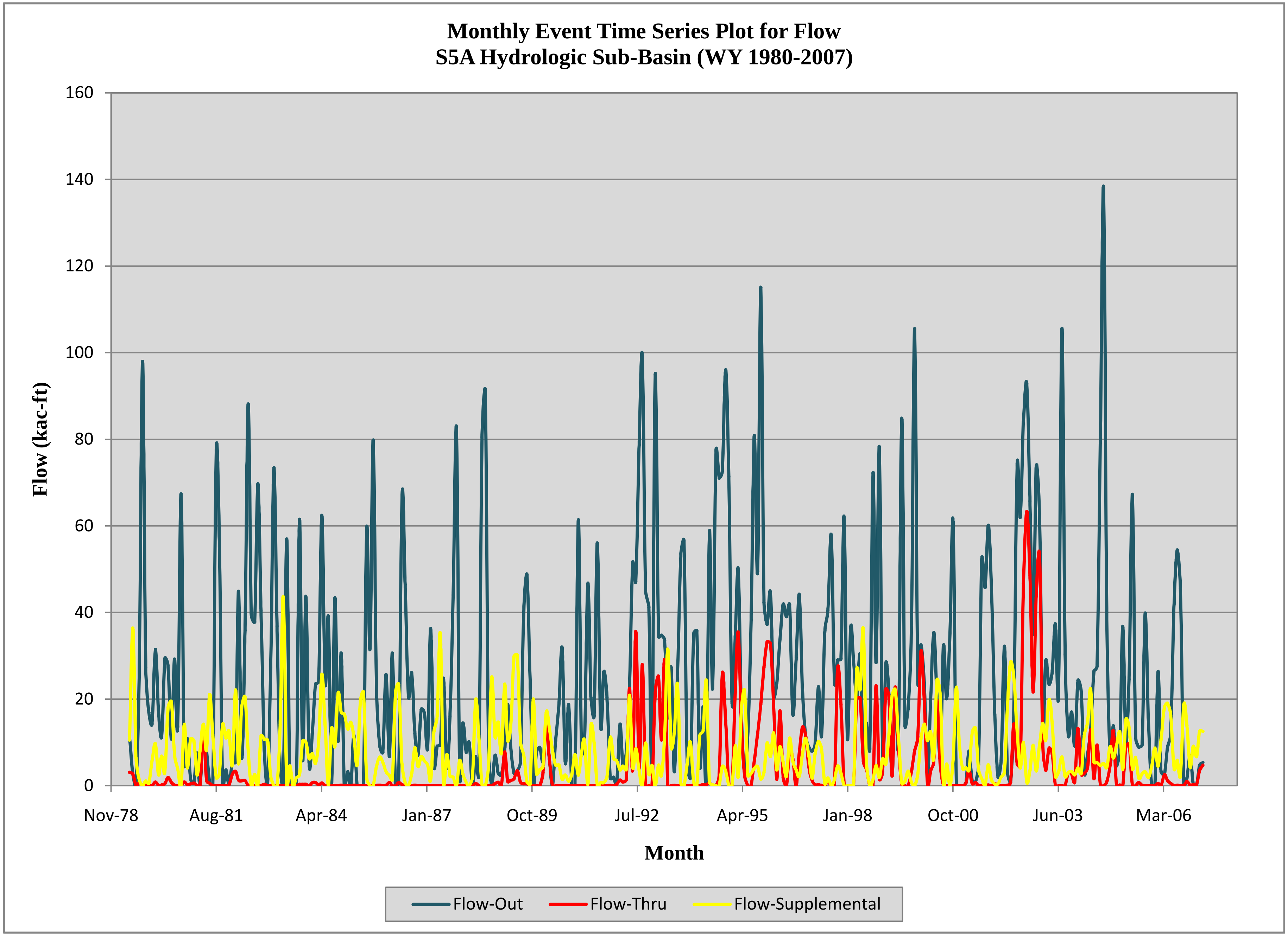
- The regression models for the hydrologic sub-basin S5A have better fit with higher R^2 values than those for the hydrologic sub-basins S6/S7 and S8.
- In general, the dry season regression models have better fits than those of the wet season regression models for all three hydrologic sub-basins.
- Based on the regression models presented in this report, Lake Okeechobee supplemental inflows, which represent the portion of Lake Okeechobee inflows that can affect BMP farm performance and runoff, are not statistically significant in predicting outflow loads. Rainfall is the major factor in the regression models. Therefore, it is necessary to account to account for the farm practices (water management and landuse practices) in the model for better account of the BMP performance.
- None of the concentration regression models fitted well, and had low R^2 values.
- Except for minor variations, all three hydrologic sub-basins demonstrate similar hydrologic behavior supported by the trend analyses plots of the flow, load, and concentration datasets.
- As indicated by the change in slope of the cumulative plots, outflows have upward trend while the inflow and outflow load have downward trends since 1992. This was observed for all three hydrologic sub-basins.
- As discussed in the trend analyses section, loads in all hydrologic sub-basins have reduced despite an increase in flow volumes during the BMP period, which may be attributed to the BMP reduction performance.
- The observed trend from these plots demonstrates that C_{out} values are consistently a) higher than C_{in} during base period, b) closer to 45^o line (nearly equal to C_{in} values) during Pre-BMP period, and c) less than C_{in} values during BMP period. This visual observation may qualitatively be interpreted as that the BMP has been effective in the hydrologic sub-basins, and therefore in the entire basin.
- Mann-Kendall tests performed on the time series plots for all three hydrologic sub-basins indicated no distinct trends with small values of Sen's slope for all the parameters.
- 5-year moving average plots of the supplemental inflow and outflow parameters for flow, load and concentration indicated the following general trends.
    - Upward trends of concentration and load for supplemental inflow for all sub-basins;
    - Upward trend of flow for supplemental inflow for sub-basins S6/S7 and S8, while inconsistent trend for sub-basin S5A;
    - Downward to insignificant trends of concentration and load for outflow for all sub-basins; and
    - Downward to insignificant trends of flow for outflow for sub-basins S6/S7 and S8, while upward trend for sub-basin S5A.

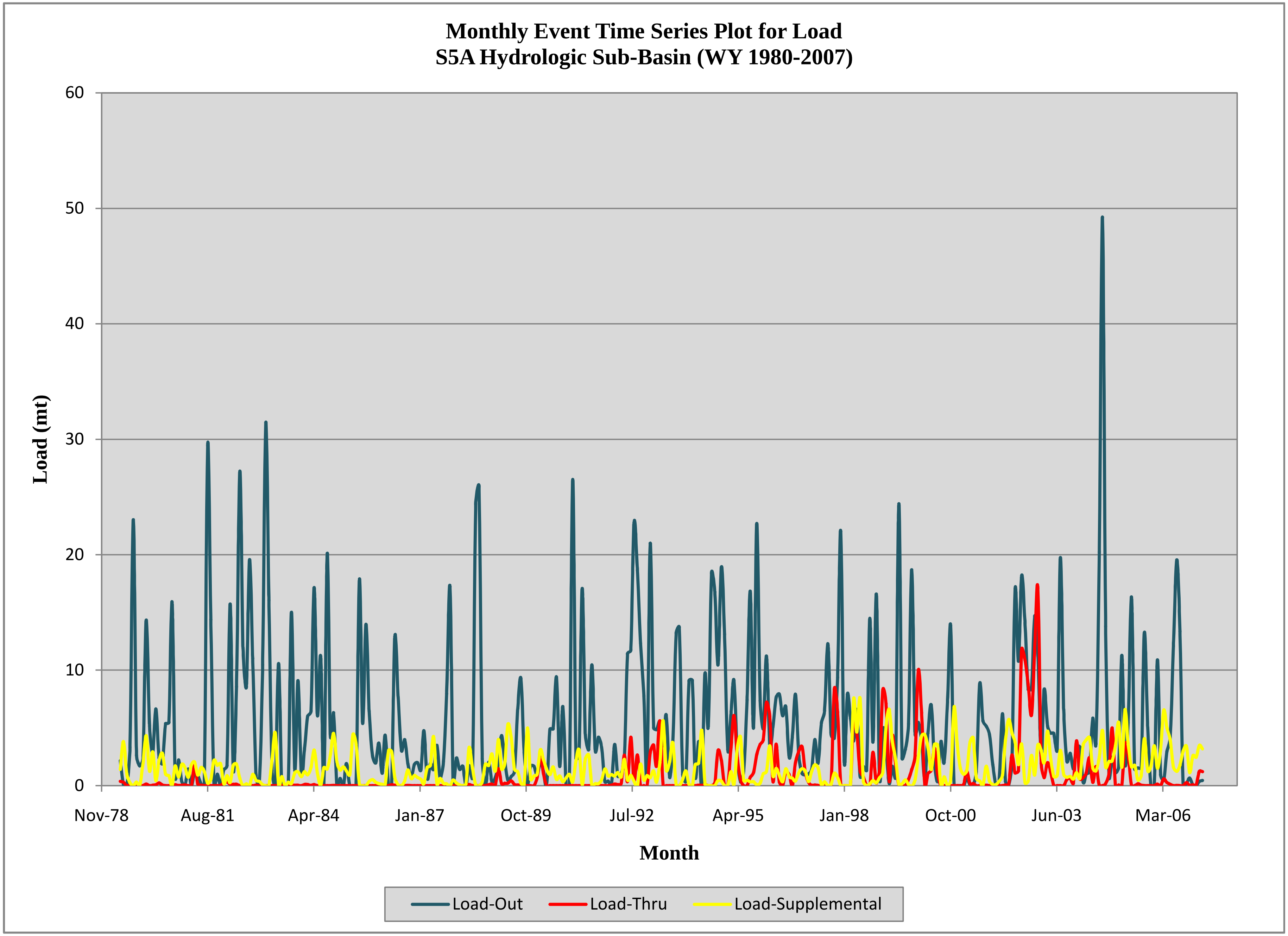
5.2 Recommendations

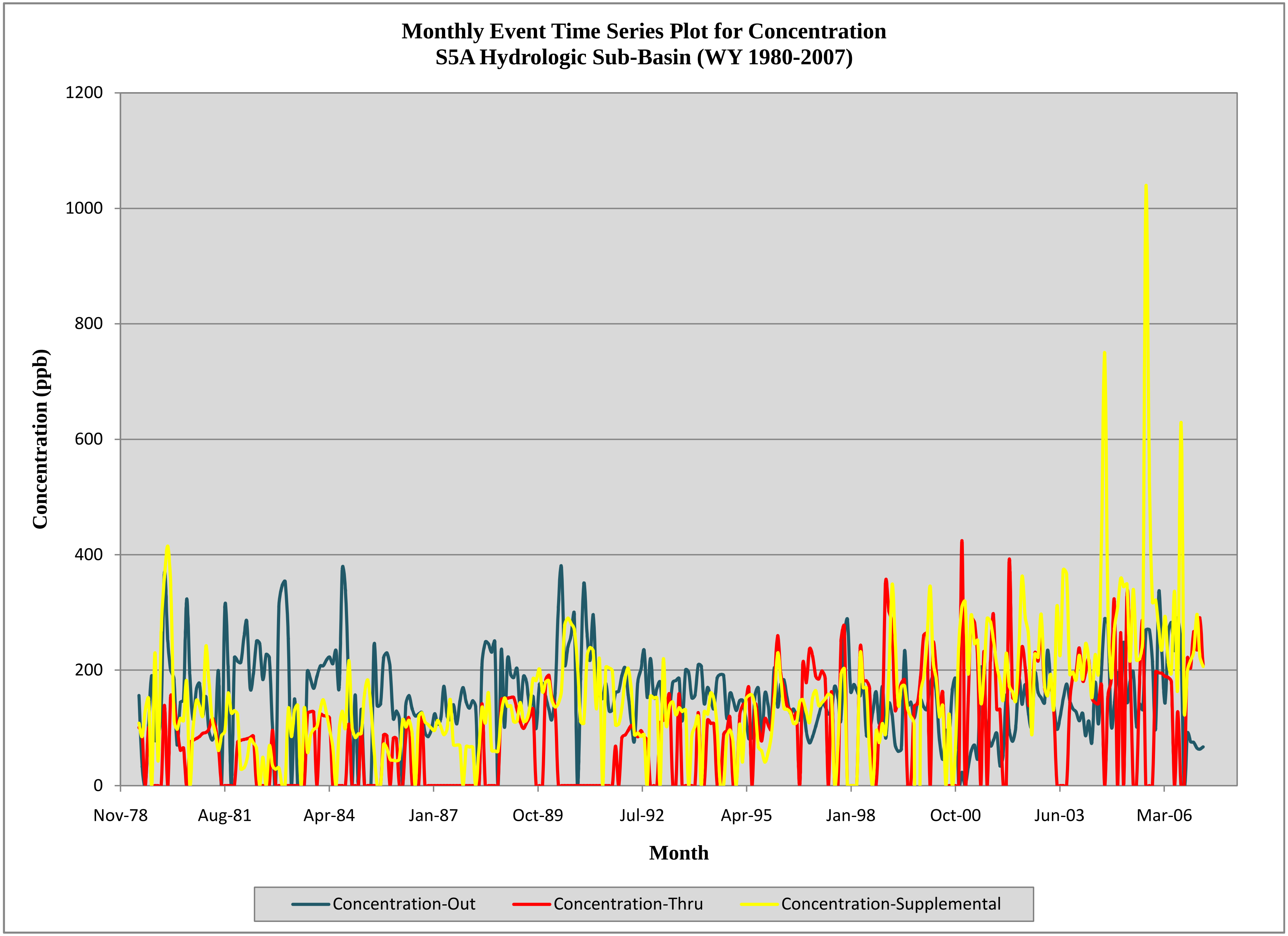
- BMP impact may be more quantitatively evaluated by incorporating the farm practices, including water management and landuse practices, into the evaluation process. This can be achieved by hydrologic and hydraulic computations and establishing rainfall-runoff relationships at a spatial scale smaller than the sub-basin level. This may also include a mass balance or hydrologic balance for the sub-basins.
- The current analyses used the datasets only at the inlets and outlets of the sub-basins. In order to define better interrelationships between the parameters, it is necessary to monitor the parameters at more spatially distributed locations within the sub-basins.
- In order to obtain better answer to the District's interest, it may be necessary to implement the other recommendations made during Phase I of the current project.
- Poor correlation of concentration values may be overcome by implementing a physical simulation model, and a phased approach may be adopted for model setup.

Appendices

Appendix A
Monthly Dataset and Plots for Hydrologic Sub-Basin S5A

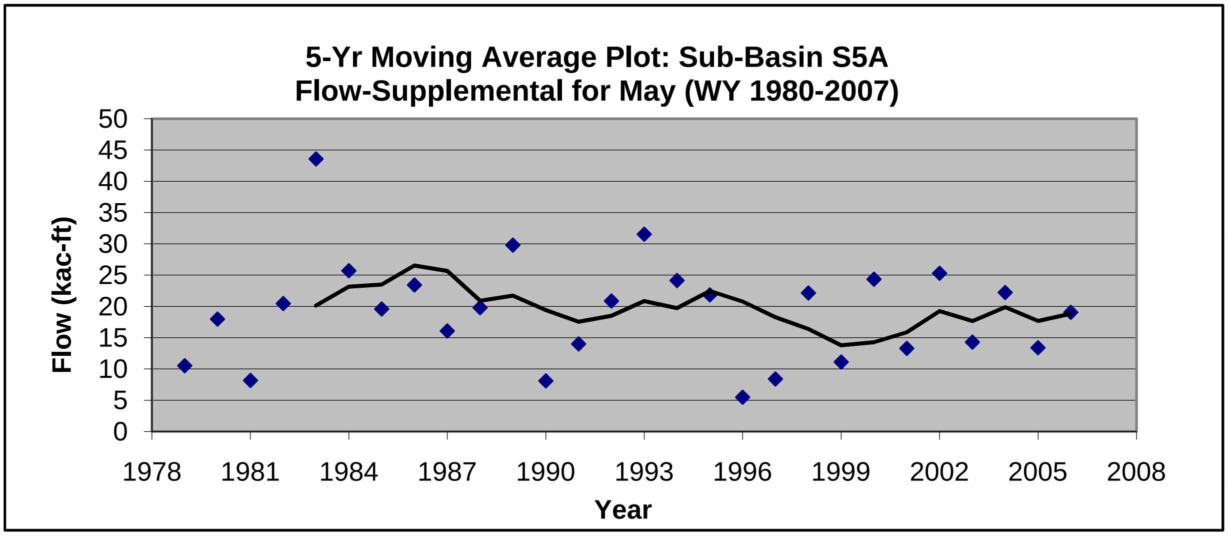

Monthly Event Time Series Plot for Flow
S5A Hydrologic Sub-Basin (WY 1980-2007)
Flow (kac-ft)
160
140
120
100
80
60
40
20
0
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Flow-Out
Flow-Thru
Flow-Supplemental

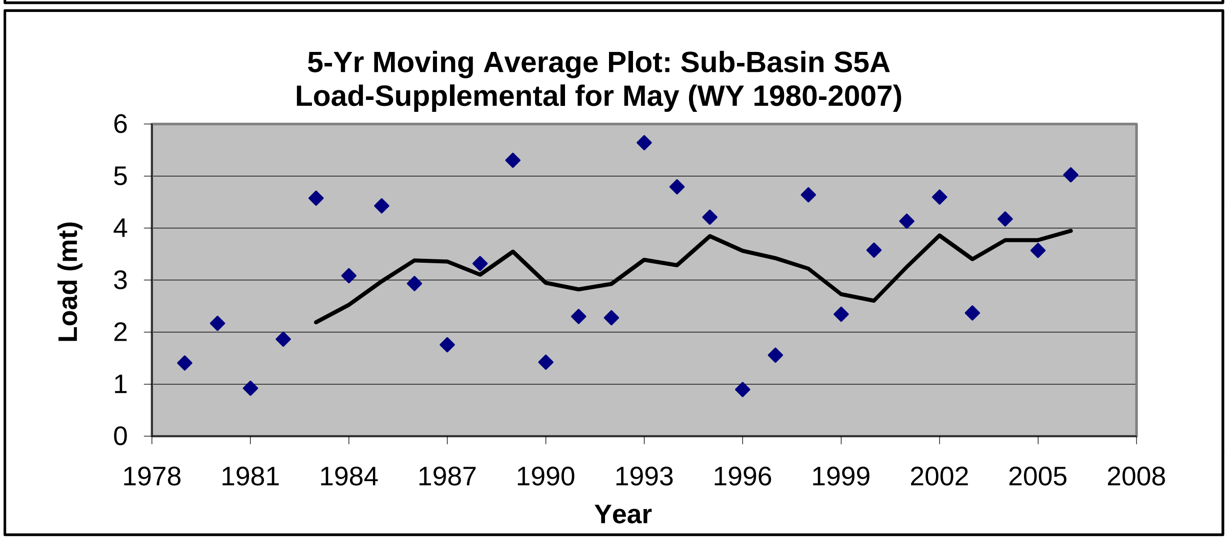

Monthly Event Time Series Plot for Load
S5A Hydrologic Sub-Basin (WY 1980-2007)
Load (mt)
0
10
20
30
40
50
60
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Load-Out
Load-Thru
Load-Supplemental

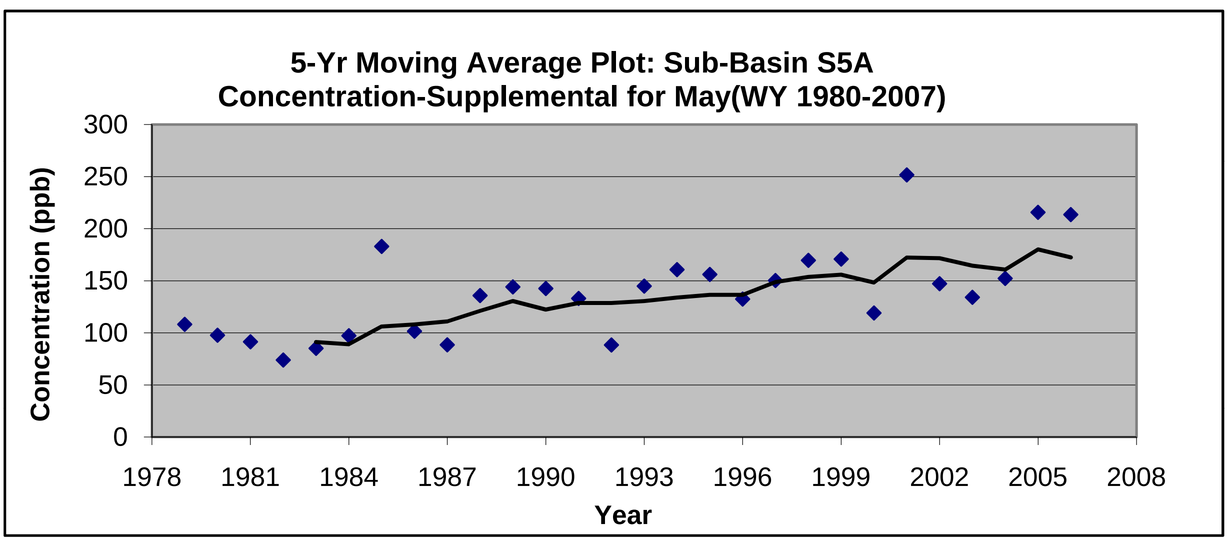

Monthly Event Time Series Plot for Concentration
S5A Hydrologic Sub-Basin (WY 1980-2007)
Concentration (ppb)
1200
1000
800
600
400
200
0
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Concentration-Out
Concentration-Thru
Concentration-Supplemental

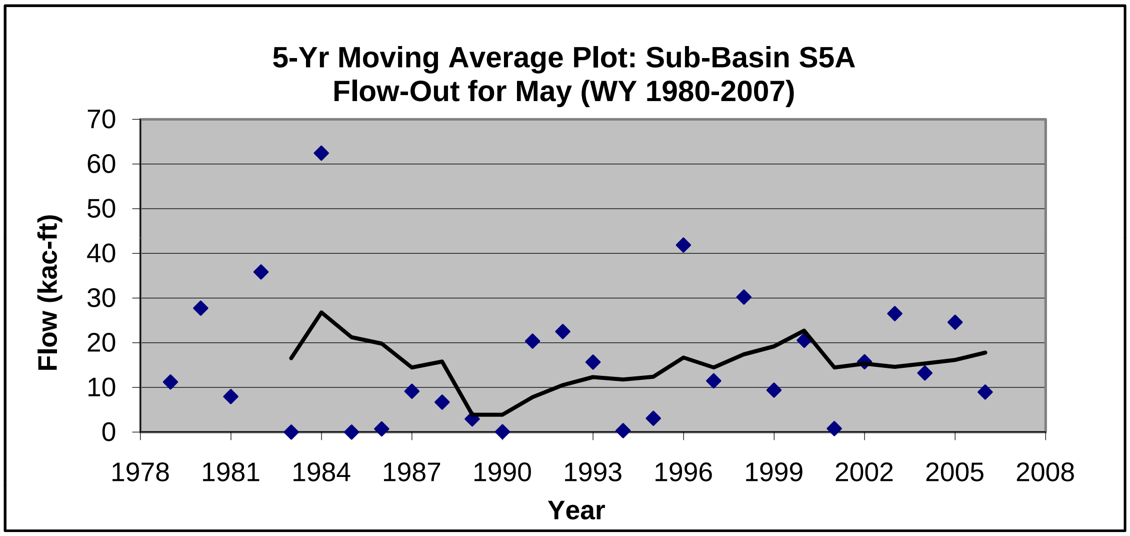
Hydrologic Sub-Basin S5A (May)

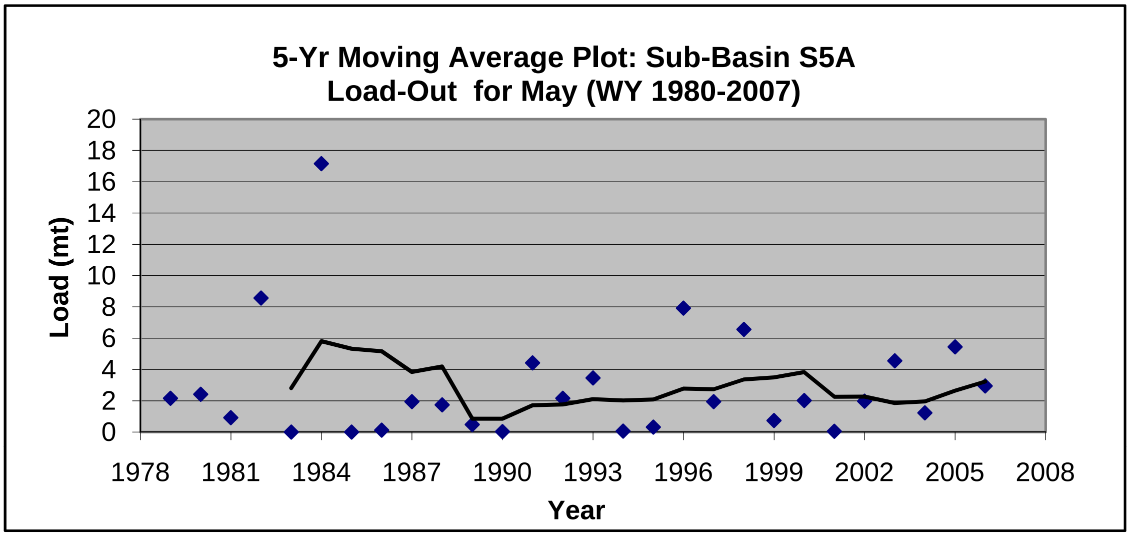
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	19.10	15.35	3.19	2.90	138.80	145.49
Standard Error	1.57	2.81	0.27	0.69	8.13	12.63
Median	19.70	11.34	3.20	1.96	139.05	145.49
Standard Deviation	8.29	14.87	1.42	3.68	43.04	64.39
Sample Variance	68.80	221.04	2.02	13.52	1852.80	4146.14
Kurtosis	1.43	2.36	-1.28	7.70	0.50	0.31
Skewness	0.74	1.38	0.00	2.47	0.72	0.61
Range	38.08	62.42	4.74	17.16	177.65	261.30
Minimum	5.49	0.00	0.90	0.00	73.87	47.80
Maximum	43.58	62.42	5.64	17.16	251.53	309.10
Sum	534.91	429.70	89.28	81.27	3886.51	3782.73
Count	28	28	28	28	28	26
Quartile-1	13.39	3.04	2.09	0.43	100.49	79.03
Quartile-2	19.70	11.34	3.20	1.96	139.05	140.05
Quartile-3	23.61	23.01	4.46	3.70	157.17	176.72
Confidence intervals	3.07	5.51	0.53	1.36	15.94	26.01

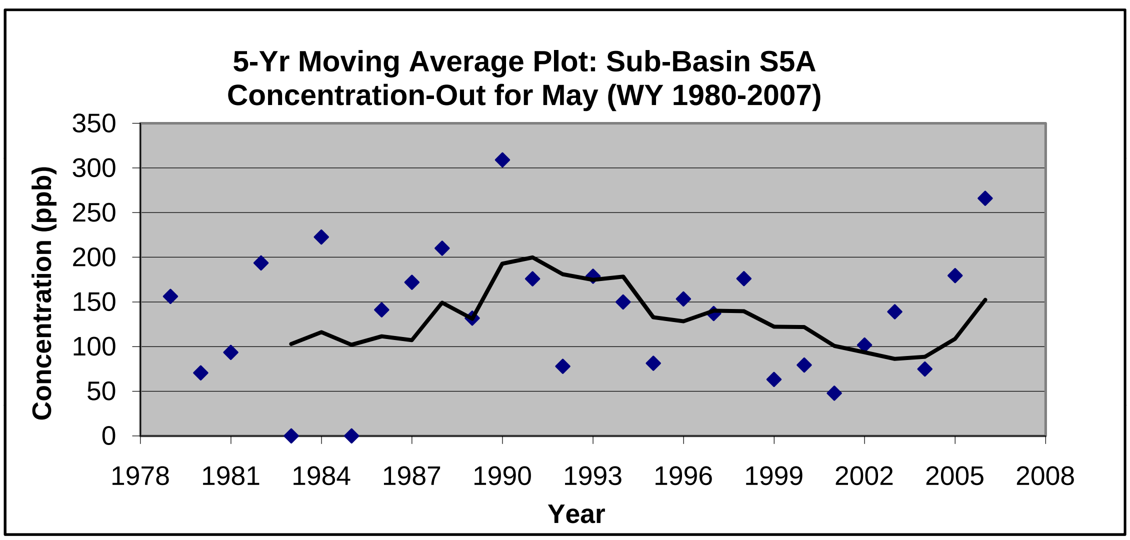

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for May (WY 1980-2007)
Flow (kac-ft)
0
5
10
15
20
25
30
35
40
45
50
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for May (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for May(WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

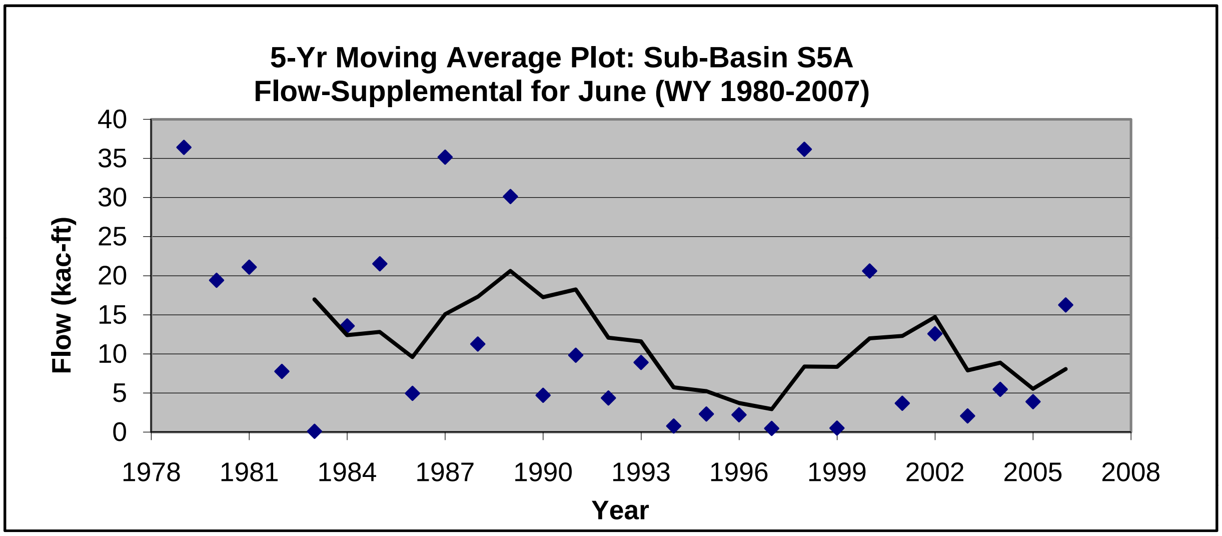

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for May (WY 1980-2007)
Flow (kac-ft)
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

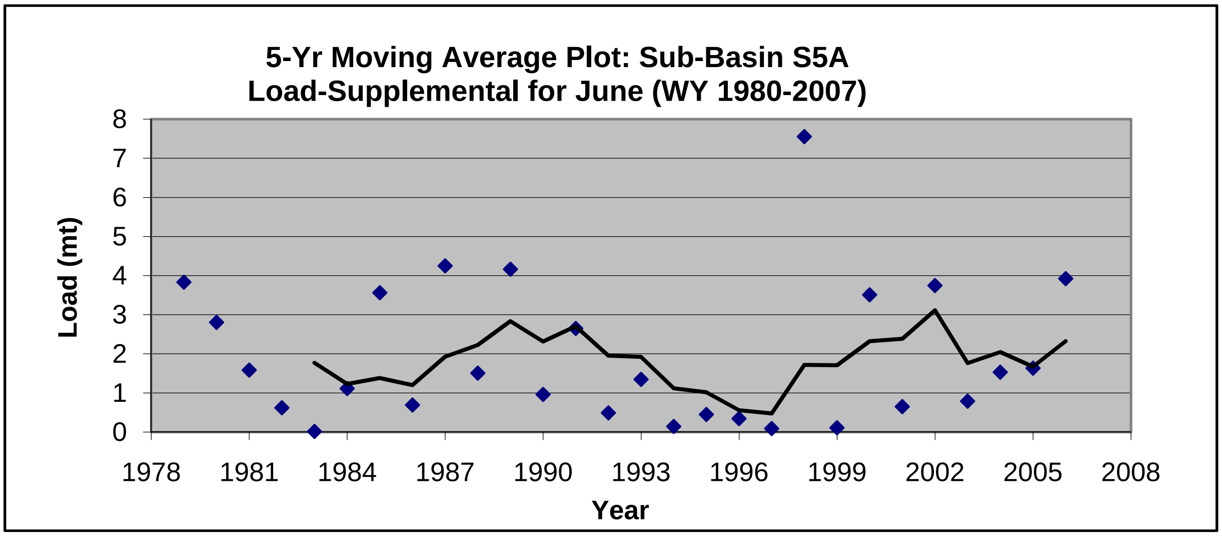

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for May (WY 1980-2007)
Load (mt)
20
18
16
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

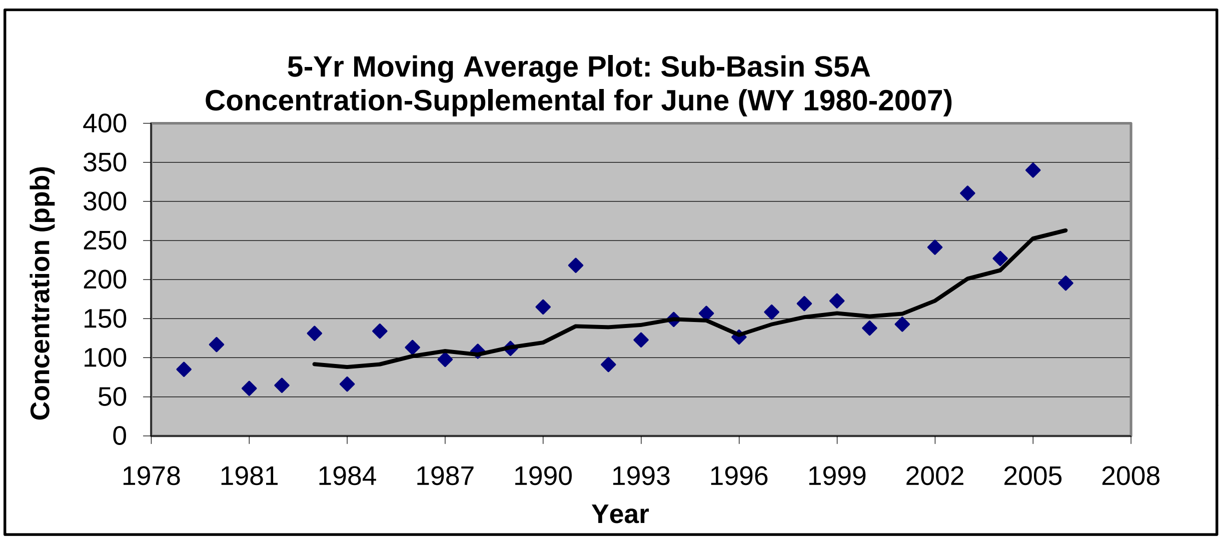

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for May (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

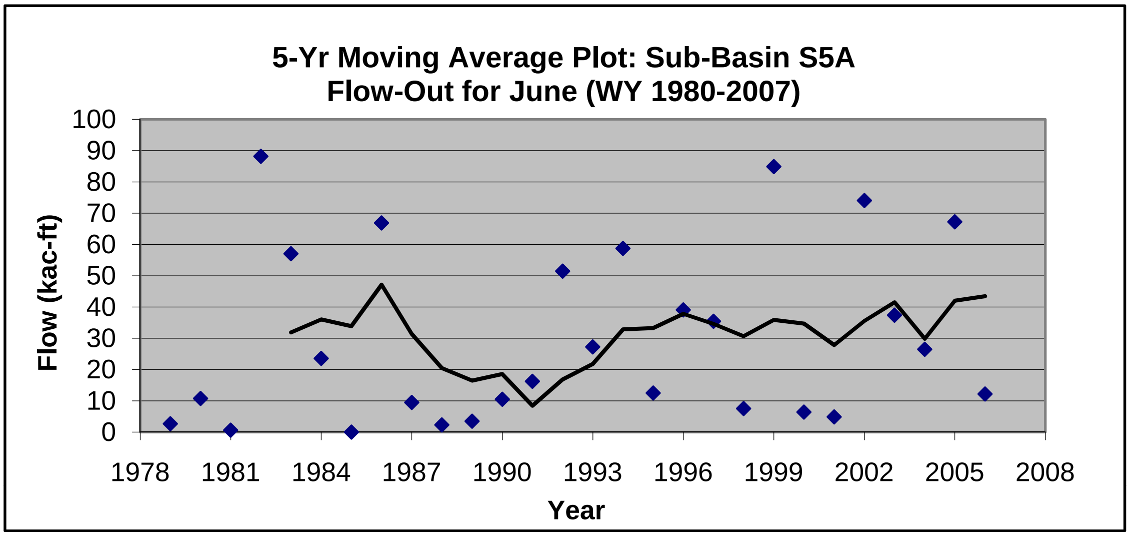
Hydrologic Sub-Basin S5A (June)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	12.00	29.88	1.93	6.60	150.60	169.59
Standard Error	2.17	5.27	0.34	1.38	12.83	14.17
Median	8.32	19.87	1.43	4.70	136.07	179.00
Standard Deviation	11.48	27.87	1.81	7.29	67.87	73.62
Sample Variance	131.82	776.92	3.27	53.18	4607.00	5420.36
Kurtosis	-0.08	-0.72	1.74	1.84	1.62	1.39
Skewness	1.00	0.77	1.26	1.51	1.23	0.58
Range	36.30	88.15	7.54	27.22	279.19	345.30
Minimum	0.10	0.00	0.02	0.00	60.89	33.00
Maximum	36.40	88.15	7.56	27.22	340.08	378.30
Sum	336.04	836.64	54.06	184.75	4216.71	4578.97
Count	28	28	28	28	28	27
Quartile-1	3.35	7.23	0.59	1.12	111.03	123.25
Quartile-2	8.32	19.87	1.43	4.70	136.07	168.10
Quartile-3	19.71	52.84	3.52	9.93	170.18	199.43
Confidence intervals	4.25	10.32	0.67	2.70	25.14	29.12

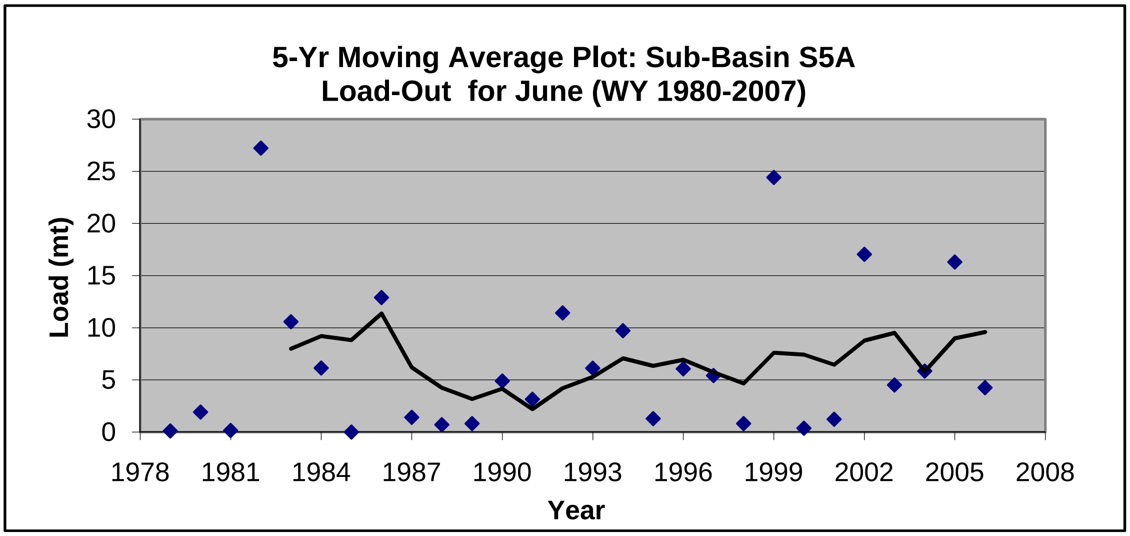

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for June (WY 1980-2007)
Flow (kac-ft)
Year
0
5
10
15
20
25
30
35
40
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for June (WY 1980-2007)
Load (mt)
Year
0
1
2
3
4
5
6
7
8
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008

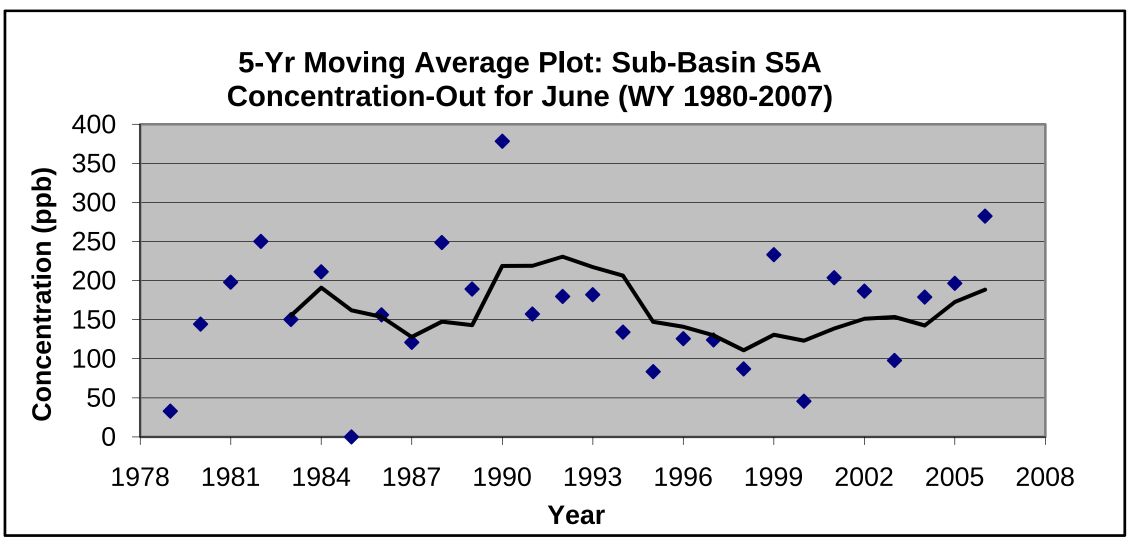

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for June (WY 1980-2007)
Concentration (ppb)
Year
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008



5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for June (WY 1980-2007)
Flow (kac-ft)
100
90
80
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



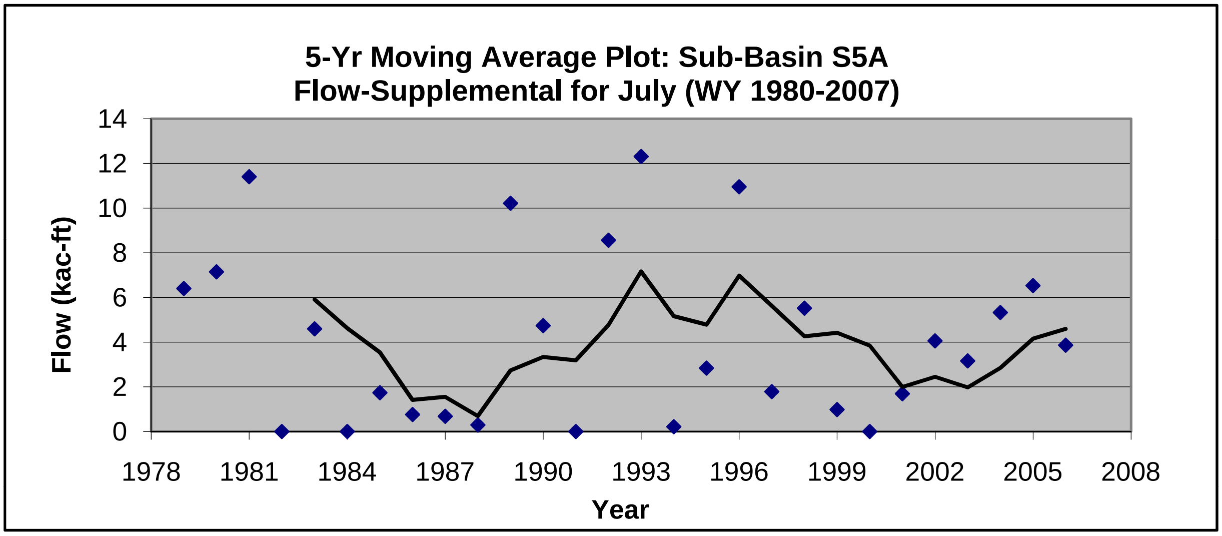
5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for June (WY 1980-2007)
Load (mt)
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

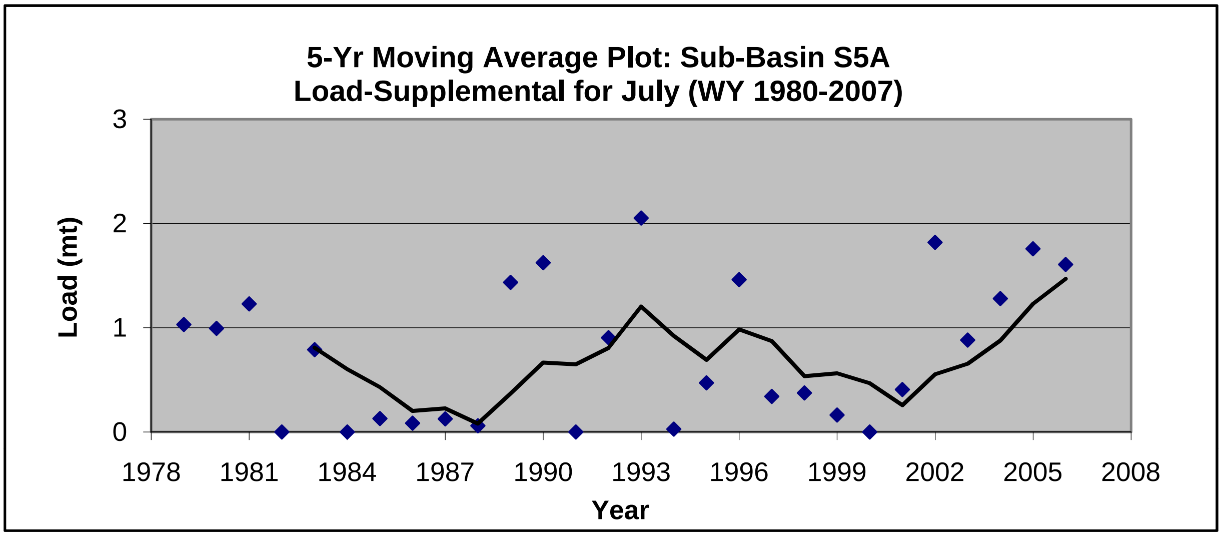


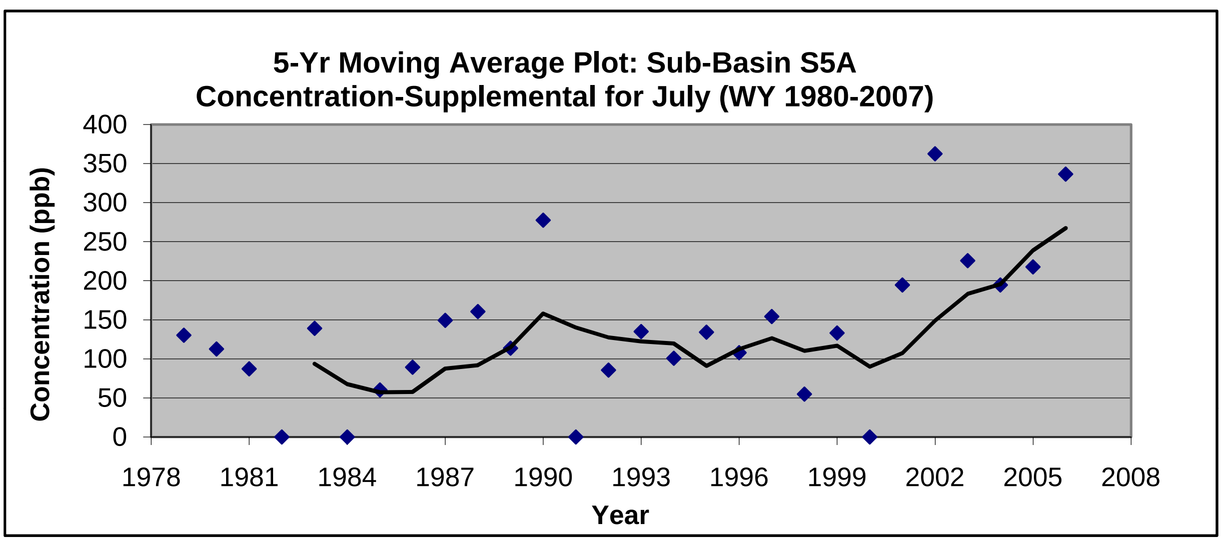
5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for June (WY 1980-2007)
Concentration (ppb)
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

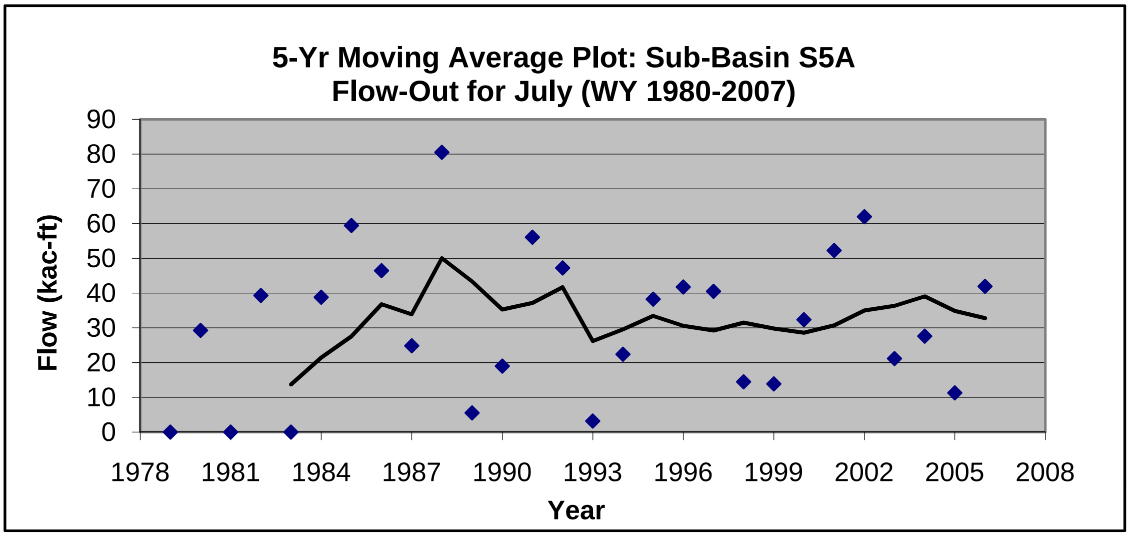
Hydrologic Sub-Basin S5A (July)

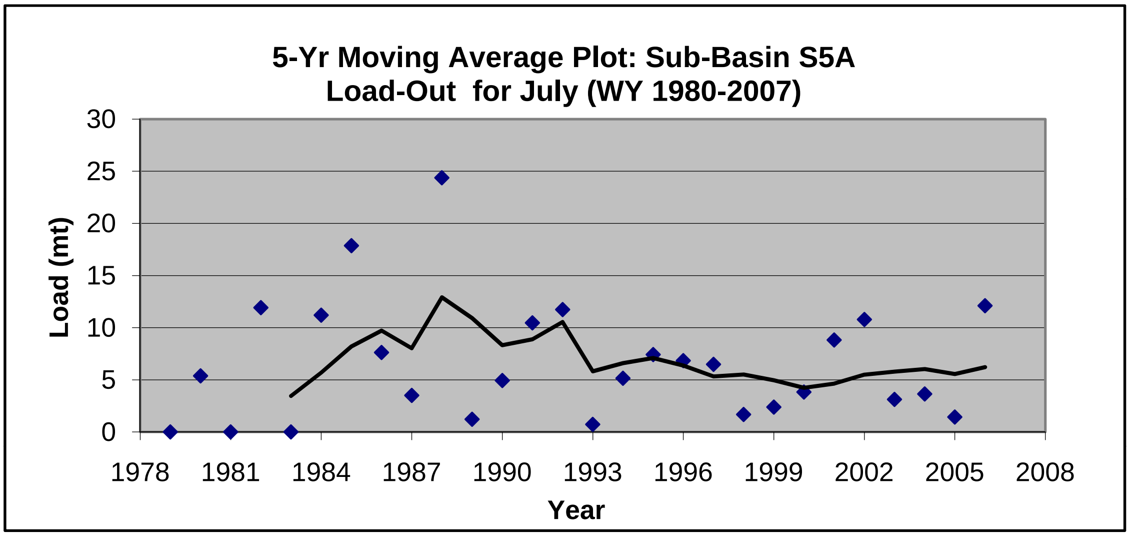
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	4.14	31.04	0.75	6.59	156.55	162.75
Standard Error	0.73	3.97	0.13	1.09	16.30	10.05
Median	3.51	30.79	0.63	5.26	134.56	149.00
Standard Deviation	3.84	21.03	0.68	5.76	79.84	50.24
Sample Variance	14.75	442.17	0.46	33.19	6375.16	2524.43
Kurtosis	-0.51	-0.41	-1.28	2.07	1.27	-1.11
Skewness	0.75	0.27	0.40	1.27	1.26	0.44
Range	12.31	80.50	2.05	24.38	307.62	151.87
Minimum	0.00	0.00	0.00	0.00	54.94	93.93
Maximum	12.31	80.50	2.05	24.38	362.55	245.80
Sum	115.83	869.05	21.04	184.63	3757.10	4068.65
Count	28	28	28	28	24	25
Quartile-1	0.74	14.31	0.12	2.21	86.86	112.50
Quartile-2	3.51	30.79	0.63	5.26	131.72	140.22
Quartile-3	6.44	43.06	1.32	10.55	169.09	189.95
Confidence intervals	1.42	7.79	0.25	2.13	33.72	20.74

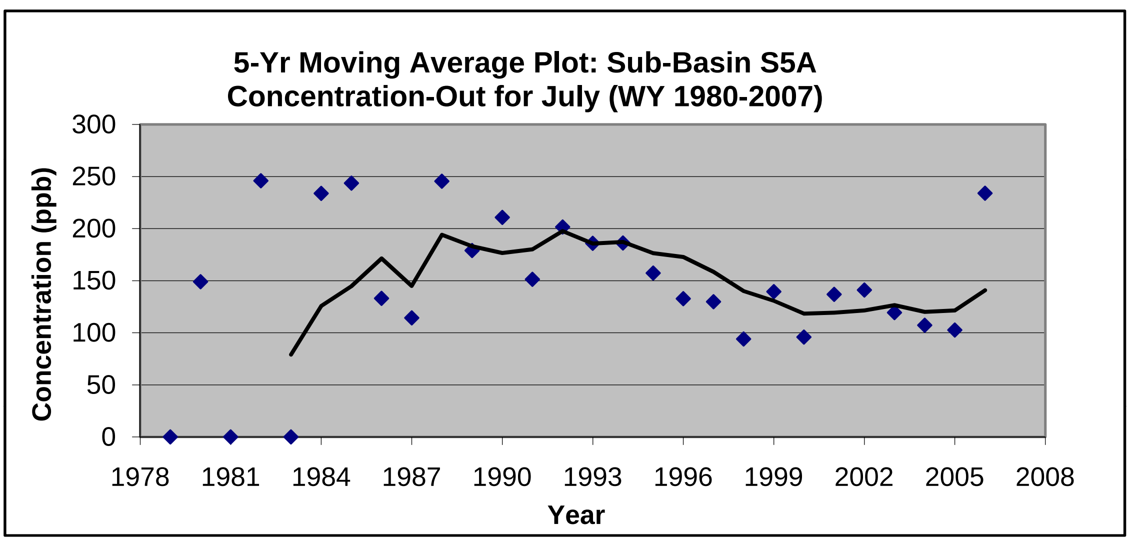

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for July (WY 1980-2007)
Flow (kac-ft)
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for July (WY 1980-2007)
Load (mt)
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for July (WY 1980-2007)
Concentration (ppb)
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

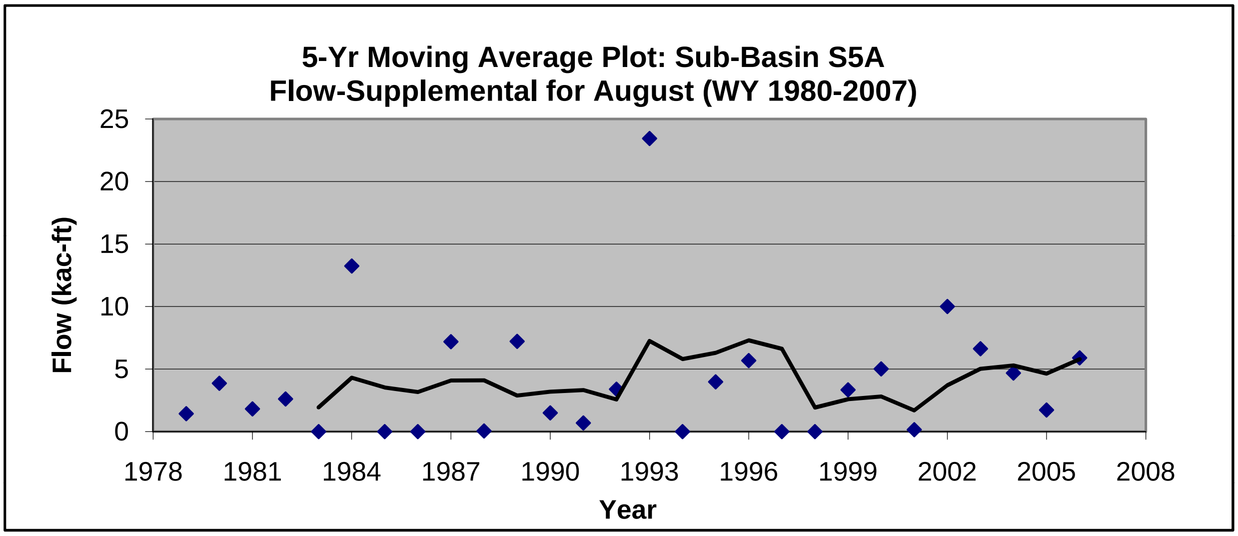

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for July (WY 1980-2007)
Flow (kac-ft)
90
80
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

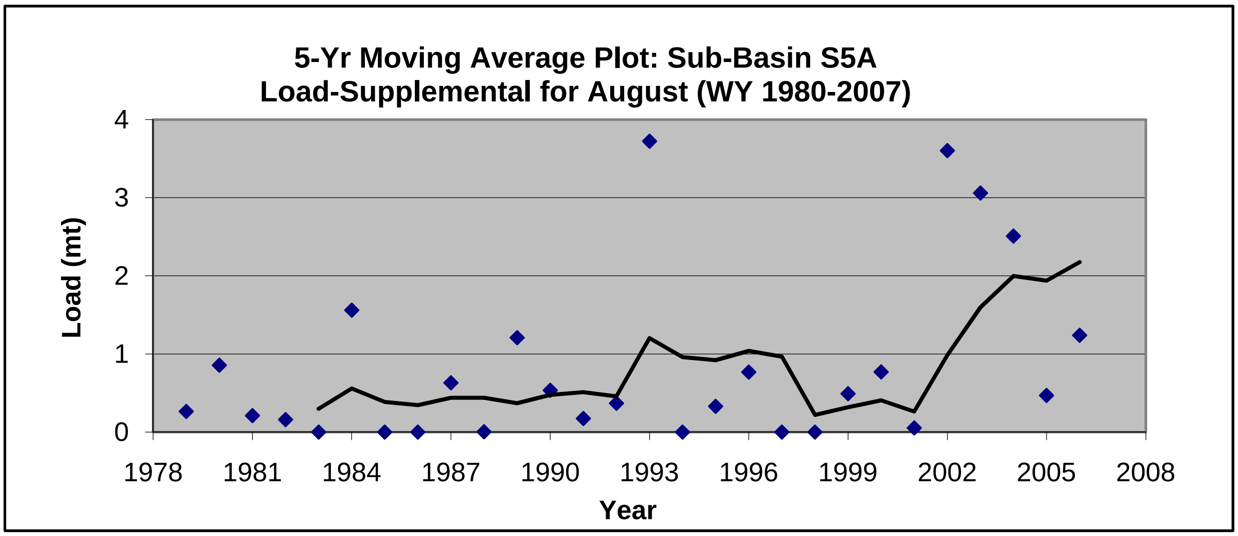

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for July (WY 1980-2007)
Load (mt)
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

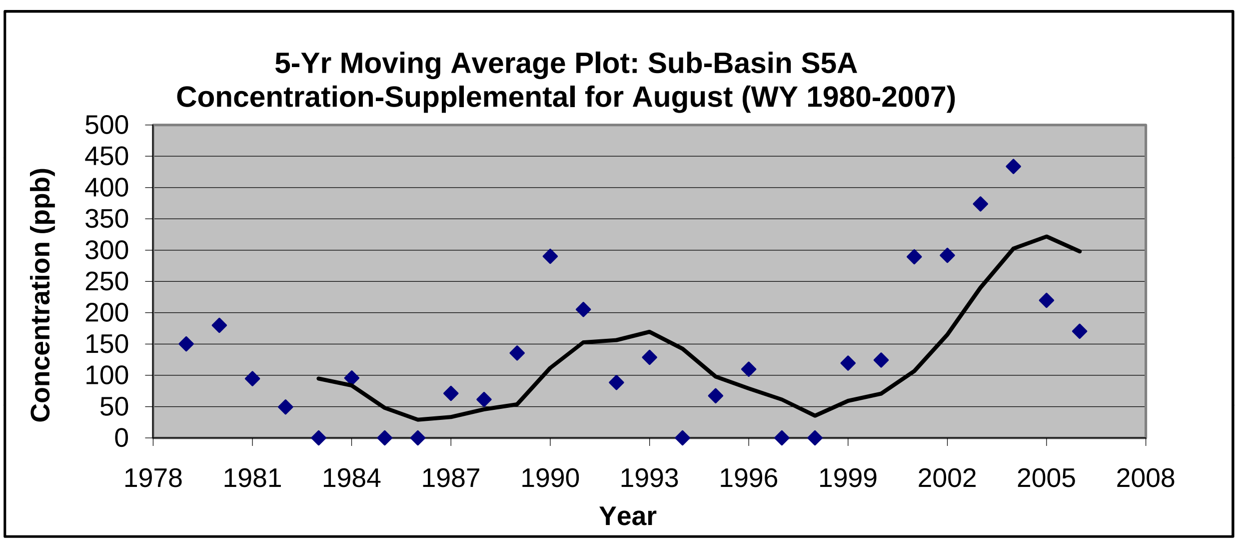

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for July (WY 1980-2007)
Concentration (ppb)
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

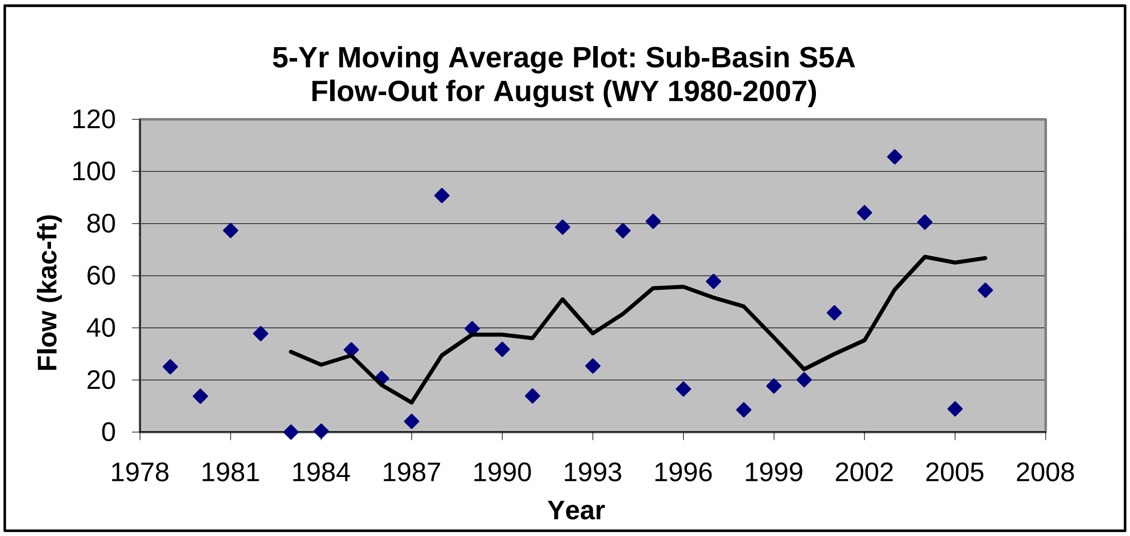
Hydrologic Sub-Basin S5A (August)

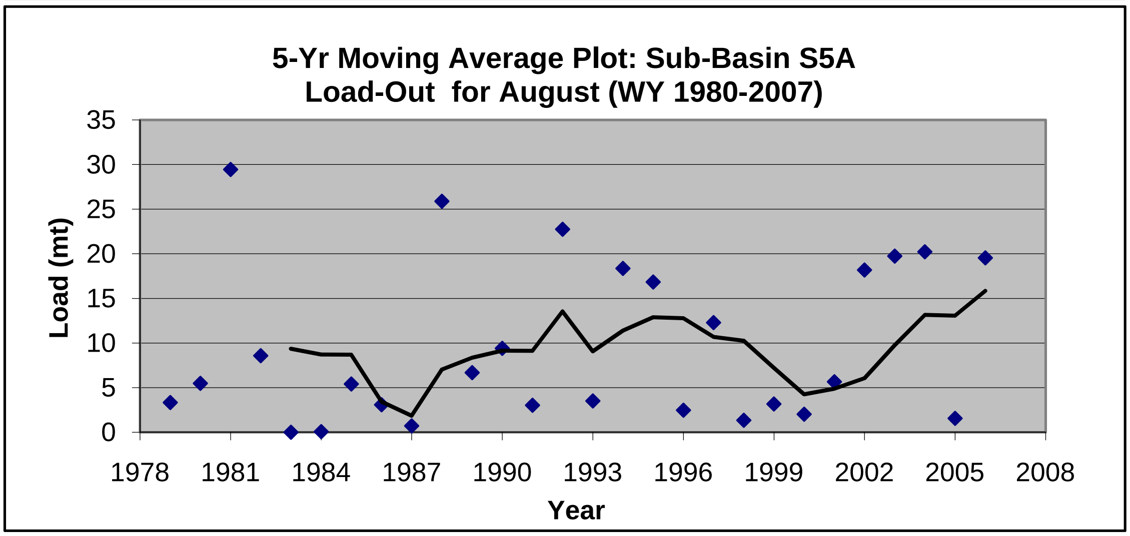
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	4.06	41.02	0.82	9.60	170.38	173.83
Standard Error	0.96	5.99	0.21	1.68	22.53	12.11
Median	2.98	31.68	0.42	5.56	132.13	168.71
Standard Deviation	5.08	31.70	1.10	8.87	105.67	62.91
Sample Variance	25.83	1004.94	1.20	78.64	11165.96	3958.26
Kurtosis	7.18	-1.10	2.01	-0.75	0.51	0.40
Skewness	2.35	0.51	1.72	0.77	1.10	0.97
Range	23.44	105.58	3.72	29.45	384.18	241.50
Minimum	0.00	0.00	0.00	0.00	49.36	81.70
Maximum	23.44	105.58	3.72	29.45	433.54	323.20
Sum	113.56	1148.63	22.99	268.68	3748.41	4693.33
Count	28	28	28	28	22	27
Quartile-1	0.13	15.83	0.04	2.89	58.28	125.66
Quartile-2	2.98	31.68	0.42	5.56	114.50	160.06
Quartile-3	5.73	77.28	0.94	18.22	186.03	195.30
Confidence intervals	1.88	11.74	0.41	3.28	46.85	24.89

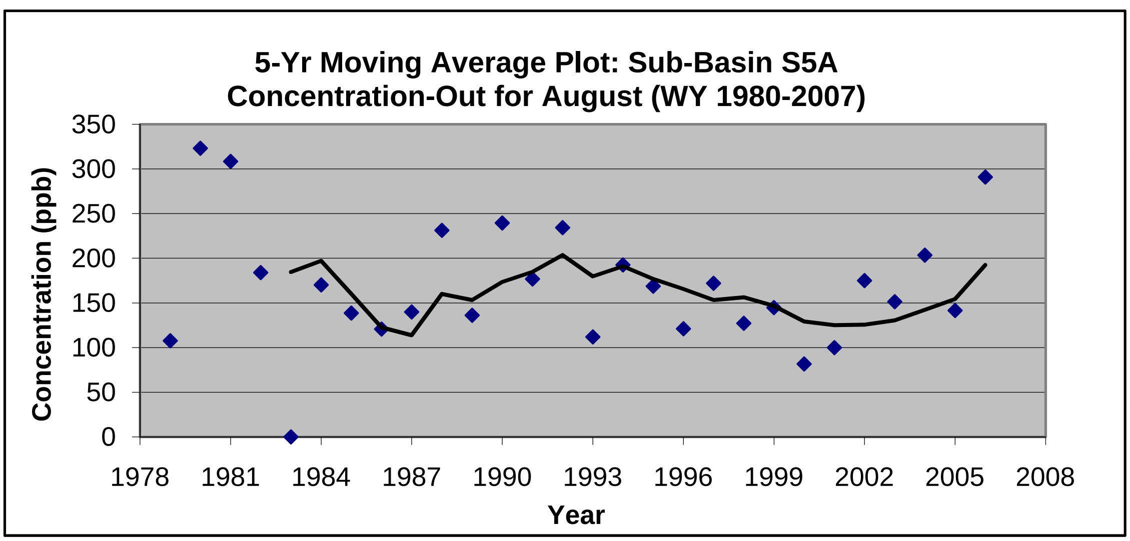

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for August (WY 1980-2007)
Flow (kac-ft)
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for August (WY 1980-2007)
Load (mt)
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for August (WY 1980-2007)
Concentration (ppb)
500
450
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

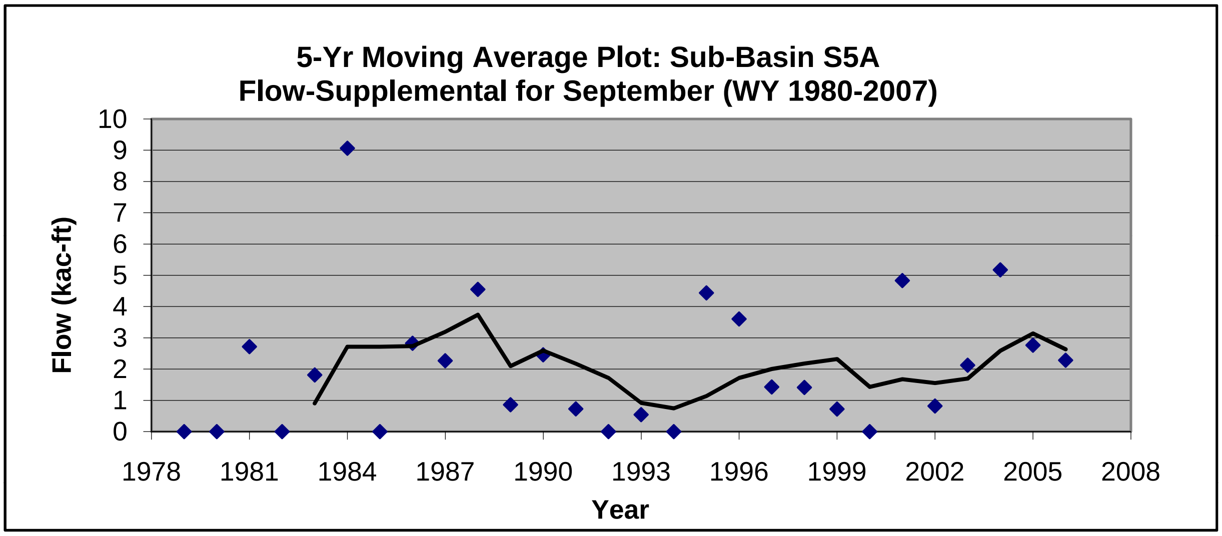

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for August (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

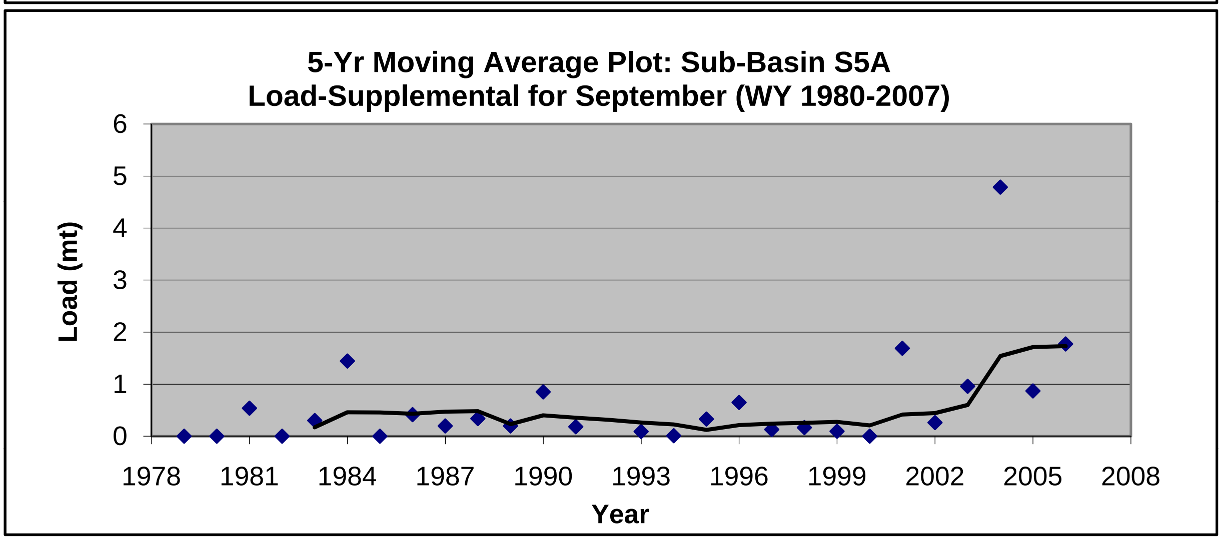

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for August (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
35
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

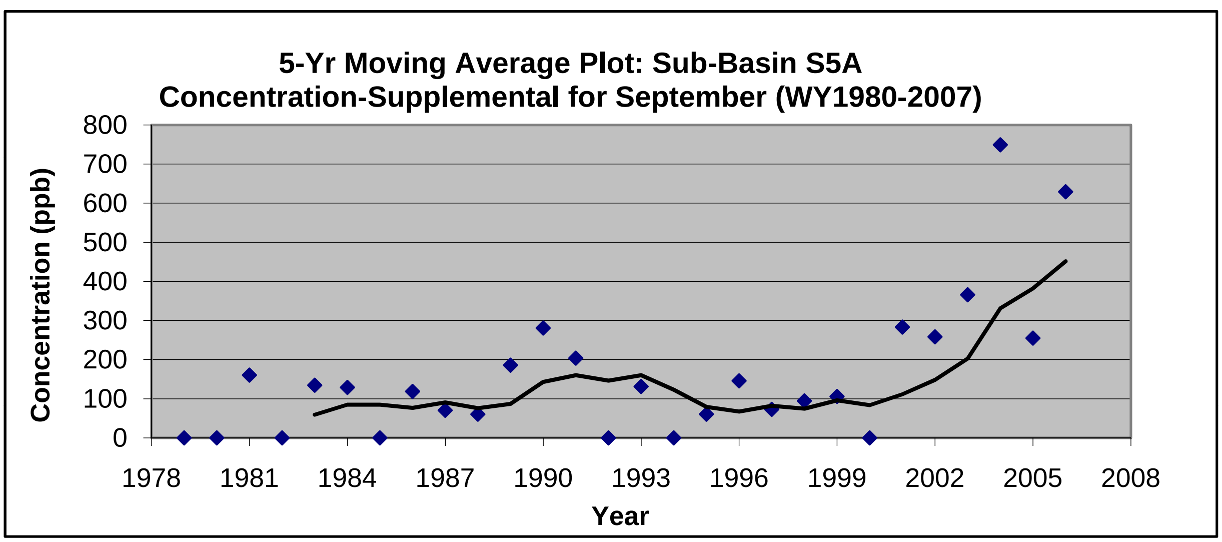

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for August (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

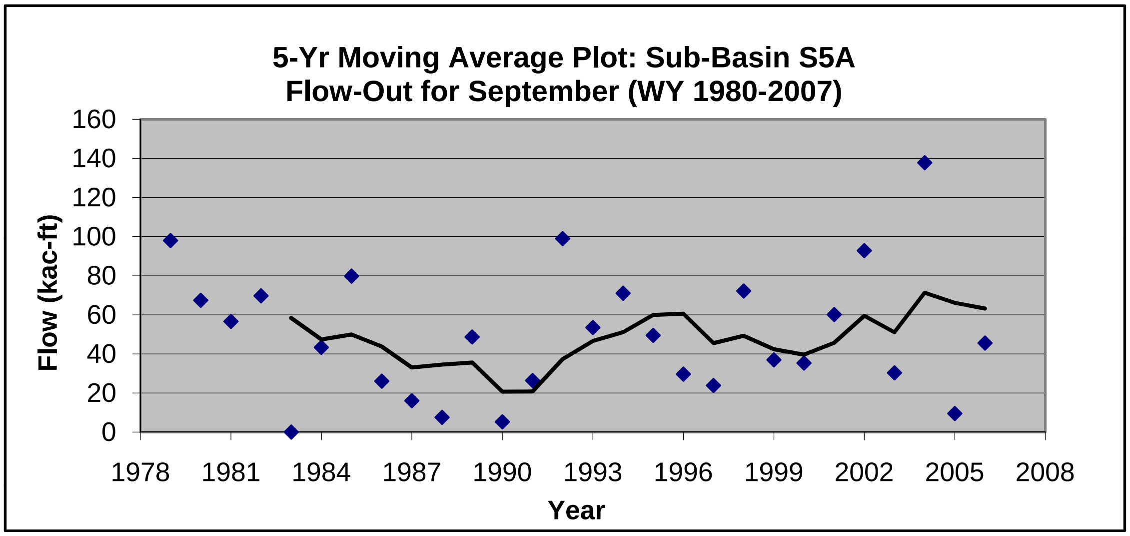
Hydrologic Sub-Basin S5A (September)

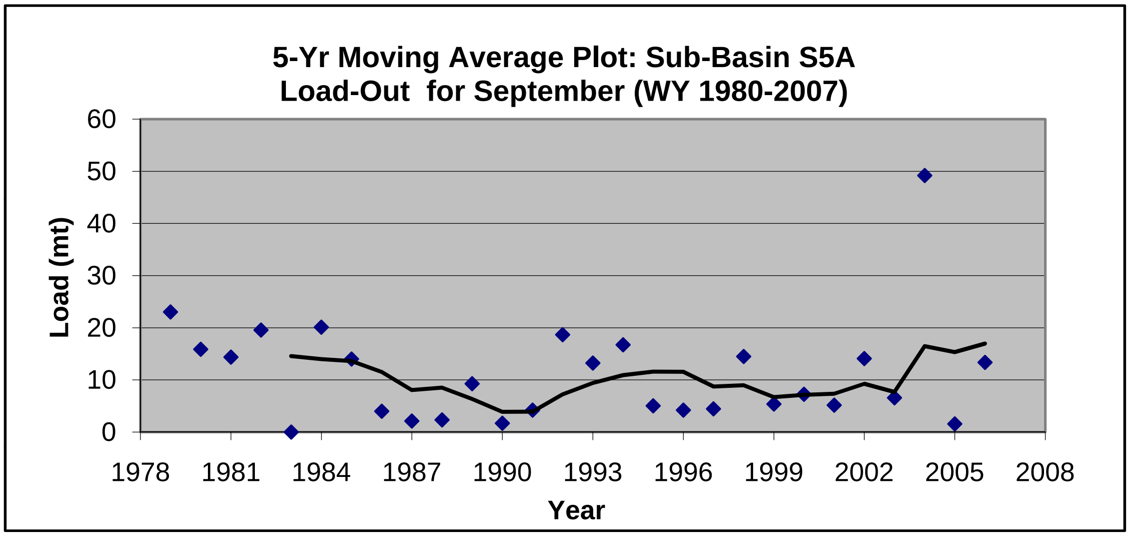
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	2.05	49.69	0.58	11.06	213.99	174.91
Standard Error	0.40	6.20	0.18	1.89	39.22	13.01
Median	1.62	47.08	0.23	8.25	145.51	162.56
Standard Deviation	2.12	32.82	0.97	10.01	179.75	67.58
Sample Variance	4.52	1077.19	0.94	100.11	32308.45	4567.50
Kurtosis	2.98	0.43	13.28	6.84	3.92	1.69
Skewness	1.49	0.68	3.33	2.11	2.00	1.06
Range	9.07	137.79	4.79	49.21	688.86	306.60
Minimum	0.00	0.00	-0.01	0.00	60.26	69.40
Maximum	9.07	137.79	4.79	49.21	749.11	376.00
Sum	57.44	1391.23	16.26	309.77	4493.71	4722.55
Count	28	28	28	28	21	27
Quartile-1	0.41	26.26	0.07	4.20	45.19	123.90
Quartile-2	1.62	47.08	0.23	8.25	123.83	158.43
Quartile-3	2.78	70.02	0.70	14.83	216.47	201.78
Confidence intervals	0.79	12.16	0.36	3.71	81.82	26.74

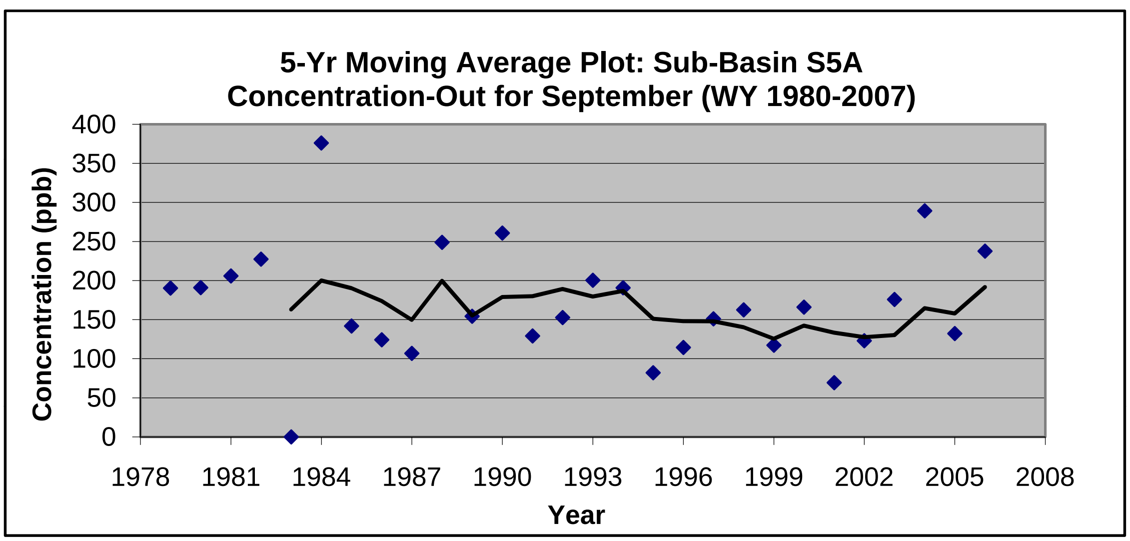

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for September (WY 1980-2007)
Flow (kac-ft)
0
1
2
3
4
5
6
7
8
9
10
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for September (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for September (WY1980-2007)
Concentration (ppb)
0
100
200
300
400
500
600
700
800
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

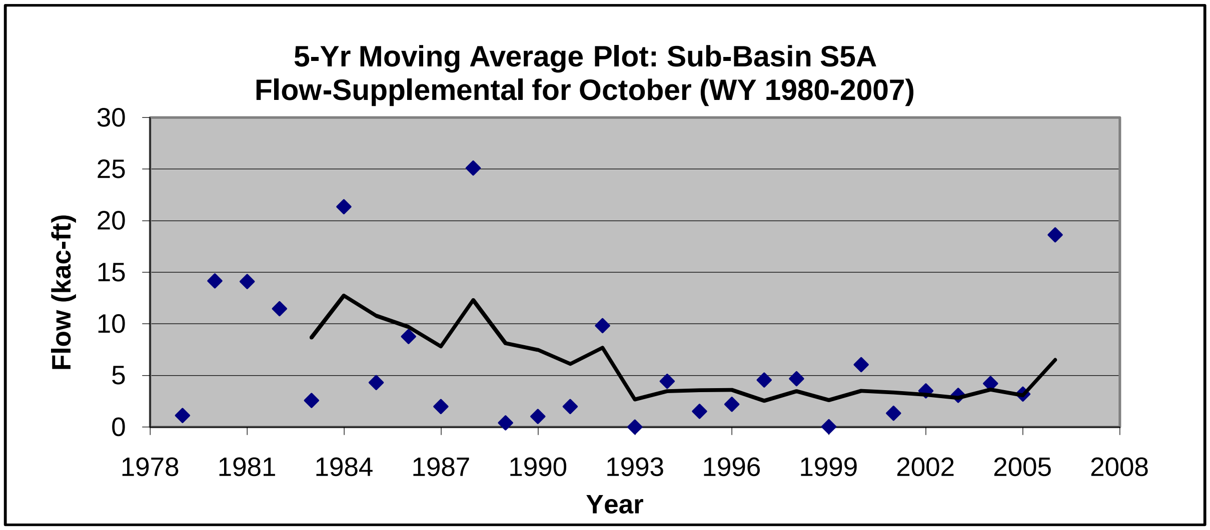

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for September (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
140
160
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

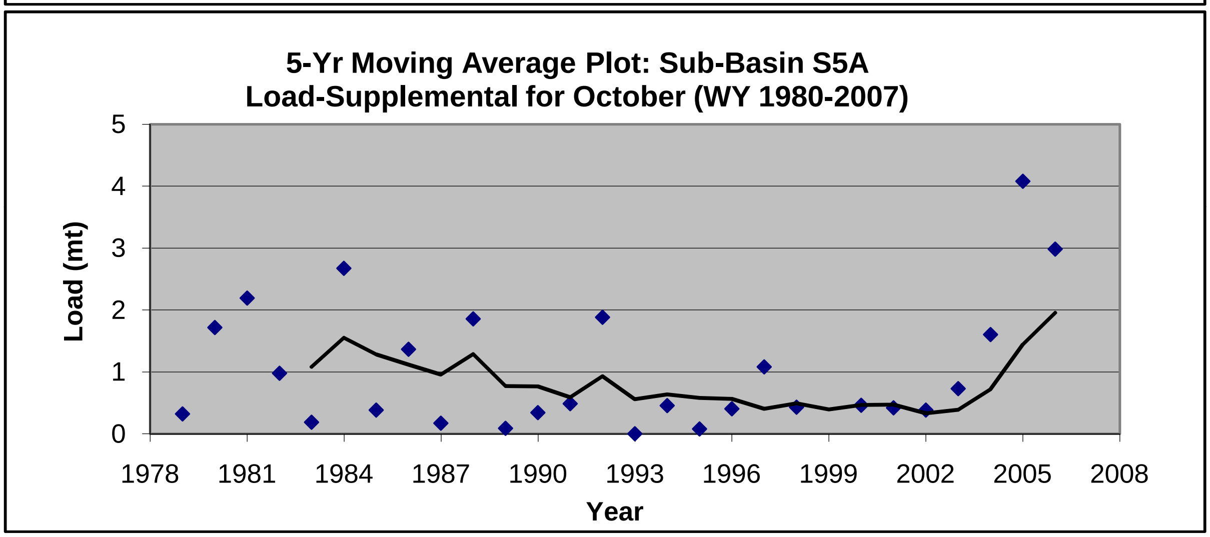

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for September (WY 1980-2007)
Load (mt)
0
10
20
30
40
50
60
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

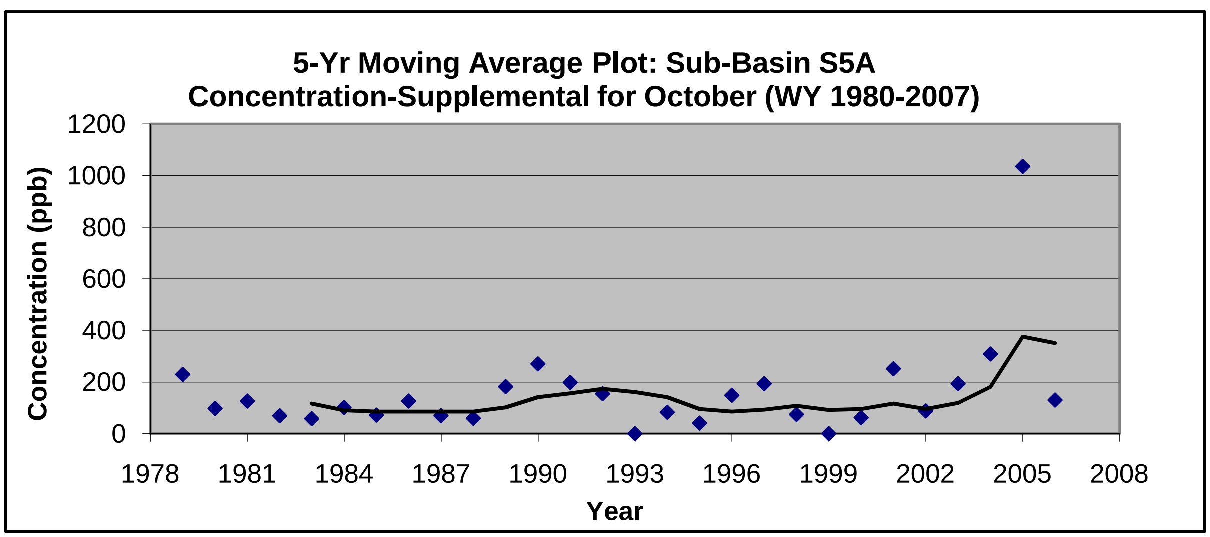

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for September (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S5A (October)

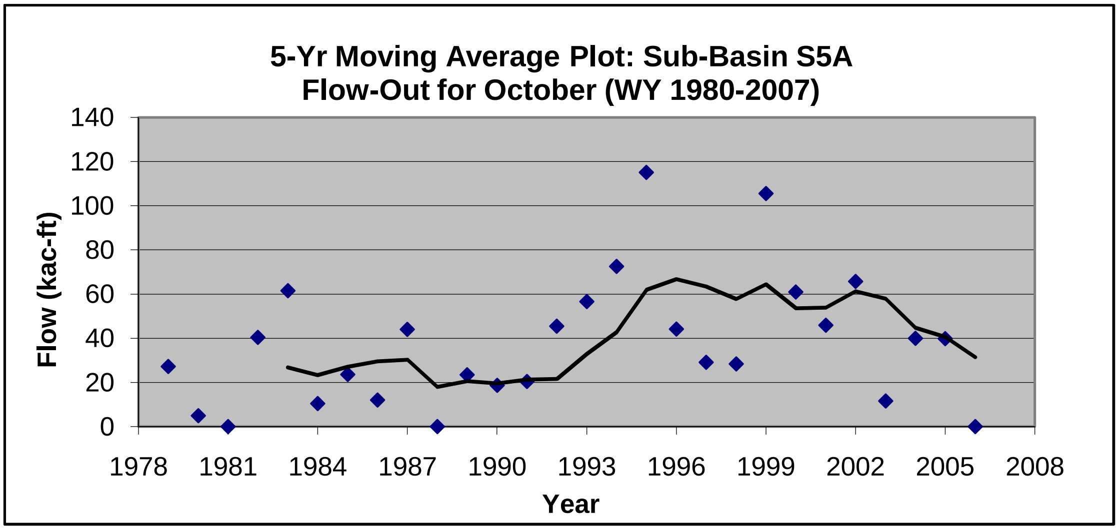
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	6.27	37.41	0.99	7.59	170.16	169.54
Standard Error	1.28	5.52	0.20	1.15	37.49	14.18
Median	3.87	34.45	0.46	6.66	126.01	146.60
Standard Deviation	6.75	29.20	1.03	6.07	191.17	70.89
Sample Variance	45.56	852.38	1.07	36.80	36544.31	5024.85
Kurtosis	1.49	1.06	1.66	-0.20	18.06	-0.09
Skewness	1.50	1.00	1.42	0.68	3.98	0.84
Range	25.11	115.07	4.12	22.69	995.09	259.60
Minimum	0.00	0.00	-0.04	0.00	40.76	78.50
Maximum	25.11	115.07	4.08	22.69	1035.85	338.10
Sum	175.62	1047.41	27.69	212.54	4424.26	4238.43
Count	28	28	28	28	26	25
Quartile-1	1.86	17.04	0.34	2.81	69.27	106.58
Quartile-2	3.87	34.45	0.46	6.66	113.57	144.30
Quartile-3	9.03	48.52	1.63	12.56	192.83	203.35
Confidence intervals	2.50	10.81	0.38	2.25	77.21	29.26

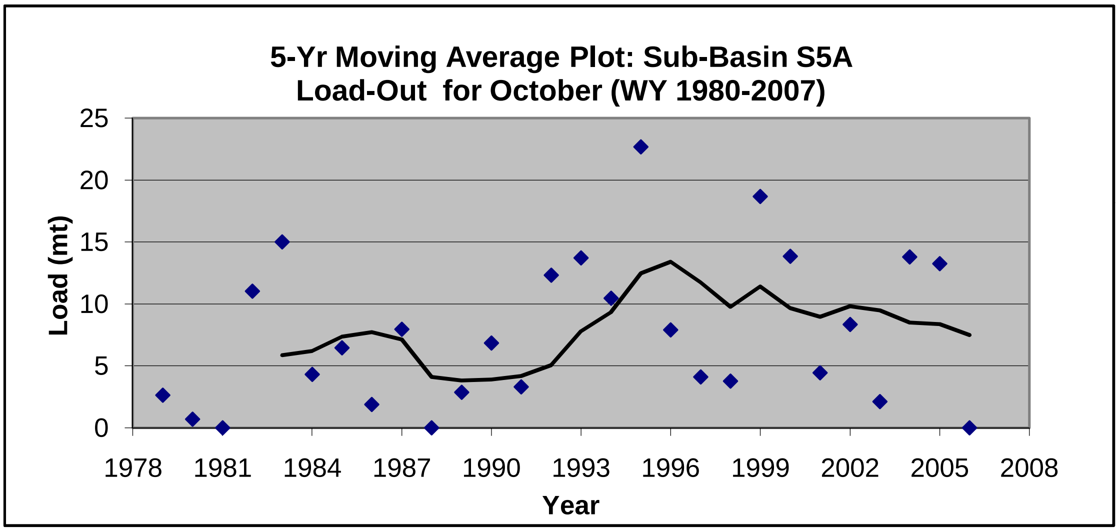


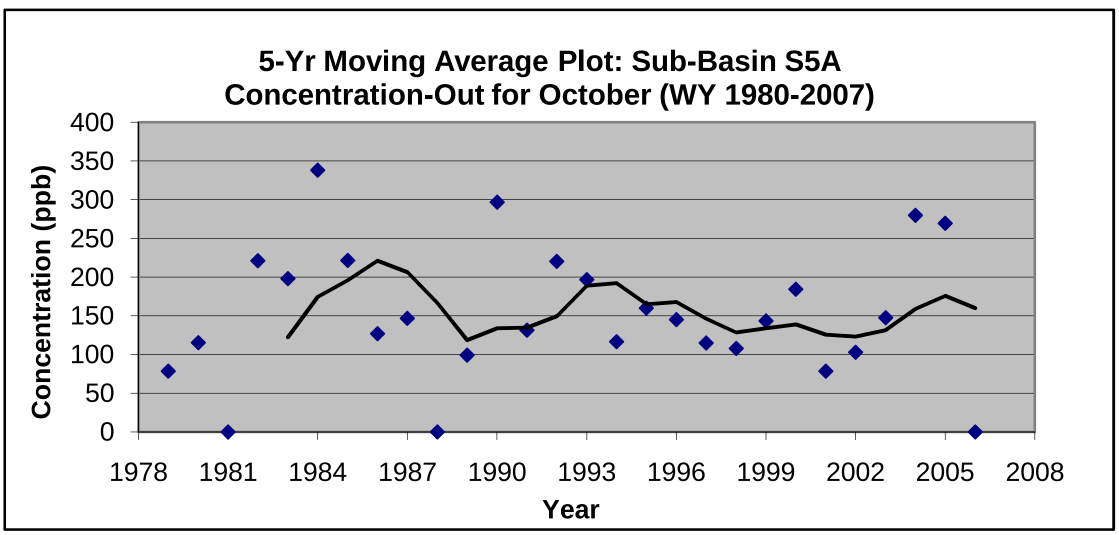




Hydrologic Sub-Basin S5A (October)

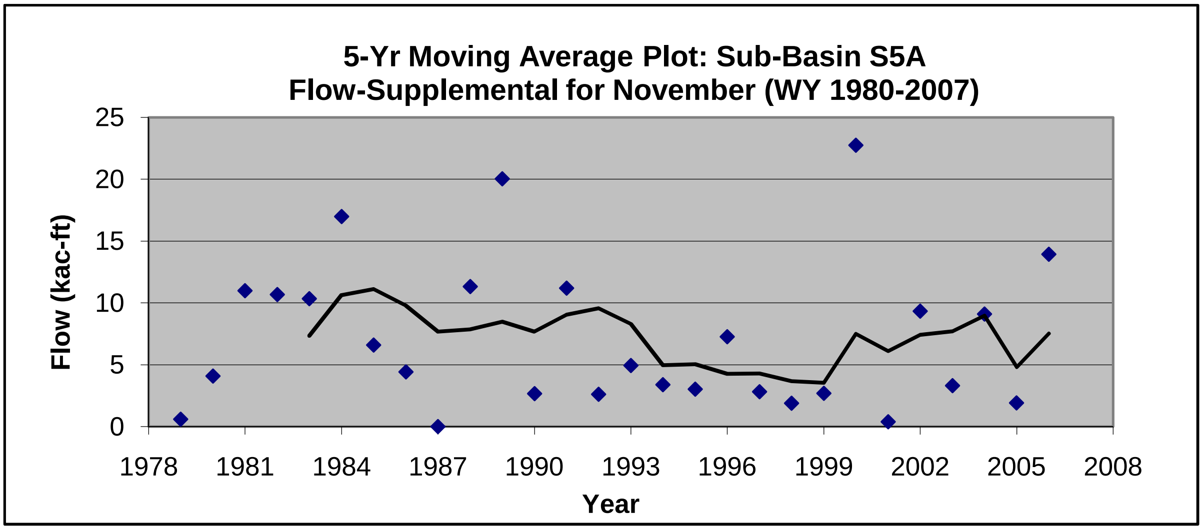

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for October (WY 1980-2007)
Flow (kac-ft)
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

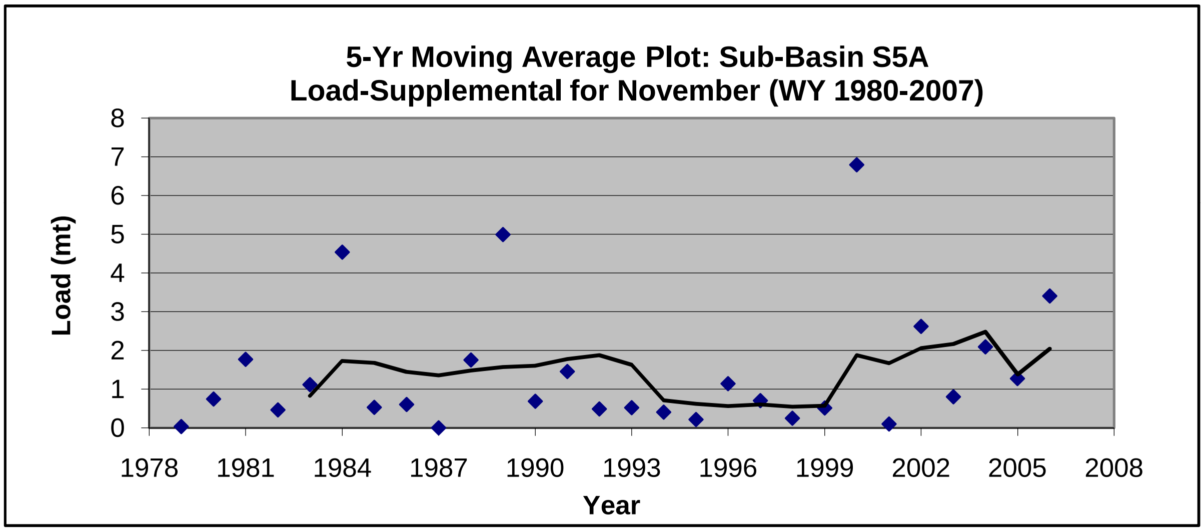

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for October (WY 1980-2007)
Load (mt)
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

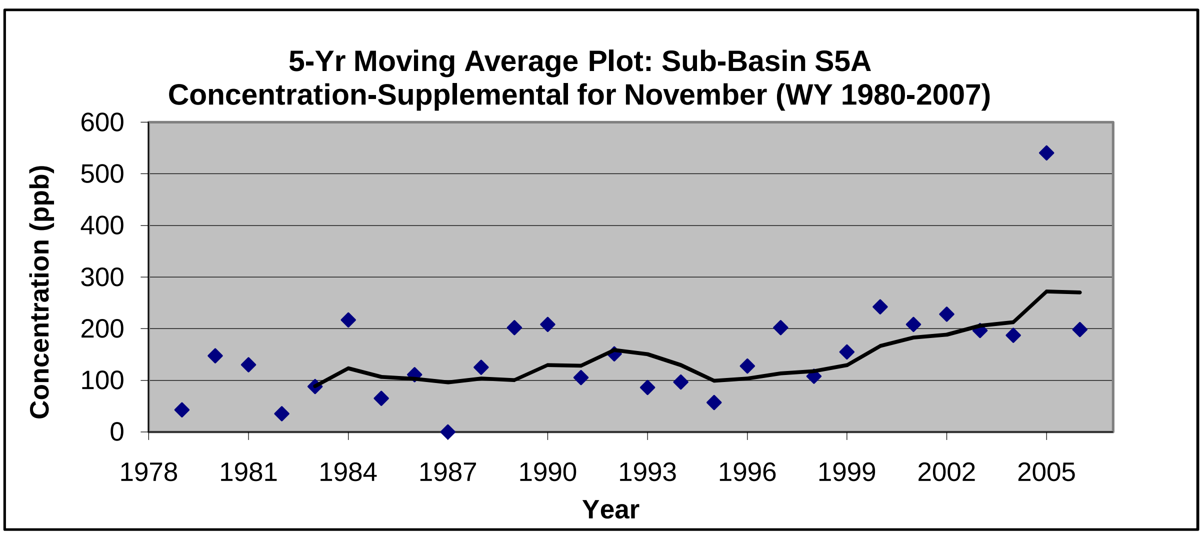

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for October (WY 1980-2007)
Concentration (ppb)
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

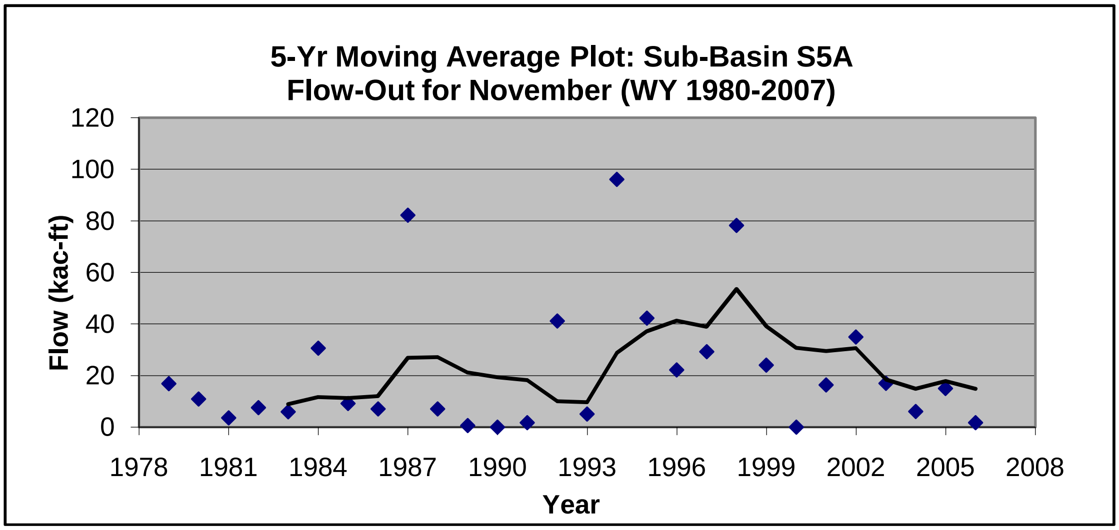
Hydrologic Sub-Basin S5A (November)

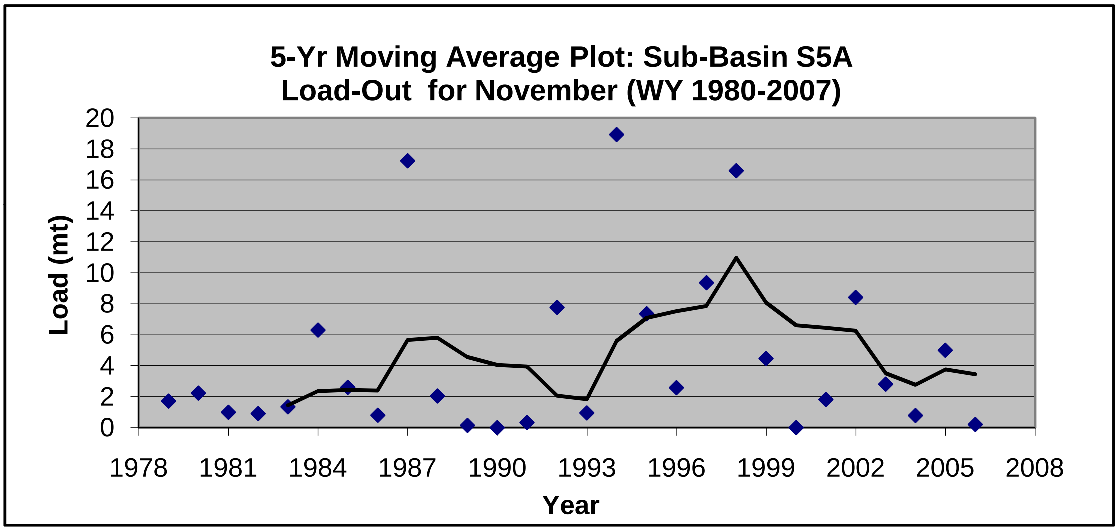
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	7.11	21.88	1.43	4.42	157.70	159.51
Standard Error	1.13	4.85	0.31	1.02	18.73	10.50
Median	4.69	12.91	0.72	2.14	147.54	160.29
Standard Deviation	6.00	25.68	1.66	5.39	97.31	53.53
Sample Variance	36.03	659.49	2.74	29.05	9469.29	2865.57
Kurtosis	0.57	2.53	3.56	1.96	8.62	-0.50
Skewness	1.06	1.76	1.95	1.66	2.30	0.37
Range	22.74	96.06	6.80	18.93	505.37	188.20
Minimum	0.00	0.00	0.00	0.00	34.89	82.00
Maximum	22.74	96.06	6.80	18.93	540.27	270.20
Sum	199.21	612.59	40.02	123.62	4258.01	4147.14
Count	28	28	28	28	27	26
Quartile-1	2.69	5.69	0.48	0.88	94.13	96.60
Quartile-2	4.69	12.91	0.72	2.14	138.88	156.34
Quartile-3	10.75	29.63	1.75	6.56	201.91	177.60
Confidence intervals	2.22	9.51	0.61	2.00	38.49	21.62

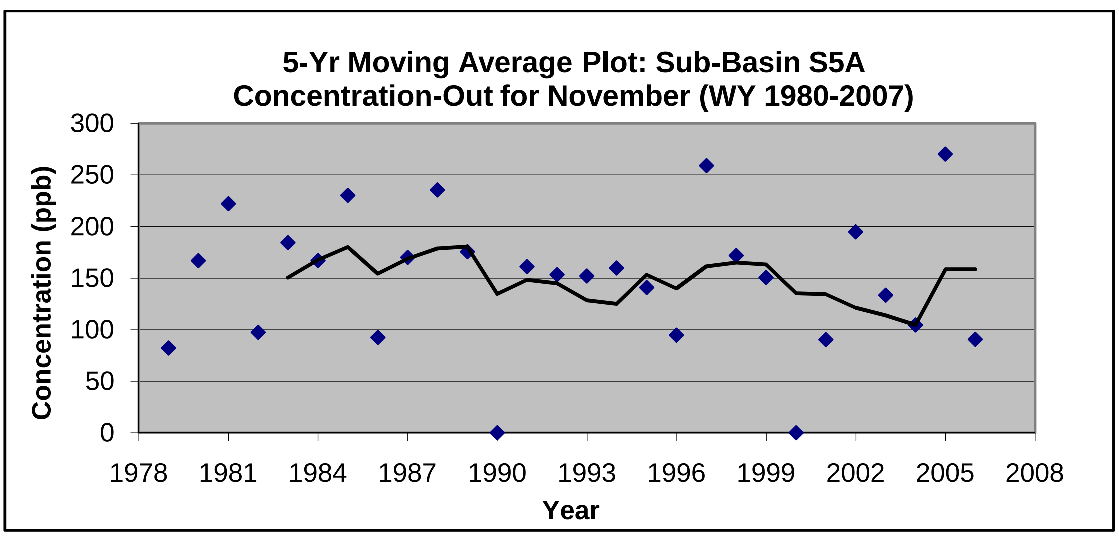

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for November (WY 1980-2007)
Flow (kac-ft)
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for November (WY 1980-2007)
Load (mt)
8
7
6
5
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for November (WY 1980-2007)
Concentration (ppb)
600
500
400
300
200
100
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
Year

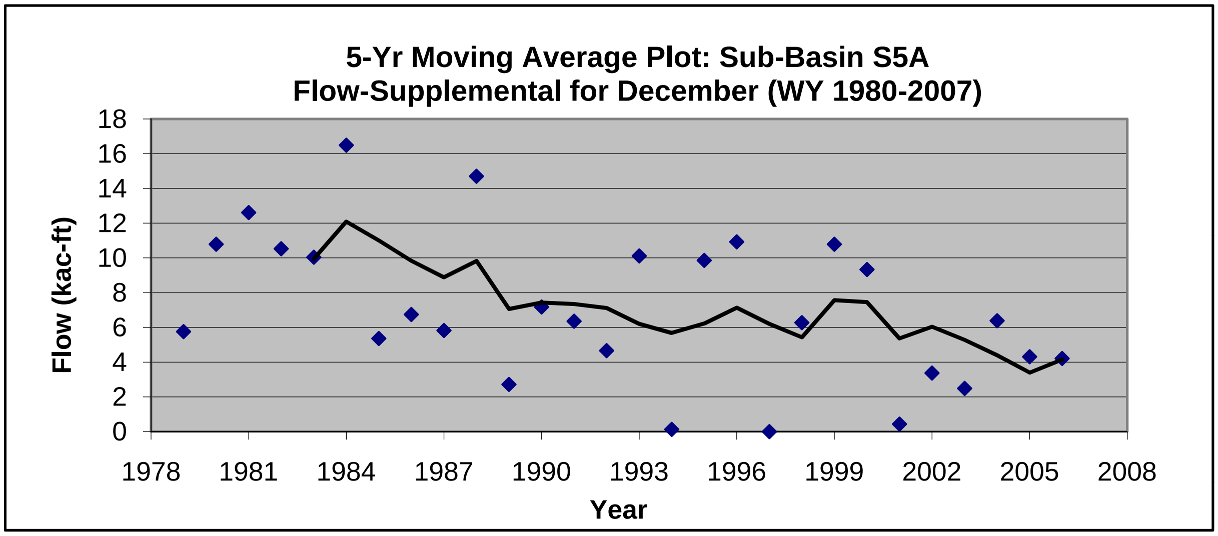

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for November (WY 1980-2007)
Flow (kac-ft)
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

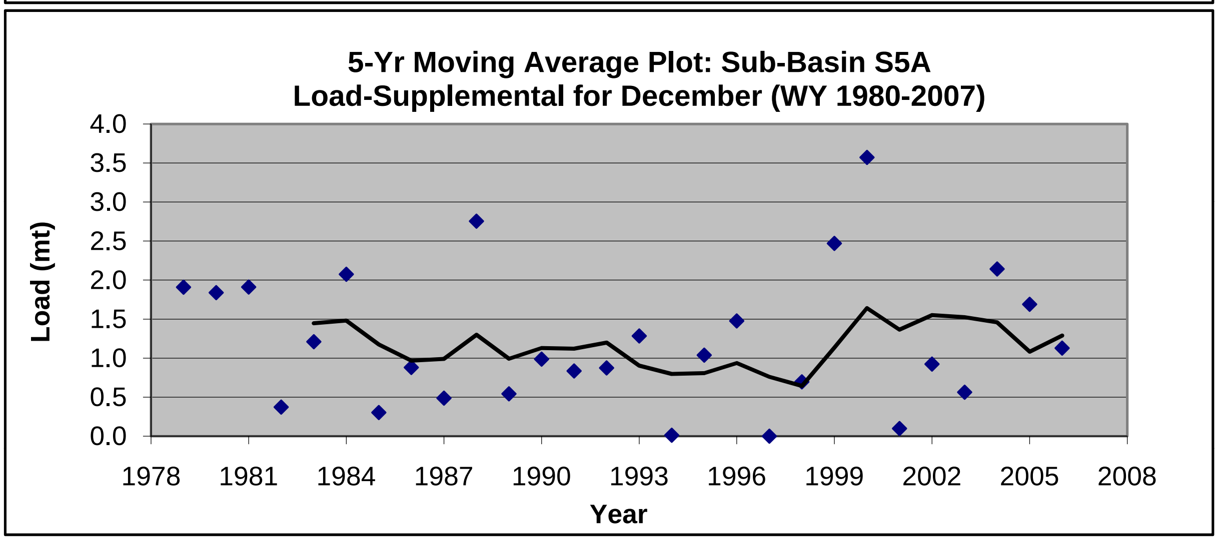

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for November (WY 1980-2007)
Load (mt)
20
18
16
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

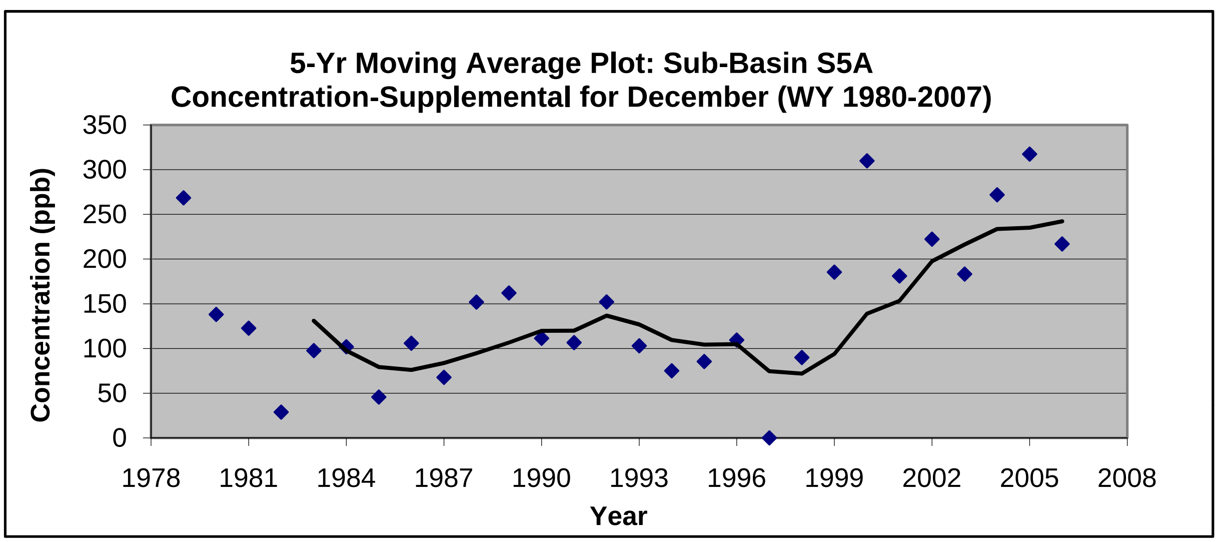

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for November (WY 1980-2007)
Concentration (ppb)
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

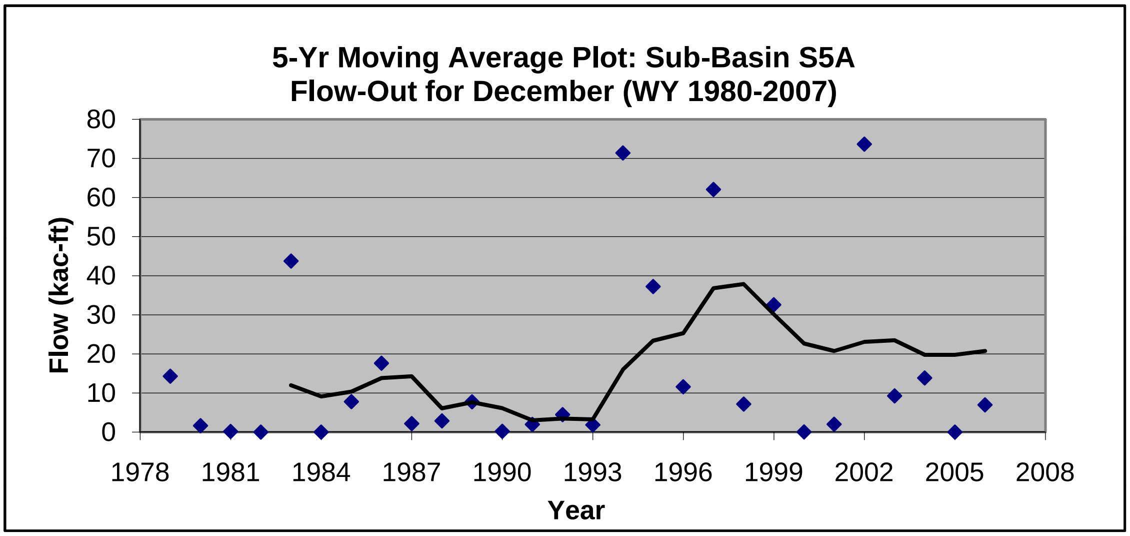
Hydrologic Sub-Basin S5A (December)

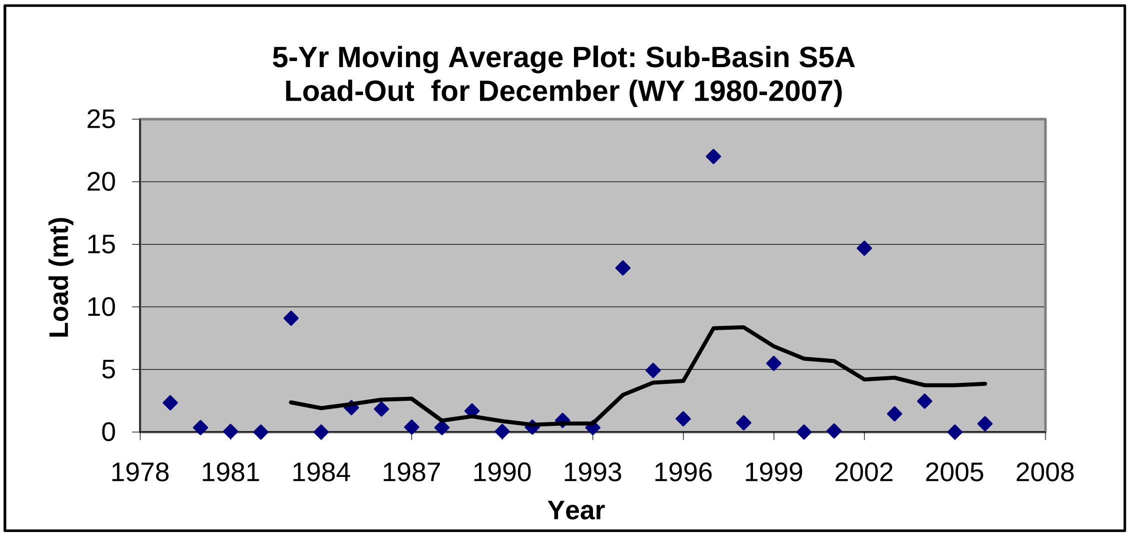
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	7.09	15.50	1.22	3.09	148.53	142.29
Standard Error	0.80	4.18	0.17	1.01	14.93	11.59
Median	6.37	7.07	1.01	0.83	122.62	146.92
Standard Deviation	4.25	22.10	0.88	5.34	77.58	59.08
Sample Variance	18.09	488.32	0.77	28.52	6018.03	3490.07
Kurtosis	-0.38	1.95	0.47	5.68	-0.13	0.50
Skewness	0.23	1.73	0.80	2.42	0.77	0.05
Range	16.49	73.64	3.57	22.02	288.69	264.63
Minimum	0.00	0.00	0.00	0.00	28.71	23.00
Maximum	16.49	73.64	3.57	22.02	317.40	287.63
Sum	198.42	433.98	34.07	86.51	4010.24	3699.60
Count	28	28	28	28	27	26
Quartile-1	4.29	1.79	0.56	0.29	95.69	84.42
Quartile-2	6.37	7.07	1.01	0.83	116.99	144.70
Quartile-3	10.22	15.11	1.86	2.37	183.68	170.93
Confidence intervals	1.58	8.19	0.32	1.98	30.69	23.86

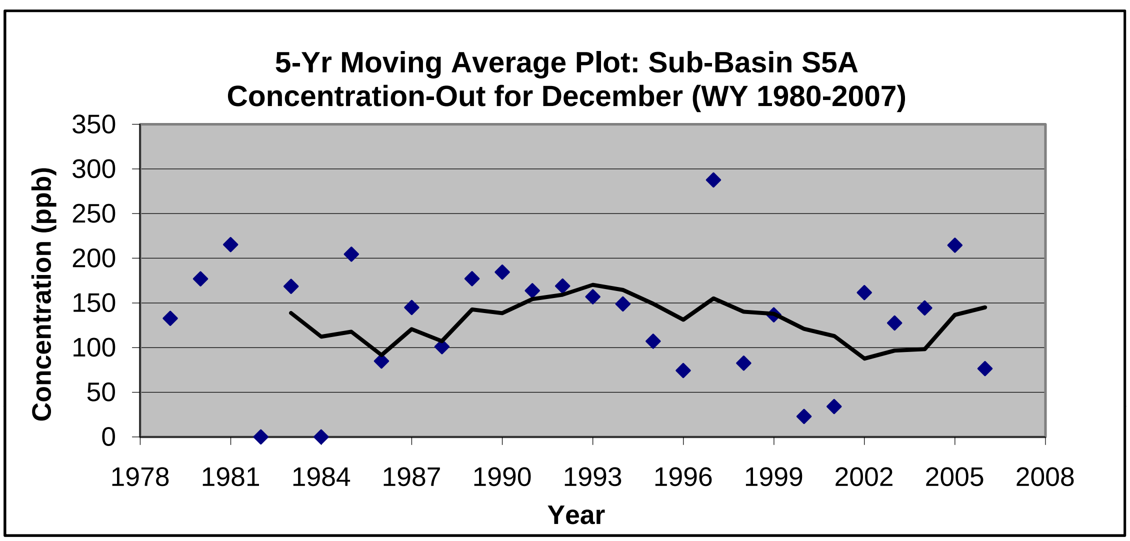

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for December (WY 1980-2007)
Flow (kac-ft)
0
2
4
6
8
10
12
14
16
18
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for December (WY 1980-2007)
Load (mt)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for December (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

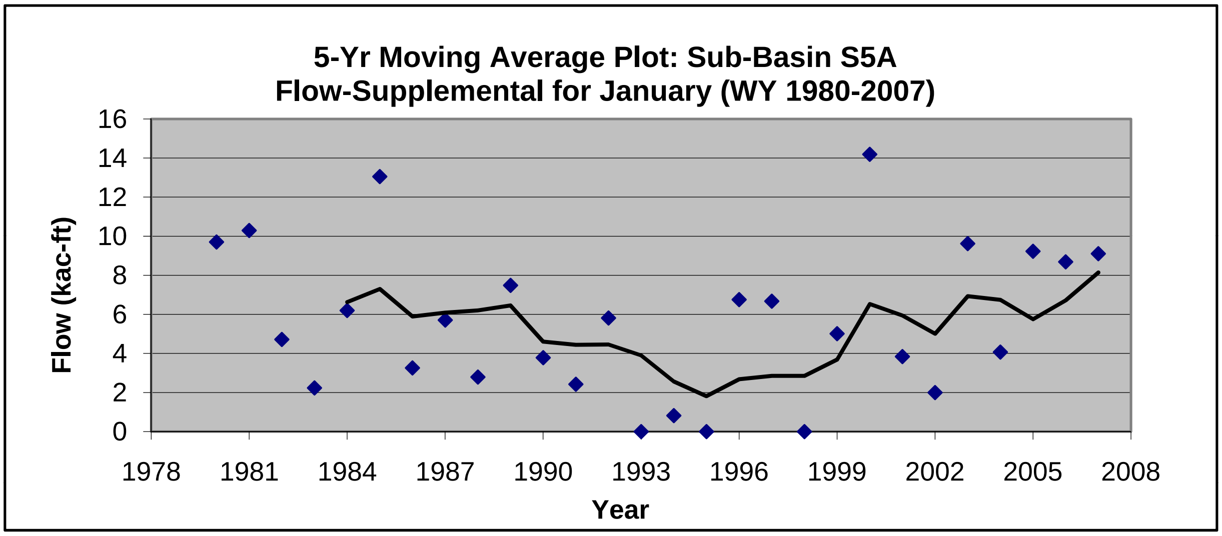

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for December (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

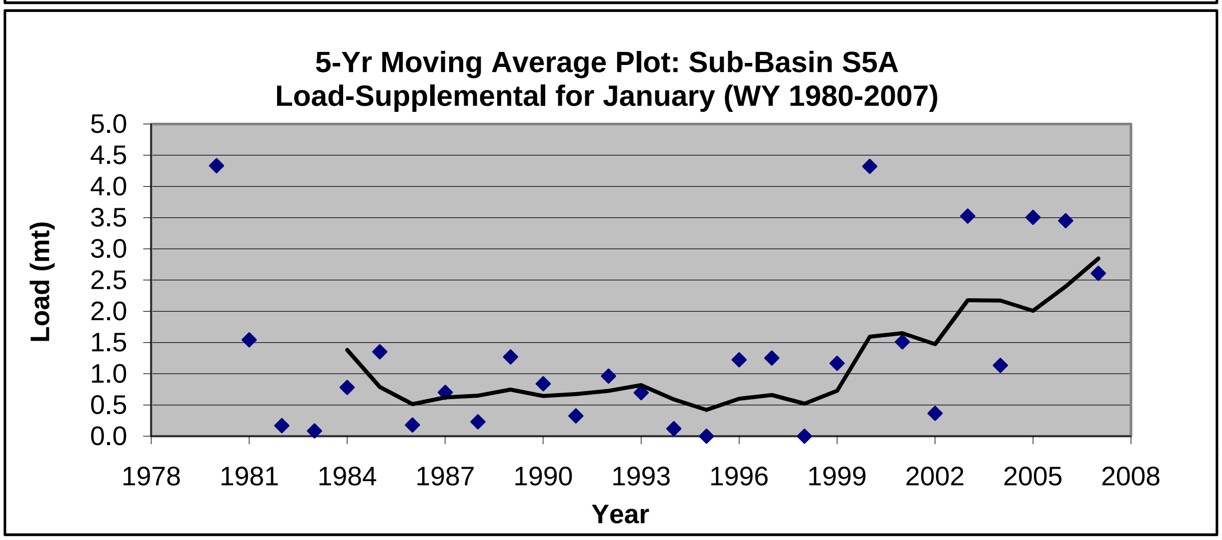

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for December (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

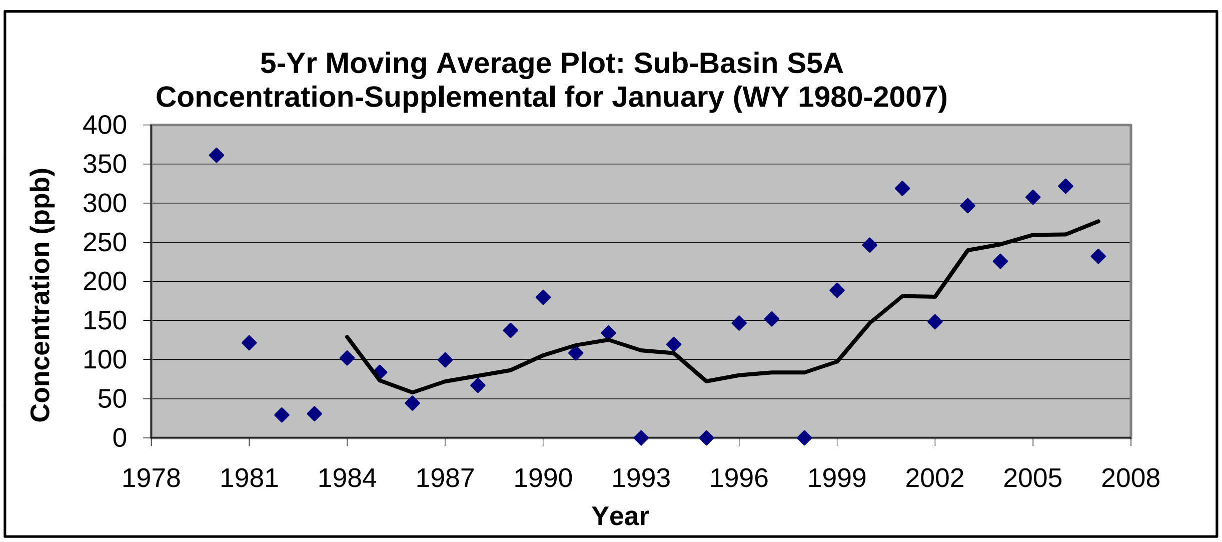

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for December (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

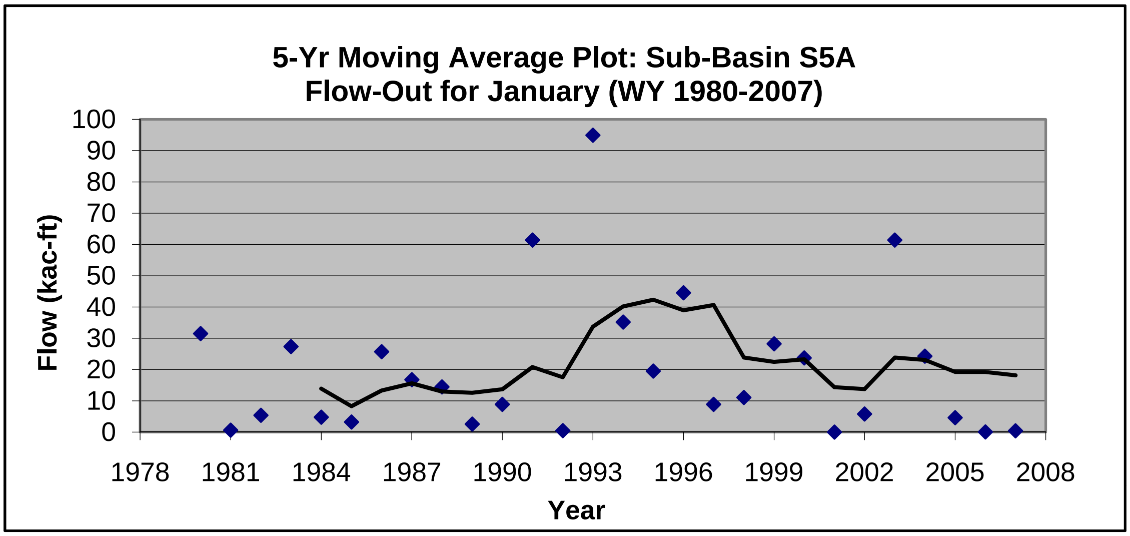
Hydrologic Sub-Basin S5A (January)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	5.63	20.18	1.34	4.93	168.14	168.70
Standard Error	0.73	4.30	0.25	1.27	19.36	14.84
Median	5.36	12.73	1.05	2.11	146.73	154.30
Standard Deviation	3.85	22.74	1.33	6.72	96.81	77.12
Sample Variance	14.83	517.31	1.76	45.10	9372.01	5947.39
Kurtosis	-0.43	3.31	0.26	3.48	-0.75	1.37
Skewness	0.41	1.73	1.17	1.93	0.50	1.16
Range	14.20	94.91	4.33	26.51	332.22	315.70
Minimum	0.00	0.00	0.00	0.00	29.10	52.60
Maximum	14.20	94.91	4.33	26.51	361.32	368.30
Sum	157.51	565.03	37.65	137.91	4203.47	4554.83
Count	28	28	28	28	25	27.0
Quartile-1	2.70	4.24	0.30	0.67	79.60	115.45
Quartile-2	5.36	12.73	1.05	2.11	135.76	153.25
Quartile-3	8.79	27.54	1.52	6.00	227.26	198.06
Confidence intervals	1.43	8.42	0.49	2.49	39.96	30.51

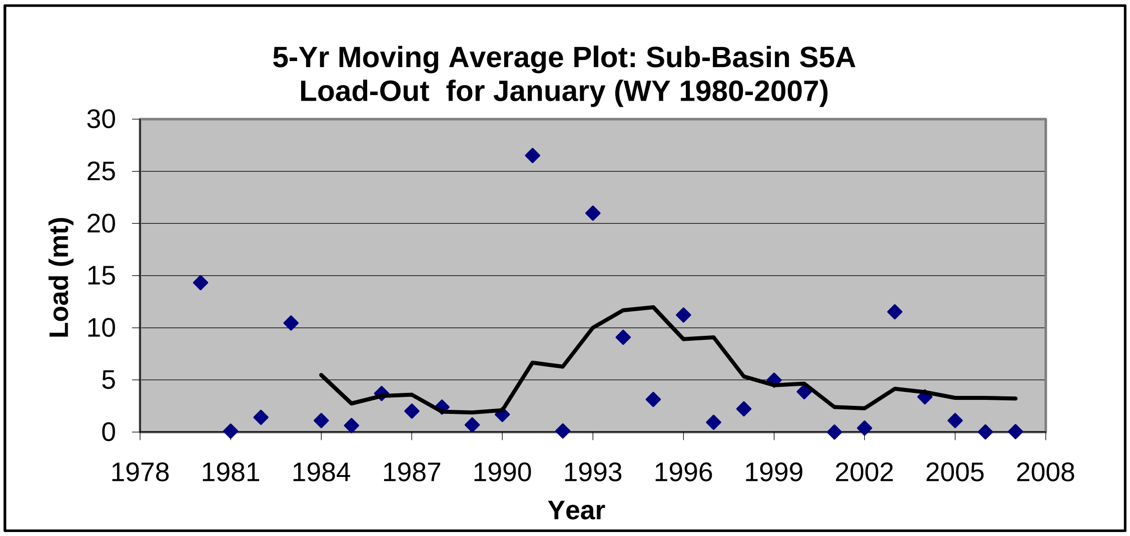

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for January (WY 1980-2007)
Flow (kac-ft)
0
2
4
6
8
10
12
14
16
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for January (WY 1980-2007)
Load (mt)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

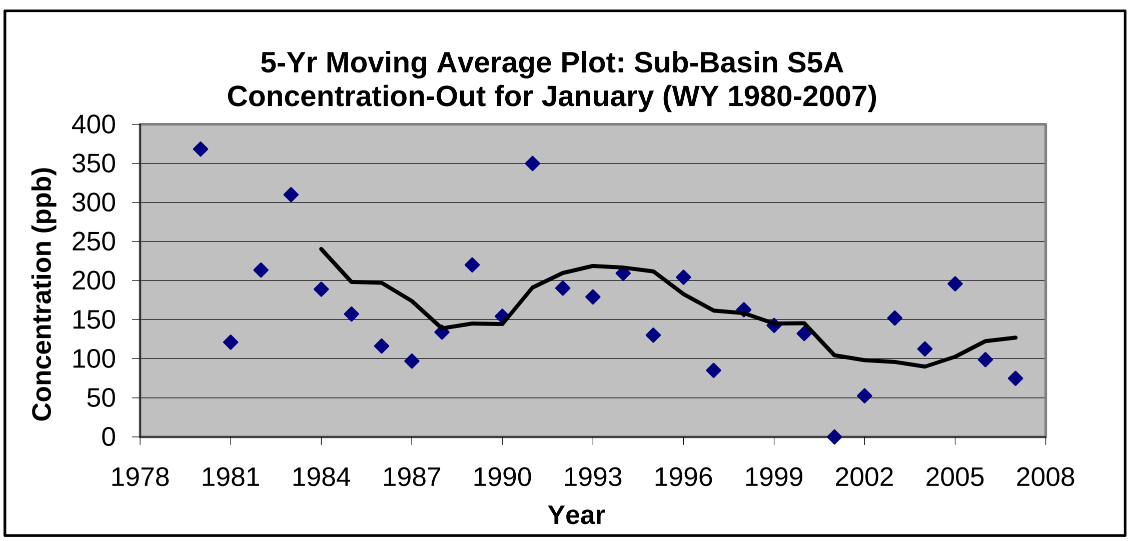

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for January (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for January (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
90
100
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



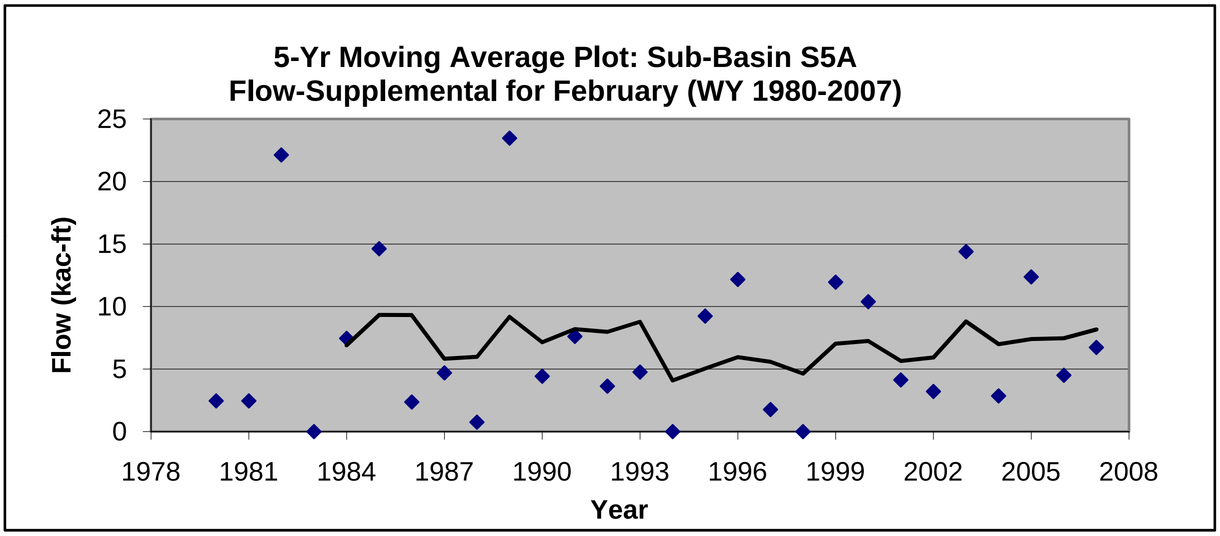
5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for January (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

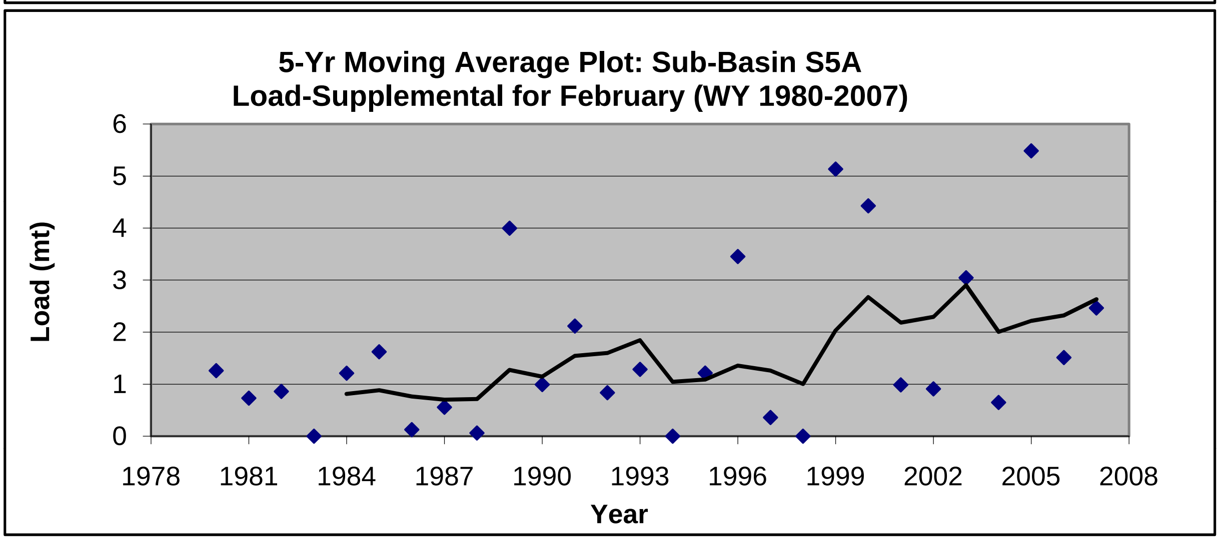


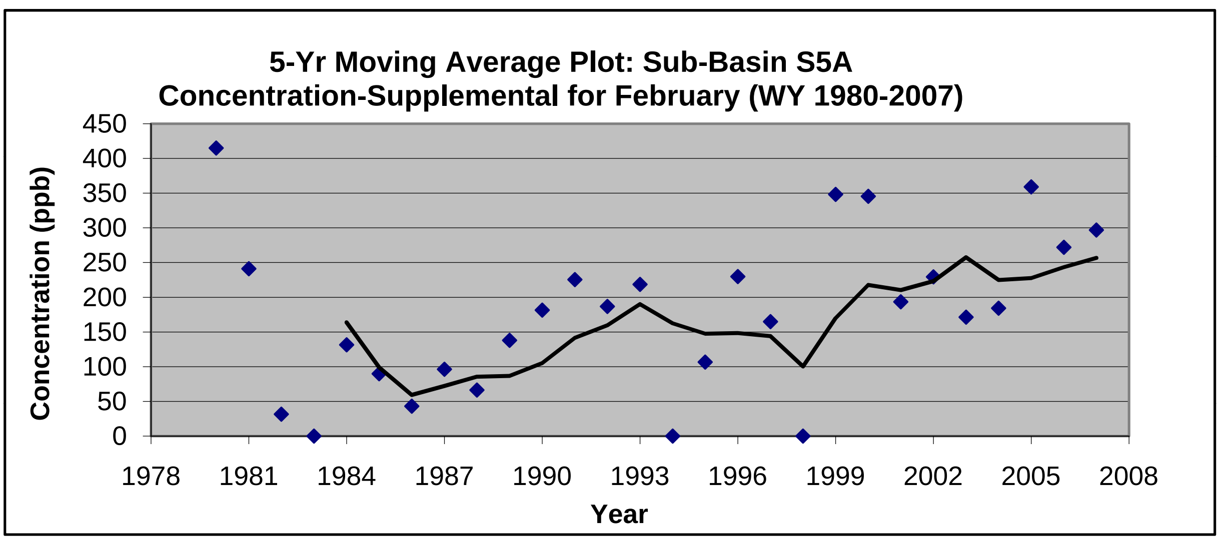
5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for January (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

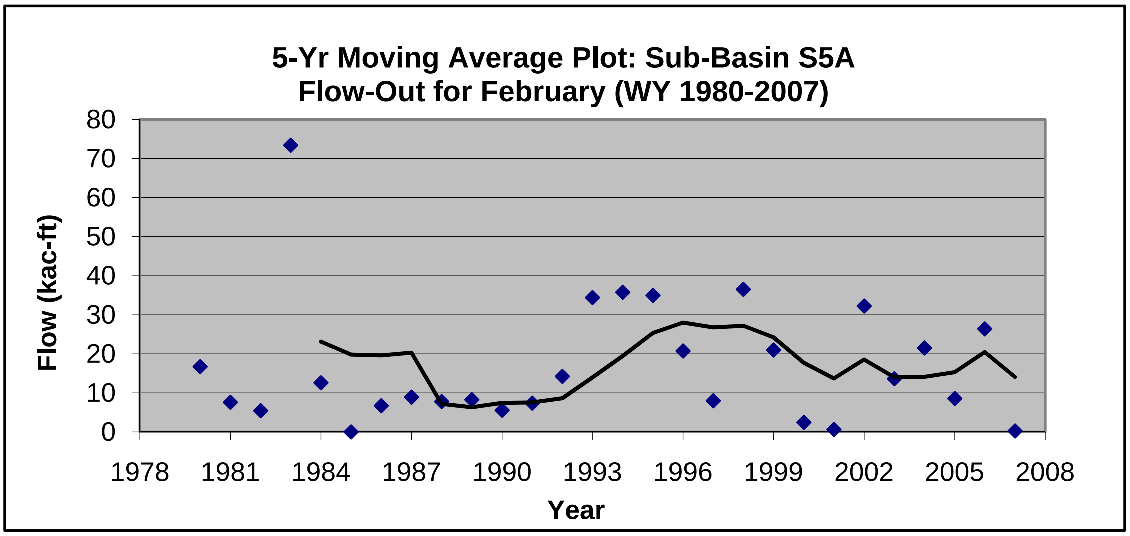
Hydrologic Sub-Basin S5A (February)

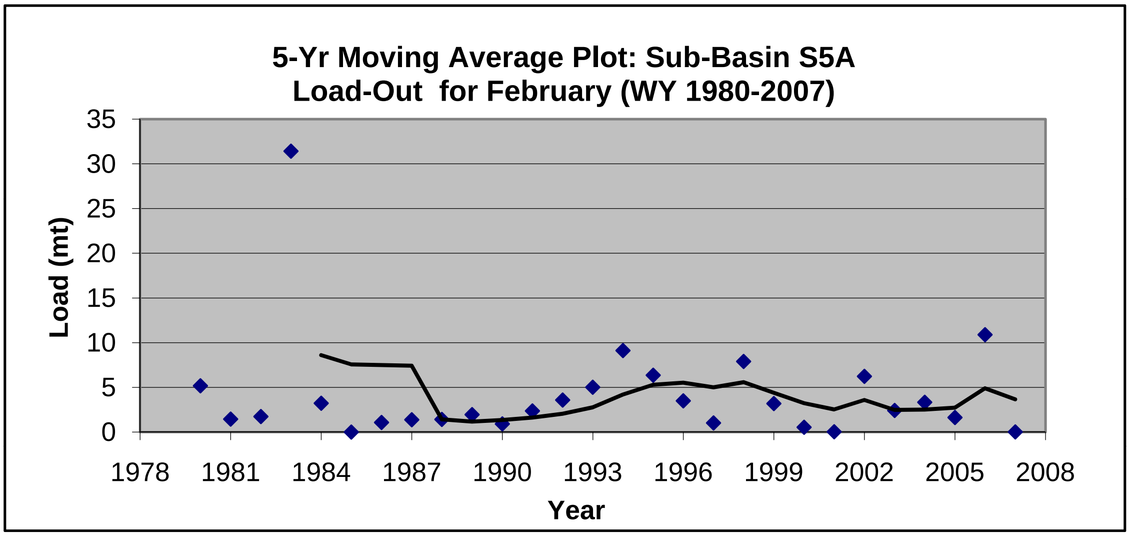
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	6.95	16.83	1.62	4.17	198.55	170.41
Standard Error	1.18	3.03	0.30	1.14	20.31	13.88
Median	4.60	10.73	1.10	2.39	186.77	153.90
Standard Deviation	6.27	16.01	1.58	6.03	101.53	72.11
Sample Variance	39.28	256.41	2.49	36.37	10307.49	5199.83
Kurtosis	1.07	4.46	0.55	16.09	-0.41	0.92
Skewness	1.21	1.81	1.22	3.68	0.34	0.79
Range	23.47	73.38	5.48	31.42	383.38	314.90
Minimum	0.00	0.00	0.00	0.00	31.47	32.00
Maximum	23.47	73.38	5.48	31.42	414.85	346.90
Sum	194.57	471.21	45.29	116.72	4963.82	4601.06
Count	28	28	28	28	25	27
Quartile-1	2.46	7.20	0.63	1.29	94.51	125.23
Quartile-2	4.60	10.73	1.10	2.39	182.83	150.50
Quartile-3	10.78	22.72	2.20	5.05	232.57	204.40
Confidence intervals	2.32	5.93	0.58	2.23	41.91	28.53

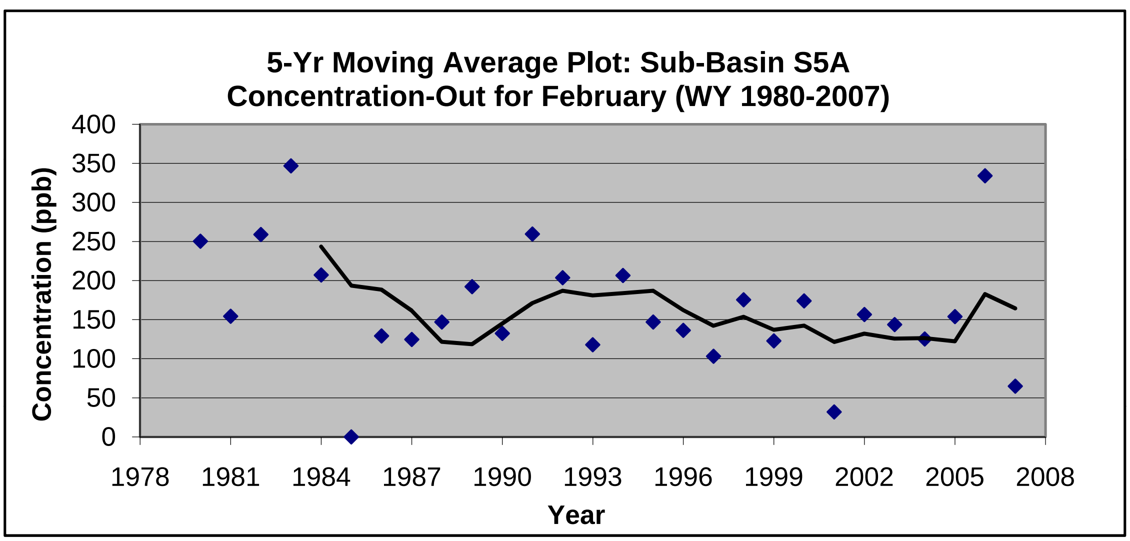

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for February (WY 1980-2007)
Flow (kac-ft)
0
5
10
15
20
25
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for February (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for February (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
450
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

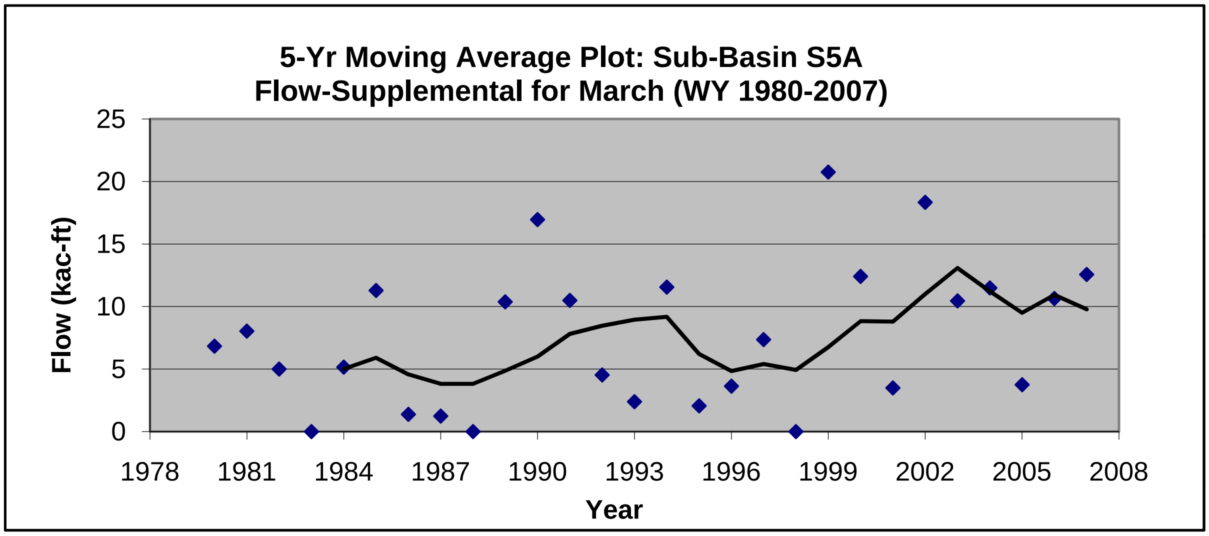

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for February (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

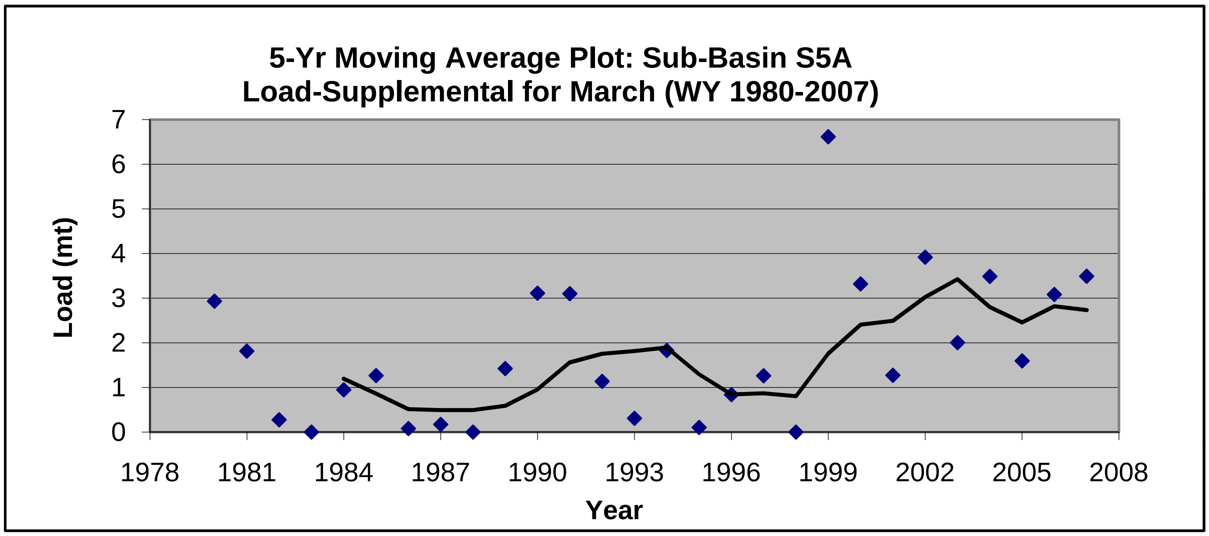

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for February (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
35
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

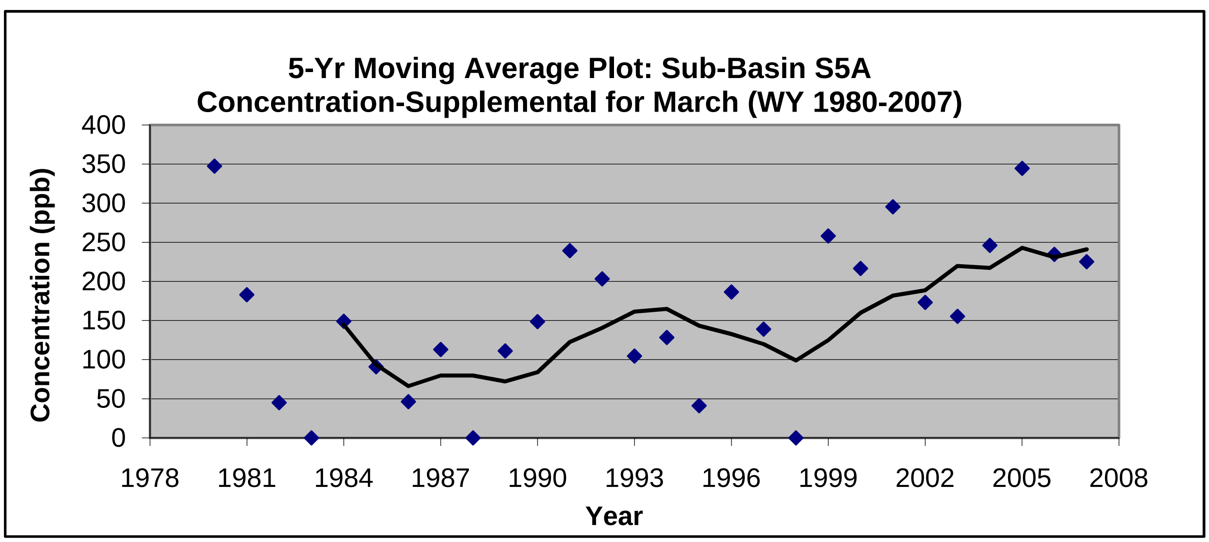

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for February (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

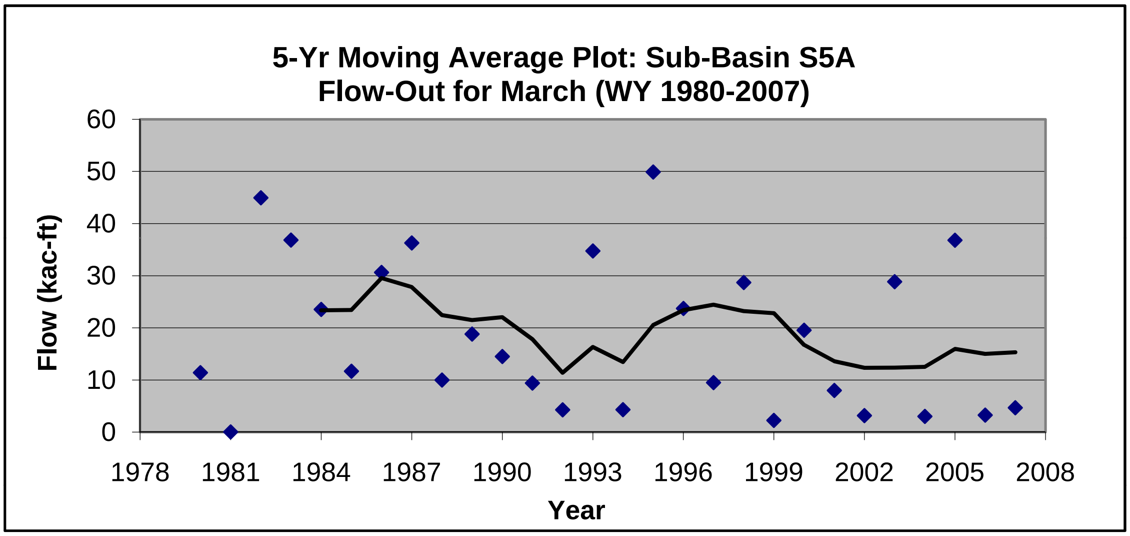
Hydrologic Sub-Basin S5A (March)

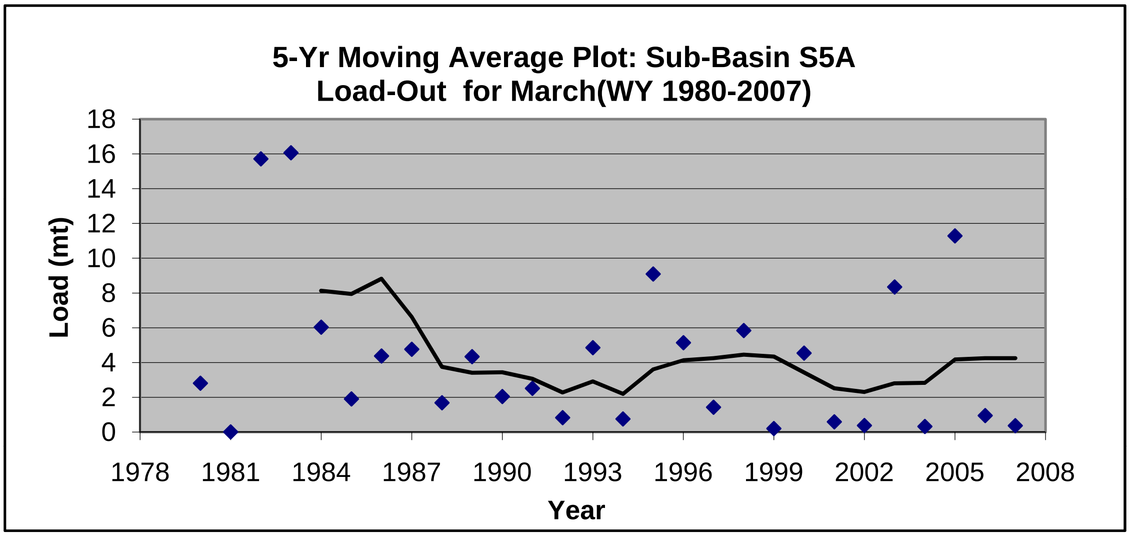
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	7.58	18.30	1.76	4.18	176.95	159.26
Standard Error	1.08	2.75	0.30	0.83	17.04	13.30
Median	7.10	13.08	1.35	2.66	173.10	144.80
Standard Deviation	5.71	14.55	1.59	4.41	85.22	70.39
Sample Variance	32.66	211.62	2.51	19.49	7262.89	4954.34
Kurtosis	-0.37	-0.85	1.55	1.87	-0.38	0.66
Skewness	0.54	0.59	1.09	1.50	0.29	0.84
Range	20.76	49.84	6.61	16.07	306.27	293.70
Minimum	0.00	0.03	0.00	0.00	41.03	59.80
Maximum	20.76	49.87	6.61	16.07	347.29	353.50
Sum	212.23	512.34	49.39	117.15	4423.72	4459.28
Count	28	28	28	28	25	28
Quartile-1	3.22	4.58	0.30	0.81	101.17	111.48
Quartile-2	7.10	13.08	1.35	2.66	152.12	144.80
Quartile-3	11.34	29.29	3.09	5.32	227.41	201.90
Confidence intervals	2.12	5.39	0.59	1.64	35.18	26.07

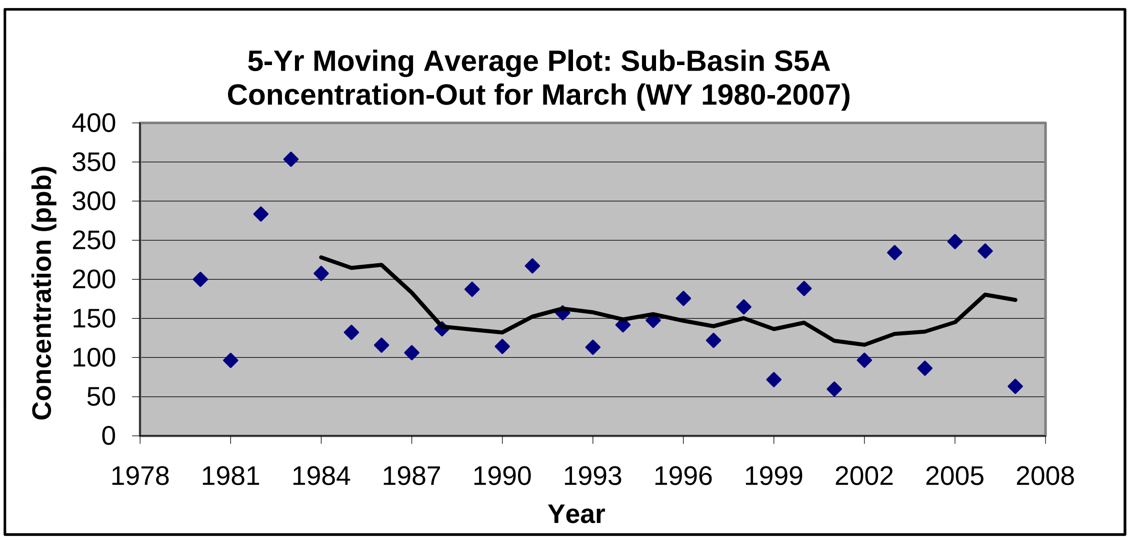

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for March (WY 1980-2007)
Flow (kac-ft)
0
5
10
15
20
25
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for March (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
7
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for March (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

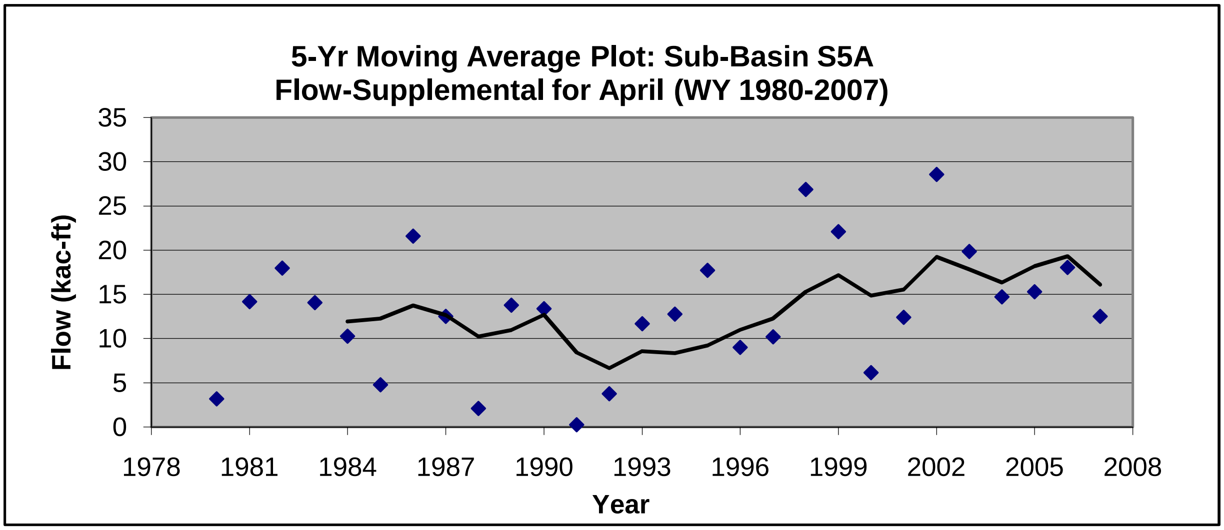

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for March (WY 1980-2007)
Flow (kac-ft)
Year

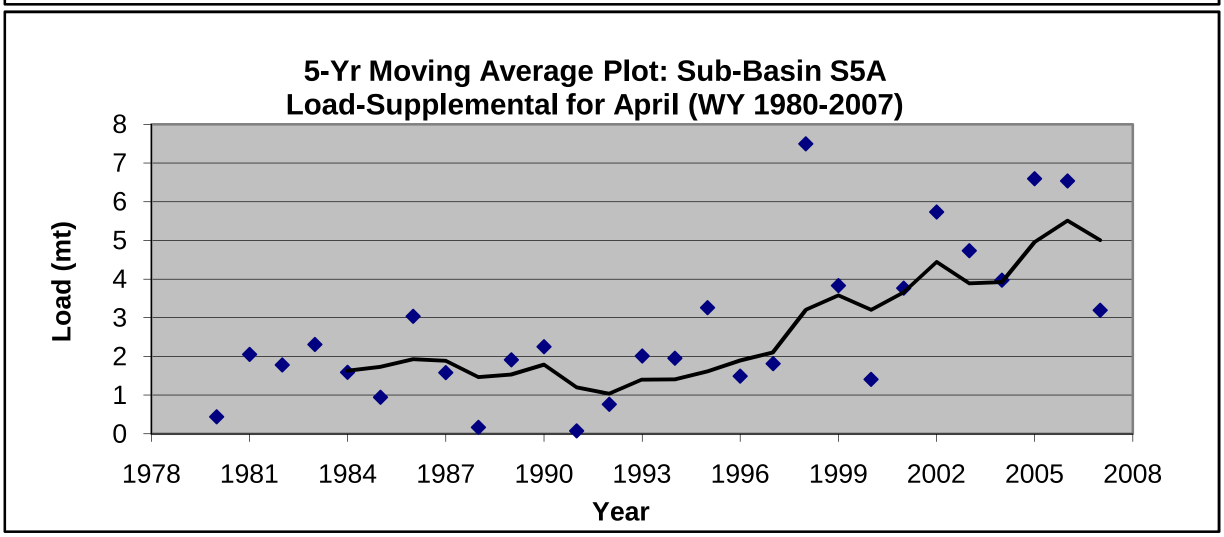

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for March(WY 1980-2007)
Load (mt)
Year

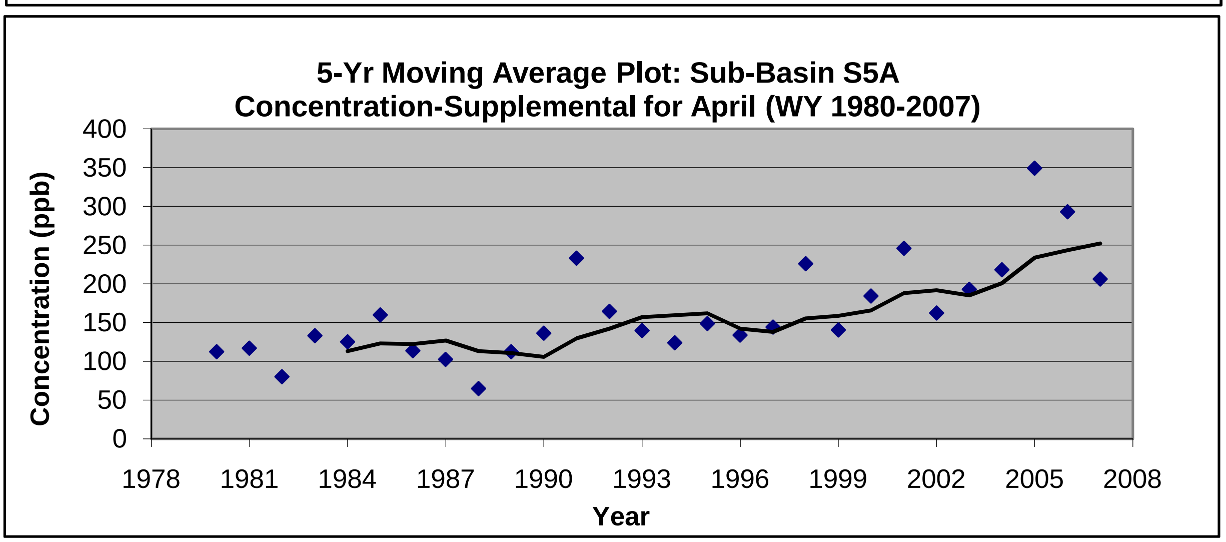

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for March (WY 1980-2007)
Concentration (ppb)
Year

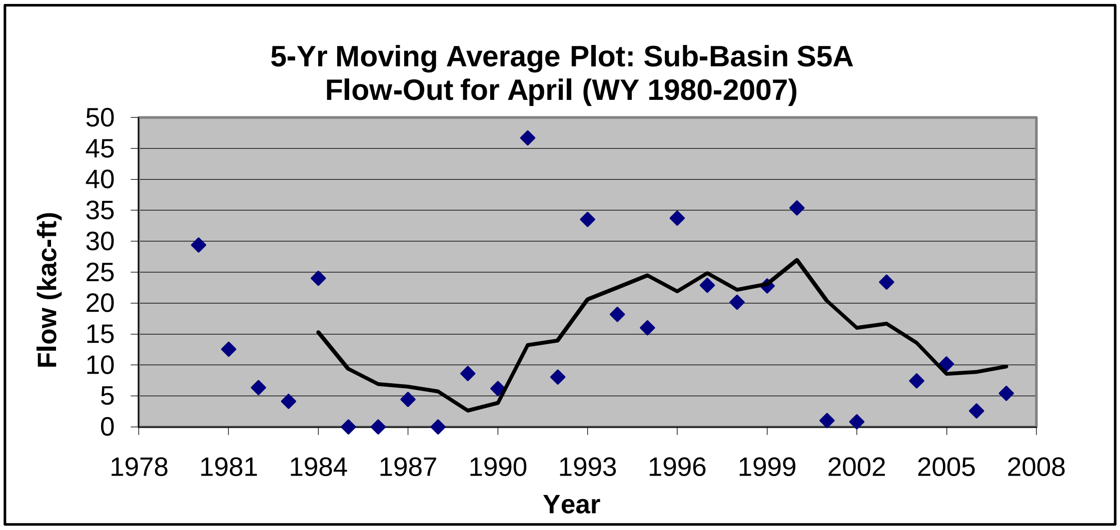
Hydrologic Sub-Basin S5A (April)

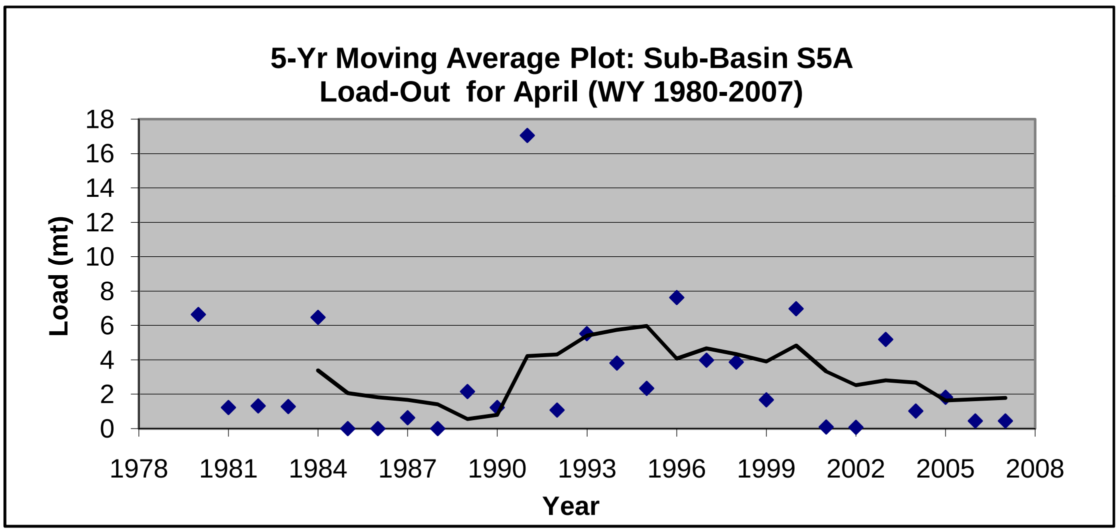
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	13.21	14.41	2.74	3.00	162.94	148.11
Standard Error	1.33	2.44	0.37	0.69	12.09	11.63
Median	13.08	9.38	2.03	1.50	142.19	145.70
Standard Deviation	7.03	12.91	1.98	3.65	63.96	58.14
Sample Variance	49.37	166.62	3.92	13.35	4091.37	3380.35
Kurtosis	-0.05	-0.22	0.26	7.22	1.53	0.52
Skewness	0.19	0.80	0.96	2.33	1.17	0.58
Range	28.31	46.69	7.42	17.07	284.34	236.51
Minimum	0.27	0.00	0.08	0.00	64.63	59.59
Maximum	28.58	46.69	7.49	17.07	348.97	296.10
Sum	369.83	403.62	76.65	84.02	4562.32	3702.83
Count	28	28	28	28	28	25
Quartile-1	9.90	4.34	1.56	0.59	122.16	78.53
Quartile-2	13.08	9.38	2.03	1.50	142.19	142.19
Quartile-3	17.79	22.99	3.78	4.29	196.28	172.68
Confidence intervals	2.60	4.78	0.73	1.35	23.69	24.00

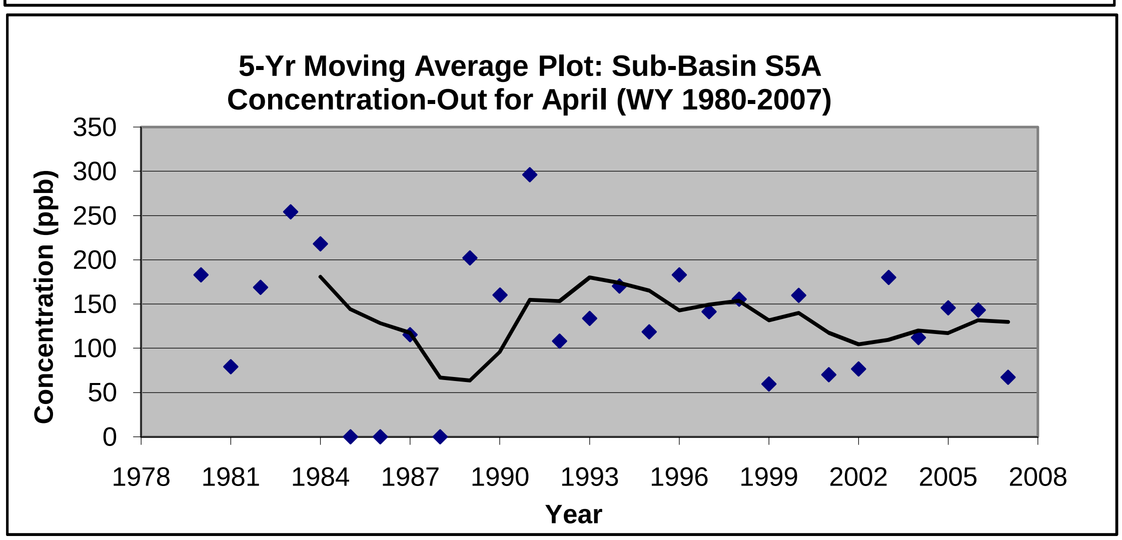

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Supplemental for April (WY 1980-2007)
Flow (kac-ft)
0
5
10
15
20
25
30
35
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Load-Supplemental for April (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
7
8
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

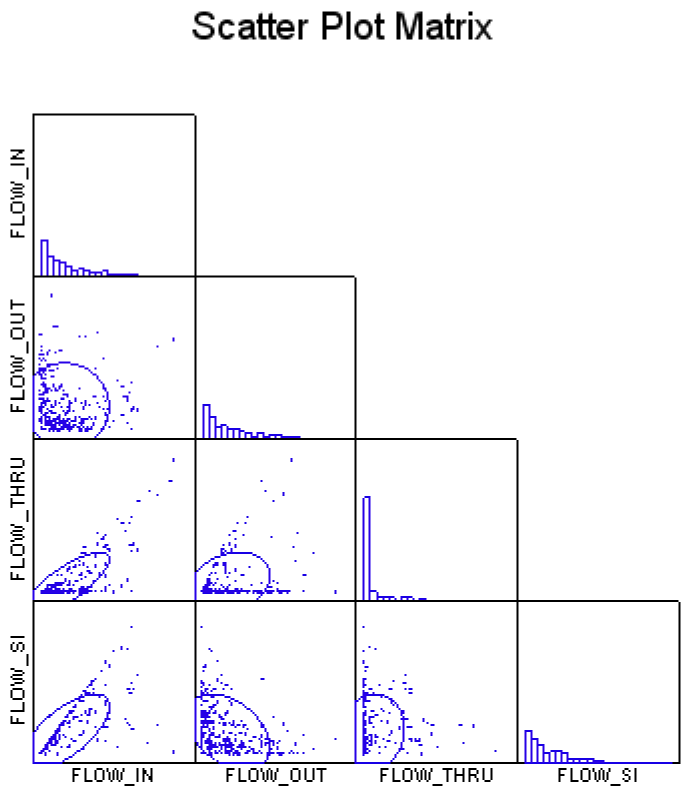

5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Supplemental for April (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

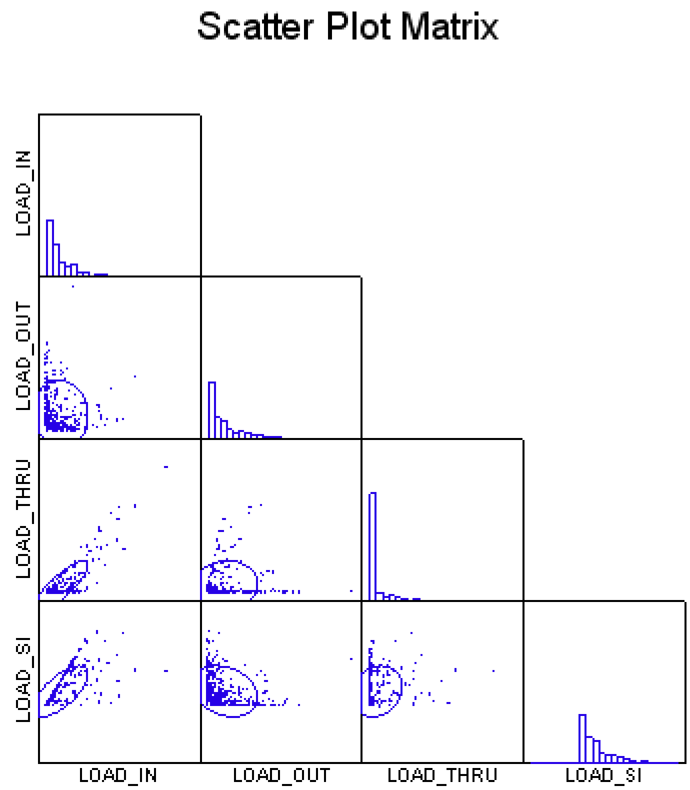

5-Yr Moving Average Plot: Sub-Basin S5A
Flow-Out for April (WY 1980-2007)
Flow (kac-ft)
50
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

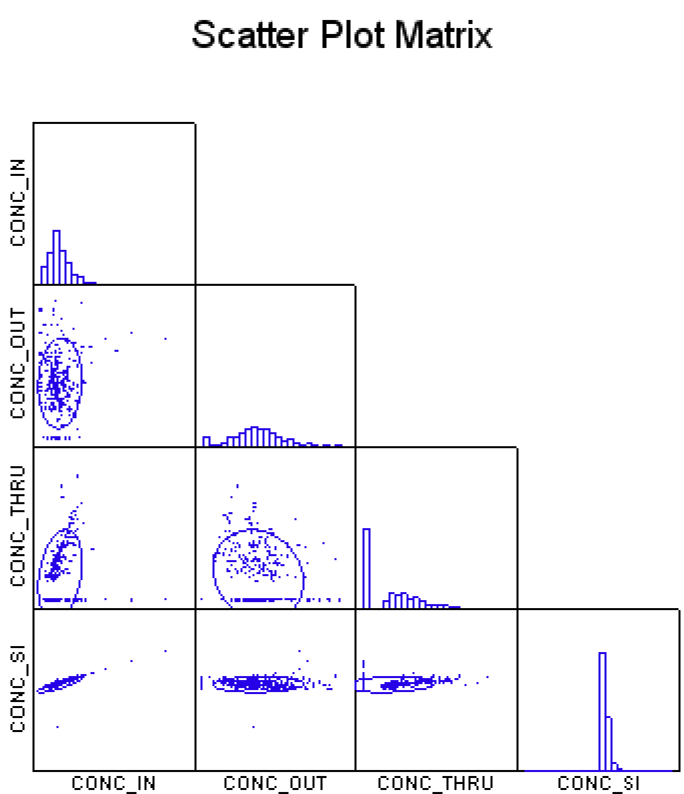

5-Yr Moving Average Plot: Sub-Basin S5A
Load-Out for April (WY 1980-2007)
Load (mt)
18
16
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S5A
Concentration-Out for April (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Correlation Analyses Plots for Hydrologic Sub-Basin S5A



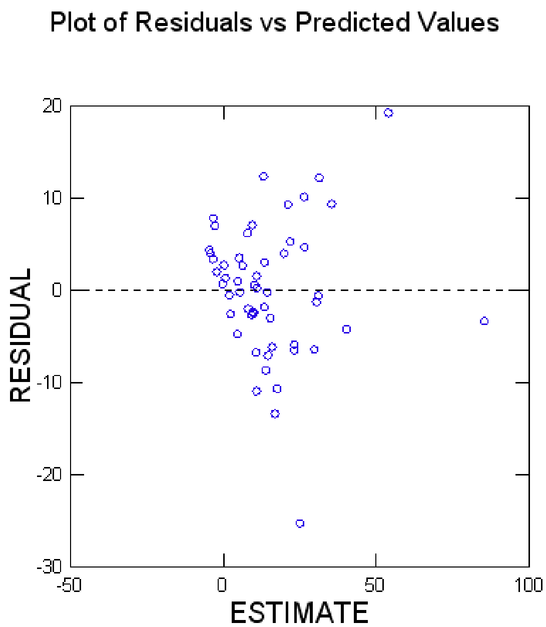




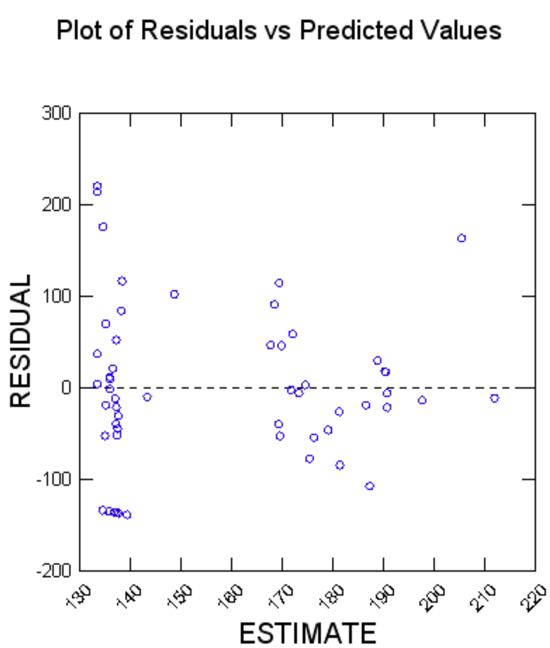
Residual Plots for Four Time Periods for Hydrologic Sub-Basin S5A during Dry Season

1. Base Period

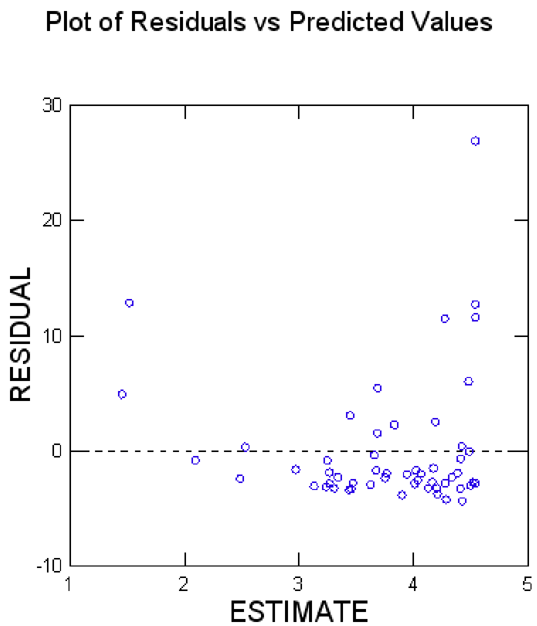
Regression Model: $Q_{out} = 1.12\ Q_{thru} - 0.09\ Q_{si} + 7.38\ P_m - 3.42$



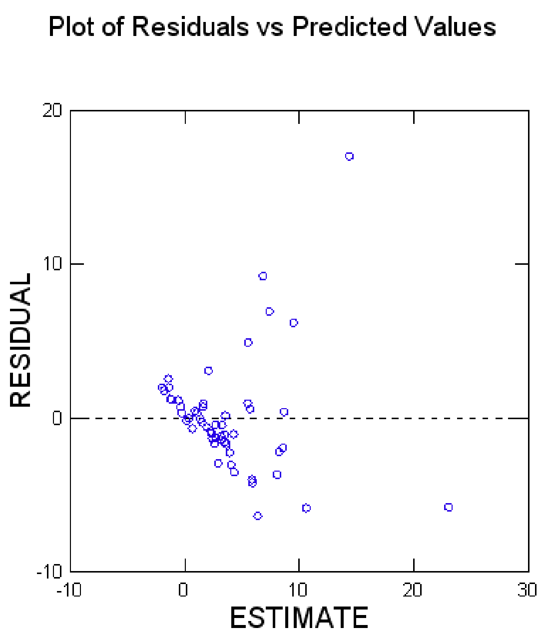
Regression Model: $C_{out} = 0.42\ C_{thru} + 0.04\ C_{si} + 133.62$



Regression Model: $L_{out} = -0.59\ L_{thru} - 0.68\ L_{si} + 4.54$



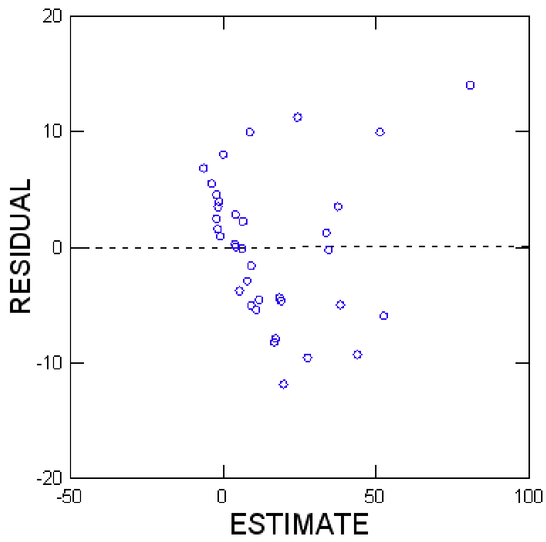
Regression Model: $L_{out} = 0.19\ Q_{thru} - 0.04\ Q_{si} + 2.03\ P_m + 0.005\ C_{thru} - 1.42$



2. Pre-BMP Period

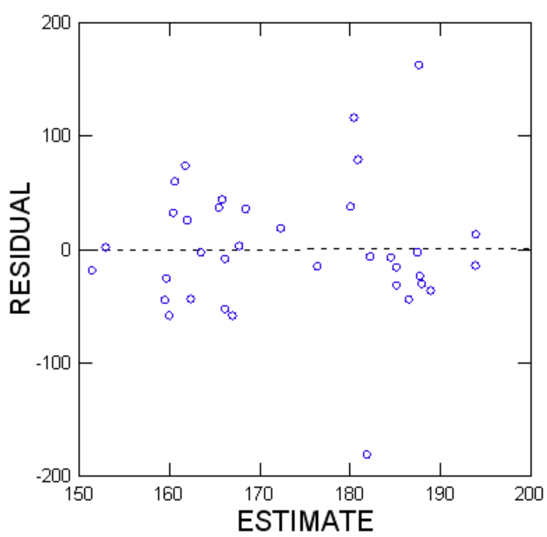
Regression Model: $Q_{out} = 1.00\ Q_{thru} - 0.30\ Q_{si} + 7.84\ P_m - 5.23$

Plot of Residuals vs Predicted Values



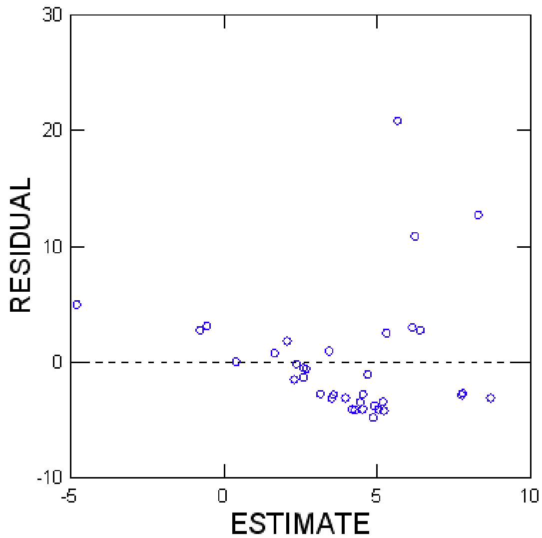
Regression Model: $C_{out} = -0.17\ C_{thru} - 0.06\ C_{si} + 193.94$

Plot of Residuals vs Predicted Values



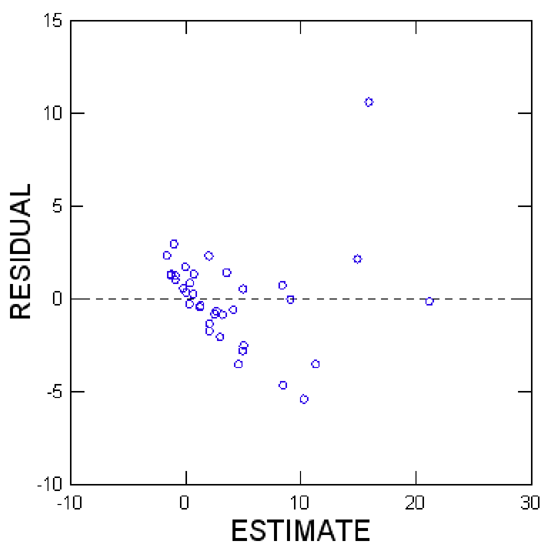
Regression Model: $L_{out} = 1.21\ L_{thru} - 2.24\ L_{si} + 6.42$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.1\ Q_{thru} + 0.007\ Q_{si} + 2.41\ P_m - 0.009\ C_{thru} - 0.009\ C_{si} - 0.75$

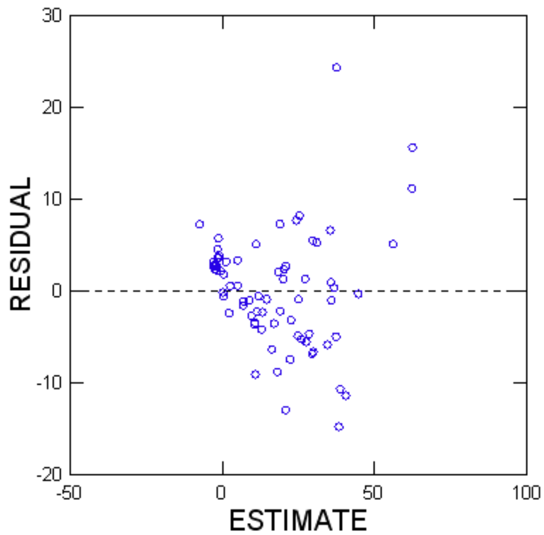
Plot of Residuals vs Predicted Values



3. BMP Period

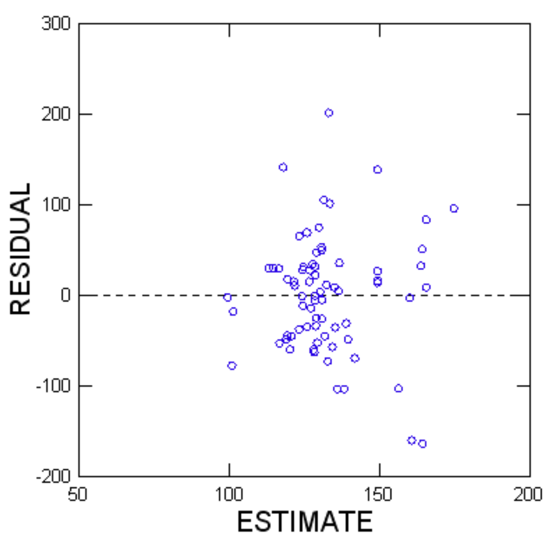
Regression Model: $Q_{out} = 1.10\ Q_{thru} - 0.38\ Q_{si} + 6.26\ P_m - 0.72$

Plot of Residuals vs Predicted Values

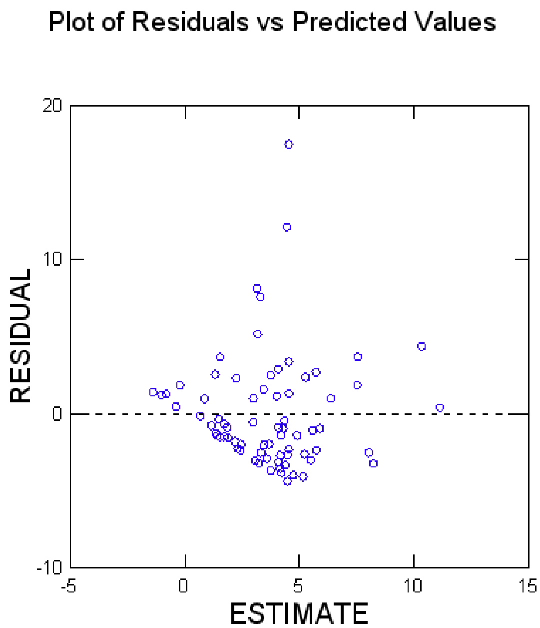


Regression Model: $C_{out} = -0.15\ C_{thru} + 0.05\ C_{si} + 149.53$

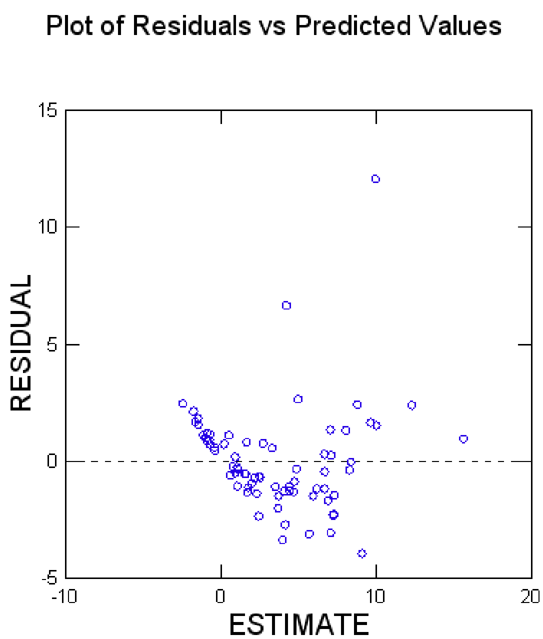
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.56\ L_{thru} – 0.87\ L_{si} + 4.57$



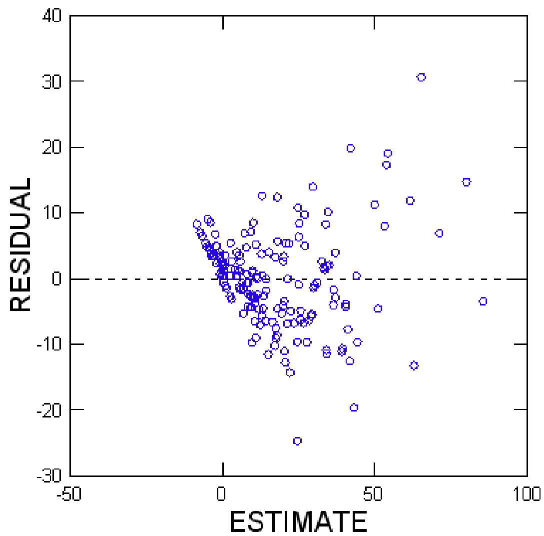
Regression Model: $L_{out} = 0.21\ Q_{thru} - 0.075\ Q_{si} + 1.60\ P_m - 0.006\ C_{thru} - 0.13$



4. Entire Period

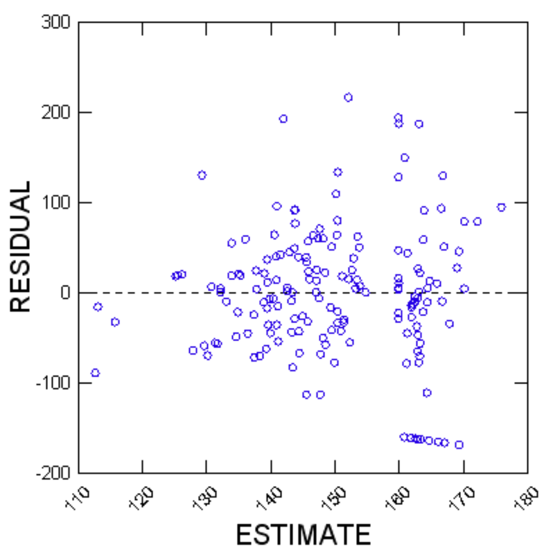
Regression Model: $Q_{out} = 1.06\ Q_{thru} - 0.30\ Q_{si} + 7.34\ P_m - 2.85$

Plot of Residuals vs Predicted Values

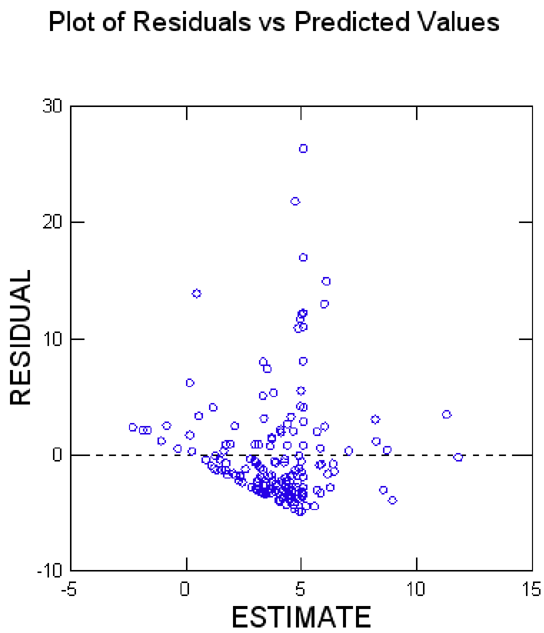


Regression Model: $C_{out} = -0.13\ C_{thru} + 0.03\ C_{si} + 160$

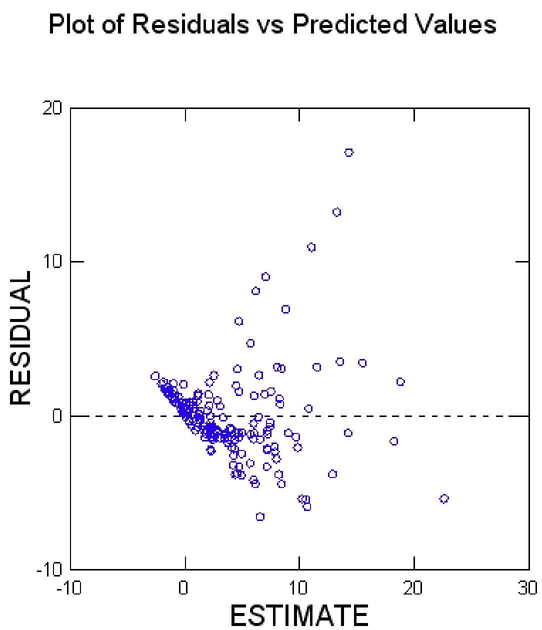
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.62\ L_{thru} - 1.09\ L_{si} + 5.10$



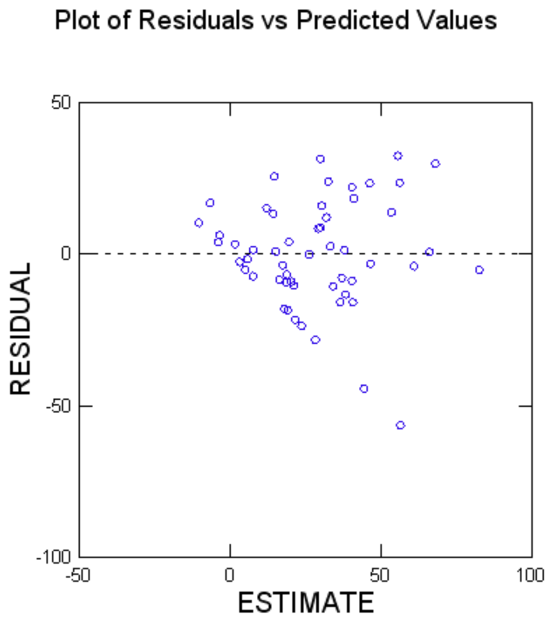
Regression Model: $L_{out} = 0.19\ Q_{thru} - 0.05\ Q_{si} + 1.95\ P_m - 0.004\ C_{thru} - 0.91$



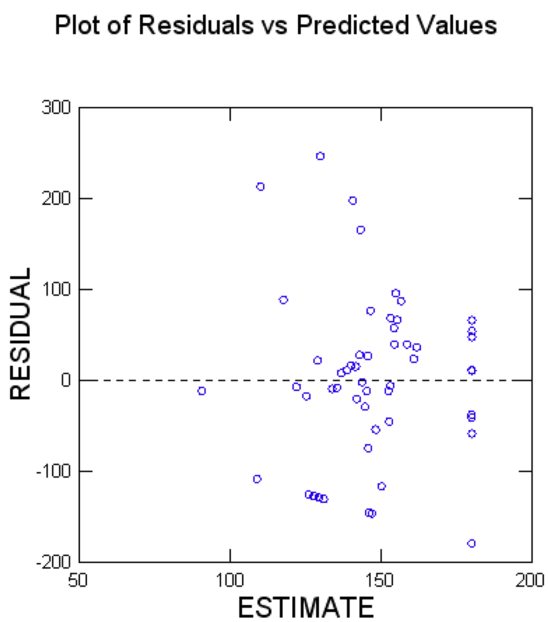
Residual Plots for Four Time Periods for Hydrologic Sub-Basin S5A during Wet Season

1. **Base Period**

Regression Model: $Q_{out} = -2.37\ Q_{thru} - 0.39\ Q_{si} + 5.88\ P_m - 2.07$

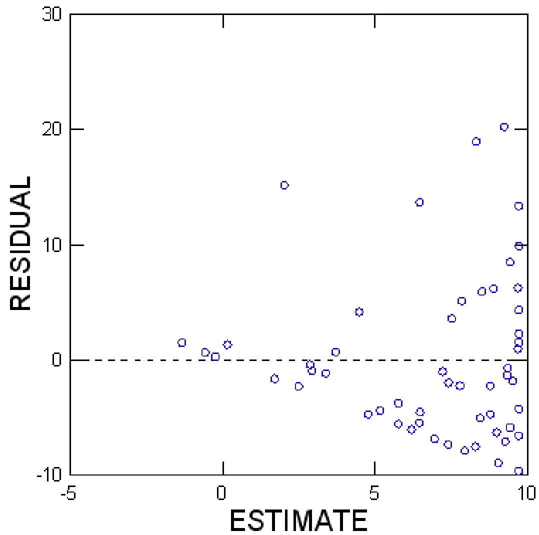


Regression Model: $C_{out} = 0.04\ C_{thru} - 0.39\ C_{si} + 180.32$



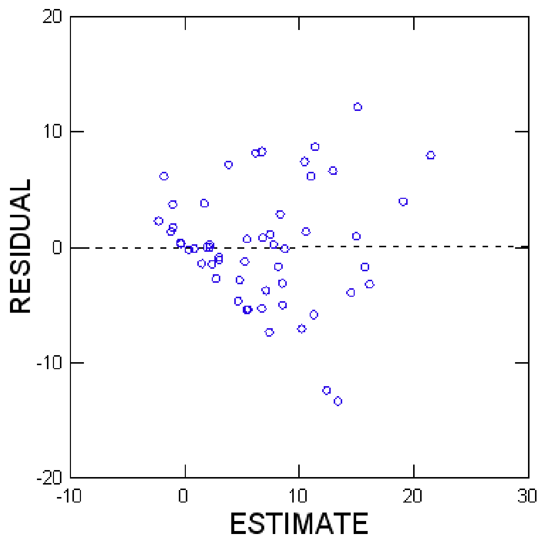
Regression Model: $L_{out} = -8.22\ L_{thru} - 2.25\ L_{si} + 0\ L_p + 9.73$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = -1.30\ Q_{thru} - 0.01\ Q_{si} + 1.66\ P_m - 0.004\ C_{thru} - 0.019\ C_{si} + 0.69$

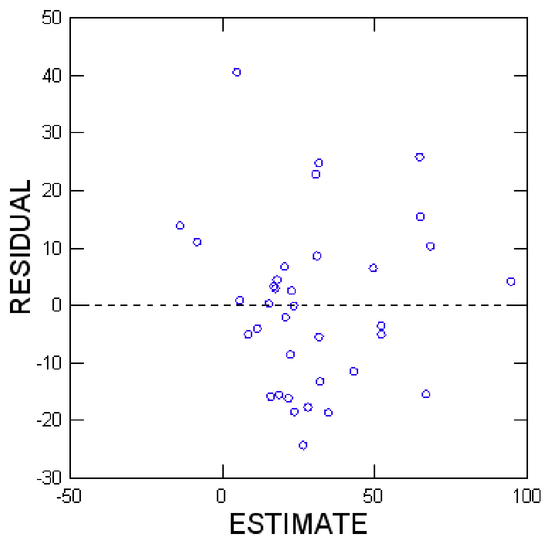
Plot of Residuals vs Predicted Values



2. Pre-BMP Period

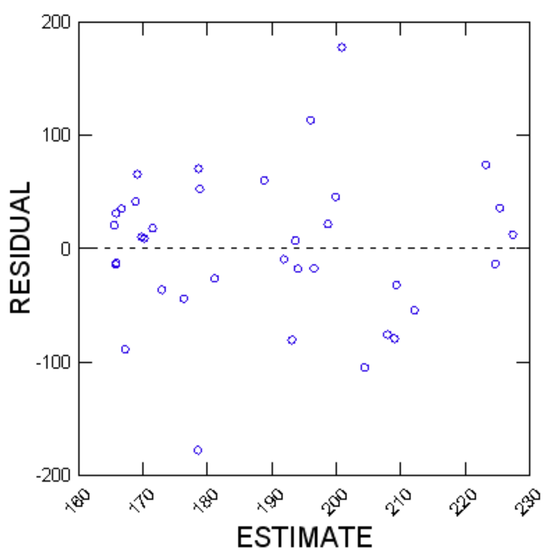
Regression Model: $Q_{out} = 1.00\ Q_{thru} - 0.72\ Q_{si} + 5.22\ P_m - 3.05$

Plot of Residuals vs Predicted Values



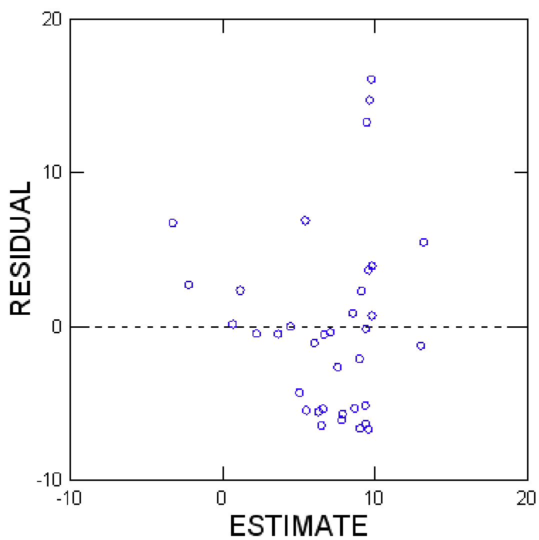
Regression Model: $C_{out} = -0.18\ C_{thru} + 0.21\ C_{si} + 165.89$

Plot of Residuals vs Predicted Values



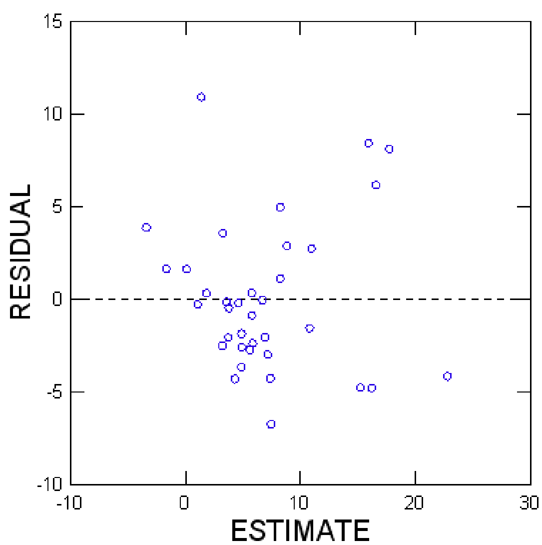
Regression Model: $L_{out} = 1.27\ L_{thru} - 2.32\ L_{si} + 9.82$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.12\ Q_{thru} - 0.19\ Q_{si} + 1.25\ P_m - 0.01\ C_{thru} - 0.02\ C_{si} - 4.10$

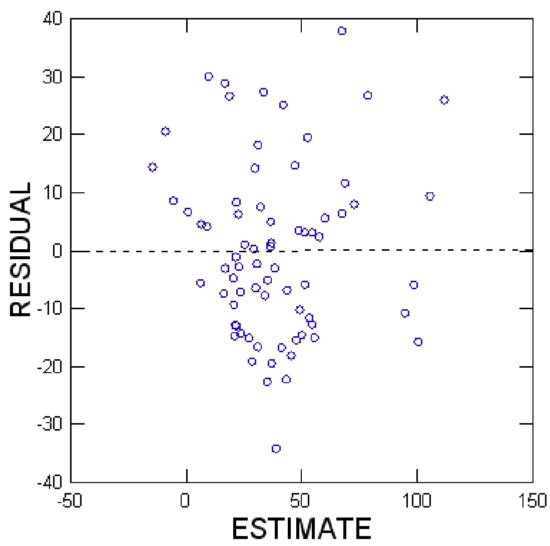
Plot of Residuals vs Predicted Values



3. **BMP Period**

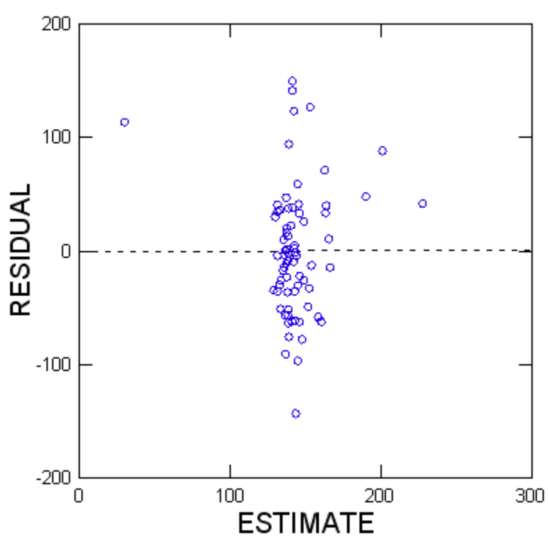
Regression Model: $Q_{out} = 1.32\ Q_{thru} - 0.09\ Q_{si} + 8.06\ P_m - 17.40$

Plot of Residuals vs Predicted Values

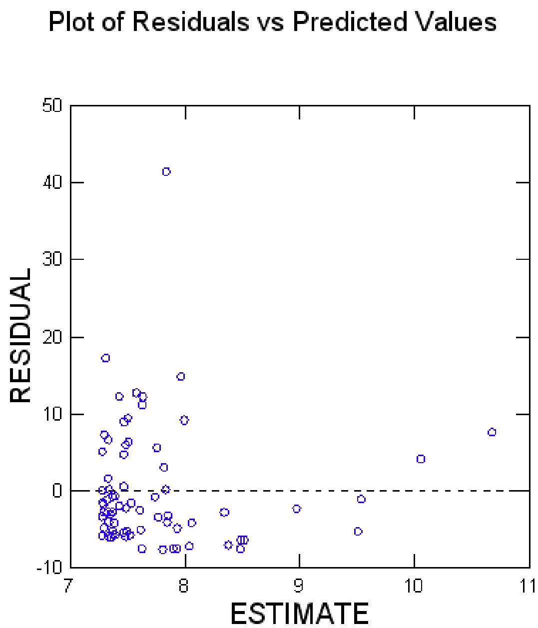


Regression Model: $C_{out} = -0.05\ C_{thru} + 0.09\ C_{si} + 131.93$

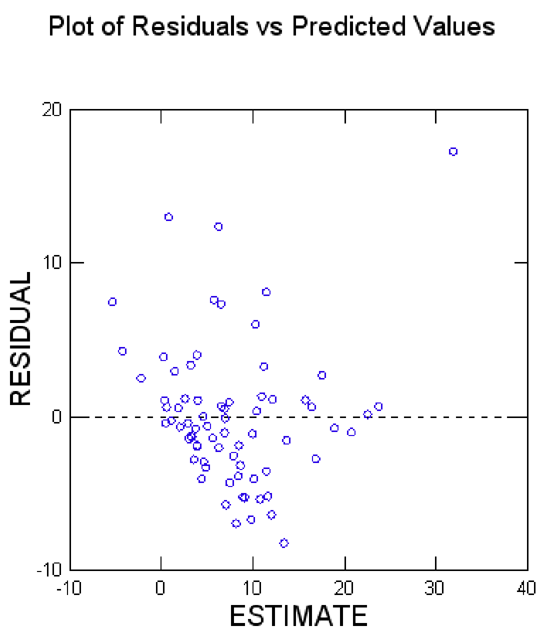
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.25\ L_{thru} + 0.12\ L_{si} + 7.28$

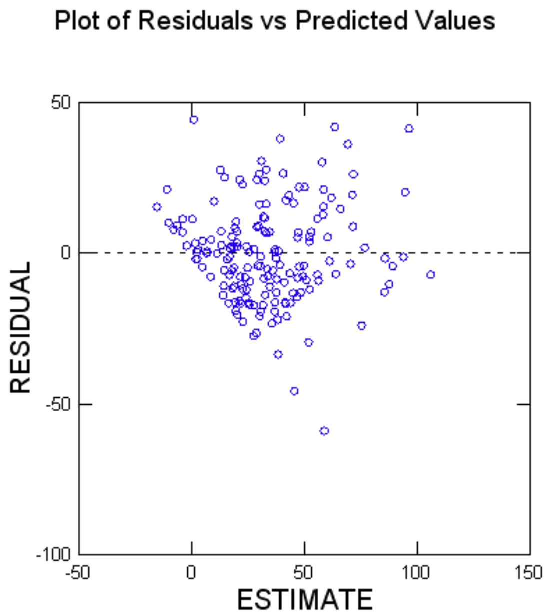


Regression Model: $L_{out} = 0.24\ Q_{thru} + 0.11\ Q_{si} + 2.16\ P_m - 0.004\ C_{thru} + 0.007\ C_{si} - 8.39$

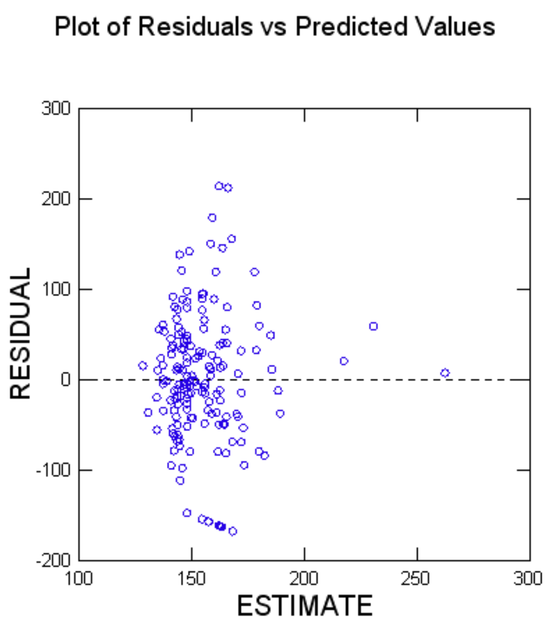


4. Entire Period

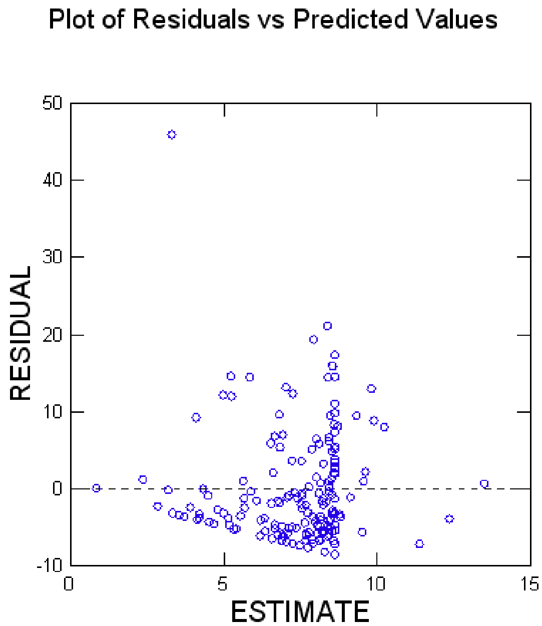
Regression Model: $Q_{out} = 1.16\ Q_{thru} - 0.44\ Q_{si} + 6.49\ P_m - 5.58$



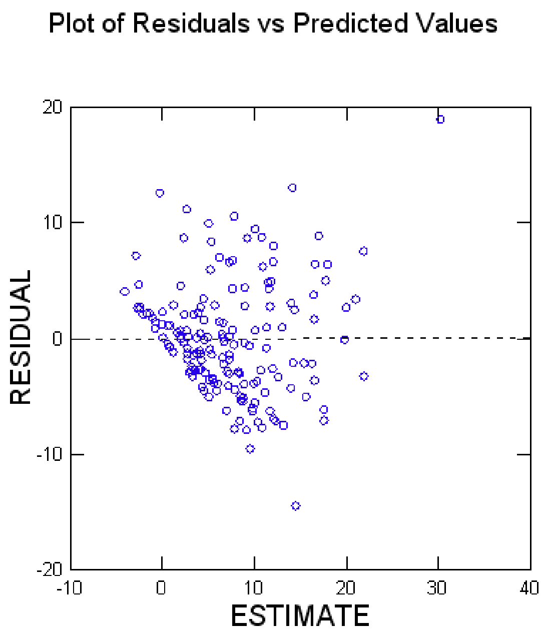
Regression Model: $C_{out} = -0.14\ C_{thru} + 0.11\ C_{si} + 148.25$



Regression Model: $L_{out} = 0.47\ L_{thru} - 1.11\ L_{si} + 8.64$



Regression Model: $L_{out} = 0.20\ Q_{thru} - 0.02\ Q_{si} + 1.76\ P_m - 0.01\ C_{thru} - 0.009\ C_{si} - 4.34$



	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall	Rainfall (in)	IN	OUT	Thru	Supplemental Inflow
May-79	13.63	11.21	3.09	10.54	1.79	2.16	0.38	1.41	0.00	5.77	106.50	156.20	100.80	108.13
Jun-79	39.07	2.67	2.67	36.40	4.13	0.11	0.30	3.83	0.00	3.25	85.62	33.00	89.90	85.28
Jul-79	6.41	0.00	0.00	6.41	1.03	0.00	0.00	1.03	0.00	4.83	130.33	0.00	0.00	130.27
Aug-79	2.09	25.07	0.66	1.43	0.35	3.33	0.08	0.26	0.00	7.26	134.44	107.60	100.80	150.04
Sep-79	0.00	97.98	0.00	0.00	0.00	23.03	0.00	0.00	0.00	11.95	0.00	190.40	0.00	0.00
Oct-79	1.12	27.27	0.00	1.12	0.32	2.64	0.00	0.32	0.00	2.51	229.83	78.50	0.00	229.83
Nov-79	0.59	16.89	0.00	0.59	0.03	1.71	0.00	0.03	0.00	3.65	42.80	82.00	0.00	42.78
Dec-79	5.76	14.29	0.00	5.76	1.91	2.34	0.00	1.91	0.00	1.64	268.44	132.80	0.00	268.41
Jan-80	10.55	31.49	0.84	9.71	4.48	14.32	0.15	4.33	0.00	4.10	343.59	368.30	139.00	361.32
Feb-80	2.46	16.71	0.00	2.46	1.26	5.16	0.00	1.26	0.00	1.81	414.90	250.40	0.00	414.85
Mar-80	7.02	11.38	0.18	6.84	2.97	2.81	0.04	2.93	0.00	2.04	342.29	200.00	155.60	347.29
Apr-80	3.65	29.36	0.48	3.17	0.52	6.64	0.08	0.44	0.00	4.59	116.21	183.20	142.20	112.24
May-80	19.88	27.73	1.89	17.99	2.41	2.42	0.24	2.17	0.00	4.76	98.09	70.60	102.20	97.66
Jun-80	20.17	10.75	0.76	19.42	2.86	1.92	0.06	2.80	0.00	5.56	114.85	144.40	61.40	116.91
Jul-80	7.24	29.23	0.10	7.15	1.00	5.37	0.01	0.99	0.00	7.19	112.04	149.00	65.10	112.64
Aug-80	3.86	13.74	0.00	3.86	0.86	5.48	0.00	0.86	0.00	3.60	179.70	323.20	0.00	179.71
Sep-80	0.04	67.36	0.04	0.00	0.00	15.88	0.00	0.00	0.00	9.49	93.70	191.00	73.30	0.00
Oct-80	15.03	4.97	0.87	14.16	1.80	0.71	0.08	1.72	0.00	1.95	97.04	115.00	78.40	98.17
Nov-80	4.32	10.84	0.23	4.09	0.77	2.23	0.02	0.75	0.00	1.88	144.11	166.90	81.50	147.54
Dec-80	11.21	1.64	0.41	10.79	1.88	0.36	0.04	1.84	0.00	0.84	136.11	177.00	85.30	137.99
Jan-81	10.87	0.58	0.58	10.29	1.61	0.09	0.07	1.54	0.00	0.50	119.81	121.30	90.80	121.47
Feb-81	2.54	7.58	0.08	2.46	0.74	1.44	0.01	0.73	0.00	1.86	236.43	154.40	92.20	241.10
Mar-81	8.07	0.03	0.03	8.04	1.82	0.00	0.00	1.81	0.00	2.06	182.55	96.40	97.50	182.86
Apr-81	26.53	12.55	12.34	14.19	3.83	1.23	1.78	2.05	0.00	0.27	117.10	79.10	117.20	116.94
May-81	9.30	7.94	1.13	8.17	1.07	0.92	0.14	0.92	0.00	4.16	92.76	93.58	103.00	91.38
Jun-81	21.66	0.58	0.58	21.08	1.63	0.14	0.05	1.58	0.00	5.25	61.00	198.00	64.80	60.89
Jul-81	11.41	0.00	0.00	11.41	1.23	0.00	0.00	1.23	0.00	4.80	87.30	0.00	0.00	87.28
Aug-81	1.81	77.34	0.00	1.81	0.21	29.45	0.00	0.21	0.00	14.52	94.60	308.45	0.00	94.59
Sep-81	2.72	56.58	0.00	2.72	0.54	14.38	0.00	0.54	0.00	6.09	160.40	205.90	0.00	160.40
Oct-81	14.11	0.00	0.00	14.11	2.19	0.00	0.00	2.19	0.00	0.64	125.99	0.00	0.00	125.93
Nov-81	10.99	3.63	0.00	10.99	1.77	1.00	0.00	1.77	0.00	2.92	130.23	222.00	0.00	130.21
Dec-81	12.79	0.17	0.17	12.62	1.93	0.04	0.02	1.91	0.00	0.17	122.01	215.30	75.50	122.62
Jan-82	7.31	5.35	2.59	4.72	0.42	1.41	0.25	0.17	0.00	0.89	46.61	213.60	78.60	29.10
Feb-82	25.42	5.42	3.29	22.13	1.18	1.73	0.33	0.86	0.00	2.16	37.77	259.05	80.10	31.47
Mar-82	6.30	44.92	1.29	5.01	0.41	15.72	0.13	0.28	0.00	5.16	52.45	283.48	81.20	44.99
Apr-82	19.11	6.35	1.12	17.99	1.89	1.32	0.12	1.78	0.00	1.66	80.25	168.80	83.70	80.04
May-82	21.65	35.83	1.19	20.46	1.99	8.57	0.13	1.87	0.00	7.85	74.56	193.69	85.90	73.87
Jun-82	7.75	88.15	0.00	7.75	0.62	27.22	0.00	0.62	0.00	10.35	64.76	250.20	0.00	64.76
Jul-82	0.00	39.29	0.00	0.00	0.00	11.92	0.00	0.00	0.00	6.83	0.00	245.80	0.00	0.00
Aug-82	2.61	37.80	0.00	2.61	0.16	8.58	0.00	0.16	0.00	5.54	49.40	183.90	0.00	49.36
Sep-82	0.00	69.69	0.00	0.00	0.00	19.56	0.00	0.00	0.00	8.25	0.00	227.40	0.00	0.00
Oct-82	11.48	40.37	0.00	11.48	0.98	11.02	0.00	0.98	0.00	3.64	69.07	221.20	0.00	69.05
Nov-82	11.00	7.52	0.33	10.67	0.50	0.90	0.04	0.46	0.00	1.90	36.72	97.30	96.20	34.89
Dec-82	10.53	0.00	0.00	10.53	0.37	0.00	0.00	0.37	0.00	1.25	28.70	0.00	0.00	28.71
Jan-83	2.24	27.32	0.00	2.24	0.09	10.46	0.00	0.09	0.00	3.49	30.80	310.00	0.00	30.75
Feb-83	0.00	73.38	0.00	0.00	0.00	31.42	0.00	0.00	0.00	7.81	0.00	346.90	0.00	0.00
Mar-83	0.00	36.82	0.00	0.00	0.00	16.07	0.00	0.00	0.00	4.09	0.00	353.50	0.00	0.00
Apr-83	14.06	4.09	0.00	14.06	2.31	1.29	0.00	2.31	0.00	2.12	133.02	254.40	0.00	133.04
May-83	43.58	0.00	0.00	43.58	4.58	0.00	0.00	4.58	0.00	1.49	85.05	0.00	0.00	85.05
Jun-83	0.10	57.00	0.00	0.10	0.02	10.57	0.00	0.02	0.00	10.75	131.30	150.30	0.00	131.32
Jul-83	4.60	0.00	0.00	4.60	0.79	0.00	0.00	0.79	0.00	3.75	139.00	0.00	0.00	139.03
Aug-83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.93	0.00	0.00	0.00	0.00
Sep-83	1.81	0.00	0.00	1.81	0.30	0.00	0.00	0.30	0.00	10.10	134.60	0.00	0.00	134.63
Oct-83	2.91	61.50	0.32	2.59	0.24	15.01	0.05	0.19	0.00	5.78	65.64	197.80	124.30	58.36
Nov-83	10.66	5.89	0.33	10.33	1.17	1.34	0.05	1.12	0.00	1.22	88.85	184.20	127.90	87.61
Dec-83	10.38	43.73	0.34	10.04	1.26	9.10	0.05	1.21	0.00	4.82	98.66	168.60	127.10	97.64
Jan-84	6.20	4.74	0.00	6.20	0.78	1.11	0.00	0.78	0.00	0.13	102.20	188.90	0.00	102.17
Feb-84	8.17	12.57	0.71	7.46	1.32	3.22	0.11	1.21	0.00	2.57	130.70	207.20	123.50	131.41
Mar-84	5.89	23.53	0.73	5.16	1.06	6.03	0.11	0.95	0.00	4.49	145.51	207.60	121.50	148.88
Apr-84	10.46	24.02	0.18	10.28	1.61	6.46	0.03	1.59	0.00	3.29	125.01	218.00	120.20	125.08
May-84	26.34	62.42	0.63	25.71	3.18	17.16	0.09	3.08	0.00	9.18	97.68	222.70	117.30	97.17
Jun-84	13.57	23.53	0.00	13.57	1.11	6.13	0.00	1.11	0.00	4.59	66.42	211.20	0.00	66.39
Jul-84	0.00	38.79	0.00	0.00	0.00	11.19	0.00	0.00	0.00	5.48	0.00	233.80	0.00	0.00
Aug-84	13.24	0.34	0.00	13.24	1.56	0.07	0.00	1.56	0.00	2.55	95.53	170.20	0.00	95.52
Sep-84	9.07	43.32	0.00	9.07	1.44	20.11	0.00	1.44	0.00	8.88	128.97	376.00	0.00	129.00
Oct-84	21.37	10.36	0.00	21.37	2.67	4.32	0.00	2.67	0.00	0.67	101.26	338.10	0.00	101.21
Nov-84	17.11	30.59	0.14	16.97	4.56	6.30	0.02	4.54	0.00	3.55	215.77	166.80	106.80	216.63
Dec-84	16.49	0.00	0.00	16.49	2.07	0.00	0.00	2.07	0.00	0.41	101.88	0.00	0.00	101.89
Jan-85	13.05	3.22	0.00	13.05	1.35	0.63	0.00	1.35	0.00	0.70	83.85	157.30	0.00	83.81
Feb-85	14.63	0.00	0.00	14.63	1.62	0.00	0.00	1.62	0.00	0.11	89.81	0.00	0.00	89.84
Mar-85	11.39	11.68	0.11	11.29	1.28	1.91	0.01	1.27	0.00	2.43	90.99	132.30	100.10	90.91
Apr-85	4.77	0.00	0.00	4.77	0.94	0.00	0.00	0.94	0.00	3.96	160.10	0.00	0.00	160.05
May-85	19.59	0.00	0.00	19.59	4.43	0.00	0.00	4.43	0.00	2.53	182.90	0.00	0.00	182.92
Jun-85	21.51	0.00	0.00	21.51	3.56	0.00	0.00	3.56	0.00	6.60	134.20	0.00	0.00	134.18
Jul-85	1.74	59.44	0.00	1.74	0.13	17.87	0.00	0.13	0.00	7.47	60.20	243.50	0.00	60.21

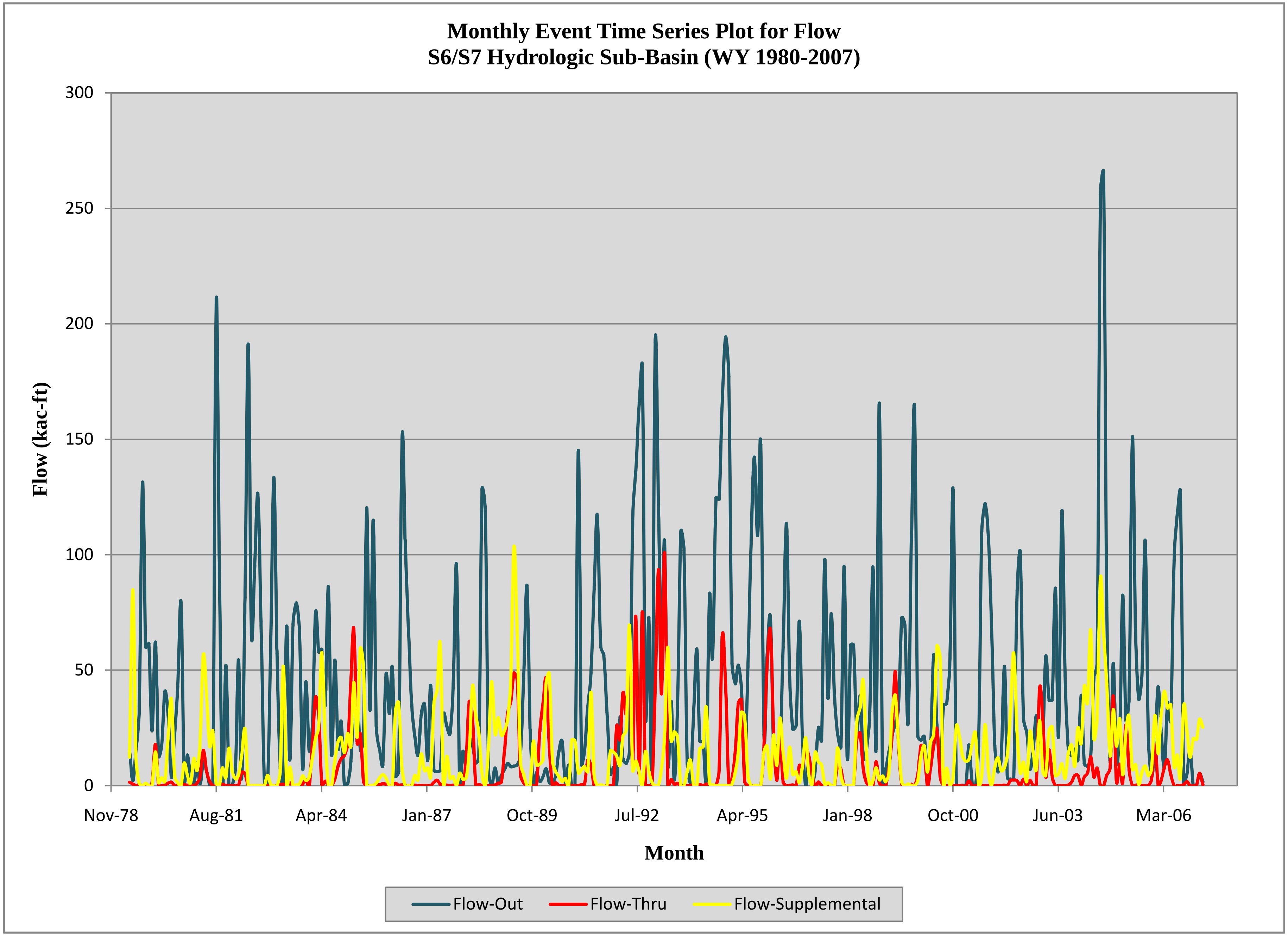
	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall	Rainfall (in)	IN	OUT	Thru	Supplemental Inflow
Aug-85	0.00	31.59	0.00	0.00	0.00	5.40	0.00	0.00	0.00	7.24	0.00	138.60	0.00	0.00
Sep-85	0.00	79.80	0.00	0.00	0.00	13.98	0.00	0.00	0.00	9.93	0.00	141.90	0.00	0.00
Oct-85	4.41	23.66	0.09	4.32	0.39	6.46	0.01	0.38	0.00	6.52	71.88	221.30	87.50	71.56
Nov-85	6.72	9.18	0.11	6.60	0.54	2.61	0.01	0.53	0.00	1.42	64.98	230.00	85.80	64.62
Dec-85	5.37	7.76	0.00	5.37	0.30	1.96	0.00	0.30	0.00	2.55	45.70	204.60	0.00	45.68
Jan-86	3.38	25.68	0.12	3.26	0.19	3.69	0.01	0.18	0.00	2.30	45.71	116.40	81.60	44.36
Feb-86	3.12	6.70	0.75	2.37	0.20	1.07	0.07	0.13	0.00	1.66	52.16	129.10	81.10	43.06
Mar-86	1.39	30.63	0.00	1.39	0.08	4.38	0.00	0.08	0.00	4.72	46.10	115.80	0.00	46.09
Apr-86	21.59	0.00	0.00	21.59	3.03	0.00	0.00	3.03	0.00	0.15	113.77	0.00	0.00	113.73
May-86	24.13	0.71	0.71	23.42	3.01	0.12	0.08	2.93	0.00	2.76	101.04	141.10	87.20	101.44
Jun-86	5.21	66.86	0.26	4.95	0.73	12.90	0.04	0.69	0.00	12.04	113.47	156.30	115.70	113.30
Jul-86	0.76	46.45	0.00	0.76	0.08	7.63	0.00	0.08	0.00	5.60	89.20	133.00	0.00	89.24
Aug-86	0.00	20.65	0.00	0.00	0.00	3.08	0.00	0.00	0.00	6.59	0.00	120.80	0.00	0.00
Sep-86	2.82	26.04	0.00	2.82	0.41	3.99	0.00	0.41	0.00	5.02	118.70	124.20	0.00	118.67
Oct-86	8.90	12.09	0.14	8.76	1.38	1.89	0.02	1.36	0.00	4.21	125.99	126.60	120.50	126.08
Nov-86	4.43	7.10	0.00	4.43	0.61	0.81	0.00	0.61	0.00	2.94	110.63	92.30	0.00	110.62
Dec-86	6.74	17.58	0.00	6.74	0.88	1.85	0.00	0.88	0.00	3.74	105.84	85.00	0.00	105.85
Jan-87	5.70	16.72	0.00	5.70	0.70	2.00	0.00	0.70	0.00	2.40	99.57	97.00	0.00	99.56
Feb-87	4.70	8.90	0.00	4.70	0.56	1.37	0.00	0.56	0.00	1.26	96.07	124.70	0.00	96.07
Mar-87	1.25	36.27	0.00	1.25	0.17	4.76	0.00	0.17	0.00	5.98	113.00	106.30	0.00	112.97
Apr-87	12.52	4.42	0.00	12.52	1.58	0.63	0.00	1.58	0.00	0.28	102.30	115.50	0.00	102.25
May-87	16.10	9.13	0.00	16.10	1.76	1.94	0.00	1.76	0.00	2.75	88.41	172.00	0.00	88.39
Jun-87	35.16	9.46	0.00	35.16	4.25	1.41	0.00	4.25	0.00	5.87	97.86	121.00	0.00	97.89
Jul-87	0.68	24.82	0.00	0.68	0.13	3.50	0.00	0.13	0.00	7.35	149.30	114.30	0.00	149.26
Aug-87	7.19	4.10	0.00	7.19	0.63	0.71	0.00	0.63	0.00	1.83	71.10	140.00	0.00	71.09
Sep-87	2.27	16.02	0.00	2.27	0.20	2.11	0.00	0.20	0.00	3.10	70.50	106.90	0.00	70.46
Oct-87	1.98	44.01	0.00	1.98	0.17	7.96	0.00	0.17	0.00	5.94	69.30	146.60	0.00	69.35
Nov-87	0.00	82.16	0.00	0.00	0.00	17.23	0.00	0.00	0.00	12.07	0.00	169.80	0.00	0.00
Dec-87	5.83	2.17	0.00	5.83	0.49	0.39	0.00	0.49	0.00	0.66	67.70	145.00	0.00	67.71
Jan-88	2.79	14.43	0.00	2.79	0.23	2.39	0.00	0.23	0.00	2.49	67.00	134.20	0.00	66.97
Feb-88	0.75	7.77	0.00	0.75	0.06	1.41	0.00	0.06	0.00	1.86	66.20	147.10	0.00	66.27
Mar-88	0.00	9.96	0.00	0.00	0.00	1.68	0.00	0.00	0.00	2.66	0.00	136.80	0.00	0.00
Apr-88	2.11	0.00	0.00	2.11	0.17	0.00	0.00	0.17	0.00	0.85	64.60	0.00	0.00	64.63
May-88	20.35	6.68	0.54	19.81	3.41	1.73	0.10	3.32	0.00	3.17	135.88	210.10	141.70	135.66
Jun-88	11.26	2.31	0.00	11.26	1.51	0.71	0.00	1.51	0.00	6.09	108.42	248.80	0.00	108.39
Jul-88	0.30	80.50	0.00	0.30	0.06	24.38	0.00	0.06	0.00	11.95	160.80	245.40	0.00	160.63
Aug-88	0.06	90.70	0.00	0.06	0.00	25.88	0.00	0.00	0.00	11.88	61.70	231.20	0.00	61.26
Sep-88	4.55	7.55	0.00	4.55	0.34	2.32	0.00	0.34	0.00	2.28	60.40	249.00	0.00	60.37
Oct-88	25.11	0.00	0.00	25.11	1.85	0.00	0.00	1.85	0.00	0.23	59.80	0.00	0.00	59.81
Nov-88	11.81	7.02	0.49	11.32	1.84	2.04	0.09	1.75	0.00	1.59	126.29	235.20	149.00	125.27
Dec-88	15.48	2.86	0.78	14.70	2.90	0.36	0.14	2.75	0.00	1.01	151.70	101.00	150.40	151.76
Jan-89	7.57	2.54	0.09	7.49	1.29	0.69	0.02	1.27	0.00	0.70	137.50	220.00	151.60	137.36
Feb-89	31.26	8.22	7.79	23.47	5.46	1.95	1.47	4.00	0.00	0.61	141.57	192.20	152.70	137.90
Mar-89	11.36	18.78	0.98	10.38	1.61	4.34	0.18	1.42	0.00	2.08	114.60	187.30	152.50	111.06
Apr-89	15.04	8.63	1.27	13.78	2.12	2.15	0.20	1.91	0.00	3.20	113.90	202.10	131.10	112.32
May-89	31.38	2.92	1.55	29.82	5.51	0.47	0.21	5.30	0.00	1.67	142.41	131.80	110.40	144.02
Jun-89	33.54	3.48	3.42	30.12	4.58	0.81	0.42	4.16	0.00	4.54	110.66	189.10	99.30	111.91
Jul-89	11.01	5.51	0.80	10.22	1.54	1.22	0.11	1.43	0.00	4.84	113.29	178.90	108.40	113.71
Aug-89	7.67	39.70	0.45	7.22	1.27	6.67	0.07	1.21	0.00	6.30	134.62	136.10	119.10	135.61
Sep-89	1.28	48.62	0.42	0.86	0.27	9.26	0.07	0.20	0.00	9.47	168.10	154.30	132.20	185.55
Oct-89	0.39	23.46	0.00	0.39	0.09	2.87	0.00	0.09	0.00	4.00	181.80	99.00	0.00	181.91
Nov-89	20.02	0.60	0.00	20.02	5.00	0.13	0.00	5.00	0.00	0.66	202.15	175.40	0.00	202.10
Dec-89	2.72	7.71	0.00	2.72	0.54	1.69	0.00	0.54	0.00	1.97	162.17	177.10	0.00	162.10
Jan-90	3.83	8.84	0.05	3.78	0.85	1.68	0.01	0.84	0.00	1.66	179.80	154.30	182.90	179.70
Feb-90	7.45	5.58	3.03	4.43	1.71	0.91	0.71	0.99	0.00	1.86	185.40	132.40	191.30	181.42
Mar-90	31.01	14.48	14.06	16.95	5.79	2.04	2.68	3.11	0.00	1.97	151.30	114.30	154.50	148.60
Apr-90	19.60	6.20	6.20	13.39	3.29	1.23	1.03	2.25	0.00	1.21	135.80	160.40	134.80	136.29
May-90	8.09	0.07	0.00	8.09	1.42	0.03	0.00	1.42	0.00	3.60	142.40	309.10	0.00	142.43
Jun-90	4.71	10.48	0.00	4.71	0.96	4.90	0.00	0.96	0.00	5.49	165.04	378.30	0.00	165.00
Jul-90	4.74	18.95	0.00	4.74	1.62	4.93	0.00	1.62	0.00	6.26	277.44	210.70	0.00	277.38
Aug-90	1.49	31.77	0.00	1.49	0.54	9.39	0.00	0.54	0.00	7.93	290.20	239.50	0.00	290.14
Sep-90	2.46	5.23	0.00	2.46	0.85	1.69	0.00	0.85	0.00	4.32	280.80	260.90	0.00	280.75
Oct-90	1.02	18.69	0.00	1.02	0.34	6.85	0.00	0.34	0.00	3.56	270.50	296.80	0.00	270.51
Nov-90	2.66	0.00	0.00	2.66	0.68	0.00	0.00	0.68	0.00	0.58	208.40	0.00	0.00	208.35
Dec-90	7.17	0.19	0.00	7.17	0.99	0.04	0.00	0.99	0.00	0.86	111.40	184.50	0.00	111.37
Jan-91	2.42	61.38	0.00	2.42	0.32	26.51	0.00	0.32	0.00	7.33	108.40	349.90	0.00	108.41
Feb-91	7.61	7.36	0.00	7.61	2.12	2.36	0.00	2.12	0.00	2.49	225.34	259.60	0.00	225.27
Mar-91	10.49	9.38	0.00	10.49	3.10	2.52	0.00	3.10	0.00	3.29	239.30	217.30	0.00	239.29
Apr-91	0.27	46.69	0.00	0.27	0.08	17.07	0.00	0.08	0.00	7.40	233.00	296.10	0.00	232.83
May-91	14.03	20.34	0.00	14.03	2.30	4.42	0.00	2.30	0.00	4.62	132.95	175.90	0.00	132.95
Jun-91	9.83	16.21	0.00	9.83	2.65	3.14	0.00	2.65	0.00	7.46	218.31	157.20	0.00	218.29
Jul-91	0.00	56.05	0.00	0.00	0.00	10.47	0.00	0.00	0.00	8.94	0.00	151.30	0.00	0.00
Aug-91	0.69	13.87	0.00	0.69	0.17	3.03	0.00	0.17	0.00	3.83	205.00	176.90	0.00	205.01
Sep-91	0.73	26.33	0.00	0.73	0.18	4.20	0.00	0.18	0.00	5.64	203.60	129.20	0.00	203.63
Oct-91	1.98	20.42	0.00	1.98	0.49	3.31	0.00	0.49	0.00	3.05	198.50	131.50	0.00	198.47

	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	**IN**	**OUT**	**Flow Thru**	**Supplemental Inflow**	**IN**	**OUT**	**Thru**	**Supplemental Inflow**	**Rainfall**	**Rainfall (in)**	**IN**	**OUT**	**Thru**	**Supplemental Inflow**
Nov-91	11.26	1.69	0.07	11.19	1.46	0.33	0.01	1.46	0.00	1.80	105.13	160.90	68.40	105.32
Dec-91	6.36	1.97	0.00	6.36	0.84	0.40	0.00	0.84	0.00	0.73	106.60	163.70	0.00	106.54
Jan-92	6.15	0.46	0.34	5.81	1.00	0.11	0.03	0.96	0.00	0.60	131.30	190.50	82.70	134.16
Feb-92	4.93	14.21	1.30	3.63	0.98	3.57	0.14	0.84	0.00	3.02	160.70	203.70	87.70	186.77
Mar-92	5.36	4.26	0.84	4.52	1.23	0.83	0.10	1.14	0.00	1.93	186.50	157.20	95.60	203.29
Apr-92	5.18	8.05	1.43	3.76	0.95	1.07	0.18	0.76	0.00	3.18	147.80	108.00	104.30	164.30
May-92	43.36	22.48	22.48	20.88	4.92	2.16	2.65	2.28	0.00	1.42	92.00	77.90	95.40	88.32
Jun-92	7.83	51.45	3.48	4.35	0.86	11.41	0.36	0.49	0.00	12.19	88.47	179.70	84.80	91.30
Jul-92	44.19	47.20	35.63	8.56	5.10	11.74	4.20	0.90	0.00	3.76	93.54	201.50	95.40	85.62
Aug-92	7.37	78.65	3.98	3.39	0.79	22.76	0.42	0.37	0.00	12.24	86.40	234.40	84.80	88.31
Sep-92	27.95	98.95	27.95	0.00	2.66	18.65	2.67	-0.01	0.00	12.22	77.00	152.70	77.30	0.00
Oct-92	9.84	45.38	0.00	9.84	1.88	12.33	0.00	1.88	0.00	1.71	154.84	220.00	0.00	154.86
Nov-92	2.62	41.16	0.00	2.62	0.49	7.77	0.00	0.49	0.00	5.58	151.40	153.00	0.00	151.39
Dec-92	4.66	4.45	0.00	4.66	0.87	0.93	0.00	0.87	0.00	1.42	152.02	168.90	0.00	152.03
Jan-93	21.42	94.91	21.42	0.00	3.55	20.99	2.85	0.70	0.00	8.24	134.20	179.10	107.90	0.00
Feb-93	29.95	34.39	25.19	4.76	4.80	5.01	3.52	1.28	0.00	2.04	129.84	118.00	113.10	218.41
Mar-93	12.96	34.75	10.56	2.40	2.00	4.85	1.69	0.31	0.00	5.03	125.10	113.20	129.70	104.59
Apr-93	40.69	33.50	29.02	11.66	7.62	5.53	5.61	2.01	0.00	2.31	151.66	133.70	156.50	139.48
May-93	31.56	15.67	0.00	31.56	5.64	3.46	0.00	5.64	0.00	6.71	144.72	178.80	0.00	144.73
Jun-93	8.89	27.25	0.00	8.89	1.35	6.12	0.00	1.35	0.00	4.59	122.80	182.10	0.00	122.77
Jul-93	12.38	3.17	0.07	12.31	2.06	0.73	0.01	2.05	0.00	4.70	135.10	185.80	159.10	134.99
Aug-93	23.44	25.34	0.00	23.44	3.72	3.50	0.00	3.72	0.00	7.02	128.70	112.00	0.00	128.65
Sep-93	0.55	53.51	0.00	0.55	0.09	13.24	0.00	0.09	0.00	5.40	131.10	200.40	0.00	131.12
Oct-93	0.00	56.53	0.00	0.00	0.00	13.71	0.00	0.00	0.00	5.53	0.00	196.60	0.00	0.00
Nov-93	4.94	5.09	0.00	4.94	0.52	0.96	0.00	0.52	0.00	1.89	86.01	152.00	0.00	86.02
Dec-93	10.11	1.83	0.00	10.11	1.28	0.36	0.00	1.28	0.00	0.60	102.91	156.90	0.00	102.85
Jan-94	0.93	35.15	0.10	0.82	0.14	9.09	0.02	0.12	0.00	5.02	120.20	209.40	126.50	119.46
Feb-94	0.00	35.74	0.00	0.00	0.00	9.11	0.00	0.00	0.00	3.80	0.00	206.50	0.00	0.00
Mar-94	11.55	4.29	0.00	11.55	1.83	0.75	0.00	1.83	0.00	1.64	128.20	141.90	0.00	128.18
Apr-94	13.04	18.18	0.27	12.77	1.99	3.82	0.04	1.95	0.00	4.68	123.68	170.20	113.70	123.90
May-94	24.36	0.31	0.20	24.16	4.82	0.06	0.03	4.79	0.00	2.17	160.23	149.89	107.90	160.68
Jun-94	1.34	58.71	0.58	0.77	0.22	9.72	0.08	0.14	0.00	10.28	130.83	134.10	107.10	148.96
Jul-94	0.22	22.39	0.00	0.22	0.03	5.14	0.00	0.03	0.00	8.91	100.90	186.10	0.00	100.80
Aug-94	0.00	77.26	0.00	0.00	0.00	18.37	0.00	0.00	0.00	6.94	0.00	192.57	0.00	0.00
Sep-94	2.32	71.01	2.32	0.00	0.26	16.73	0.25	0.01	0.00	9.45	91.60	190.89	88.60	0.00
Oct-94	30.34	72.58	25.92	4.42	3.50	10.45	3.05	0.46	0.00	9.72	93.50	116.63	95.20	83.49
Nov-94	18.45	96.06	15.05	3.40	2.59	18.93	2.19	0.40	0.00	7.28	113.80	159.67	117.70	96.30
Dec-94	0.13	71.37	0.00	0.13	0.01	13.11	0.00	0.01	0.00	7.77	75.20	148.85	0.00	74.97
Jan-95	0.00	19.50	0.00	0.00	0.00	3.13	0.00	0.00	0.00	2.51	0.00	130.23	0.00	0.00
Feb-95	31.76	34.98	22.51	9.24	4.56	6.35	3.35	1.21	0.00	2.07	116.30	147.04	120.40	106.45
Mar-95	37.43	49.87	35.37	2.07	6.18	9.09	6.07	0.10	0.00	3.98	133.70	147.69	139.10	41.03
Apr-95	31.24	16.02	13.52	17.72	5.68	2.34	2.43	3.26	0.00	1.92	147.40	118.50	145.40	148.87
May-95	24.31	3.08	2.45	21.86	4.72	0.31	0.51	4.21	0.00	1.33	157.34	81.40	169.00	156.00
Jun-95	2.31	12.50	0.00	2.31	0.45	1.29	0.00	0.45	0.00	6.56	156.82	83.50	0.00	156.80
Jul-95	2.98	38.26	0.14	2.84	0.49	7.43	0.02	0.47	0.00	6.77	134.30	157.28	137.80	134.14
Aug-95	9.71	80.85	5.72	3.98	1.06	16.84	0.73	0.33	0.00	10.32	88.68	168.71	103.60	67.30
Sep-95	16.50	49.47	12.06	4.44	1.48	5.02	1.15	0.33	0.00	4.12	72.86	82.18	77.60	60.26
Oct-95	20.34	115.07	18.82	1.51	2.77	22.69	2.69	0.08	0.00	12.22	110.14	159.71	115.70	40.76
Nov-95	30.38	42.32	27.36	3.03	3.78	7.35	3.57	0.21	0.00	1.22	100.80	140.74	105.70	56.83
Dec-95	43.06	37.24	33.20	9.86	5.03	4.93	3.99	1.04	0.00	0.81	94.70	107.17	97.40	85.33
Jan-96	39.53	44.52	32.77	6.76	8.43	11.22	7.21	1.22	0.00	1.96	172.80	204.24	178.10	146.73
Feb-96	30.79	20.71	18.62	12.17	9.42	3.48	5.97	3.45	0.00	0.59	247.90	136.32	259.70	229.72
Mar-96	5.09	23.69	1.45	3.64	1.19	5.14	0.35	0.84	0.00	6.25	189.00	175.77	195.50	186.39
Apr-96	26.29	33.74	17.28	9.01	5.08	7.63	3.59	1.49	0.00	1.73	156.36	183.14	168.20	133.86
May-96	7.41	41.85	1.91	5.49	1.23	7.93	0.33	0.90	0.00	8.56	134.20	153.41	139.20	132.40
Jun-96	2.23	39.04	0.02	2.20	0.35	6.06	0.00	0.34	0.00	8.31	126.50	125.74	131.10	126.49
Jul-96	19.06	41.76	8.10	10.96	2.61	6.84	1.15	1.46	0.00	5.53	110.90	132.63	114.90	107.89
Aug-96	11.96	16.49	6.28	5.68	1.74	2.46	0.97	0.77	0.00	4.14	117.75	121.03	125.10	109.67
Sep-96	3.61	29.64	0.00	3.61	0.65	4.19	0.00	0.65	0.00	5.86	145.50	114.53	0.00	145.51
Oct-96	9.92	44.14	7.71	2.21	2.42	7.90	2.02	0.41	0.00	4.65	197.92	145.11	212.00	148.72
Nov-96	20.81	22.18	13.54	7.27	4.13	2.59	2.98	1.14	0.00	2.63	160.60	94.50	178.50	127.32
Dec-96	22.49	11.56	11.56	10.92	4.85	1.06	3.37	1.48	0.00	0.71	174.70	74.38	236.40	109.44
Jan-97	10.82	8.86	4.15	6.67	2.40	0.93	1.15	1.25	0.00	1.90	179.70	85.17	224.00	152.09
Feb-97	2.93	7.96	1.16	1.77	0.63	1.02	0.27	0.36	0.00	1.47	174.43	103.26	189.30	164.70
Mar-97	7.56	9.48	0.20	7.36	1.31	1.43	0.05	1.26	0.00	3.47	140.18	121.95	184.70	138.92
Apr-97	10.44	22.87	0.25	10.19	1.87	3.99	0.06	1.81	0.00	5.46	145.31	141.27	198.50	144.02
May-97	8.50	11.47	0.09	8.41	1.58	1.94	0.02	1.56	0.00	4.83	150.52	136.97	184.90	150.13
Jun-97	0.46	35.42	0.00	0.46	0.09	5.42	0.00	0.09	0.00	8.39	158.40	124.00	0.00	158.42
Jul-97	2.79	40.48	1.00	1.79	0.54	6.49	0.20	0.34	0.00	8.92	157.30	129.77	162.70	154.28
Aug-97	0.00	57.81	0.00	0.00	0.00	12.28	0.00	0.00	0.00	8.96	0.00	172.07	0.00	0.00
Sep-97	1.43	23.79	0.00	1.43	0.13	4.44	0.00	0.13	0.00	5.94	72.70	151.08	0.00	72.71
Oct-97	31.53	29.04	26.98	4.55	9.41	4.11	8.33	1.08	0.00	0.63	241.80	114.63	250.00	192.86
Nov-97	21.54	29.30	18.73	2.82	7.06	9.37	6.36	0.70	0.00	3.52	265.40	258.93	275.00	201.84
Dec-97	0.00	62.03	0.00	0.00	0.00	22.02	0.00	0.00	0.00	6.15	0.00	287.63	0.00	0.00
Jan-98	0.00	11.03	0.00	0.00	0.00	2.21	0.00	0.00	0.00	2.26	0.00	162.69	0.00	0.00

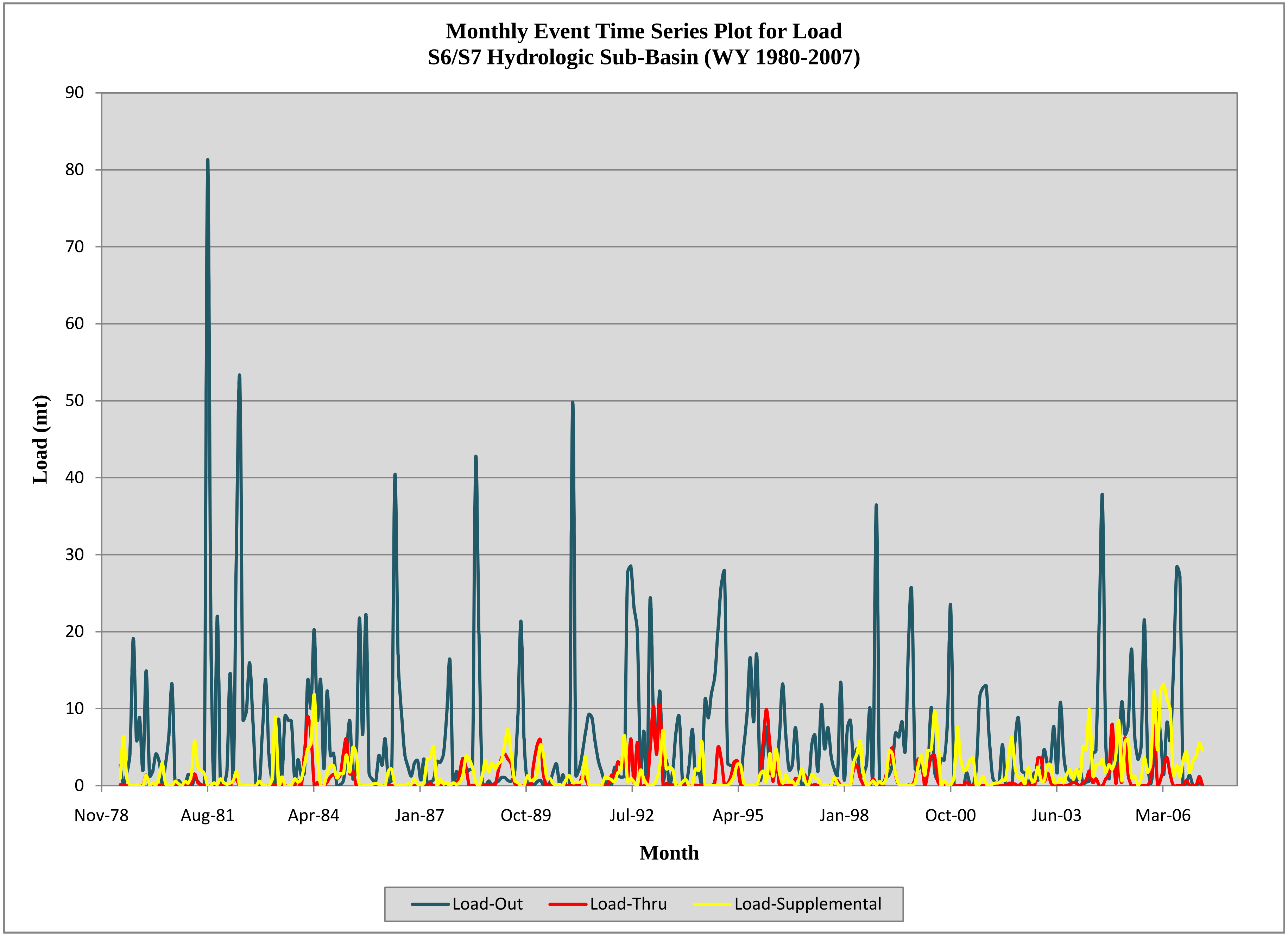
	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall	Rainfall (in)	IN	OUT	Thru	Supplemental Inflow
Feb-98	0.00	36.47	0.00	0.00	0.00	7.90	0.00	0.00	0.00	5.11	0.00	175.44	0.00	0.00
Mar-98	0.00	28.69	0.00	0.00	0.00	5.84	0.00	0.00	0.00	4.50	0.00	164.89	0.00	0.00
Apr-98	46.89	20.13	20.02	26.86	13.36	3.86	5.87	7.49	0.00	2.27	230.80	155.52	237.40	225.93
May-98	42.35	30.21	20.19	22.16	9.20	6.56	4.56	4.64	0.00	1.82	176.00	176.02	183.20	169.55
Jun-98	41.83	7.50	5.68	36.15	8.83	0.80	1.27	7.56	0.00	1.74	171.00	86.93	181.70	169.28
Jul-98	9.31	14.46	3.79	5.52	1.16	1.68	0.79	0.37	0.00	5.47	101.10	93.93	168.30	54.94
Aug-98	0.00	8.53	0.00	0.00	0.00	1.34	0.00	0.00	0.00	4.83	0.00	127.20	0.00	0.00
Sep-98	1.41	72.18	0.00	1.41	0.17	14.48	0.00	0.17	0.00	8.72	94.60	162.56	0.00	94.56
Oct-98	27.76	28.39	23.09	4.67	3.32	3.78	2.89	0.43	0.00	2.25	96.81	107.84	101.30	74.72
Nov-98	3.45	78.22	1.57	1.88	0.48	16.59	0.23	0.25	0.00	9.97	113.20	171.79	119.70	107.78
Dec-98	9.53	7.18	3.26	6.27	2.11	0.73	1.42	0.70	0.00	1.67	179.40	82.67	351.90	89.82
Jan-99	27.27	28.21	22.25	5.01	9.49	4.97	8.32	1.17	0.00	2.75	282.00	142.70	303.10	188.68
Feb-99	32.60	20.95	20.65	11.95	12.24	3.18	7.11	5.13	0.00	1.43	304.20	122.84	278.80	348.03
Mar-99	23.00	2.24	2.24	20.76	6.98	0.20	0.37	6.61	0.00	0.80	245.80	71.90	132.20	258.08
Apr-99	44.86	22.75	22.75	22.11	8.19	1.67	4.36	3.83	0.00	0.76	148.00	59.59	155.40	140.35
May-99	19.96	9.39	8.83	11.12	4.28	0.73	1.93	2.35	0.00	3.79	173.60	63.17	177.20	170.80
Jun-99	0.86	84.85	0.34	0.52	0.19	24.41	0.08	0.11	0.00	14.61	177.10	233.11	183.30	172.89
Jul-99	0.99	13.88	0.00	0.99	0.16	2.39	0.00	0.16	0.00	4.29	133.10	139.44	0.00	133.17
Aug-99	3.34	17.68	0.00	3.34	0.49	3.16	0.00	0.49	0.00	6.82	119.30	144.80	0.00	119.34
Sep-99	4.00	36.93	3.27	0.72	0.65	5.35	0.55	0.09	0.00	7.08	131.20	117.40	136.80	105.95
Oct-99	8.10	105.48	8.06	0.04	1.36	18.69	1.41	-0.04	0.00	9.24	136.30	143.50	141.40	-1020.92
Nov-99	14.00	24.04	11.30	2.70	3.13	4.46	2.62	0.51	0.00	2.90	181.40	150.30	187.80	154.55
Dec-99	41.86	32.54	31.07	10.79	12.45	5.49	9.98	2.47	0.00	1.34	241.00	136.70	260.30	185.38
Jan-00	33.57	23.68	19.37	14.20	10.62	3.86	6.30	4.32	0.00	0.96	256.30	132.20	263.50	246.48
Feb-00	10.39	2.45	0.00	10.39	4.43	0.53	0.00	4.43	0.00	0.87	345.30	174.00	0.00	345.30
Mar-00	15.90	19.52	3.49	12.41	4.37	4.54	1.05	3.32	0.00	3.91	222.53	188.40	243.80	216.53
Apr-00	11.68	35.38	5.51	6.16	2.75	6.98	1.35	1.40	0.00	4.32	191.00	159.80	198.30	184.42
May-00	44.08	20.52	19.73	24.35	6.84	2.01	3.26	3.58	0.00	1.89	125.60	79.40	133.90	118.94
Jun-00	25.40	6.41	4.81	20.59	4.46	0.36	0.95	3.51	0.00	4.23	142.30	45.70	160.70	137.95
Jul-00	0.00	32.35	0.00	0.00	0.00	3.83	0.00	0.00	0.00	8.11	0.00	95.80	0.00	0.00
Aug-00	5.02	20.07	0.00	5.02	0.77	2.03	0.00	0.77	0.00	5.07	124.29	81.70	0.00	124.25
Sep-00	0.00	35.29	0.00	0.00	0.00	7.23	0.00	0.00	0.00	6.93	0.00	166.10	0.00	0.00
Oct-00	6.05	60.95	0.00	6.05	0.46	13.85	0.00	0.46	0.00	6.41	61.73	184.21	0.00	61.74
Nov-00	22.74	0.00	0.00	22.74	6.80	0.00	0.00	6.80	0.00	0.37	242.26	0.00	0.00	242.20
Dec-00	9.35	0.01	0.01	9.33	3.58	0.00	0.01	3.57	0.00	0.27	310.12	23.00	424.00	309.88
Jan-01	3.84	0.00	0.00	3.84	1.51	0.00	0.00	1.51	0.00	0.75	318.80	0.00	0.00	318.78
Feb-01	4.76	0.66	0.62	4.14	1.10	0.03	0.12	0.99	0.00	0.02	187.80	32.00	151.00	193.34
Mar-01	7.10	7.98	3.60	3.49	2.56	0.59	1.29	1.27	0.00	3.06	292.20	59.80	289.20	295.26
Apr-01	12.88	1.01	0.47	12.41	3.93	0.09	0.16	3.76	0.00	0.50	247.00	70.20	282.00	245.66
May-01	14.03	0.78	0.72	13.31	4.32	0.05	0.19	4.13	0.00	2.99	249.70	47.80	215.20	251.53
Jun-01	3.69	4.85	0.00	3.69	0.65	1.22	0.00	0.65	0.00	7.06	142.89	203.70	0.00	142.91
Jul-01	1.74	52.26	0.05	1.69	0.42	8.82	0.01	0.41	0.00	8.24	195.75	136.80	232.70	194.65
Aug-01	0.15	45.74	0.00	0.15	0.05	5.65	0.00	0.05	0.00	8.58	289.69	100.00	0.00	289.44
Sep-01	4.99	60.13	0.16	4.83	1.73	5.15	0.04	1.69	0.00	9.37	280.96	69.40	216.20	283.16
Oct-01	1.35	45.86	0.00	1.35	0.42	4.45	0.00	0.42	0.00	4.29	252.00	78.60	296.40	251.90
Nov-01	0.86	16.36	0.47	0.39	0.18	1.82	0.08	0.10	0.00	1.87	166.38	90.20	132.00	208.14
Dec-01	0.60	2.01	0.16	0.44	0.12	0.08	0.03	0.10	0.00	1.90	168.08	34.10	132.00	180.96
Jan-02	2.00	5.78	0.00	2.00	0.37	0.38	0.00	0.37	0.00	1.08	148.35	52.60	0.00	148.31
Feb-02	3.21	32.21	0.00	3.21	0.91	6.23	0.00	0.91	0.00	4.24	229.40	156.60	0.00	229.34
Mar-02	18.47	3.15	0.14	18.34	3.99	0.38	0.07	3.92	0.00	1.01	174.71	96.70	390.60	173.10
Apr-02	29.29	0.82	0.72	28.58	5.87	0.08	0.13	5.73	0.00	1.45	162.22	76.80	152.50	162.49
May-02	39.54	15.72	14.23	25.30	7.25	1.97	2.66	4.59	0.00	2.66	148.62	101.80	151.20	147.08
Jun-02	17.53	74.03	4.95	12.58	4.85	17.05	1.10	3.75	0.00	9.89	224.09	186.60	180.40	241.29
Jul-02	8.43	61.94	4.37	4.06	3.12	10.78	1.30	1.82	0.00	7.36	299.36	141.00	240.60	362.55
Aug-02	56.70	84.14	46.70	10.01	15.40	18.17	11.80	3.60	0.00	6.41	219.95	175.00	204.60	291.58
Sep-02	64.12	92.77	63.31	0.82	11.14	14.09	10.88	0.26	0.00	4.06	140.79	123.00	139.20	258.08
Oct-02	52.10	65.73	48.58	3.52	9.14	8.34	8.76	0.38	0.00	1.72	142.17	102.80	146.00	88.13
Nov-02	30.96	34.94	21.63	9.33	8.76	8.40	6.14	2.63	0.00	2.66	229.32	194.70	229.90	227.81
Dec-02	47.16	73.64	43.79	3.37	12.60	14.69	11.68	0.92	0.00	2.64	216.49	161.60	216.00	222.18
Jan-03	62.59	61.35	52.97	9.62	20.63	11.52	17.10	3.53	0.00	0.42	266.93	152.20	261.50	296.73
Feb-03	23.74	13.61	9.34	14.40	4.98	2.42	1.94	3.04	0.00	2.12	170.08	143.80	168.30	171.30
Mar-03	14.00	28.85	3.55	10.45	2.69	8.34	0.68	2.00	0.00	5.70	155.59	234.30	156.20	155.36
Apr-03	28.54	23.37	8.67	19.86	6.72	5.20	1.99	4.73	0.00	4.63	190.88	180.10	186.30	192.93
May-03	21.55	26.51	7.25	14.30	3.55	4.55	1.18	2.37	0.00	4.30	133.42	139.00	131.90	134.10
Jun-03	2.06	37.34	0.00	2.06	0.79	4.51	0.00	0.79	0.00	6.74	310.50	97.90	0.00	310.51
Jul-03	3.16	21.15	0.00	3.16	0.88	3.11	0.00	0.88	0.00	7.60	225.67	119.30	0.00	225.63
Aug-03	6.63	105.58	0.00	6.63	3.06	19.73	0.00	3.06	0.00	12.03	373.90	151.40	0.00	373.82
Sep-03	2.12	30.26	0.00	2.12	0.96	6.57	0.00	0.96	0.00	6.59	365.90	175.90	0.00	365.81
Oct-03	6.04	11.62	2.98	3.06	1.26	2.11	0.53	0.73	0.00	0.61	169.01	147.40	144.60	192.81
Nov-03	6.04	17.02	2.73	3.30	1.44	2.80	0.64	0.80	0.00	2.92	193.84	133.30	190.50	196.56
Dec-03	3.35	9.26	0.86	2.49	0.77	1.46	0.21	0.56	0.00	1.97	187.11	127.60	198.60	183.11
Jan-04	17.27	24.27	13.20	4.07	5.02	3.37	3.88	1.13	0.00	2.09	235.38	112.60	238.30	225.67
Feb-04	5.39	21.50	2.53	2.86	1.22	3.33	0.57	0.65	0.00	3.09	183.27	125.40	182.20	184.23
Mar-04	14.30	3.00	2.82	11.49	4.17	0.32	0.68	3.49	0.00	0.20	236.08	86.50	195.50	246.03
Apr-04	18.91	7.42	4.18	14.74	5.10	1.03	1.13	3.97	0.00	2.04	218.38	112.20	218.30	218.33

Month	Flow (kac-ft) IN	Flow (kac-ft) OUT	Flow (kac-ft) Flow Thru	Flow (kac-ft) Supplemental Inflow	Load (mt) IN	Load (mt) OUT	Load (mt) Thru	Load (mt) Supplemental Inflow	Load (mt) Rainfall	Rainfall (in)	Concentration (ppb) IN	Concentration (ppb) OUT	Concentration (ppb) Thru	Concentration (ppb) Supplemental Inflow
May-04	35.15	13.20	12.93	22.22	6.60	1.22	2.43	4.17	0.00	1.42	152.14	74.90	152.30	152.10
Jun-04	7.09	26.45	1.64	5.46	1.82	5.85	0.29	1.53	0.00	6.21	207.89	179.00	143.70	227.09
Jul-04	14.71	27.57	9.38	5.33	2.93	3.64	1.65	1.28	0.00	6.36	161.17	107.10	142.30	194.50
Aug-04	4.76	80.53	0.07	4.69	2.52	20.23	0.02	2.51	0.00	10.76	429.64	203.50	172.90	433.54
Sep-04	5.18	137.79	0.00	5.18	4.79	49.21	0.00	4.79	0.00	16.11	749.23	289.30	0.00	749.11
Oct-04	5.11	39.99	0.90	4.21	1.77	13.80	0.17	1.60	0.00	3.30	281.13	279.60	154.00	308.41
Nov-04	13.84	6.03	4.75	9.09	3.18	0.78	1.08	2.10	0.00	1.00	185.90	104.40	184.20	186.78
Dec-04	19.06	13.82	12.67	6.39	7.14	2.46	4.99	2.14	0.00	0.65	303.38	144.40	319.20	271.84
Jan-05	9.23	4.58	0.00	9.23	3.50	1.11	0.00	3.50	0.00	0.92	307.62	196.00	0.00	307.60
Feb-05	12.56	8.54	0.18	12.38	5.54	1.62	0.06	5.48	0.00	1.69	357.59	153.90	265.00	358.90
Mar-05	3.75	36.79	0.00	3.75	1.60	11.28	0.00	1.60	0.00	6.09	344.53	248.40	0.00	344.47
Apr-05	24.23	10.14	8.93	15.30	10.24	1.82	3.65	6.59	0.00	2.14	342.49	145.70	331.30	348.97
May-05	23.06	24.58	9.65	13.41	6.14	5.45	2.57	3.57	0.00	5.87	215.65	179.50	215.70	215.62
Jun-05	3.89	67.21	0.00	3.89	1.63	16.31	0.00	1.63	0.00	7.43	340.18	196.50	0.00	340.08
Jul-05	6.54	11.26	0.00	6.54	1.76	1.43	0.00	1.76	0.00	3.08	217.85	102.60	0.00	217.79
Aug-05	2.47	8.87	0.74	1.73	0.64	1.55	0.17	0.47	0.00	4.78	209.08	141.60	184.00	219.84
Sep-05	2.91	9.45	0.14	2.77	0.92	1.54	0.05	0.87	0.00	5.73	256.31	132.30	280.00	255.00
Oct-05	3.19	39.85	0.00	3.19	4.08	13.25	0.00	4.08	0.00	6.22	1036.00	269.40	0.00	1035.85
Nov-05	1.91	14.98	0.00	1.91	1.27	5.00	0.00	1.27	0.00	3.83	540.40	270.20	0.00	540.27
Dec-05	4.31	0.01	0.00	4.31	1.69	0.00	0.00	1.69	0.00	0.49	317.43	214.60	0.00	317.40
Jan-06	8.73	0.04	0.04	8.69	3.46	0.00	0.01	3.45	0.00	0.29	321.21	99.00	196.80	321.71
Feb-06	5.05	26.38	0.55	4.50	1.64	10.88	0.13	1.51	0.00	3.36	263.71	334.20	195.40	271.94
Mar-06	10.68	3.24	0.03	10.65	3.09	0.94	0.01	3.08	0.00	1.21	234.41	236.30	194.60	234.52
Apr-06	20.58	2.55	2.53	18.05	7.12	0.45	0.59	6.53	0.00	0.63	280.37	143.10	189.50	293.05
May-06	20.23	8.96	1.17	19.06	5.29	2.94	0.27	5.02	0.00	4.22	211.93	266.00	187.40	213.44
Jun-06	16.79	12.16	0.53	16.26	4.04	4.24	0.12	3.92	0.00	5.65	195.00	282.60	179.50	195.46
Jul-06	3.87	41.93	0.00	3.87	1.61	12.11	0.00	1.61	0.00	9.00	336.60	233.90	0.00	336.51
Aug-06	6.00	54.43	0.10	5.89	1.26	19.54	0.02	1.24	0.00	8.59	169.65	290.90	128.00	170.35
Sep-06	2.28	45.54	0.00	2.28	1.77	13.36	0.00	1.77	0.00	4.54	629.00	237.70	0.00	628.97
Oct-06	18.62	0.00	0.00	18.62	2.98	0.00	0.00	2.98	0.00	0.59	129.79	0.00	0.00	129.78
Nov-06	14.90	1.76	0.99	13.92	3.68	0.20	0.27	3.41	0.00	0.75	199.72	90.60	220.60	198.27
Dec-06	4.34	6.97	0.12	4.22	1.16	0.66	0.03	1.13	0.00	1.91	216.39	76.50	203.30	216.78
Jan-07	9.38	0.41	0.27	9.11	2.70	0.04	0.09	2.61	0.00	0.20	233.06	75.00	266.60	232.05
Feb-07	6.98	0.25	0.25	6.73	2.54	0.02	0.07	2.47	0.00	0.56	294.53	65.00	235.20	296.72
Mar-07	16.01	4.67	3.44	12.57	4.73	0.37	1.24	3.49	0.00	0.13	239.22	63.30	290.70	225.03
Apr-07	17.28	5.39	4.75	12.53	4.41	0.45	1.22	3.19	0.00	1.18	206.90	67.40	208.30	206.31

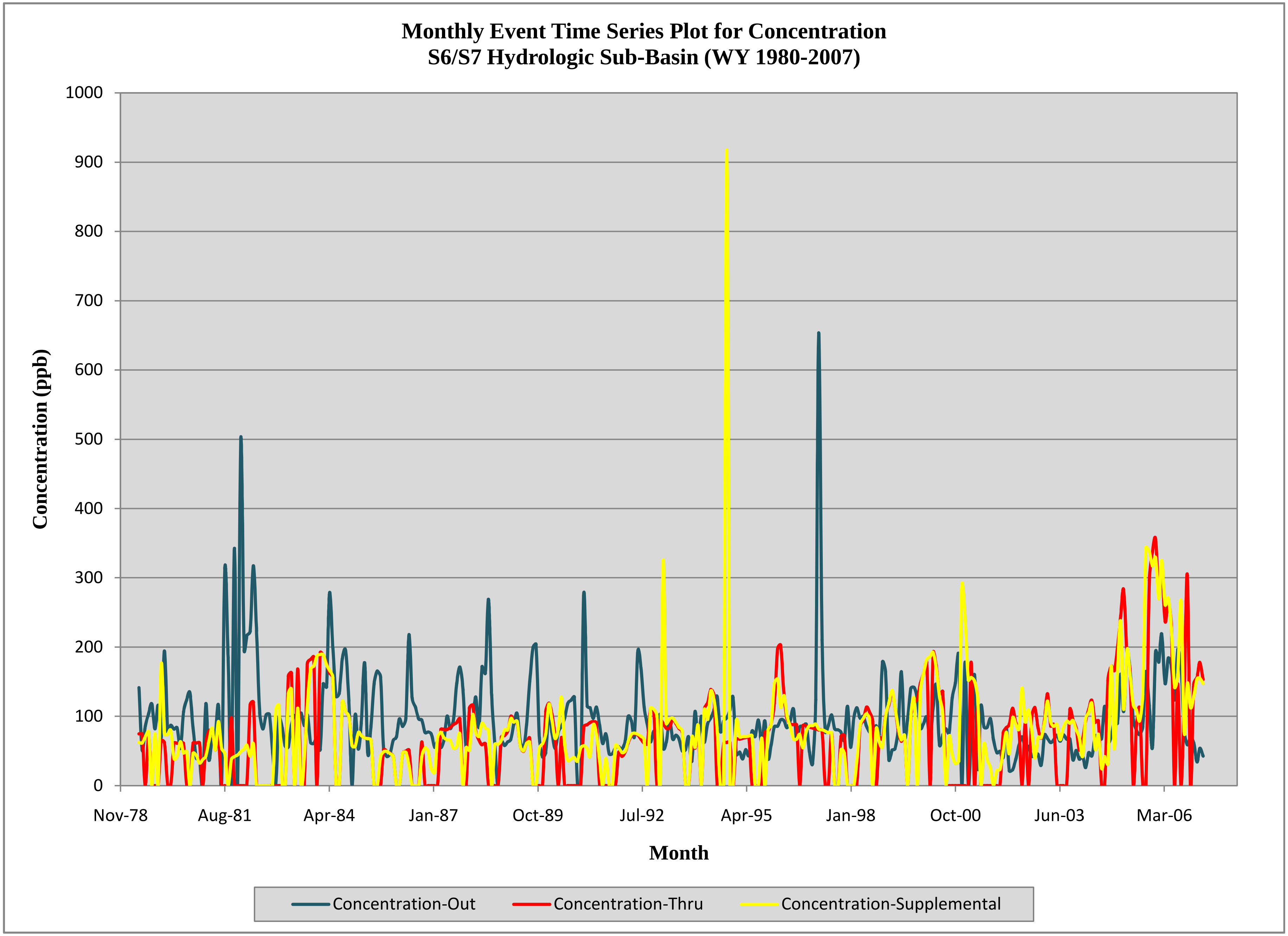
Appendix B
Monthly Dataset and Plots for Hydrologic Sub-Basin S6/S7



Monthly Event Time Series Plot for Flow
S6/S7 Hydrologic Sub-Basin (WY 1980-2007)
300
250
200
150
100
50
0
Flow (kac-ft)
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Flow-Out
Flow-Thru
Flow-Supplemental

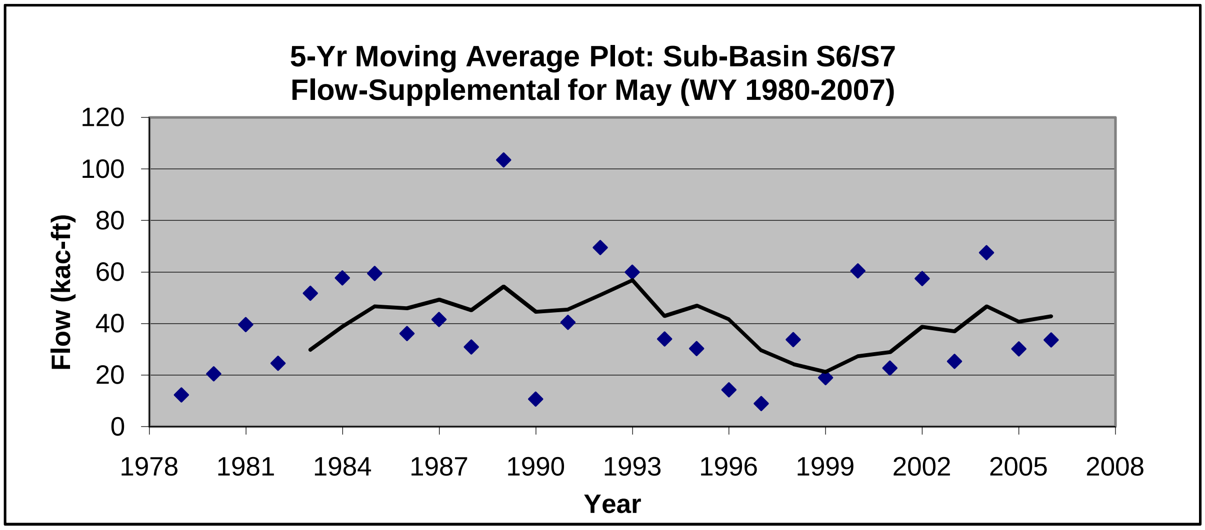


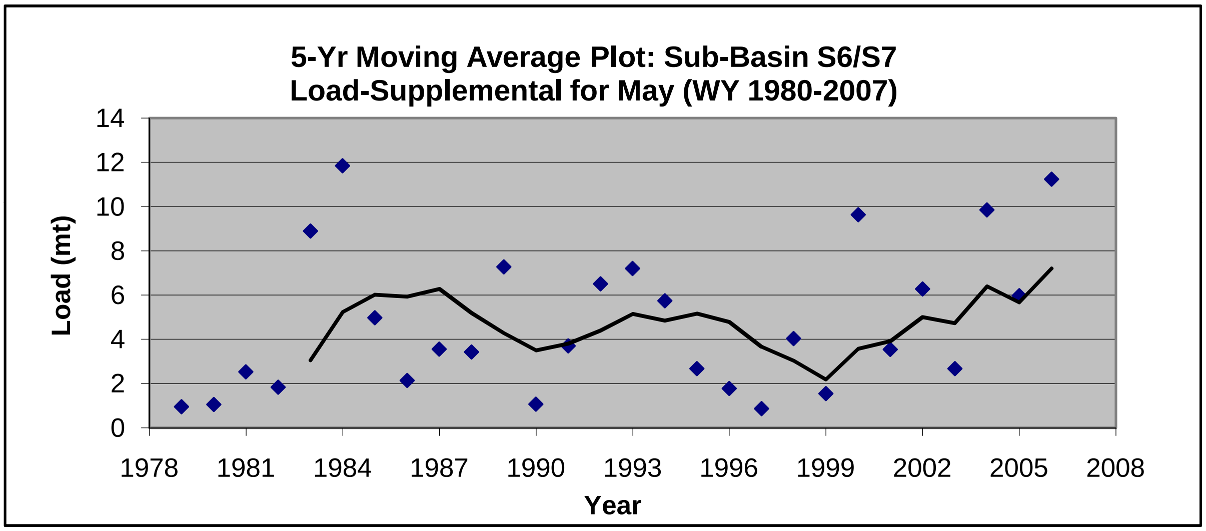
Monthly Event Time Series Plot for Load
S6/S7 Hydrologic Sub-Basin (WY 1980-2007)
Load (mt)
0
10
20
30
40
50
60
70
80
90
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Load-Out
Load-Thru
Load-Supplemental

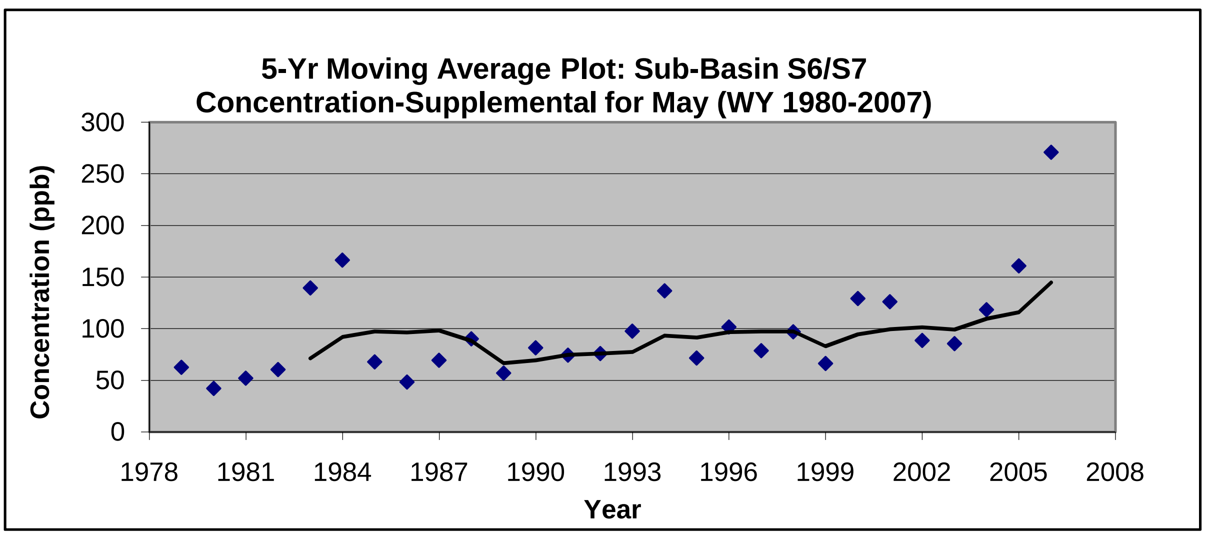

Monthly Event Time Series Plot for Concentration
S6/S7 Hydrologic Sub-Basin (WY 1980-2007)
Concentration (ppb)
1000
900
800
700
600
500
400
300
200
100
0
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Concentration-Out
Concentration-Thru
Concentration-Supplemental

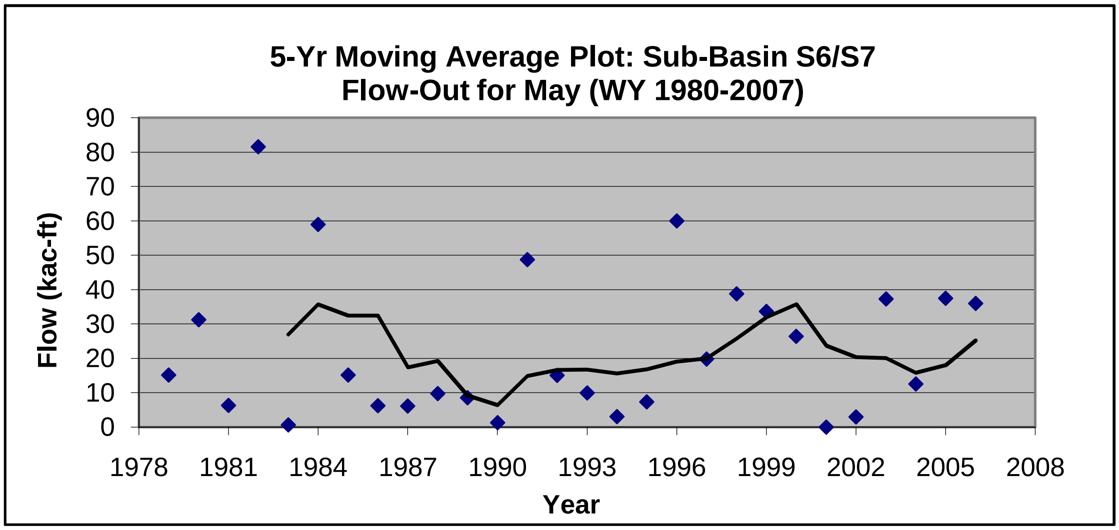
Hydrologic Sub-Basin S6/S7 (May)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	39.11	22.49	4.75	4.10	96.99	103.78
Standard Error	4.12	3.99	0.62	1.30	9.02	13.12
Median	33.89	15.08	3.63	1.61	83.49	80.71
Standard Deviation	21.79	21.11	3.28	6.90	47.71	69.44
Sample Variance	474.77	445.46	10.78	47.66	2276.03	4822.31
Kurtosis	1.22	0.83	-0.52	10.37	5.49	3.03
Skewness	0.95	1.14	0.73	3.07	1.99	1.74
Range	94.60	81.59	10.98	31.97	228.83	293.93
Minimum	8.89	0.01	0.86	0.00	42.13	23.50
Maximum	103.49	81.59	11.85	31.97	270.96	317.43
Sum	1095.20	629.82	132.89	114.92	2715.73	2905.95
Count	28	28	28	28	28	28
Quartile-1	24.11	6.30	2.07	0.54	67.42	65.17
Quartile-2	33.89	15.08	3.63	1.61	83.49	80.71
Quartile-3	57.52	36.30	6.69	5.13	120.35	120.47
Confidence intervals	8.07	7.82	1.22	2.56	17.67	25.72

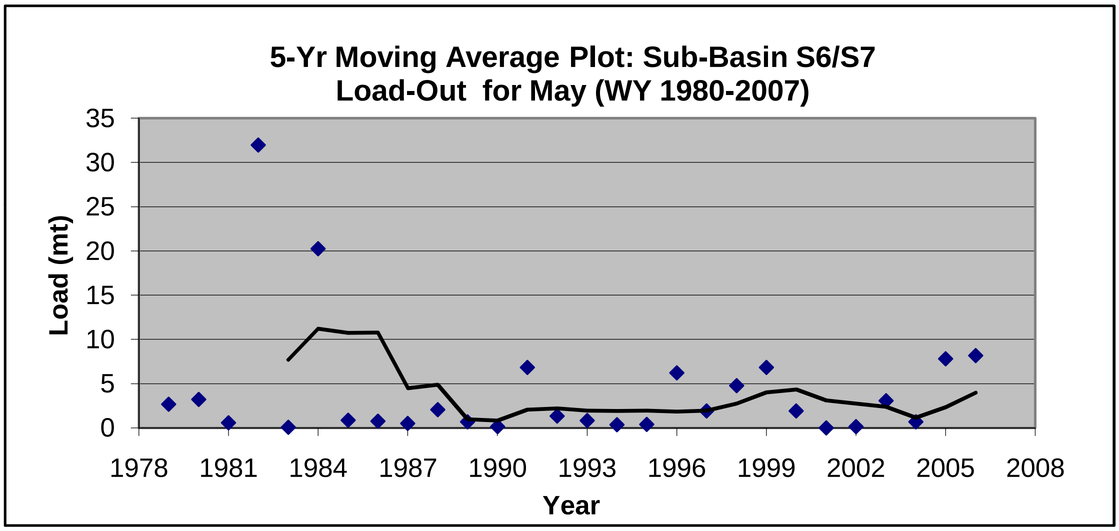

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for May (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for May (WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
14
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

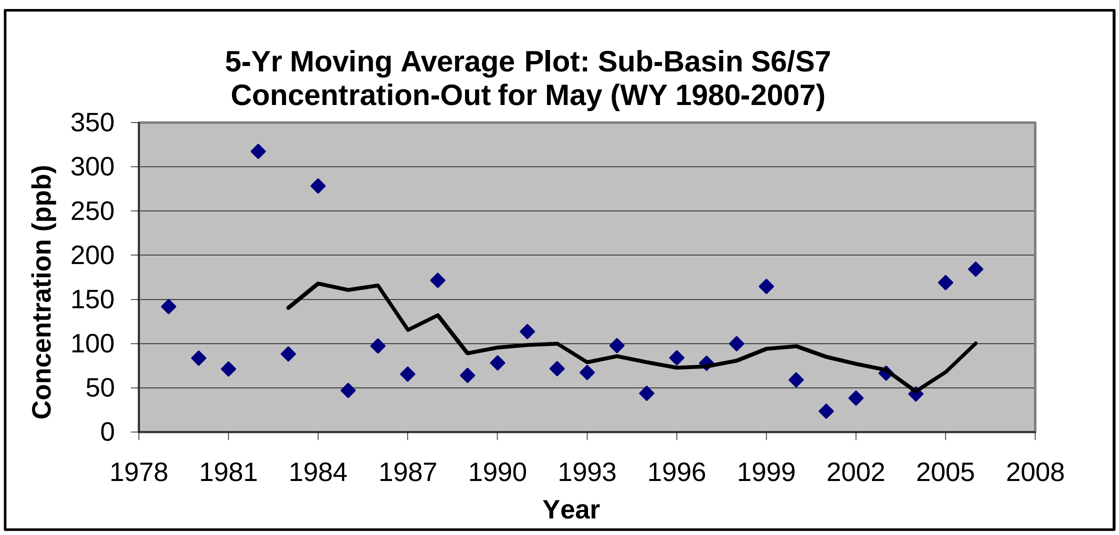

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for May (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for May (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
90
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



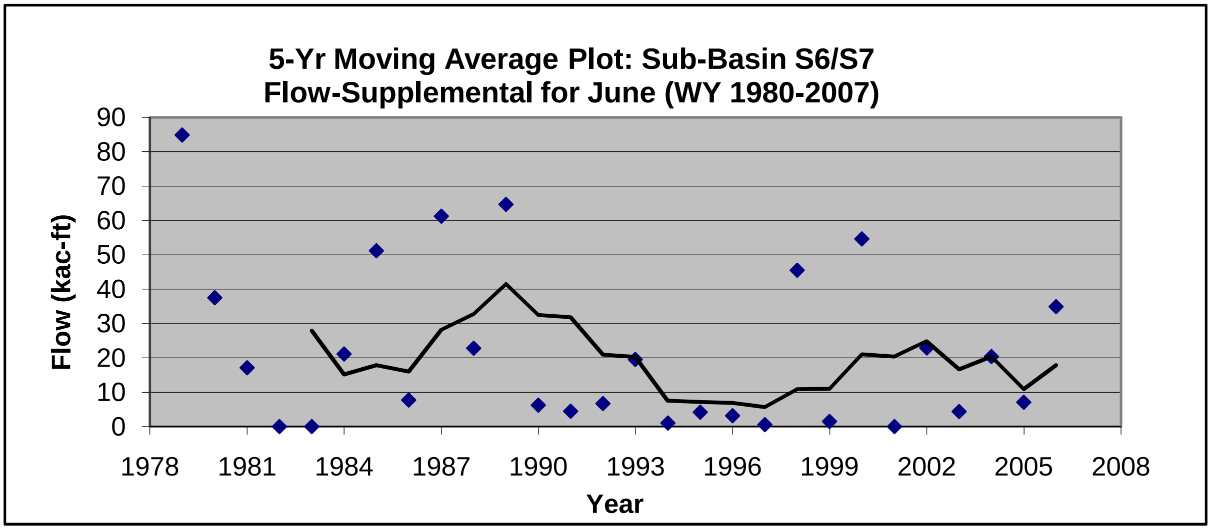
5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for May (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
35
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

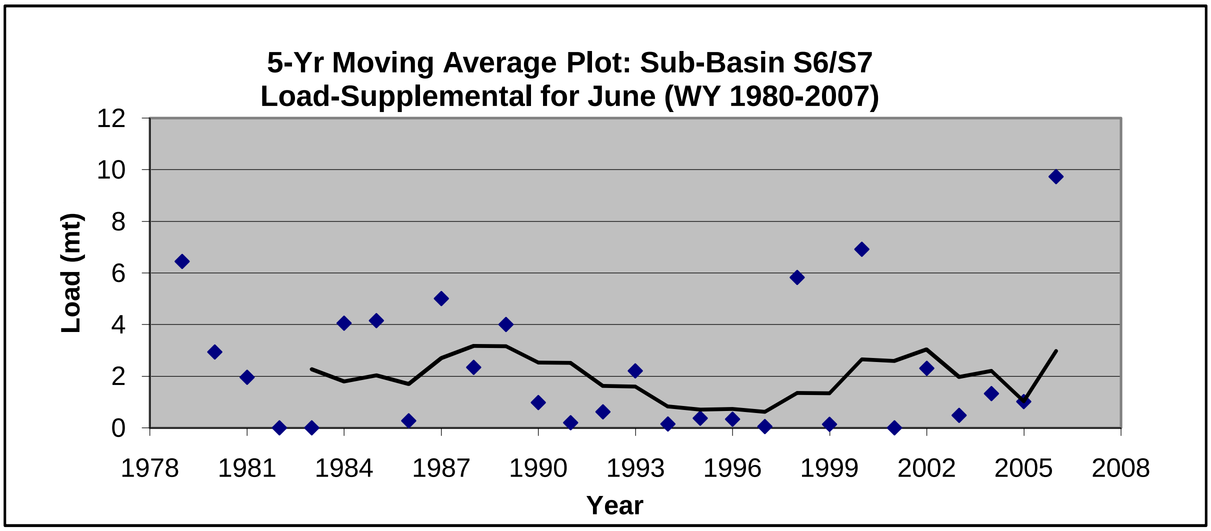


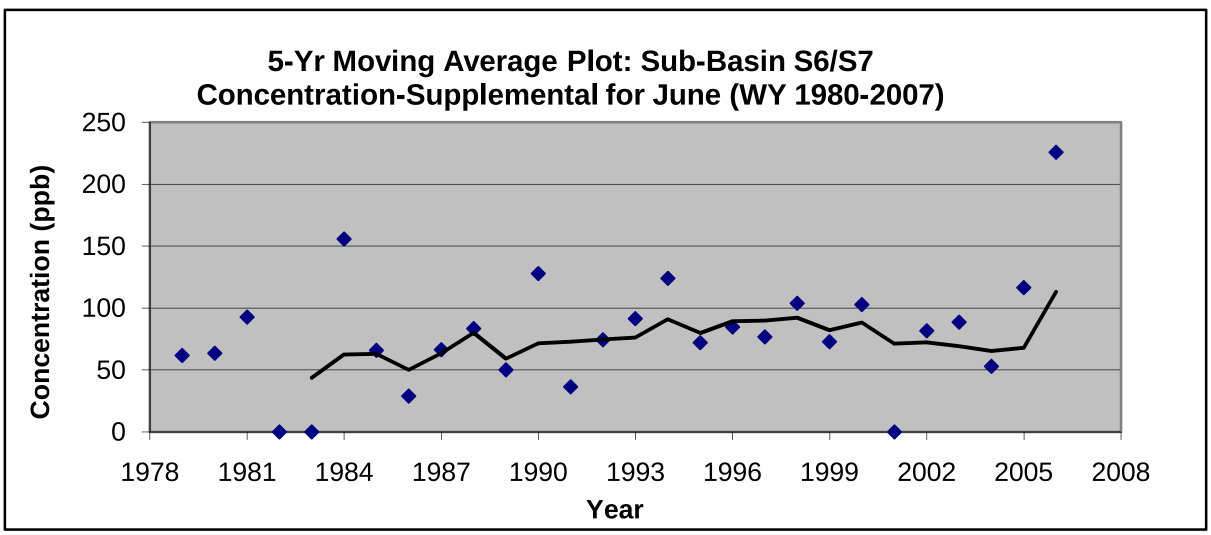
5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for May (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

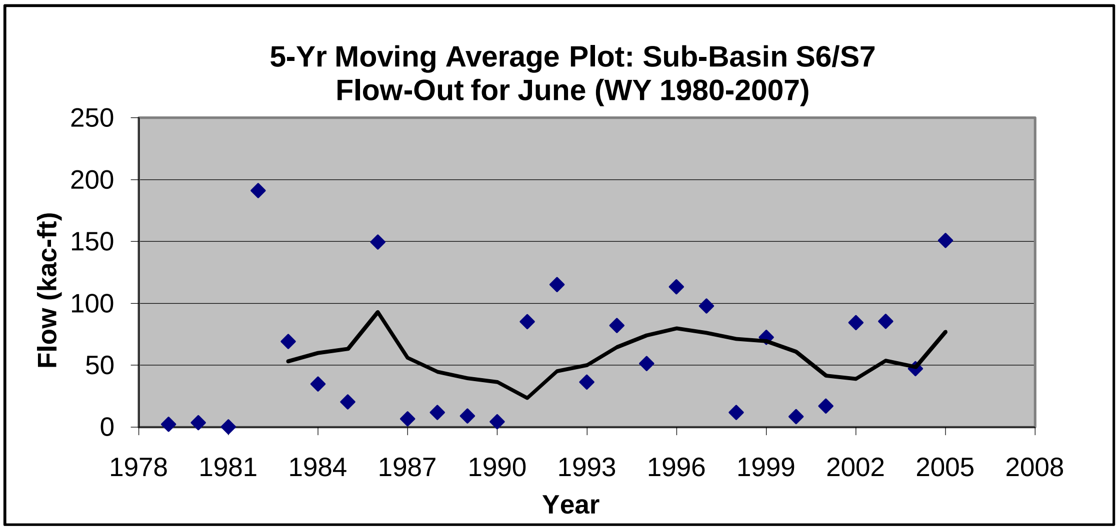
Hydrologic Sub-Basin S6/S7 (June)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	21.62	56.83	2.28	8.91	87.98	106.72
Standard Error	4.48	9.96	0.49	2.34	8.14	9.61
Median	12.44	41.89	1.17	5.50	81.65	87.47
Standard Deviation	23.71	52.68	2.59	12.39	40.68	50.87
Sample Variance	562.33	2774.87	6.68	153.46	1654.79	2588.02
Kurtosis	0.44	0.06	1.13	6.14	4.61	0.34
Skewness	1.15	0.89	1.28	2.44	1.72	1.21
Range	84.84	190.87	9.74	52.71	196.80	172.00
Minimum	0.00	0.32	0.00	0.05	28.92	51.55
Maximum	84.84	191.20	9.74	52.76	225.72	223.56
Sum	605.41	1591.32	63.88	249.37	2199.52	2988.17
Count	28	28	28	28	25	28
Quartile-1	3.94	11.10	0.26	1.14	59.38	72.89
Quartile-2	12.44	41.89	1.17	5.50	75.50	87.47
Quartile-3	35.58	85.19	4.02	9.56	95.16	114.84
Confidence intervals	8.78	19.51	0.96	4.59	16.79	18.84

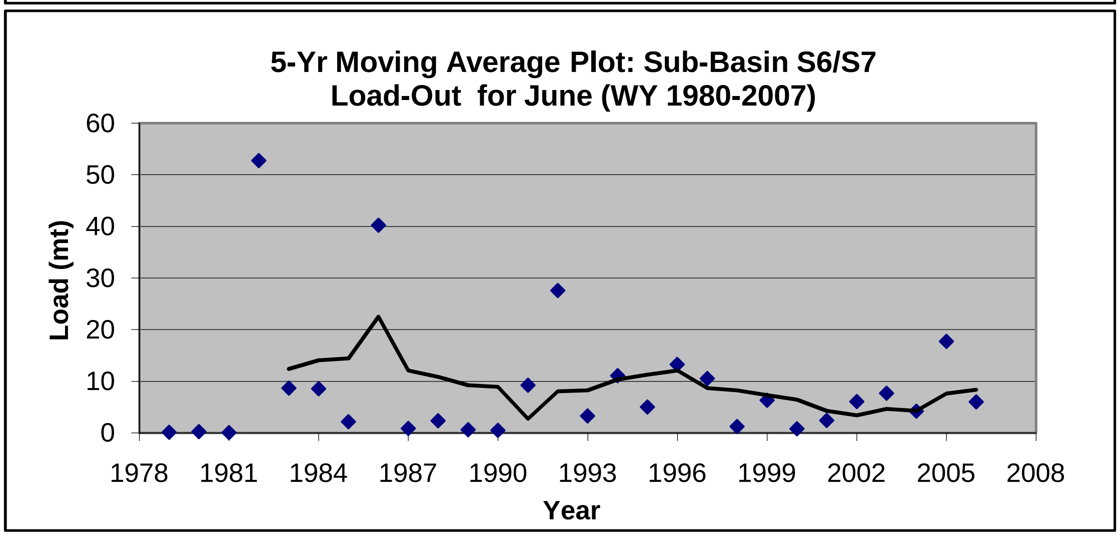

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for June (WY 1980-2007)
Flow (kac-ft)
90
80
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for June (WY 1980-2007)
Load (mt)
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

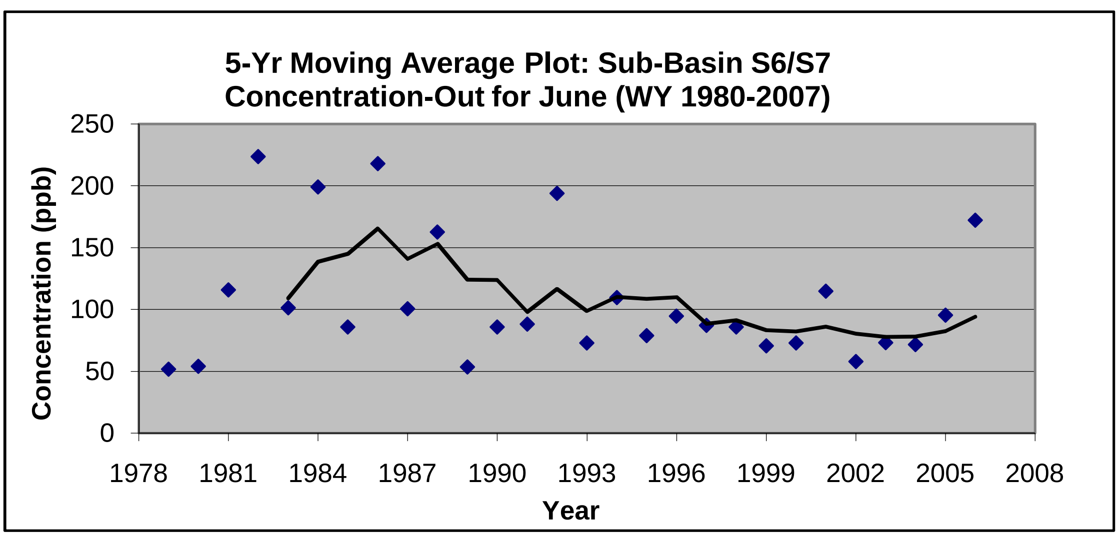

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for June (WY 1980-2007)
Concentration (ppb)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for June (WY 1980-2007)
Flow (kac-ft)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



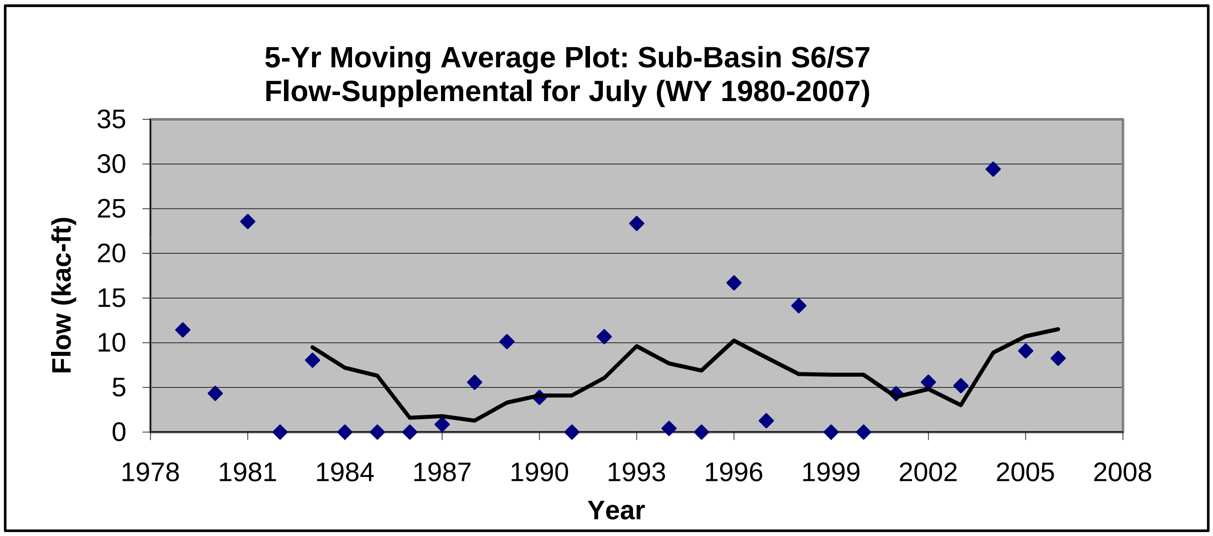
5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for June (WY 1980-2007)
Load (mt)
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



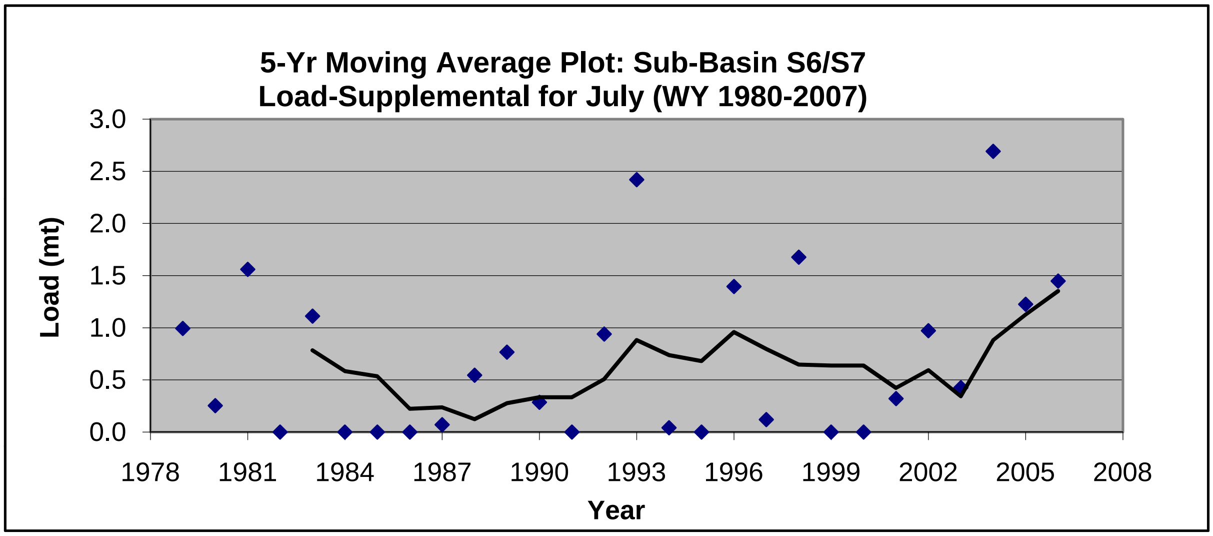
5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for June (WY 1980-2007)
Concentration (ppb)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S6/S7 (July)

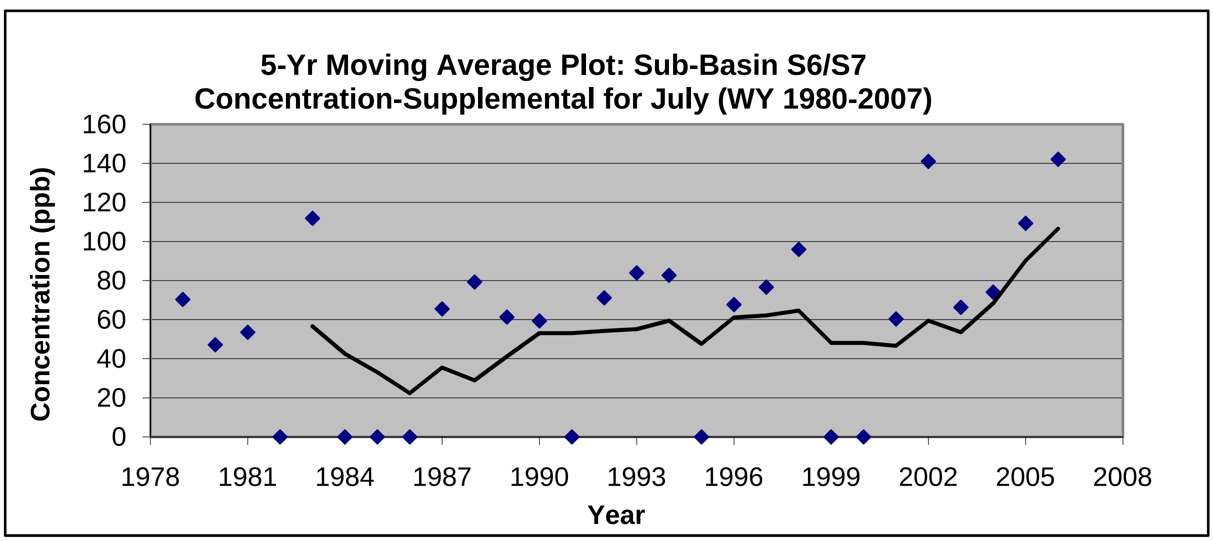
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	7.01	60.24	0.69	8.70	81.00	102.60
Standard Error	1.53	8.19	0.15	1.79	5.94	8.47
Median	4.76	54.07	0.37	6.55	72.66	91.35
Standard Deviation	8.11	43.32	0.77	9.49	26.56	43.18
Sample Variance	65.80	1876.56	0.59	89.97	705.53	1864.79
Kurtosis	1.28	-1.38	0.53	5.37	0.97	8.35
Skewness	1.35	0.26	1.09	2.12	1.25	2.54
Range	29.42	136.30	2.69	42.52	94.92	208.06
Minimum	0.00	0.00	0.00	0.00	47.15	60.95
Maximum	29.42	136.30	2.69	42.52	142.06	269.02
Sum	196.17	1686.68	19.25	243.71	1619.96	2667.51
Count	28	28	28	28	20	26
Quartile-1	0.00	19.78	0.00	1.78	0.00	75.81
Quartile-2	4.76	54.07	0.37	6.55	65.94	91.35
Quartile-3	10.26	102.26	1.14	9.85	80.15	113.96
Confidence intervals	3.00	16.05	0.29	3.51	12.43	17.44



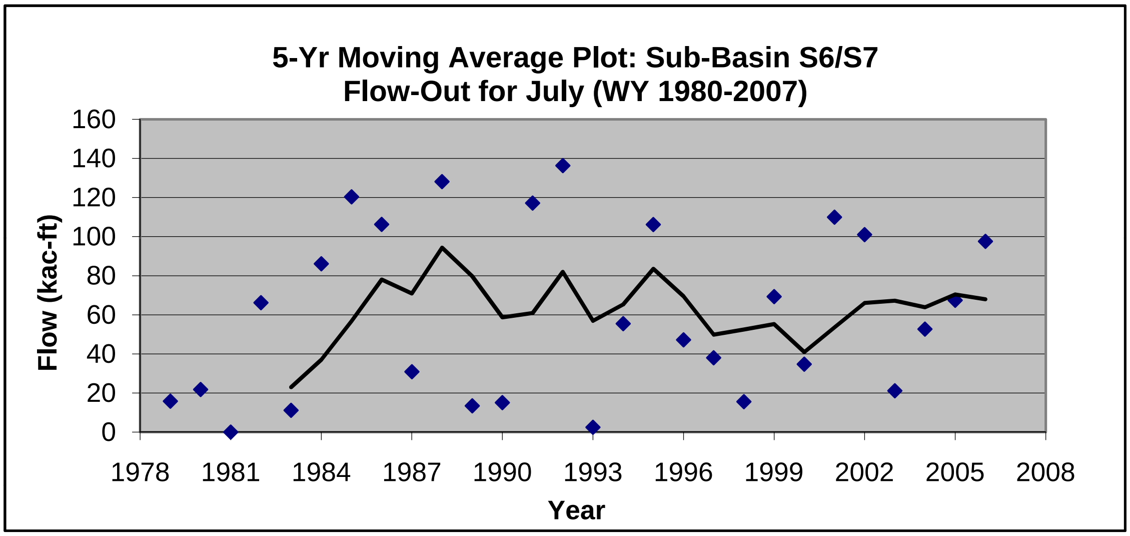
5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for July (WY 1980-2007)
Flow (kac-ft)
0
5
10
15
20
25
30
35
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

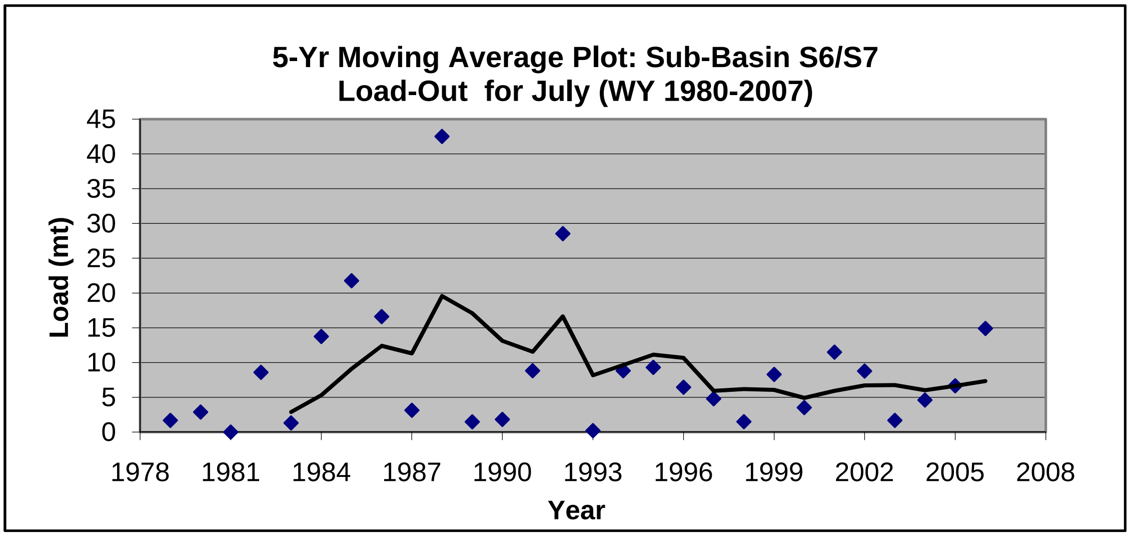


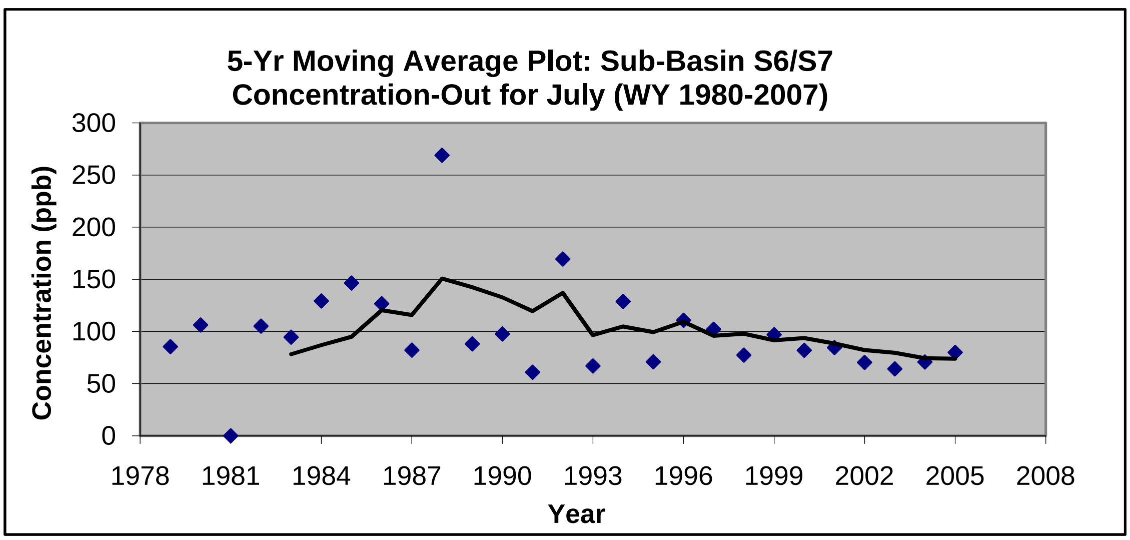
5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for July (WY 1980-2007)
Load (mt)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for July (WY 1980-2007)
Concentration (ppb)
0
20
40
60
80
100
120
140
160
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

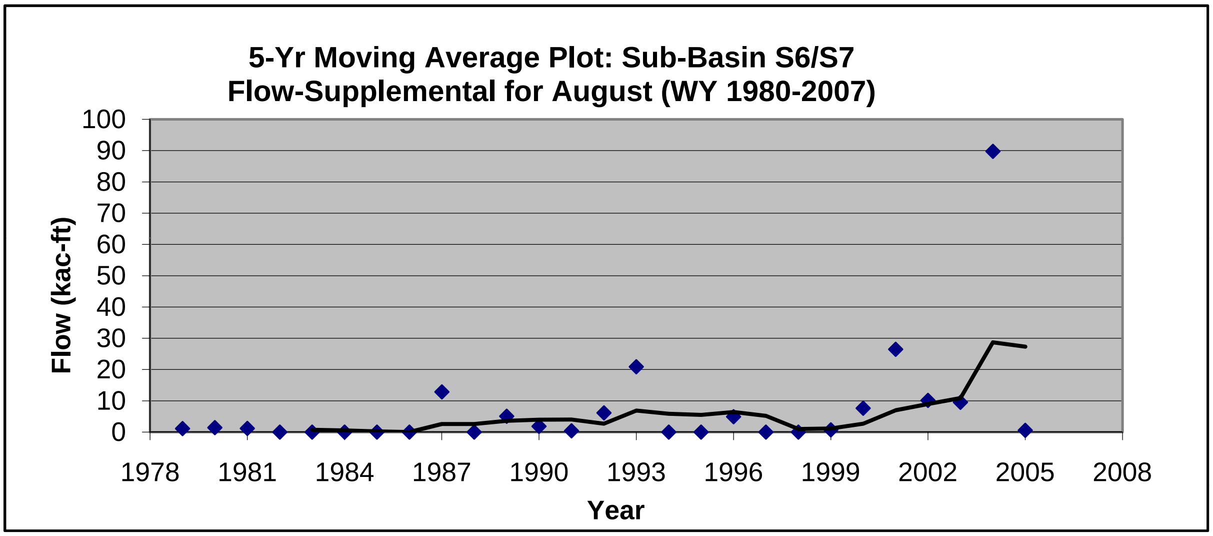

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for July (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
140
160
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

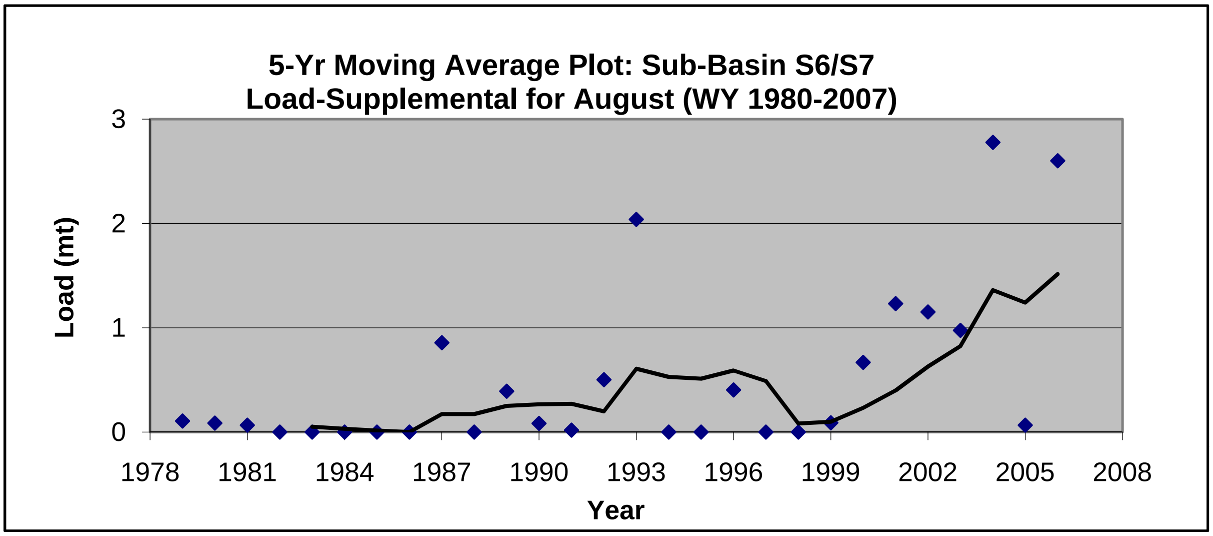

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for July (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
35
40
45
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

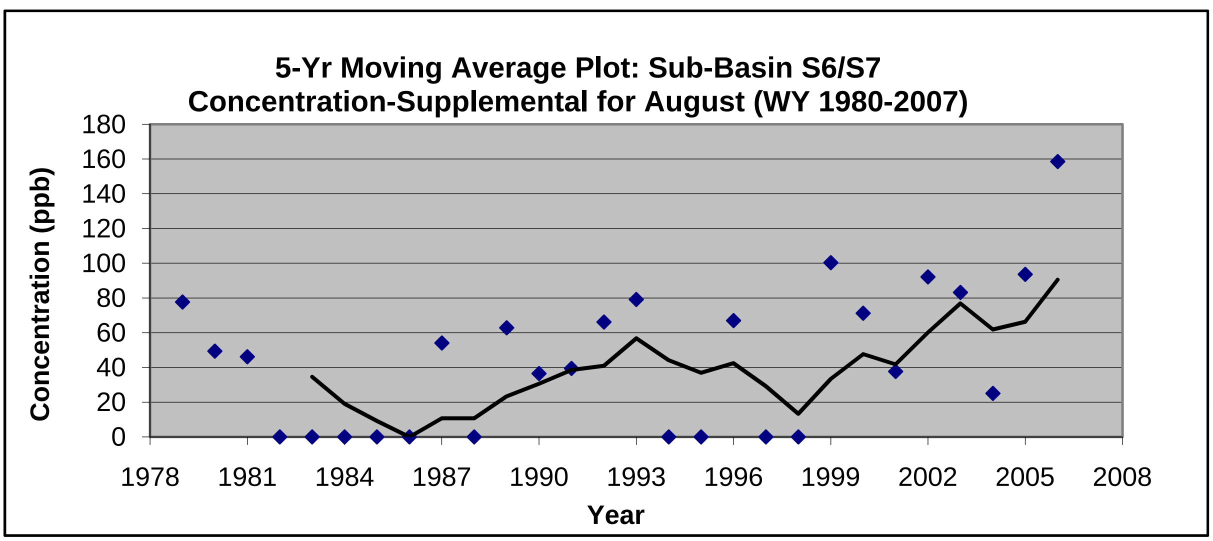

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for July (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

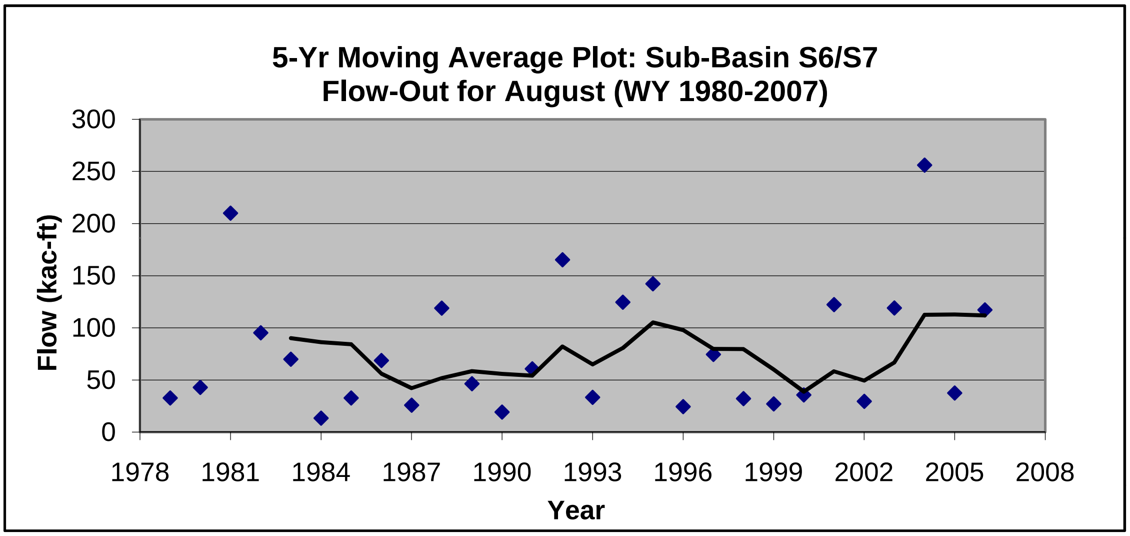
Hydrologic Sub-Basin S6/S7 (August)

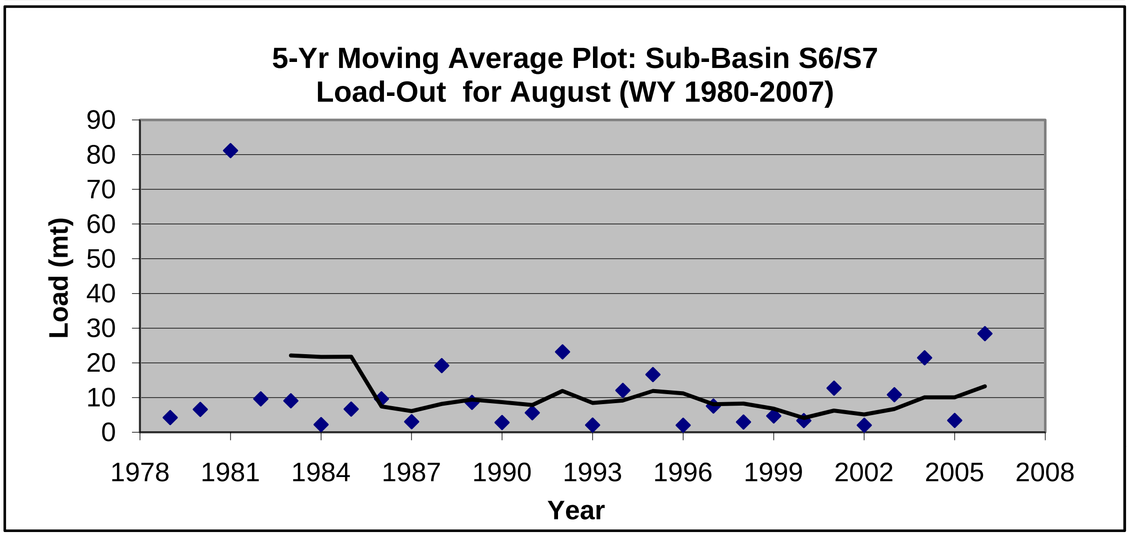
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	7.63	77.71	0.50	11.48	68.89	108.52
Standard Error	3.30	11.66	0.15	2.91	7.35	10.01
Median	1.12	53.46	0.08	7.10	66.55	94.60
Standard Deviation	17.47	61.68	0.80	15.38	31.20	52.98
Sample Variance	305.31	3803.93	0.63	236.54	973.58	2807.20
Kurtosis	19.28	1.40	2.74	16.26	2.88	7.56
Skewness	4.16	1.31	1.86	3.71	1.28	2.36
Range	89.72	242.69	2.78	79.13	133.50	263.00
Minimum	0.00	13.38	0.00	2.01	25.08	50.13
Maximum	89.72	256.07	2.78	81.15	158.58	313.13
Sum	213.59	2175.96	14.11	321.52	1239.97	3038.58
Count	28	28	28	28	18	28
Quartile-1	0.00	32.49	0.00	3.26	0.00	74.73
Quartile-2	1.12	53.46	0.08	7.10	42.77	94.60
Quartile-3	8.07	118.90	0.72	12.21	72.79	125.70
Confidence intervals	6.47	22.84	0.29	5.70	15.52	19.62

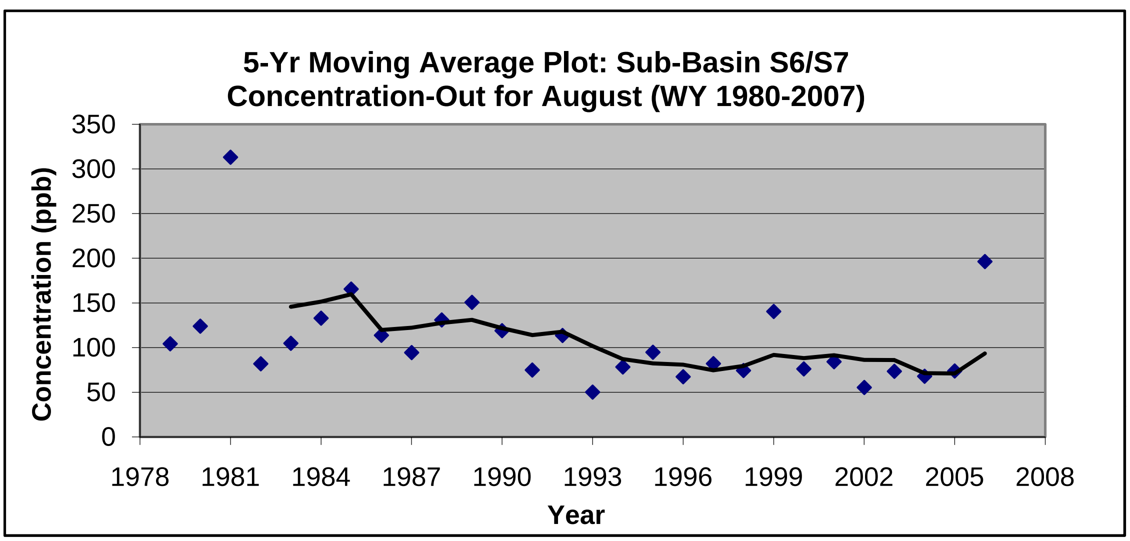

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for August (WY 1980-2007)
Flow (kac-ft)
100
90
80
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for August (WY 1980-2007)
Load (mt)
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for August (WY 1980-2007)
Concentration (ppb)
180
160
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

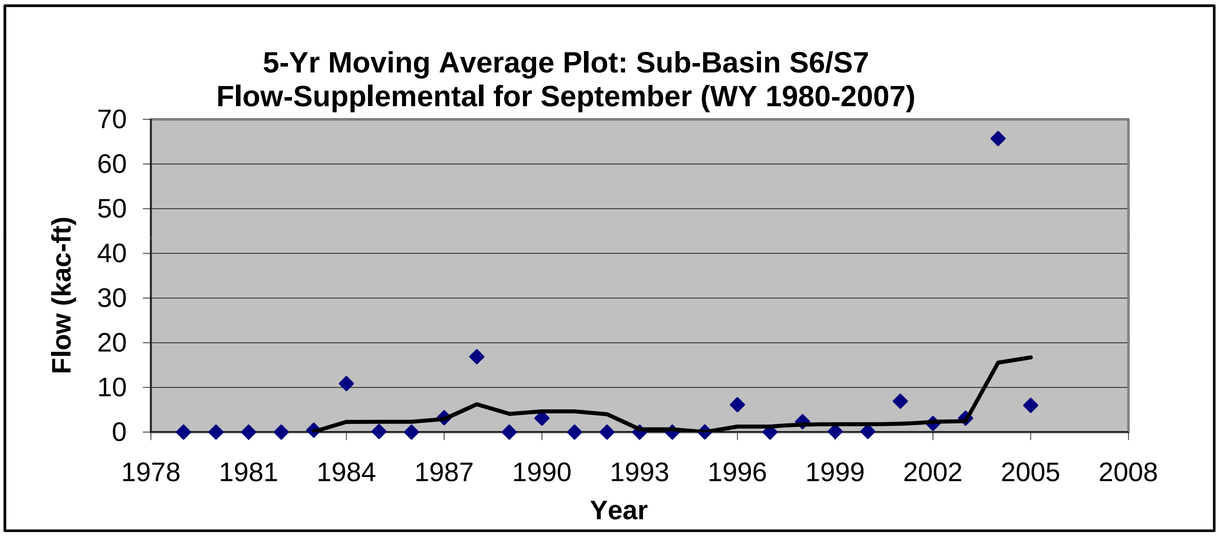

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for August (WY 1980-2007)
Flow (kac-ft)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for August (WY 1980-2007)
Load (mt)
0
10
20
30
40
50
60
70
80
90
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

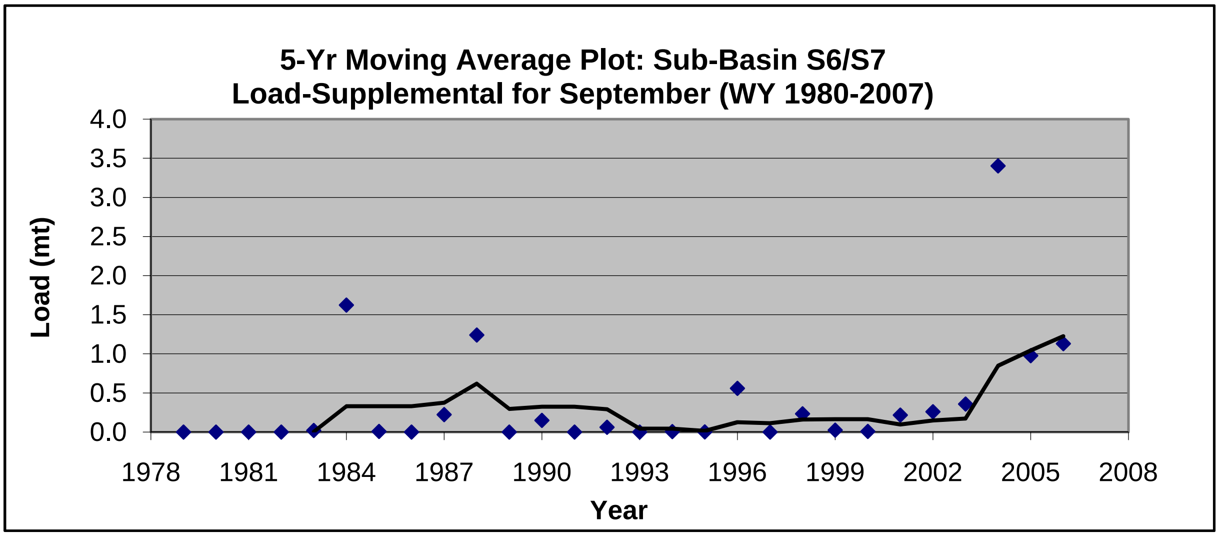

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for August (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S6/S7 (September)

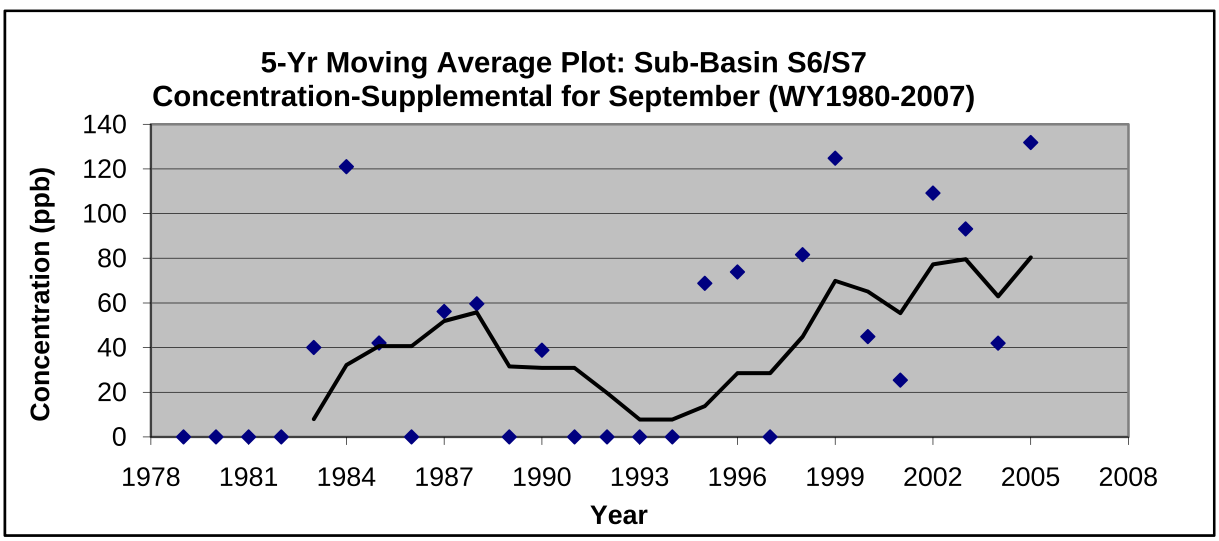
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	4.65	84.05	0.37	11.71	83.56	108.92
Standard Error	2.38	10.69	0.14	1.72	14.04	8.13
Median	0.14	82.90	0.02	9.39	68.83	96.46
Standard Deviation	12.59	56.59	0.74	9.11	57.90	43.01
Sample Variance	158.53	3202.57	0.55	82.98	3352.24	1850.13
Kurtosis	22.22	2.62	10.28	0.74	5.80	-0.56
Skewness	4.55	1.15	2.99	0.92	2.12	0.57
Range	65.68	264.48	3.40	37.38	241.38	153.95
Minimum	0.00	0.95	0.00	0.14	25.46	45.94
Maximum	65.68	265.43	3.40	37.52	266.84	199.89
Sum	130.34	2353.51	10.49	327.86	1420.47	3049.64
Count	28	28	28	28	17	28
Quartile-1	0.00	45.54	0.00	4.07	0.00	83.85
Quartile-2	0.14	82.90	0.02	9.39	41.01	96.46
Quartile-3	3.27	111.18	0.28	18.80	75.83	136.15
Confidence intervals	4.66	20.96	0.27	3.37	29.77	15.93



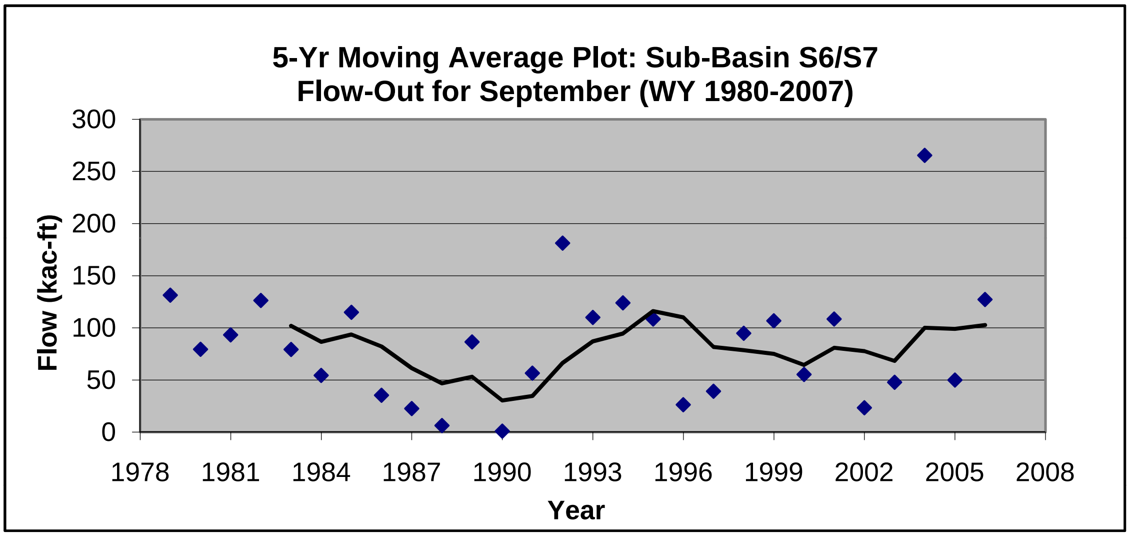
5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for September (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

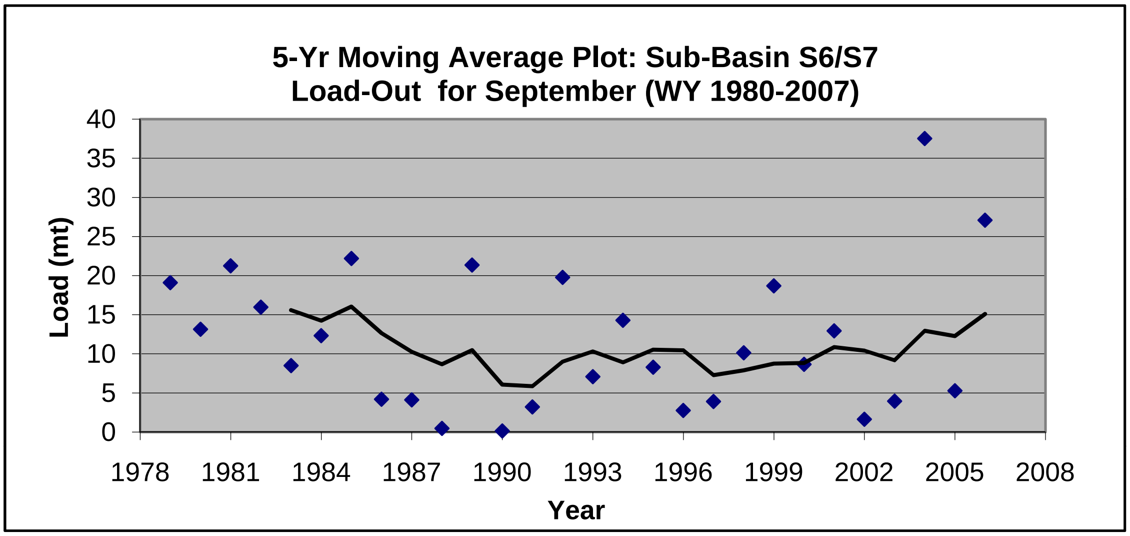


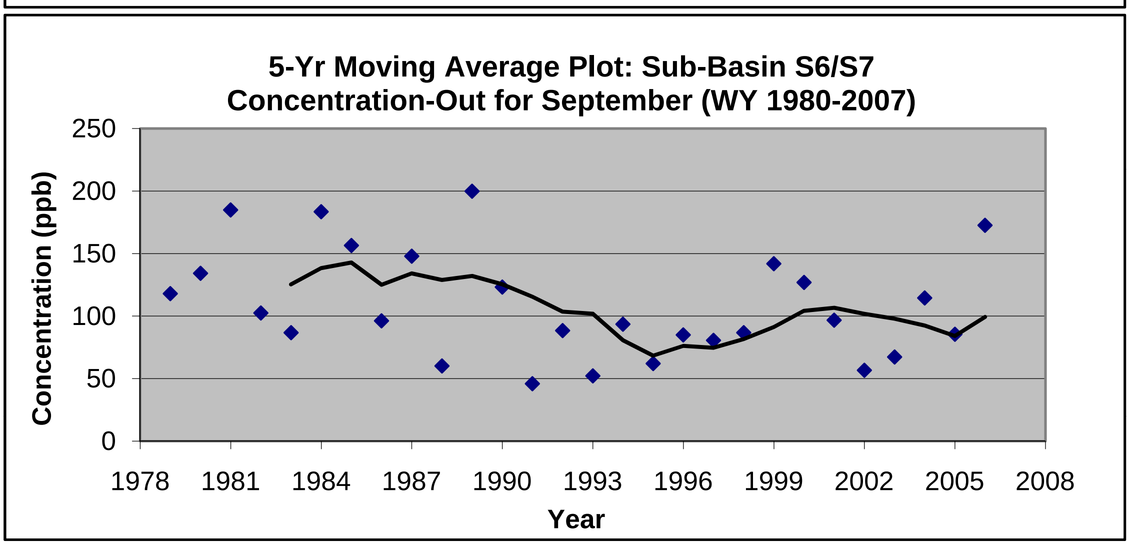
5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for September (WY 1980-2007)
Load (mt)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for September (WY1980-2007)
Concentration (ppb)
0
20
40
60
80
100
120
140
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

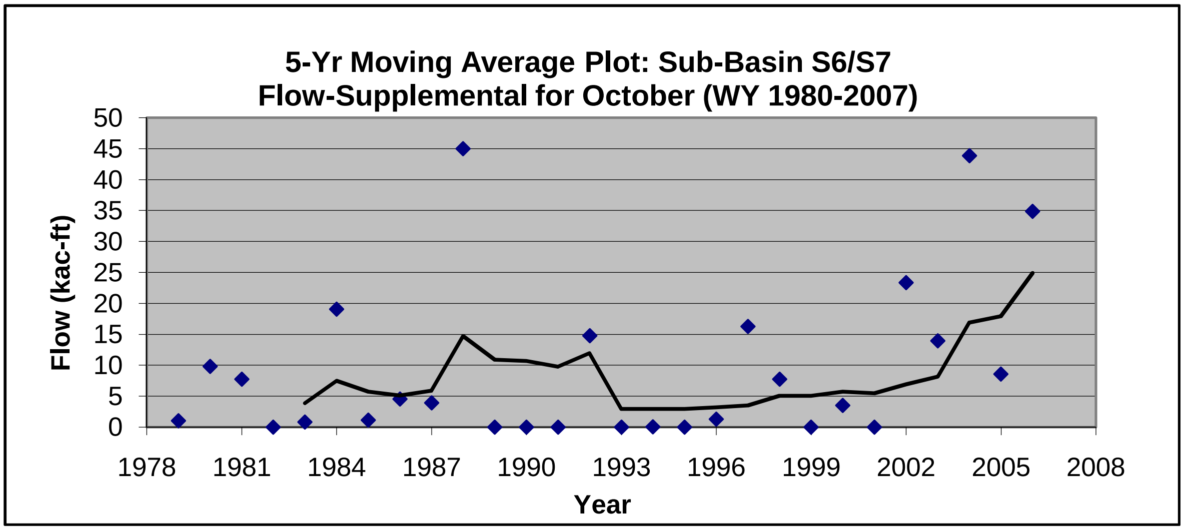

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for September (WY 1980-2007)
Flow (kac-ft)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for September (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
35
40
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

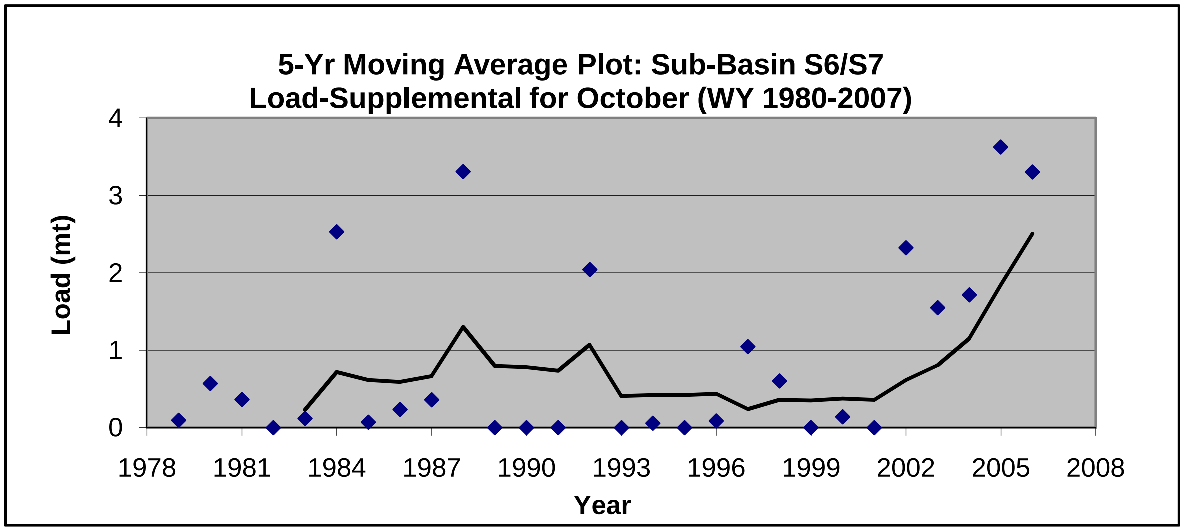

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for September (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S6/S7 (October)

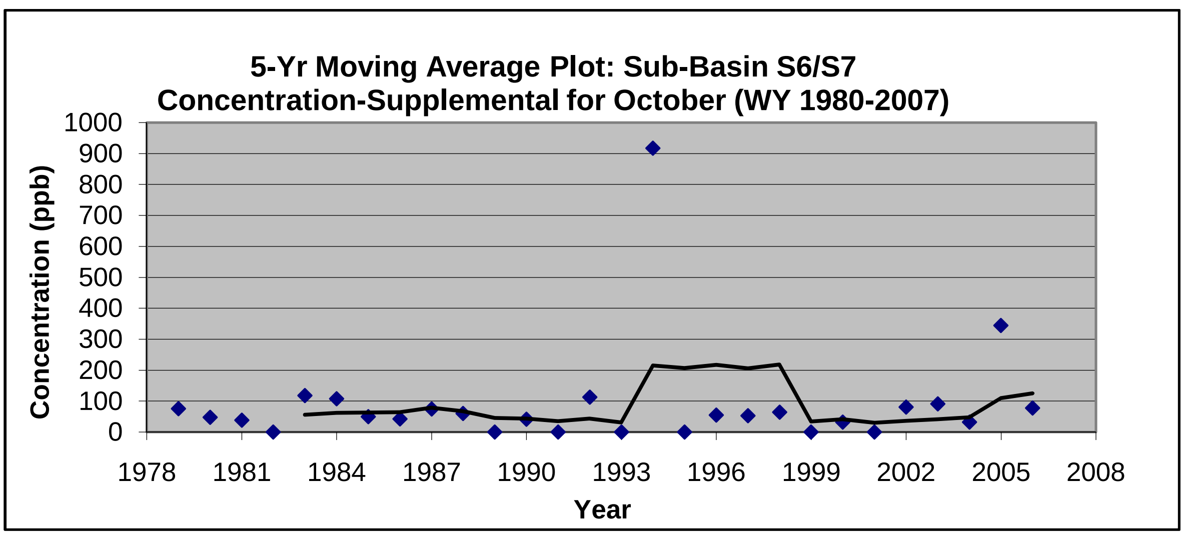
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	9.33	53.46	0.86	6.91	119.22	99.22
Standard Error	2.48	9.65	0.22	1.44	42.40	8.75
Median	3.70	31.39	0.19	4.87	63.32	84.75
Standard Deviation	13.14	51.04	1.18	7.61	194.31	44.61
Sample Variance	172.58	2605.22	1.39	57.93	37754.45	1990.29
Kurtosis	2.25	-0.06	0.24	0.61	15.85	0.32
Skewness	1.72	0.98	1.27	1.31	3.88	1.07
Range	45.03	167.70	3.62	25.09	885.56	161.60
Minimum	0.00	0.00	0.00	0.00	31.70	42.30
Maximum	45.03	167.70	3.62	25.09	917.26	203.90
Sum	261.27	1496.94	24.12	193.49	2503.66	2579.67
Count	28	28	28	28	21	26
Quartile-1	0.01	16.17	0.00	1.44	23.77	65.51
Quartile-2	3.70	31.39	0.19	4.87	50.44	82.80
Quartile-3	14.13	72.73	1.59	8.91	77.64	108.40
Confidence intervals	4.87	18.91	0.44	2.82	88.45	18.02



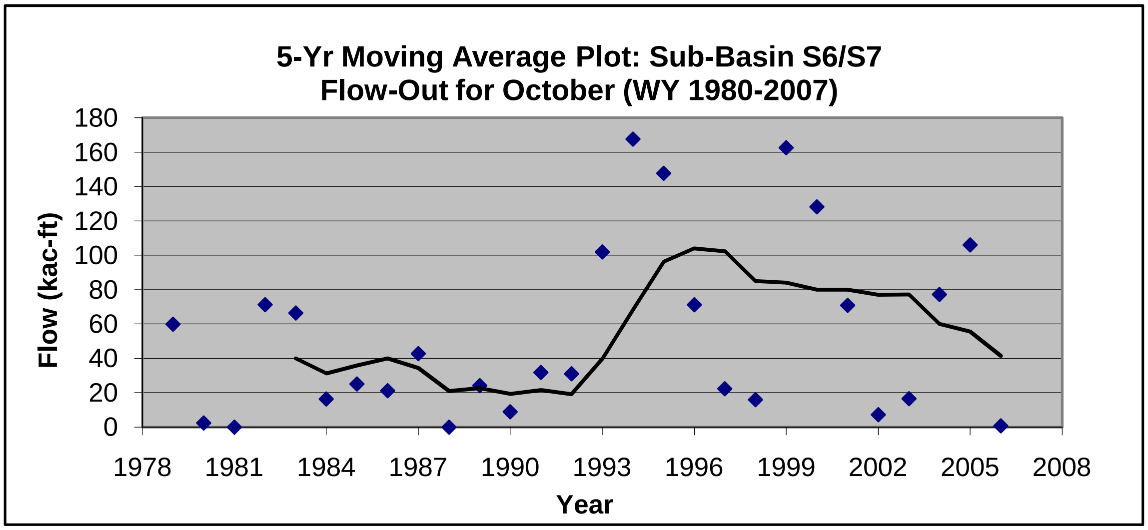
5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for October (WY 1980-2007)
Flow (kac-ft)
50
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

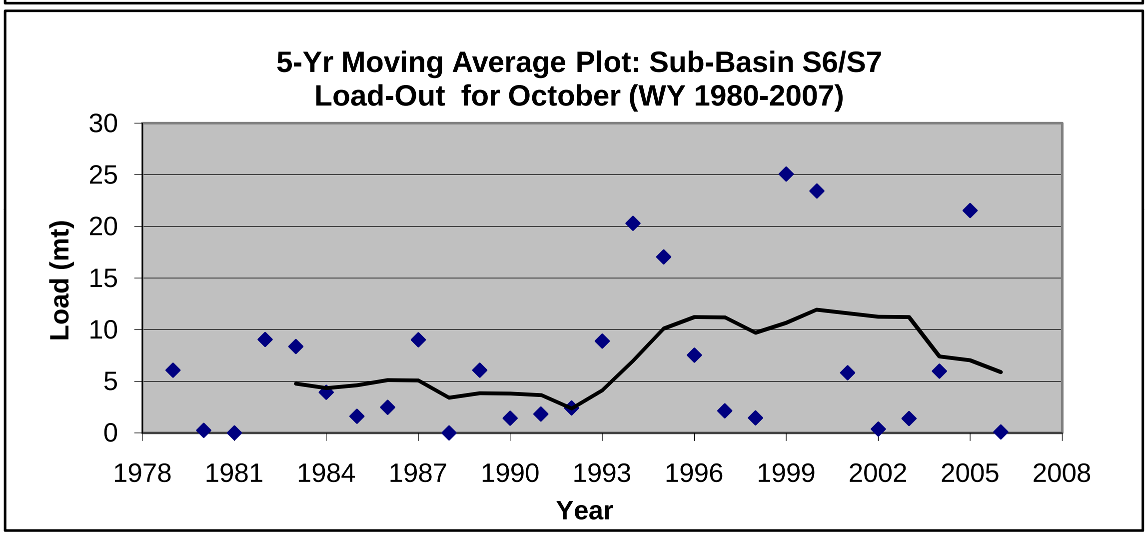


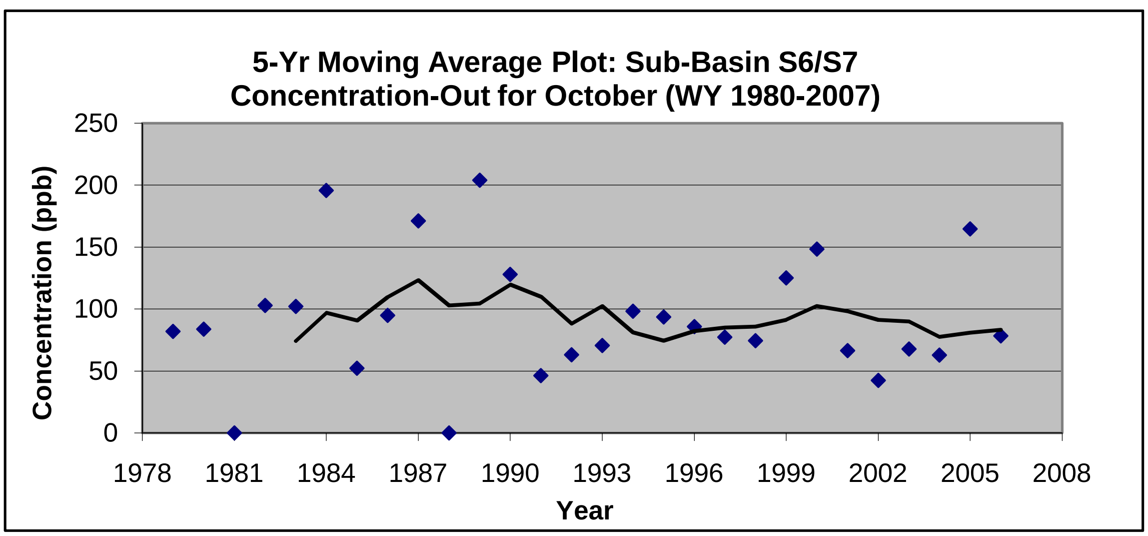
5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for October (WY 1980-2007)
Load (mt)
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for October (WY 1980-2007)
Concentration (ppb)
1000
900
800
700
600
500
400
300
200
100
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

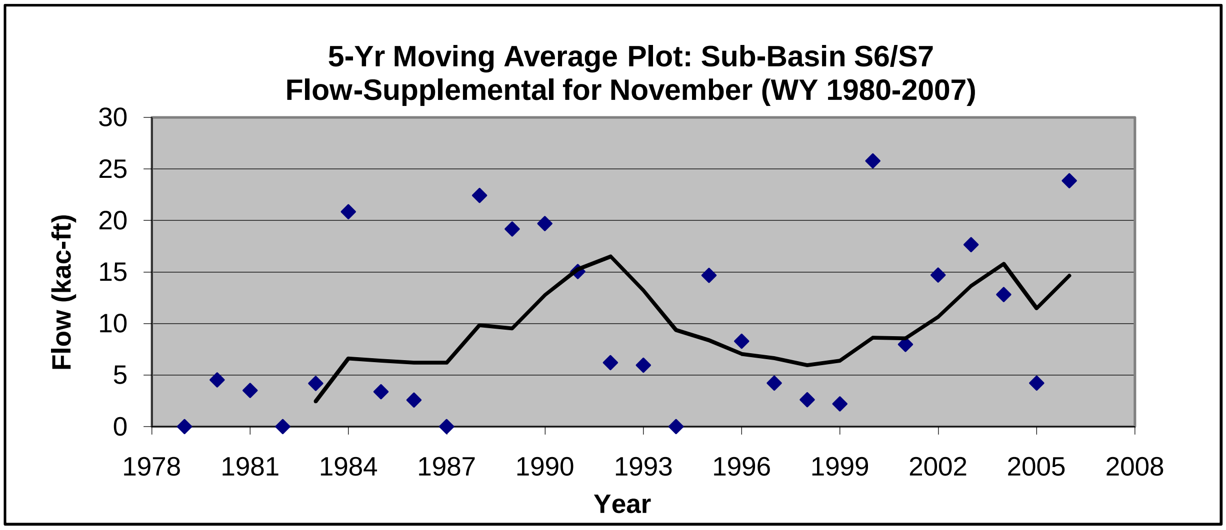

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for October (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
140
160
180
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

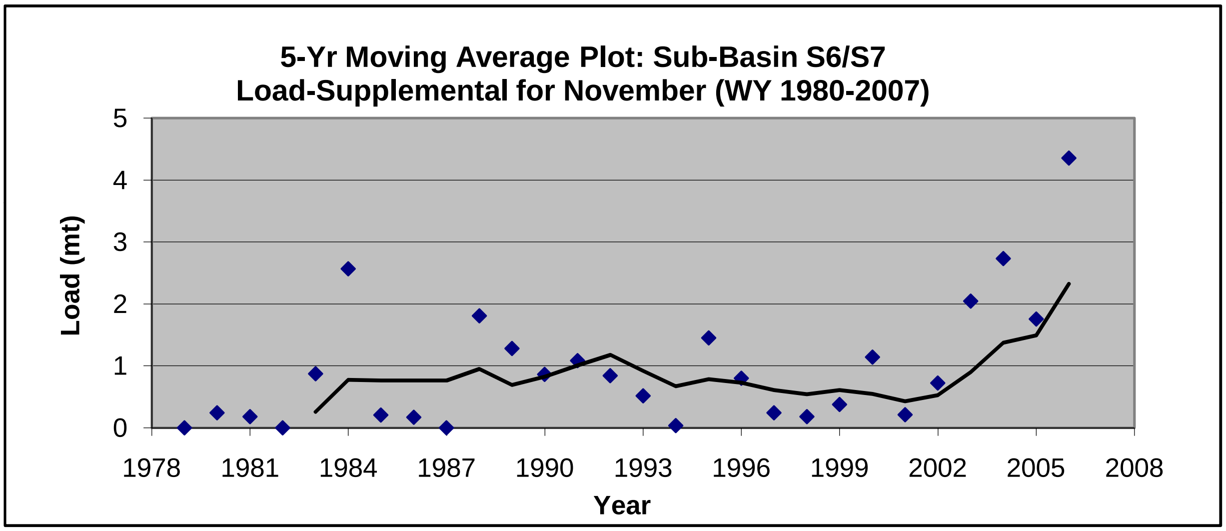

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for October (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

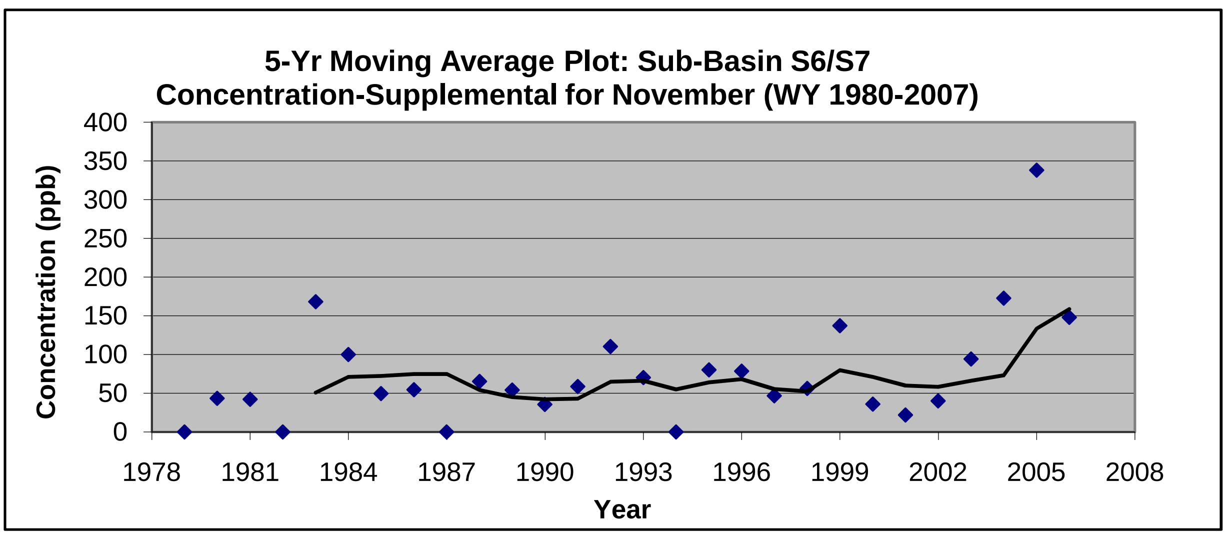

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for October (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

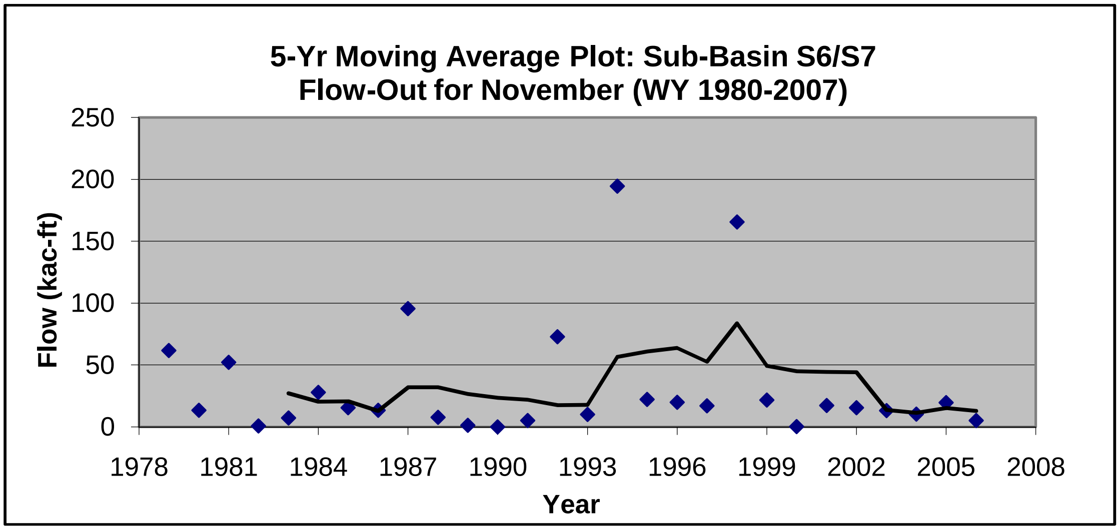
Hydrologic Sub-Basin S6/S7 (November)

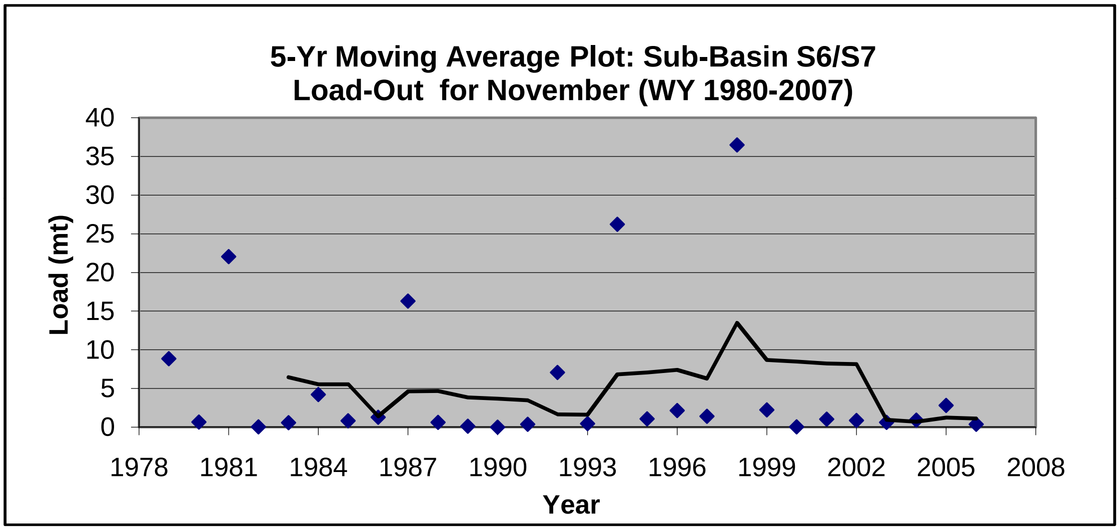
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	9.52	32.29	0.95	4.97	87.50	89.49
Standard Error	1.56	9.01	0.19	1.72	13.94	12.52
Median	6.09	15.47	0.76	0.95	61.89	68.99
Standard Deviation	8.27	47.67	1.03	9.12	68.31	65.07
Sample Variance	68.34	2272.75	1.05	83.26	4666.29	4234.36
Kurtosis	-1.10	5.89	3.26	5.29	7.20	8.23
Skewness	0.58	2.47	1.67	2.40	2.39	2.56
Range	25.79	194.35	4.36	36.48	316.20	307.00
Minimum	0.00	0.00	0.00	0.00	21.69	35.32
Maximum	25.79	194.35	4.36	36.48	337.89	342.32
Sum	266.54	904.21	26.71	139.20	2099.96	2416.32
Count	28	28	28	28	24	27
Quartile-1	3.20	7.51	0.20	0.52	38.95	46.83
Quartile-2	6.09	15.47	0.76	0.95	55.21	67.56
Quartile-3	15.69	23.51	1.32	3.15	95.42	110.77
Confidence intervals	3.06	17.66	0.38	3.38	28.84	25.74

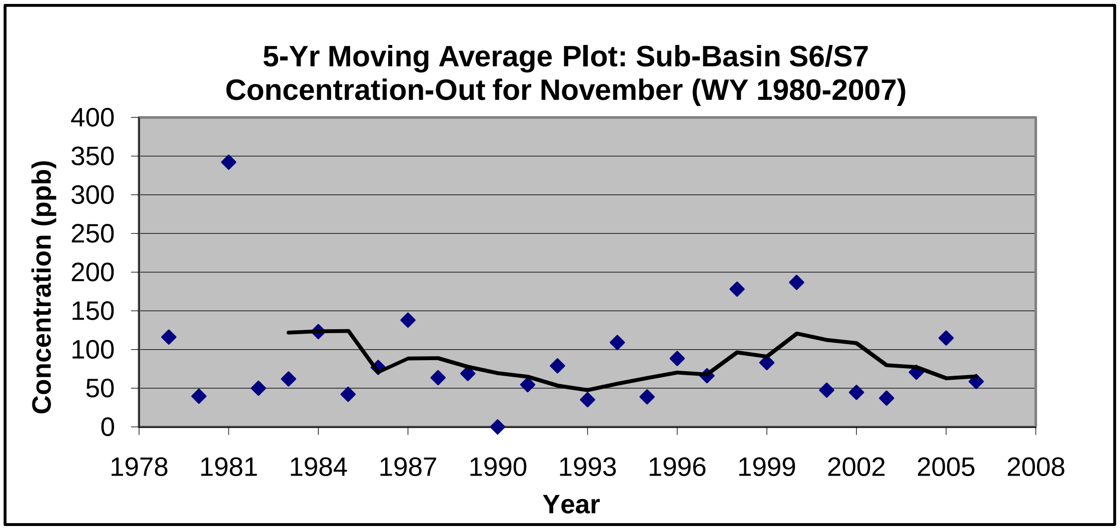

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for November (WY 1980-2007)
Flow (kac-ft)
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for November (WY 1980-2007)
Load (mt)
5
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for November (WY 1980-2007)
Concentration (ppb)
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

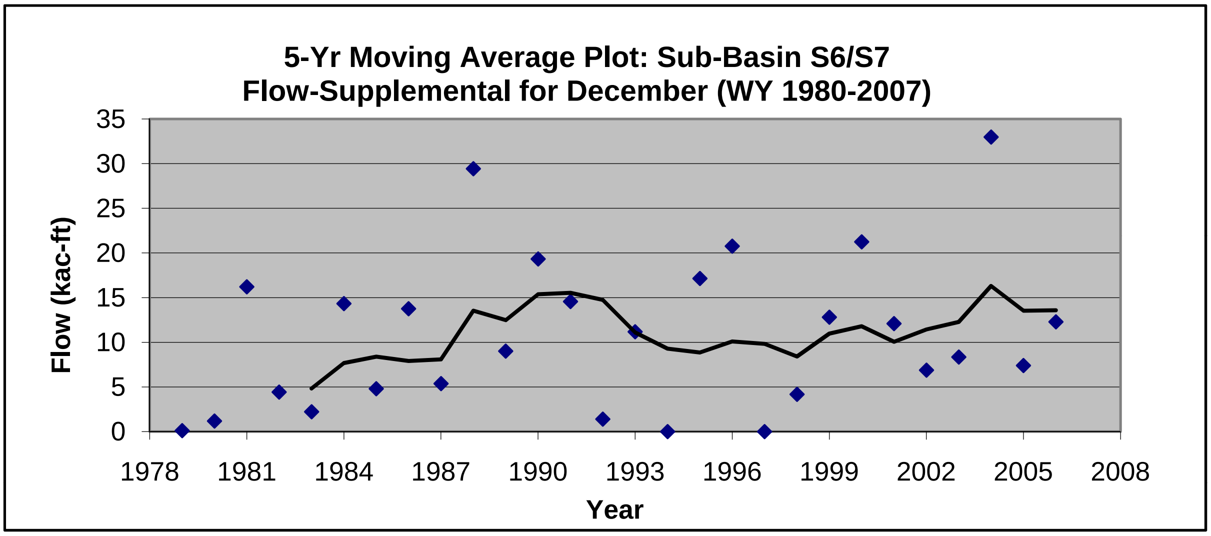

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for November (WY 1980-2007)
Flow (kac-ft)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

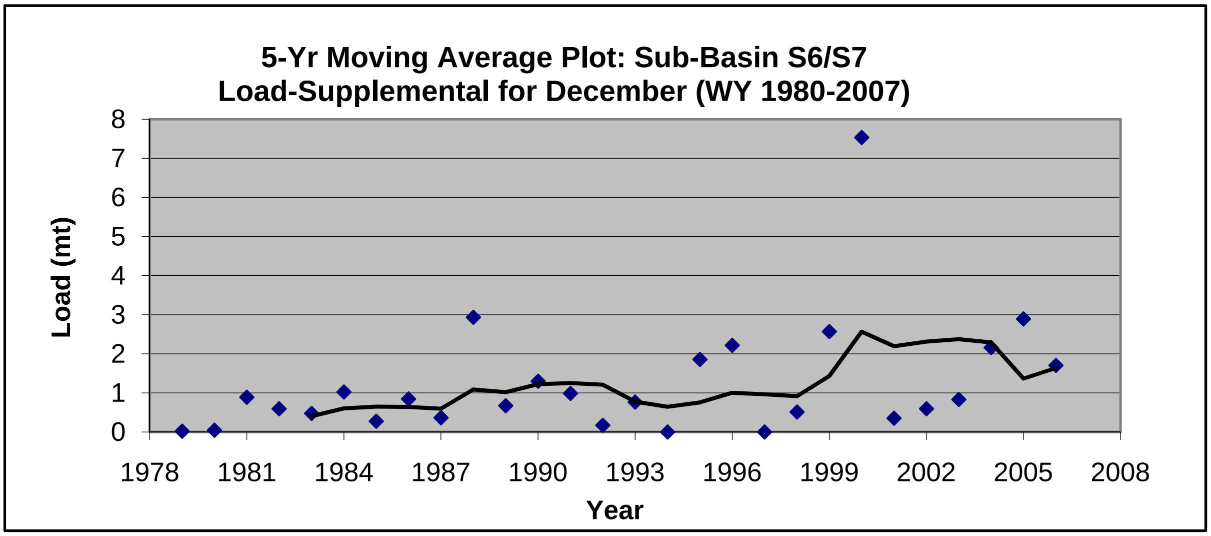

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for November (WY 1980-2007)
Load (mt)
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

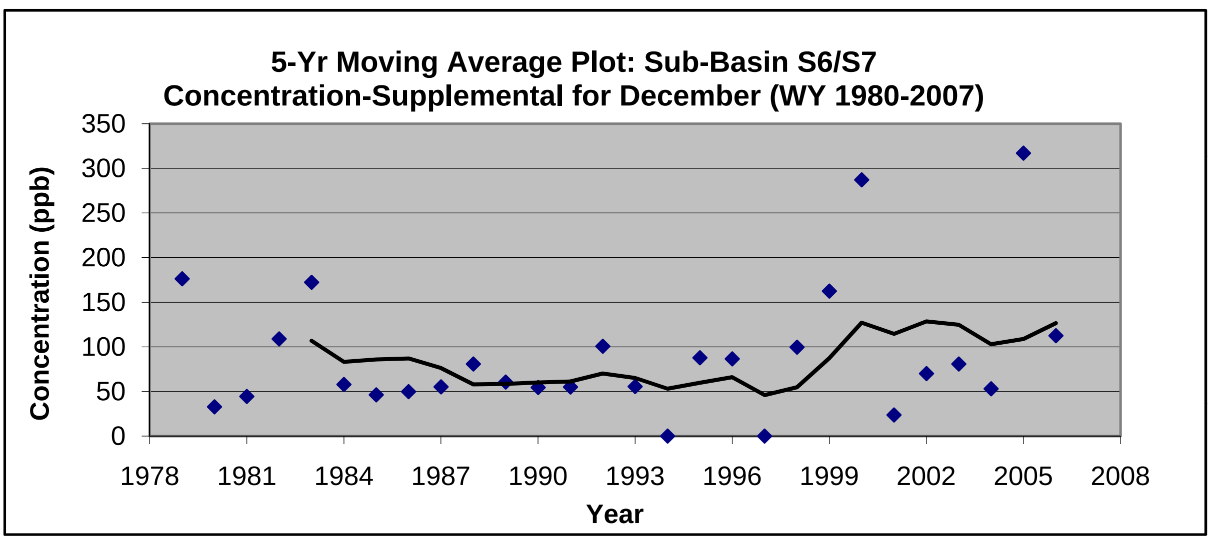

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for November (WY 1980-2007)
Concentration (ppb)
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

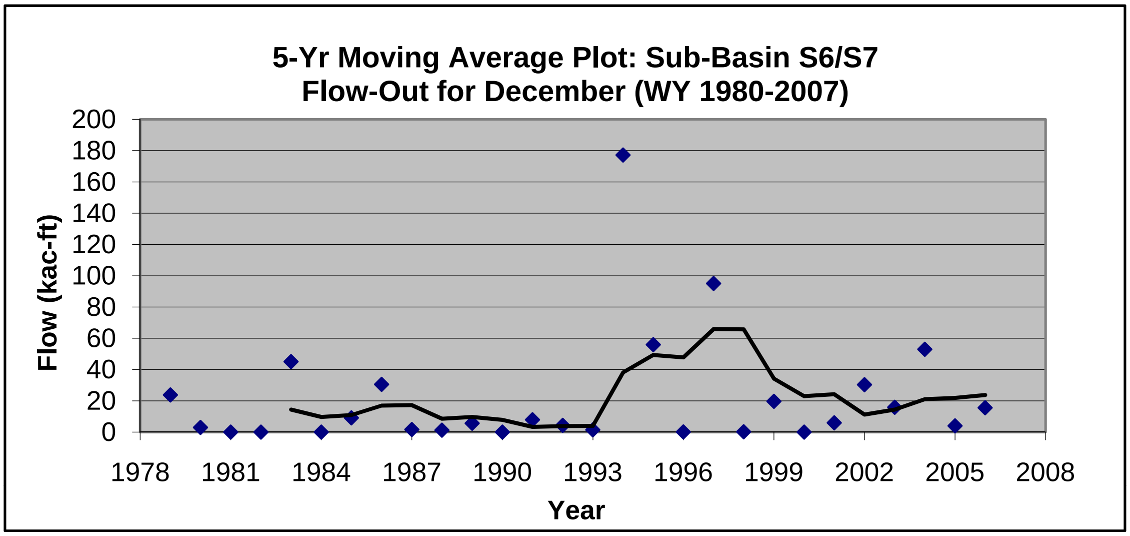
Hydrologic Sub-Basin S6/S7 (December)

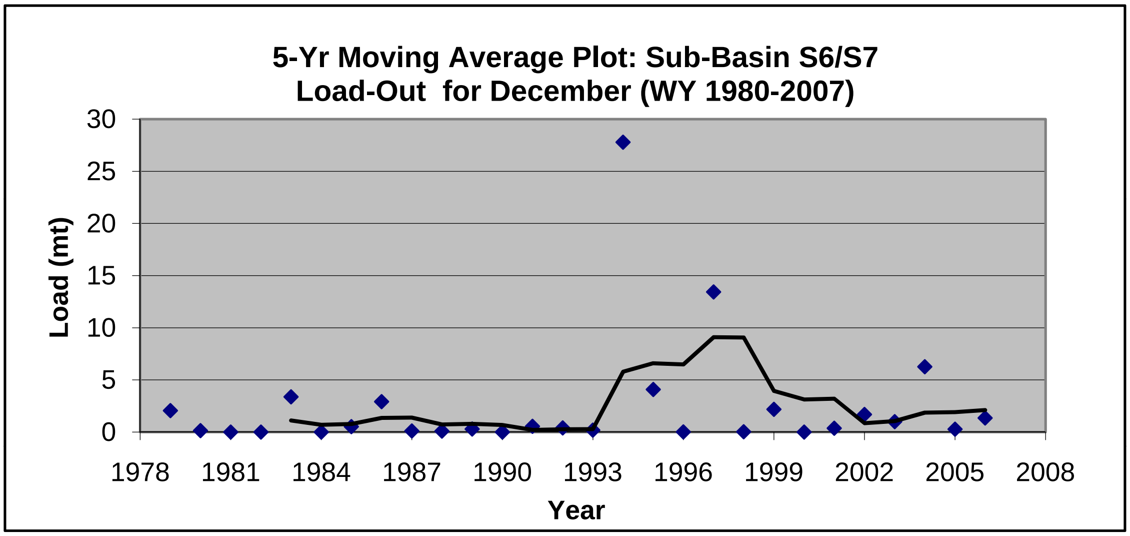
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	10.84	21.63	1.24	2.47	97.29	71.73
Standard Error	1.64	7.16	0.29	1.07	14.23	6.57
Median	10.10	5.79	0.80	0.38	75.28	59.06
Standard Deviation	8.65	37.90	1.52	5.69	72.56	31.50
Sample Variance	74.89	1436.62	2.30	32.35	5264.33	991.95
Kurtosis	0.42	10.50	10.72	15.47	3.59	2.07
Skewness	0.82	3.01	2.88	3.77	1.93	1.49
Range	32.99	177.13	7.53	27.79	293.38	125.91
Minimum	0.00	0.00	0.00	0.00	23.65	37.96
Maximum	32.99	177.13	7.53	27.79	317.03	163.87
Sum	303.51	605.75	34.59	69.03	2529.56	1649.77
Count	28	28	28	28	26	23
Quartile-1	4.37	0.93	0.36	0.07	52.21	44.19
Quartile-2	10.10	5.79	0.80	0.38	65.19	55.93
Quartile-3	14.97	25.37	1.74	2.09	102.67	74.02
Confidence intervals	3.21	14.04	0.56	2.11	29.31	13.62

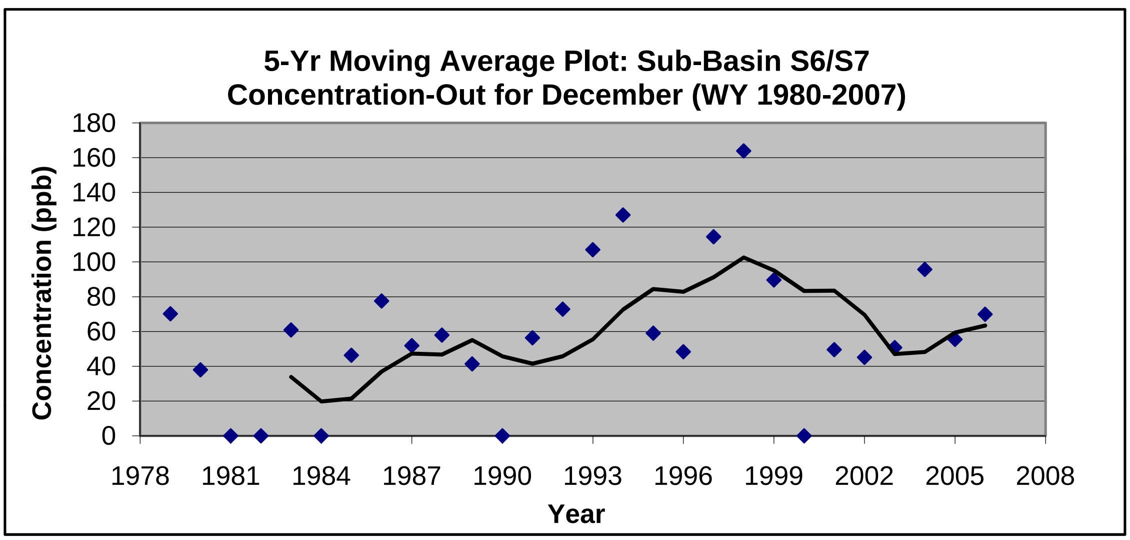

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for December (WY 1980-2007)
Flow (kac-ft)
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for December (WY 1980-2007)
Load (mt)
8
7
6
5
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for December (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

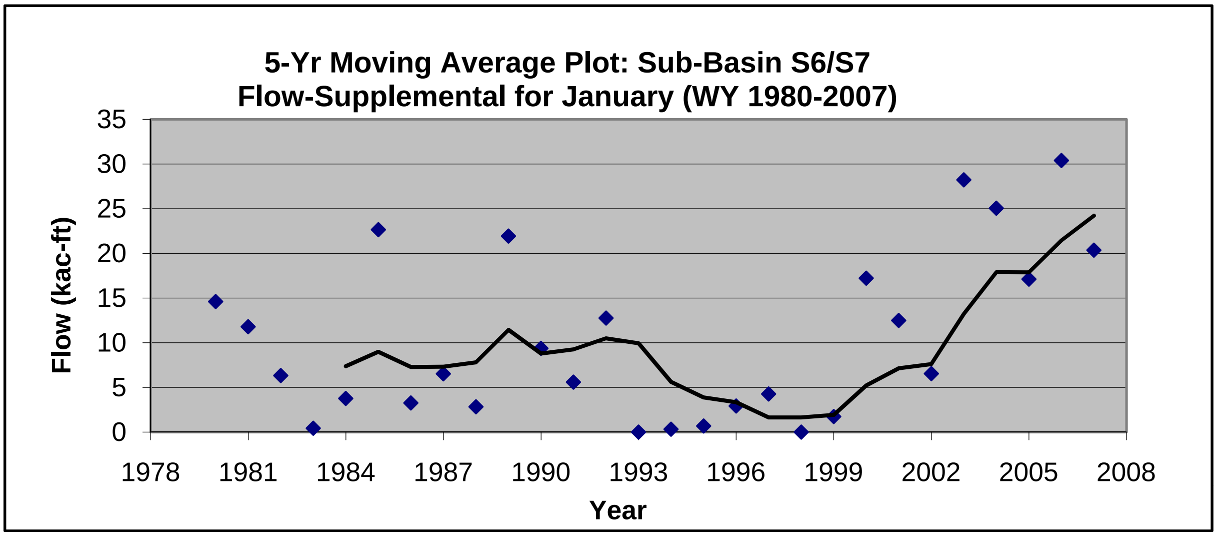

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for December (WY 1980-2007)
Flow (kac-ft)
200
180
160
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

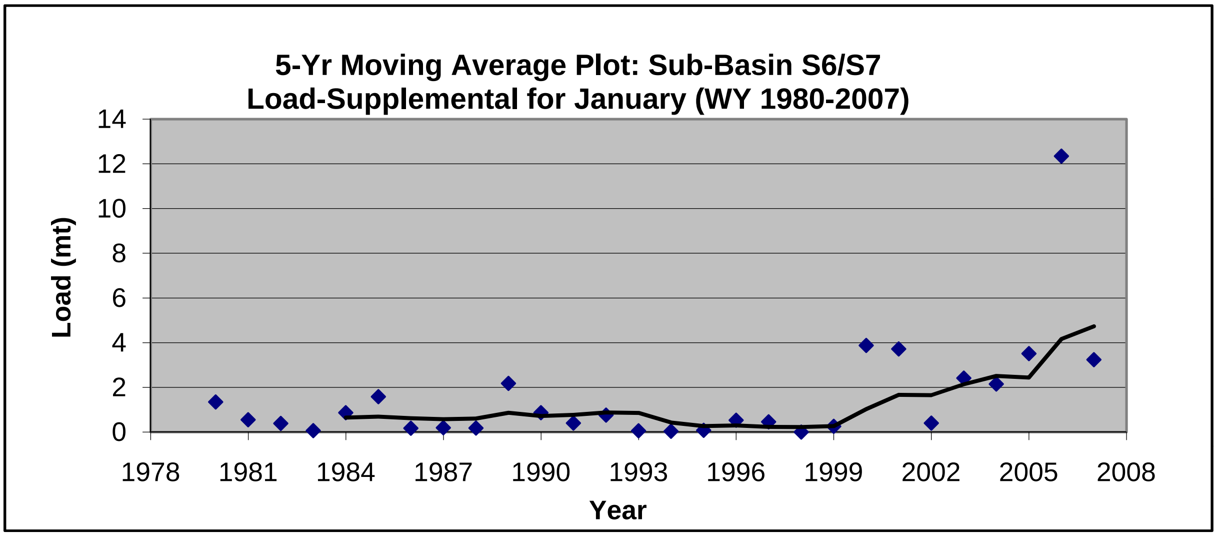

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for December (WY 1980-2007)
Load (mt)
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

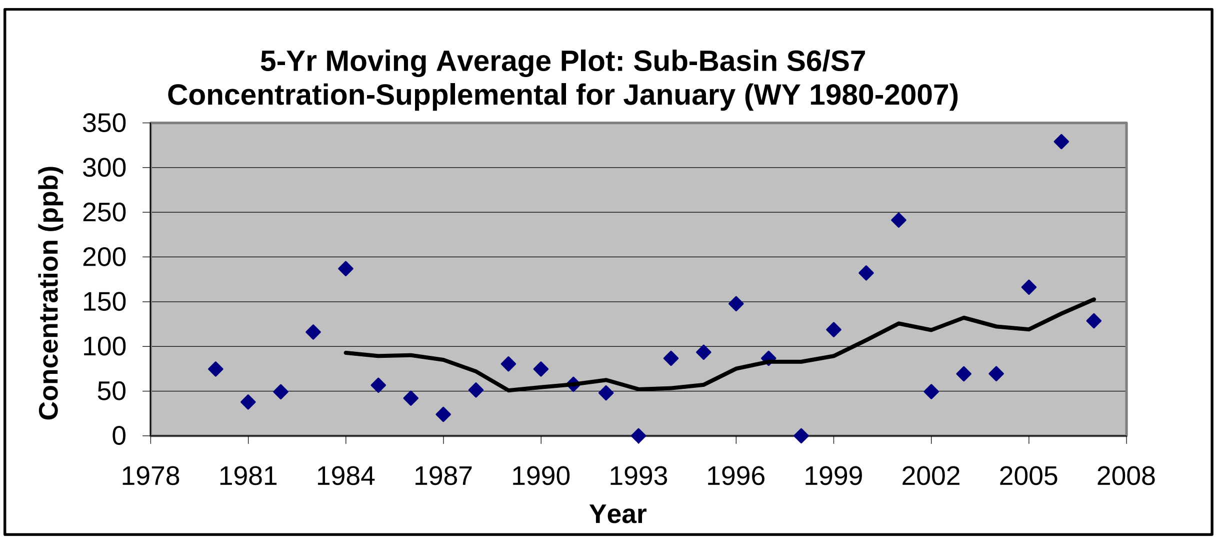

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for December (WY 1980-2007)
Concentration (ppb)
180
160
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

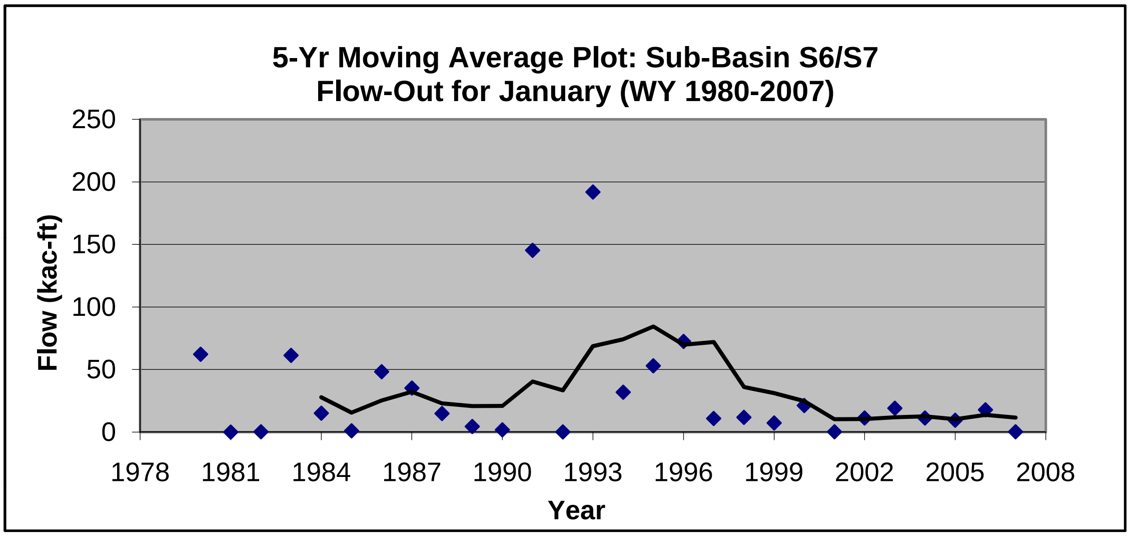
Hydrologic Sub-Basin S6/S7 (January)

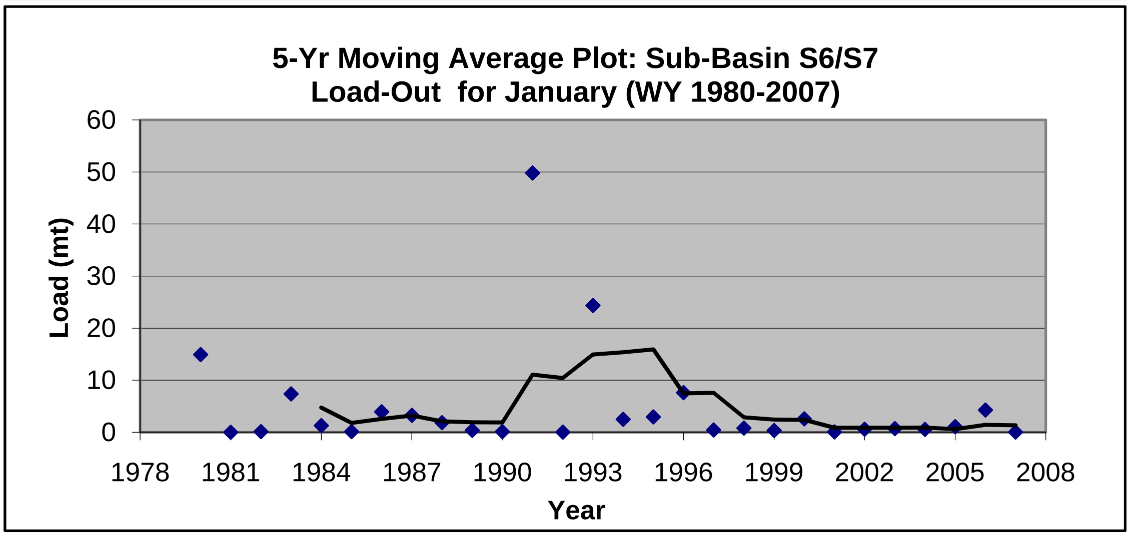
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	10.32	30.67	1.52	4.70	102.65	103.63
Standard Error	1.76	8.46	0.46	1.95	13.89	19.02
Median	6.53	13.29	0.54	0.93	77.53	68.87
Standard Deviation	9.31	44.74	2.45	10.29	70.83	98.84
Sample Variance	86.59	2001.83	6.01	105.98	5017.45	9769.00
Kurtosis	-0.67	6.56	14.38	14.35	3.11	9.92
Skewness	0.72	2.48	3.44	3.62	1.69	2.90
Range	30.38	191.86	12.34	49.80	305.01	471.25
Minimum	0.00	0.00	0.00	0.00	24.05	29.85
Maximum	30.38	191.86	12.34	49.80	329.06	501.10
Sum	289.02	858.71	42.58	131.67	2668.96	2798.14
Count	28	28	28	28	26	27
Quartile-1	2.89	3.81	0.19	0.29	49.47	46.99
Quartile-2	6.53	13.29	0.54	0.93	74.67	67.21
Quartile-3	17.13	38.40	2.16	3.40	121.31	100.25
Confidence intervals	3.45	16.57	0.91	3.81	28.61	39.10

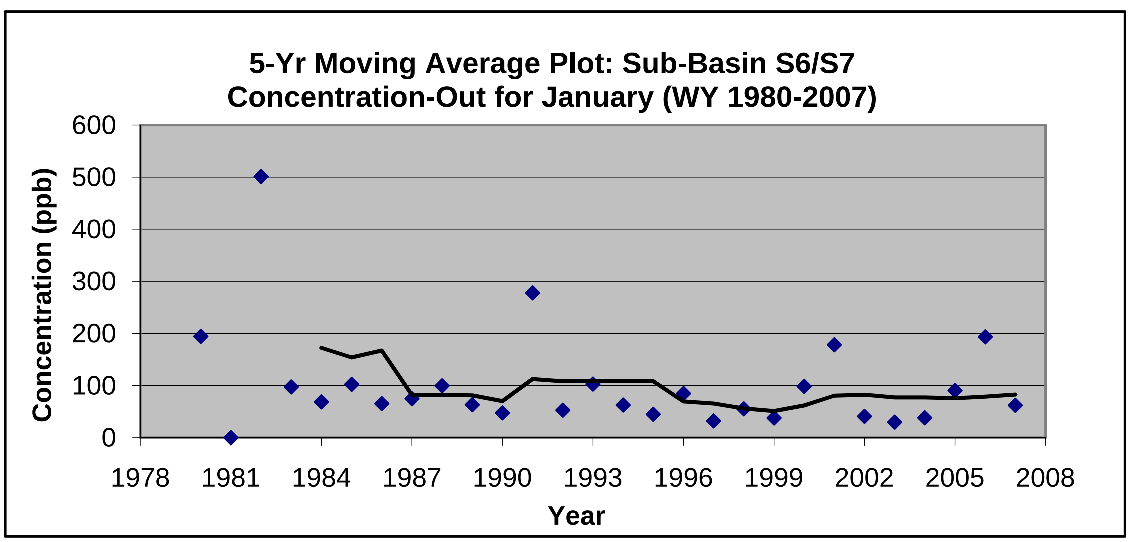

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for January (WY 1980-2007)
Flow (kac-ft)
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for January (WY 1980-2007)
Load (mt)
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for January (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

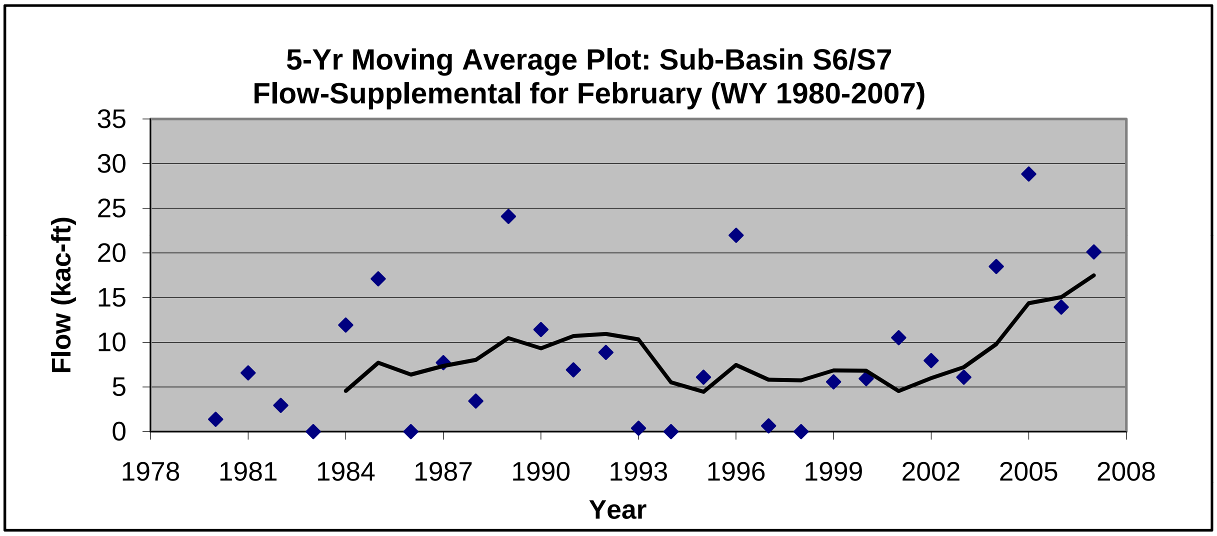

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for January (WY 1980-2007)
Flow (kac-ft)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

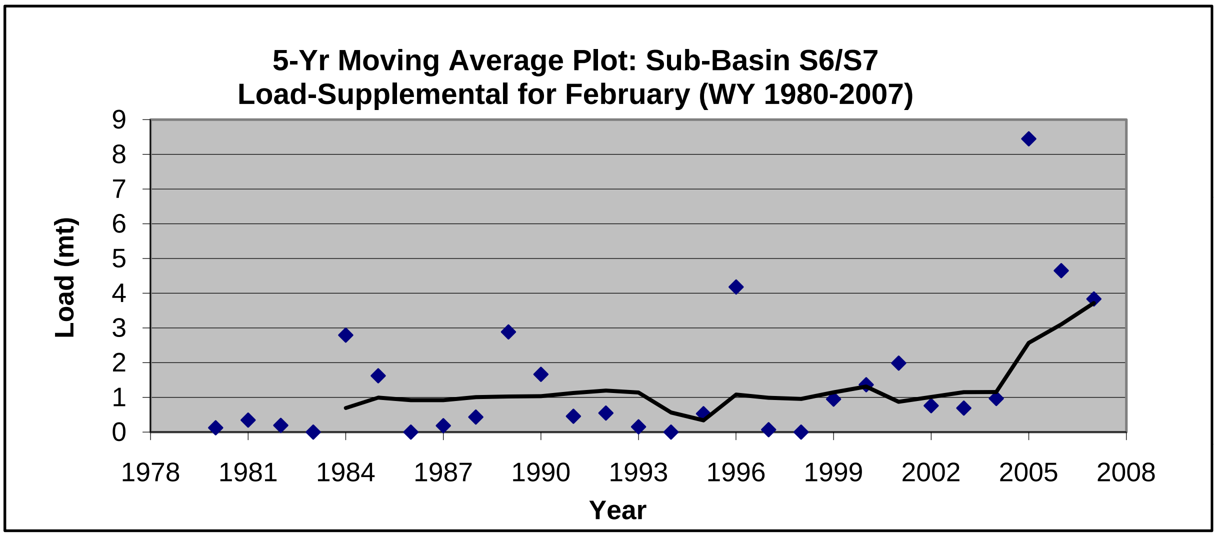

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for January (WY 1980-2007)
Load (mt)
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

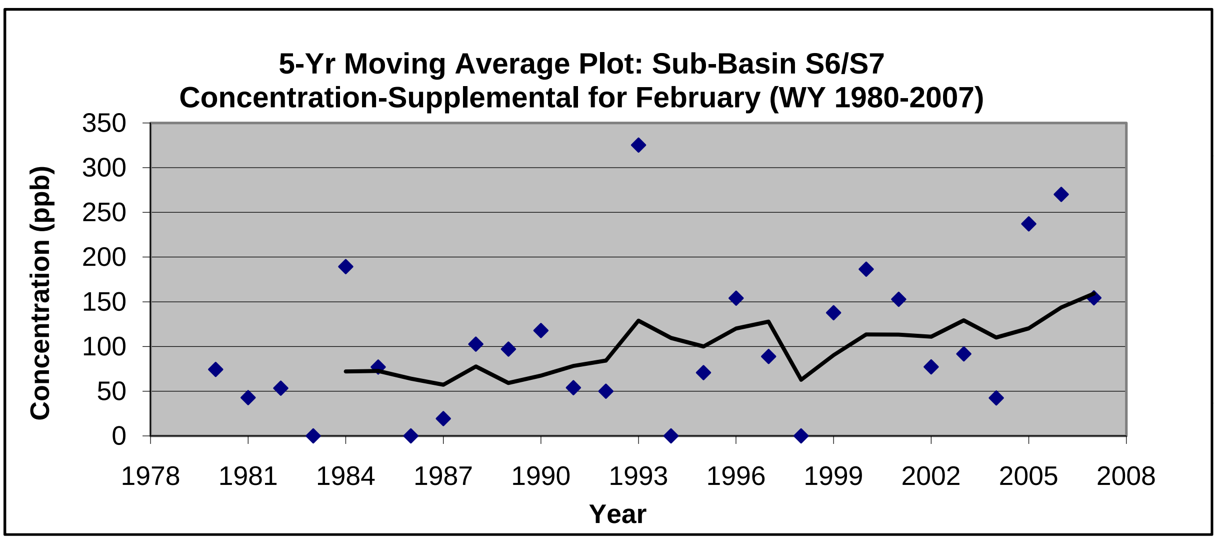

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for January (WY 1980-2007)
Concentration (ppb)
600
500
400
300
200
100
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

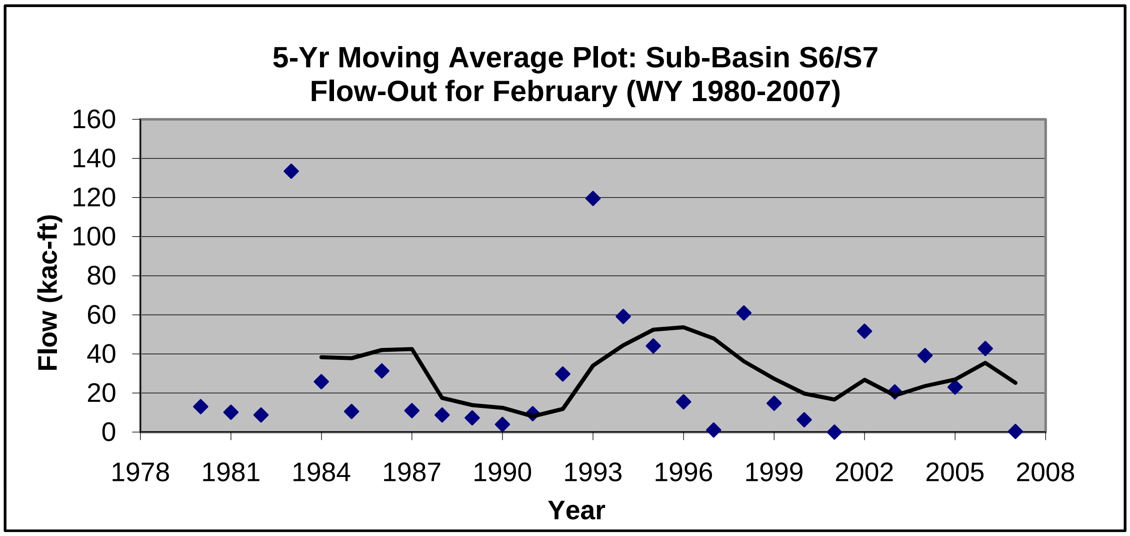
Hydrologic Sub-Basin S6/S7 (February)

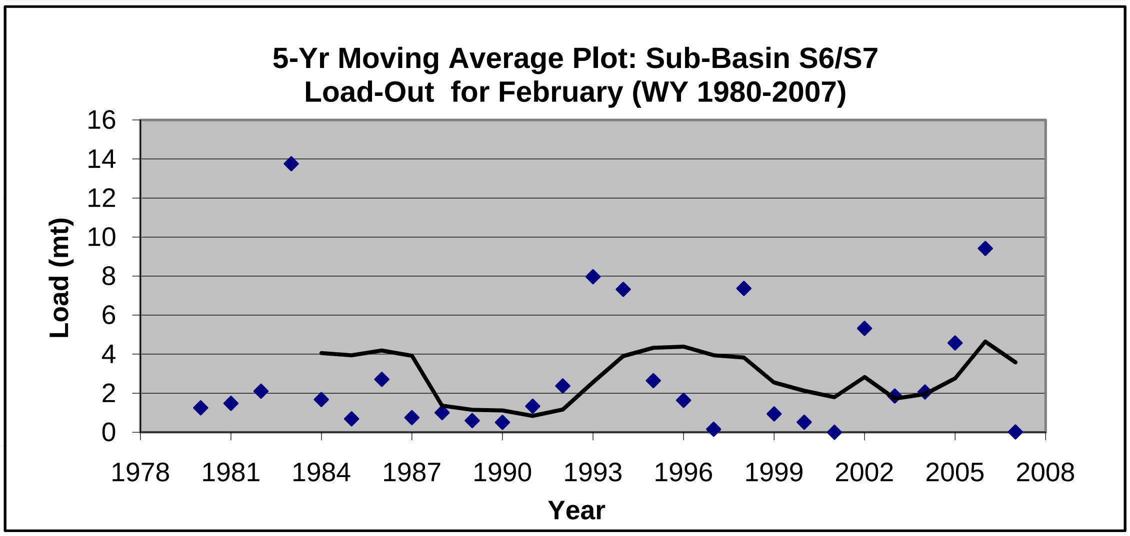
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	8.89	28.62	1.42	2.93	119.38	87.12
Standard Error	1.52	6.21	0.36	0.64	15.81	7.85
Median	6.75	15.09	0.62	1.66	94.32	77.70
Standard Deviation	8.06	32.84	1.92	3.36	77.47	40.79
Sample Variance	65.00	1078.43	3.70	11.30	6001.37	1663.77
Kurtosis	0.05	4.39	5.69	2.92	0.96	1.18
Skewness	0.90	2.06	2.21	1.78	1.15	1.23
Range	28.84	133.46	8.45	13.75	306.02	161.18
Minimum	0.00	0.00	0.00	0.00	19.25	34.12
Maximum	28.84	133.46	8.45	13.75	325.27	195.30
Sum	249.00	801.31	39.83	82.00	2865.21	2352.18
Count	28	28	28	28	24	27
Quartile-1	2.55	8.72	0.18	0.73	48.15	53.68
Quartile-2	6.75	15.09	0.62	1.66	83.04	75.42
Quartile-3	12.44	40.07	1.74	3.18	153.03	101.78
Confidence intervals	2.99	12.16	0.71	1.25	32.71	16.14

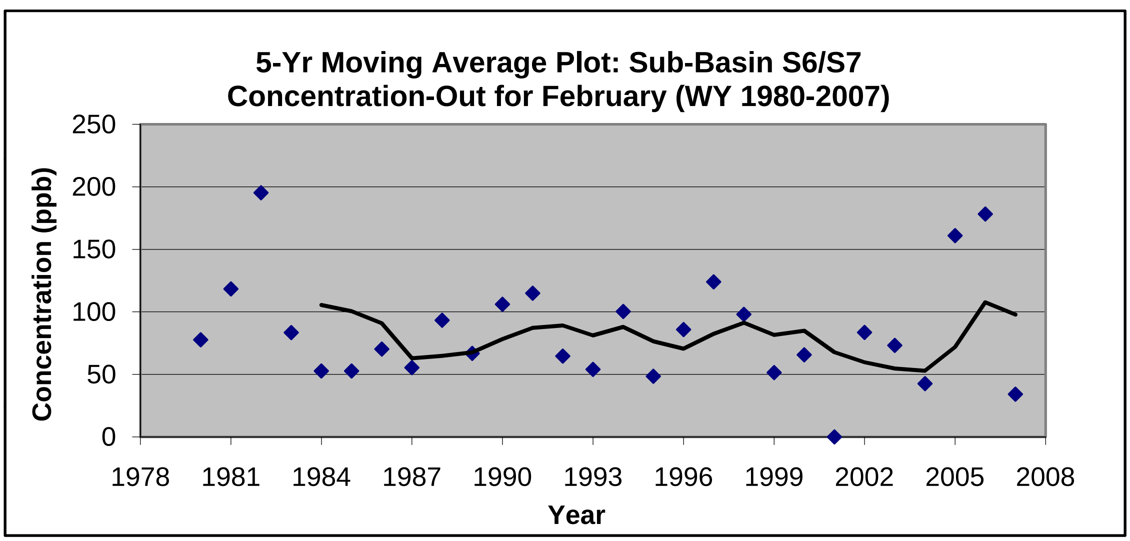

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for February (WY 1980-2007)
Flow (kac-ft)
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for February (WY 1980-2007)
Load (mt)
9
8
7
6
5
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for February (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

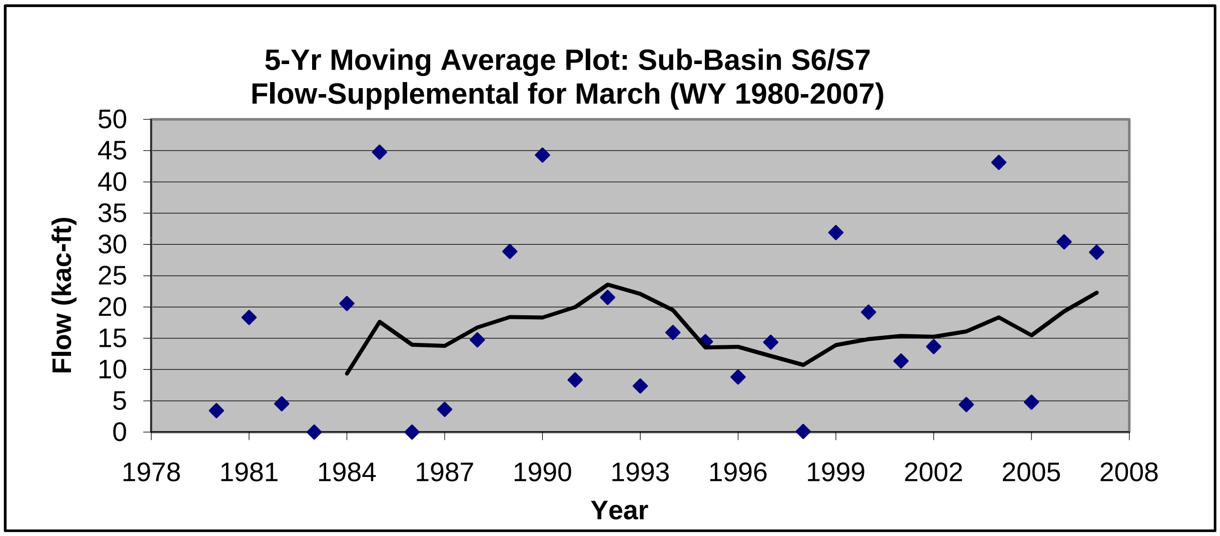

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for February (WY 1980-2007)
Flow (kac-ft)
160
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

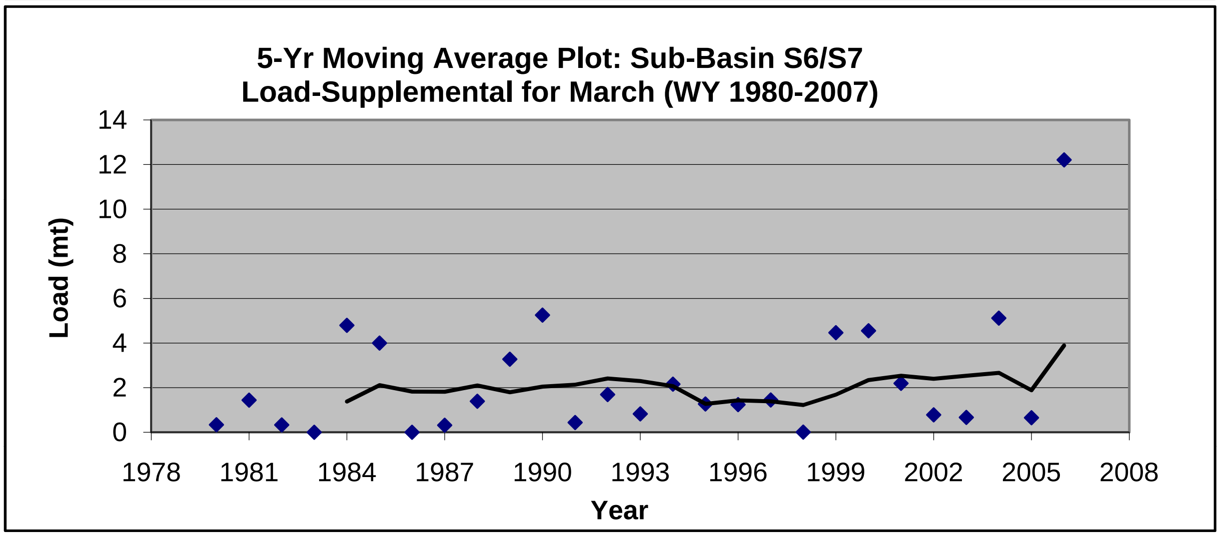

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for February (WY 1980-2007)
Load (mt)
16
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

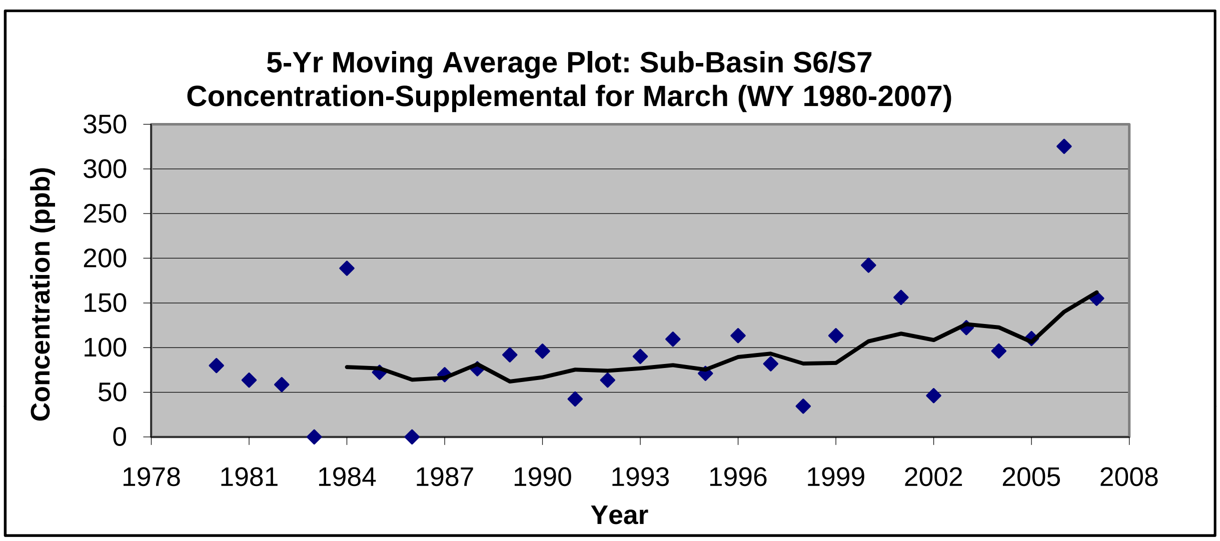

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for February (WY 1980-2007)
Concentration (ppb)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S6/S7 (March)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	16.48	30.47	2.37	3.88	104.65	109.48
Standard Error	2.54	4.54	0.50	0.73	11.95	22.03
Median	14.41	19.89	1.41	2.39	90.95	87.96
Standard Deviation	13.47	24.00	2.66	3.87	60.91	116.56
Sample Variance	181.32	575.97	7.06	15.00	3710.53	13585.55
Kurtosis	-0.23	-0.86	5.82	1.99	6.07	18.68
Skewness	0.79	0.67	2.07	1.56	2.13	4.04
Range	44.74	81.63	12.21	14.54	290.94	631.68
Minimum	0.00	0.81	0.00	0.04	34.40	21.60
Maximum	44.74	82.44	12.21	14.57	325.35	653.28
Sum	461.42	853.23	66.29	108.73	2720.83	3065.53
Count	28	28	28	28	26	28
Quartile-1	4.71	11.22	0.60	1.45	63.57	61.25
Quartile-2	14.41	19.89	1.41	2.39	85.92	87.96
Quartile-3	23.33	52.79	4.11	4.97	113.38	111.99
Confidence intervals	4.99	8.89	0.98	1.43	24.60	43.17


5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for March (WY 1980-2007)
Flow (kac-ft)
50
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for March (WY 1980-2007)
Load (mt)
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for March (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
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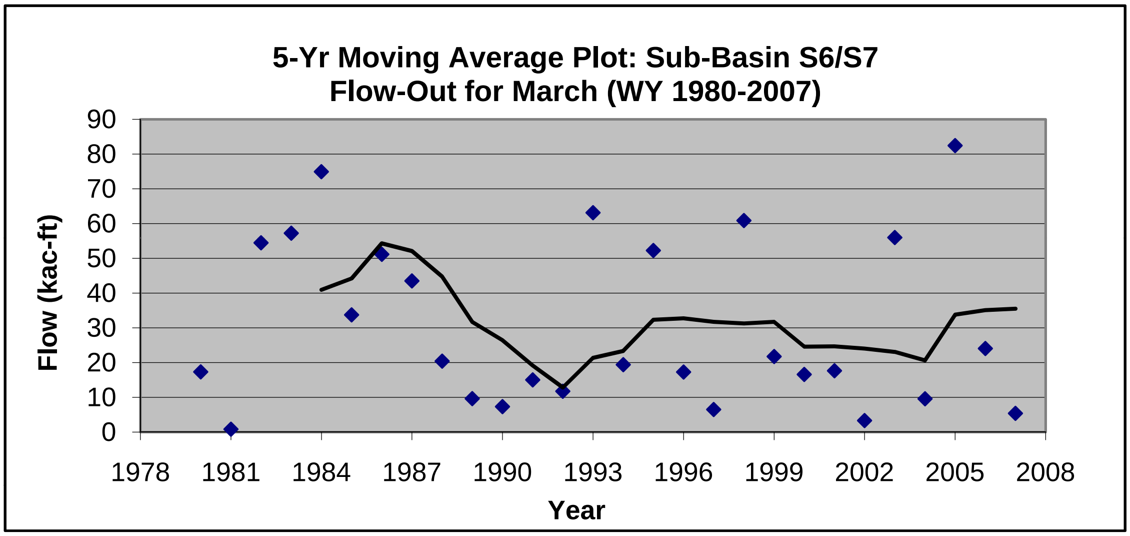
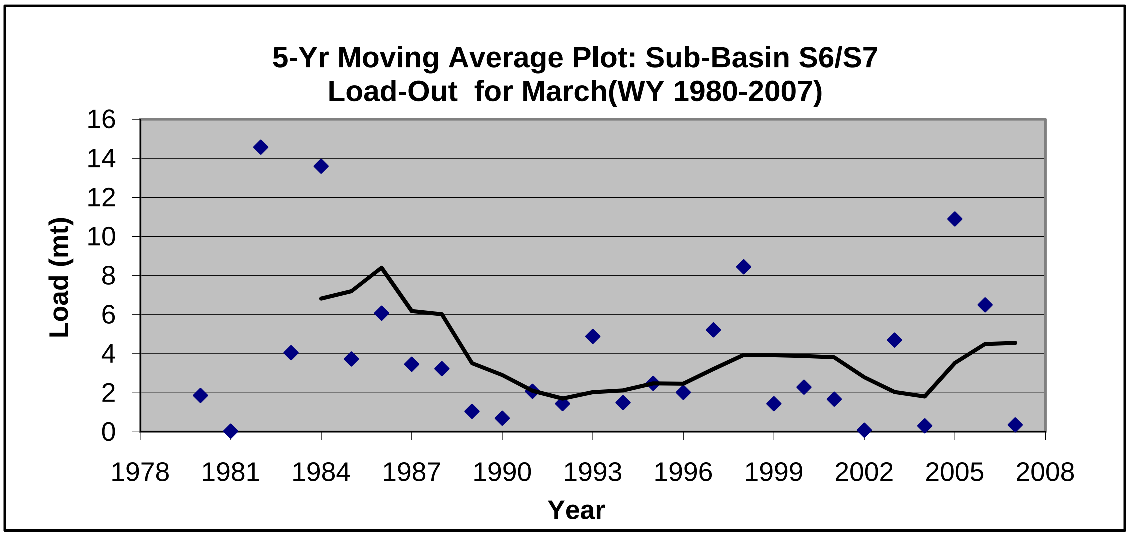
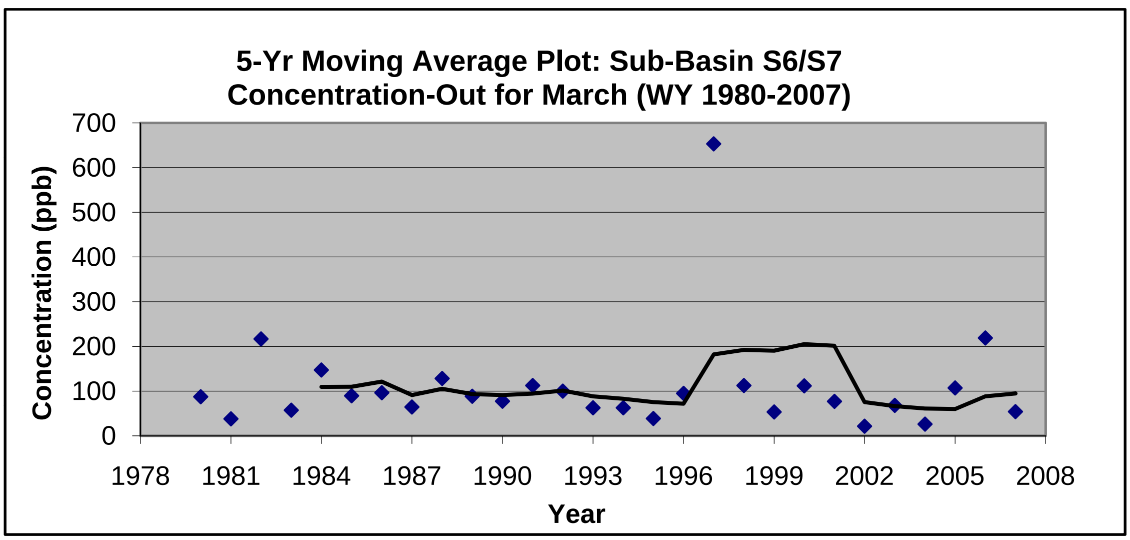
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for March (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
90
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



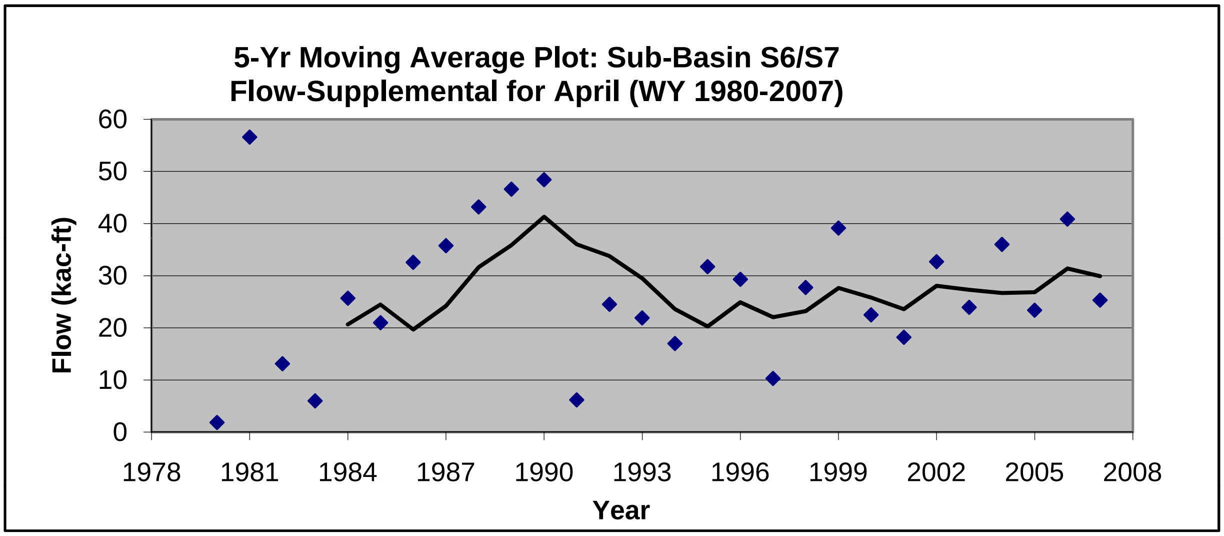
5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for March(WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
14
16
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

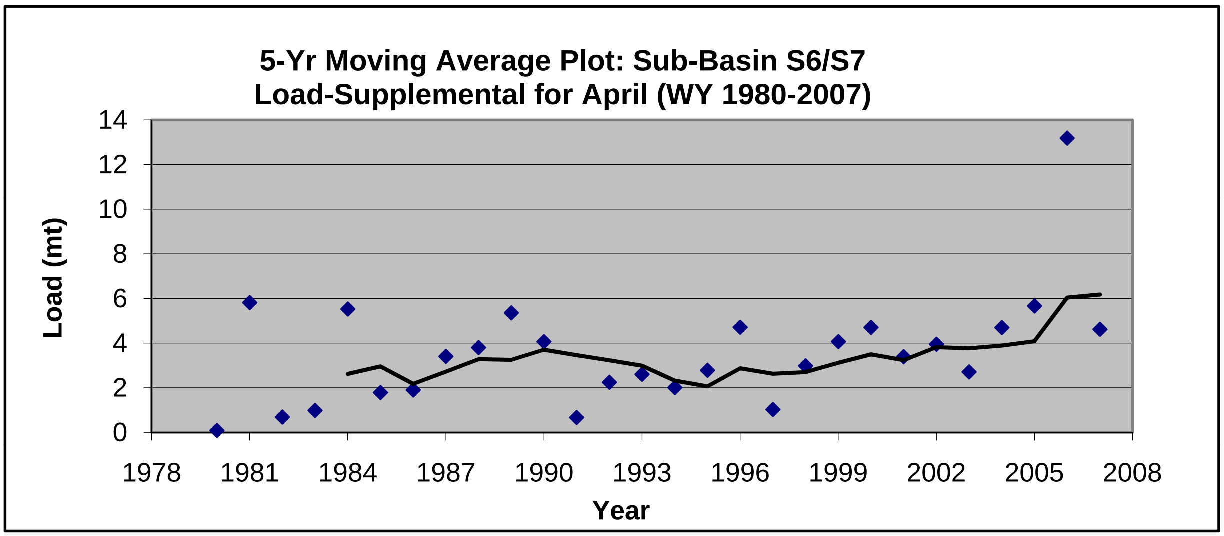


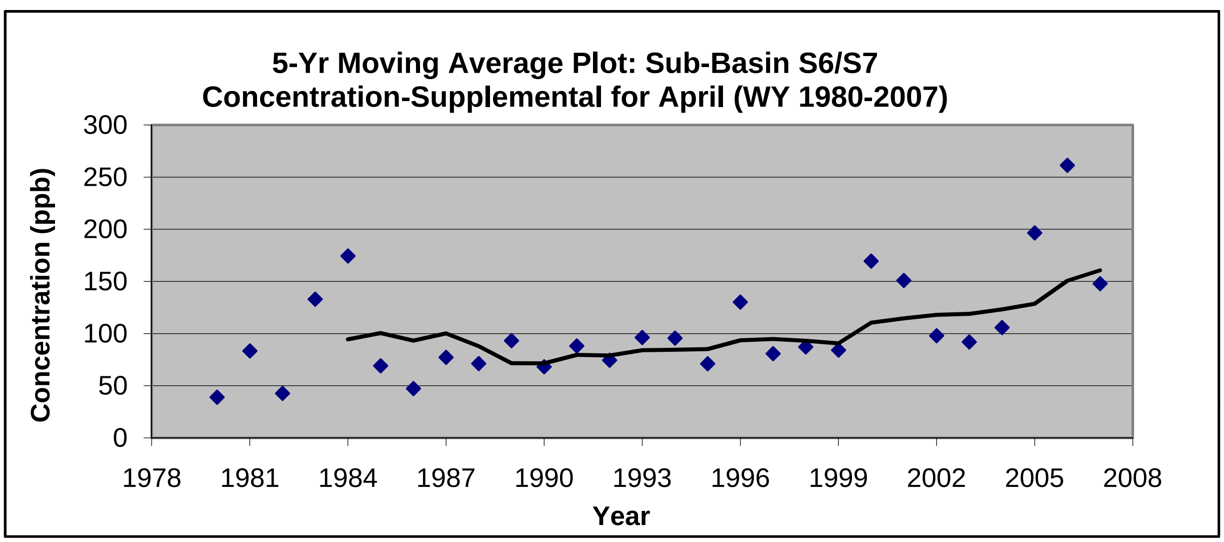
5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for March (WY 1980-2007)
Concentration (ppb)
0
100
200
300
400
500
600
700
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

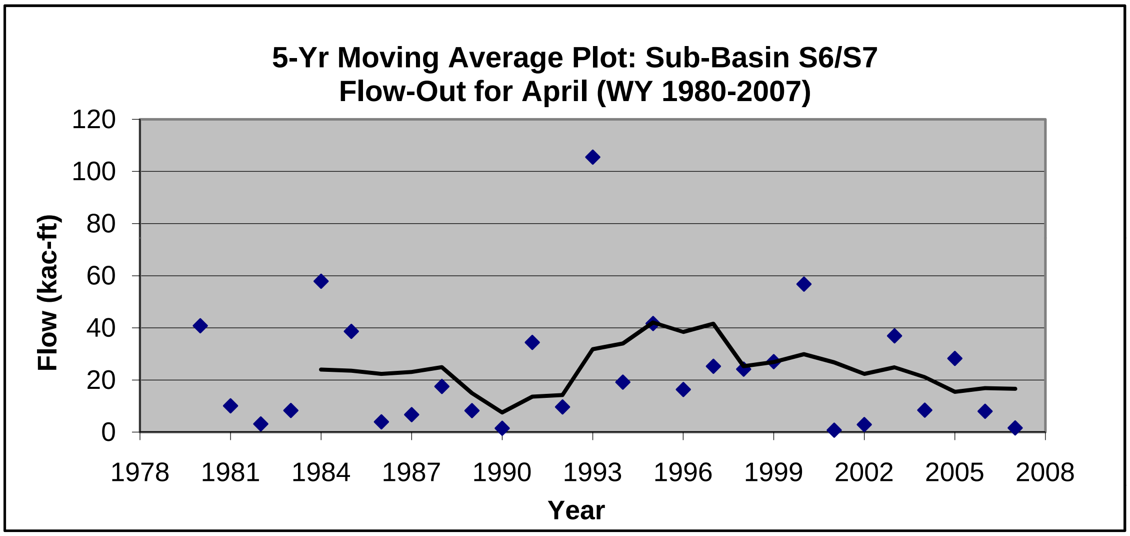
Hydrologic Sub-Basin S6/S7 (April)

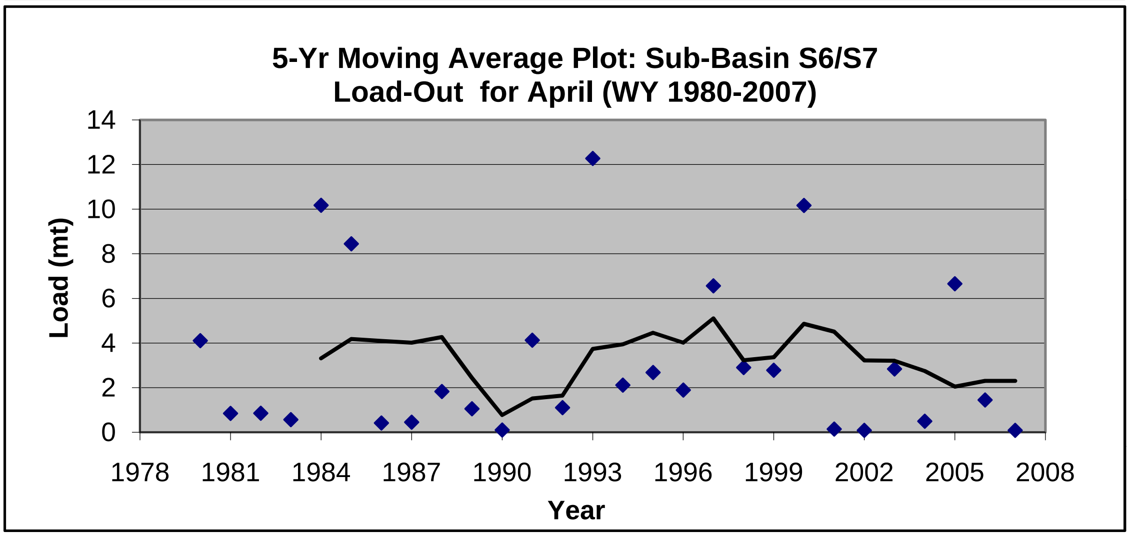
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	27.18	22.96	3.55	3.11	104.52	102.14
Standard Error	2.53	4.39	0.47	0.66	9.48	9.98
Median	25.49	16.92	3.40	1.86	89.95	91.17
Standard Deviation	13.39	23.25	2.50	3.49	50.18	52.83
Sample Variance	179.24	540.76	6.27	12.16	2517.54	2791.30
Kurtosis	-0.23	4.69	7.31	0.93	2.32	-0.08
Skewness	0.12	1.86	2.02	1.39	1.42	0.85
Range	54.73	104.73	13.09	12.19	222.37	200.11
Minimum	1.84	0.73	0.09	0.08	38.94	22.97
Maximum	56.57	105.47	13.18	12.27	261.31	223.08
Sum	761.11	642.83	99.41	87.16	2926.67	2860.00
Count	28	28	28	28	28	28
Quartile-1	20.29	7.62	1.98	0.55	73.56	60.61
Quartile-2	25.49	16.92	3.40	1.86	89.95	91.17
Quartile-3	35.80	35.01	4.70	4.11	130.80	143.14
Confidence intervals	4.96	8.61	0.93	1.29	18.58	19.57

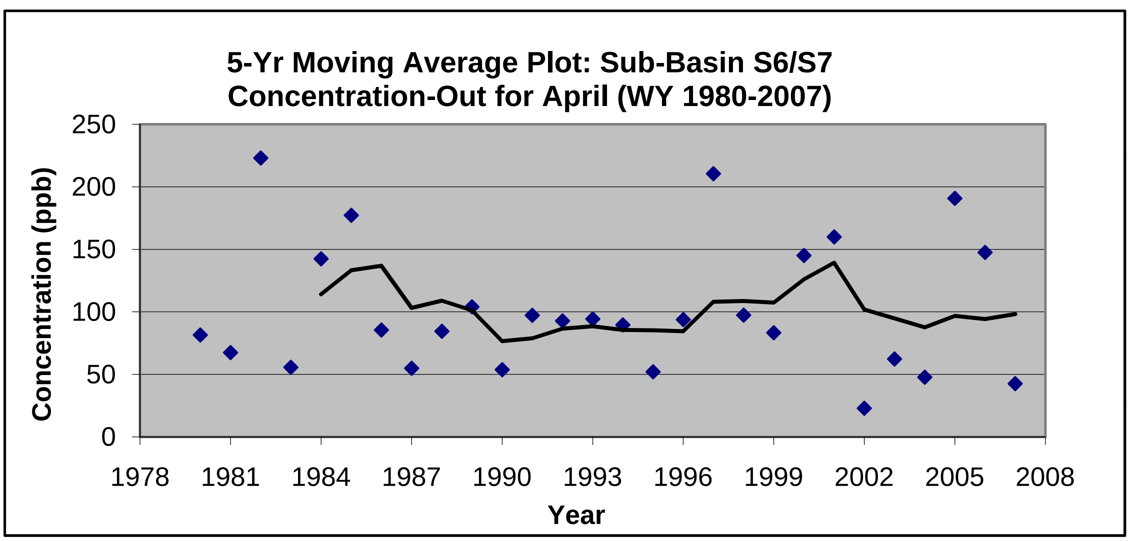

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Supplemental for April (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Supplemental for April (WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
14
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

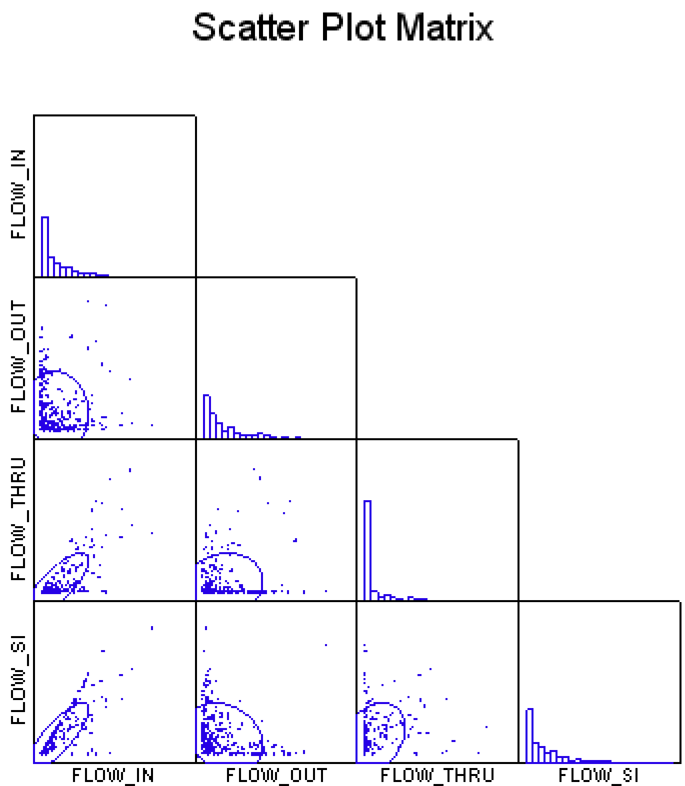

5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Supplemental for April (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

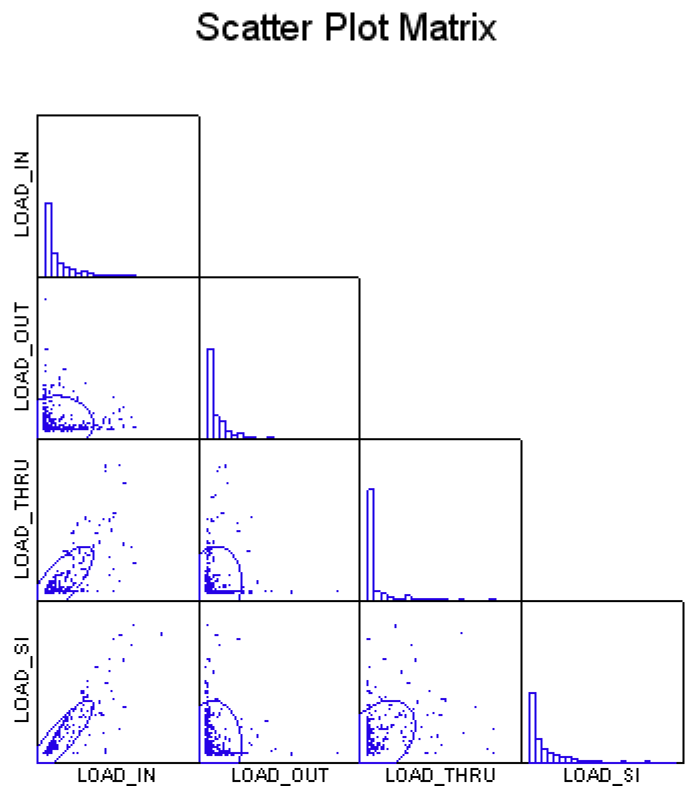

5-Yr Moving Average Plot: Sub-Basin S6/S7
Flow-Out for April (WY 1980-2007)
Flow (kac-ft)
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

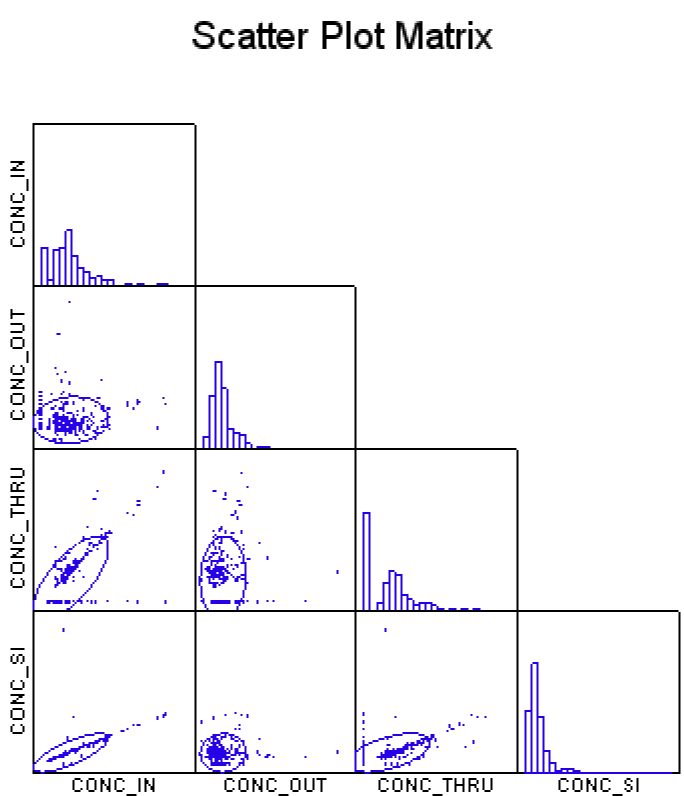

5-Yr Moving Average Plot: Sub-Basin S6/S7
Load-Out for April (WY 1980-2007)
Load (mt)
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S6/S7
Concentration-Out for April (WY 1980-2007)
Concentration (ppb)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Correlation Analyses Plots for Hydrologic Sub-Basin S6/S7



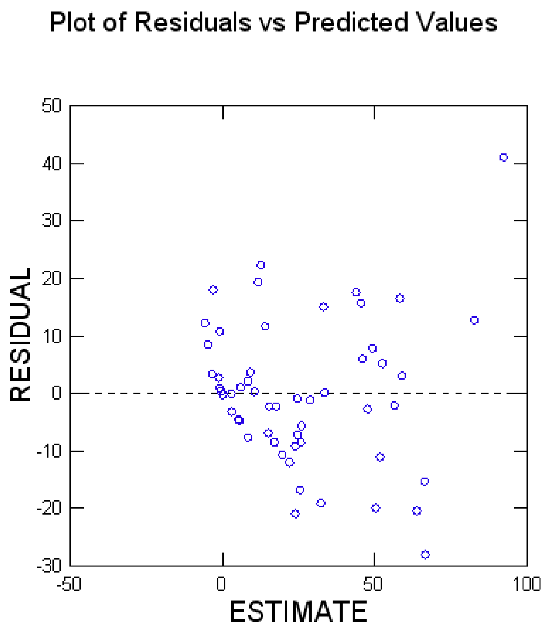




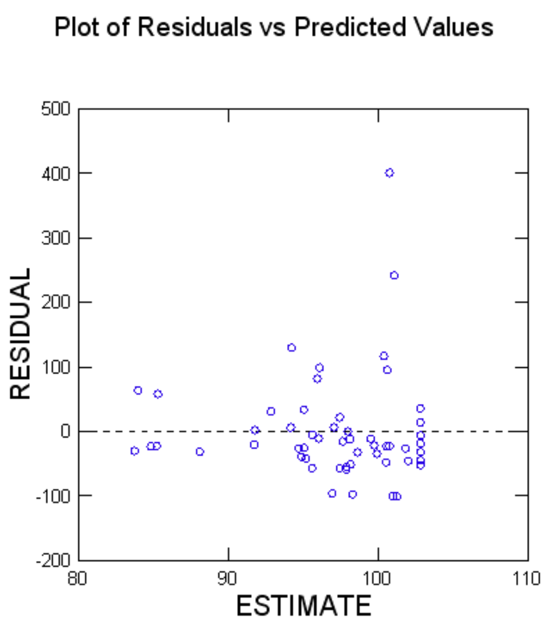
Residual Plots for Four Time Periods for Hydrologic Sub-Basin S6/S7 during Dry Season

1. Base Period

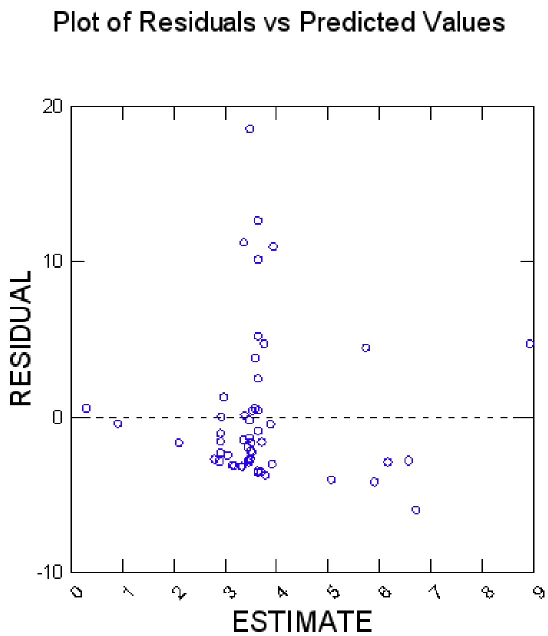
Regression Model: $Q_{out} = 0.32\ Q_{thru} - 0.08\ Q_{si} + 12.83\ P_m - 5.84$



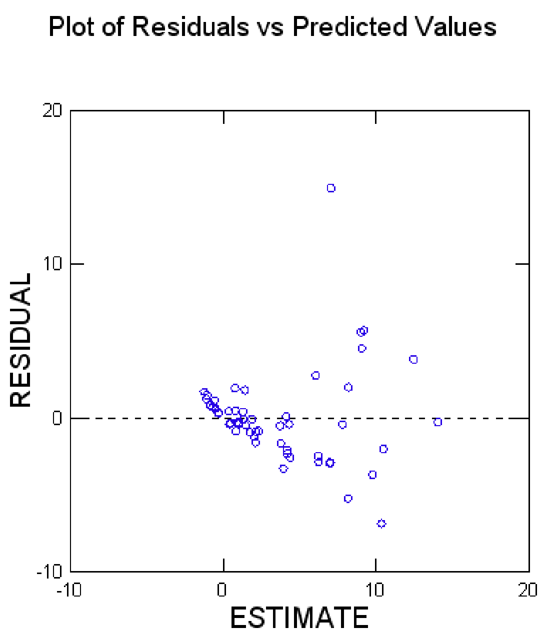
Regression Model: $C_{out} = -0.06\ C_{thru}\ -0.04\ C_{si} + 102.86$



Regression Model: $L_{out} = 1.04\ L_{thru} – 0.84\ L_{si} + 3.65$

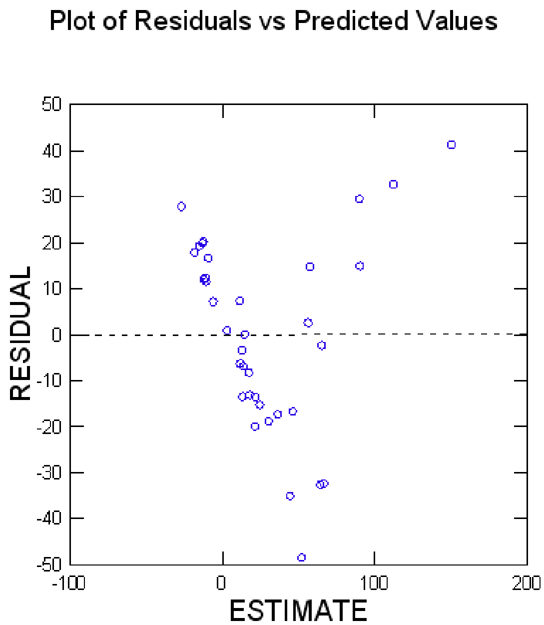


Regression Model: $L_{out} = 0.06\ Q_{thru} + 0.02\ Q_{si} + 2.11\ P_m - 0.014\ C_{thru} + 0.01\ C_{si} – 2.11$

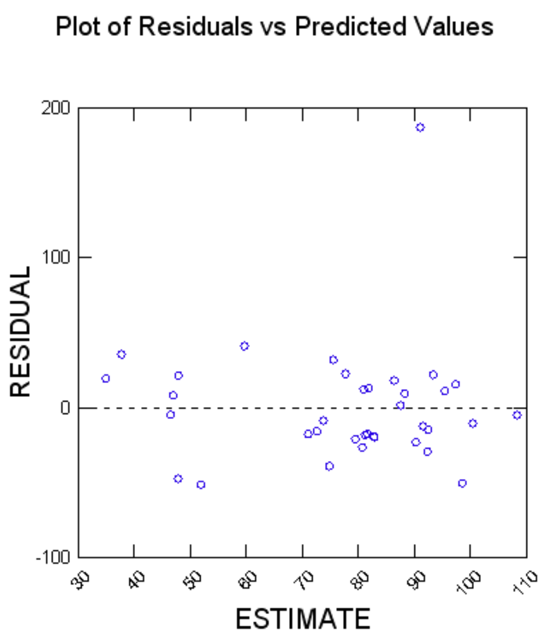


2. Pre-BMP Period

Regression Model: $Q_{out} = 0.79\ Q_{thru} - 1.01\ Q_{si} + 15.13\ P_m - 4.74$

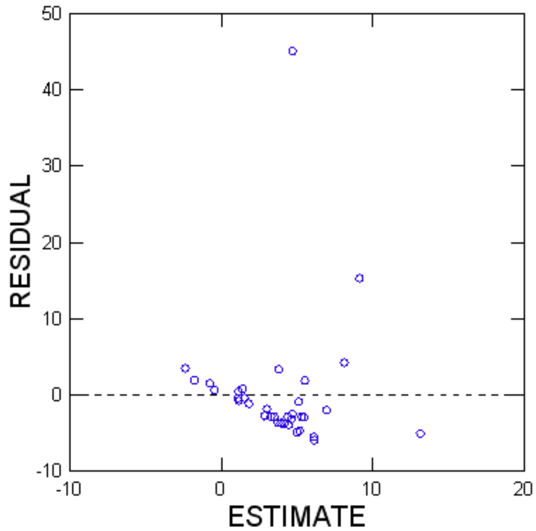


Regression Model: $C_{out} = 0.52\ C_{thru} - 0.22\ C_{si} + 59.74$



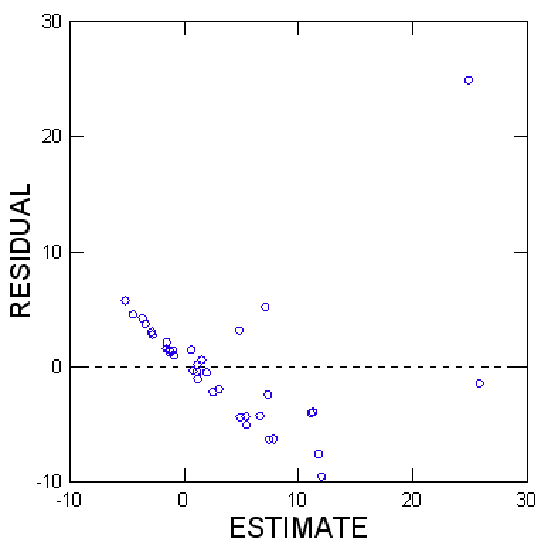
Regression Model: $L_{out} = 0.77\ L_{thru} - 2.06\ L_{si} + 5.57$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.04\ Q_{thru} - 0.03\ Q_{si} + 3.80\ P_m - 0.025\ C_{thru} + 0.007\ C_{si} - 4.08$

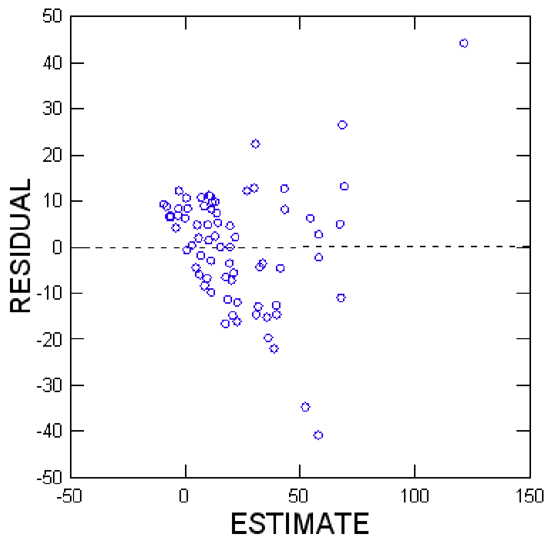
Plot of Residuals vs Predicted Values



3. BMP Period

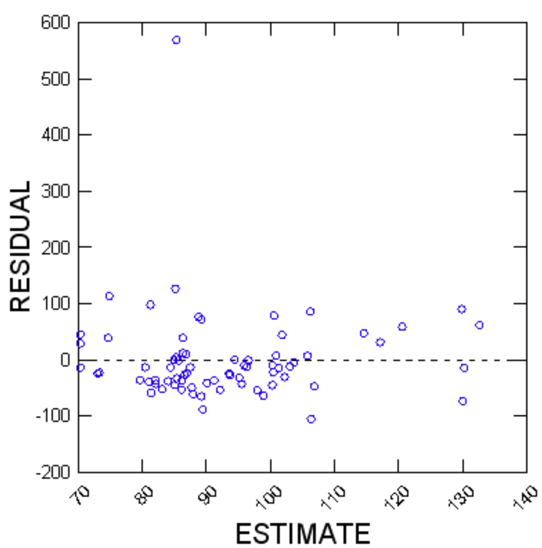
Regression Model: $Q_{out} = 0.79\ Q_{thru} - 0.04\ Q_{si} + 13.66\ P_m - 9.26$

Plot of Residuals vs Predicted Values



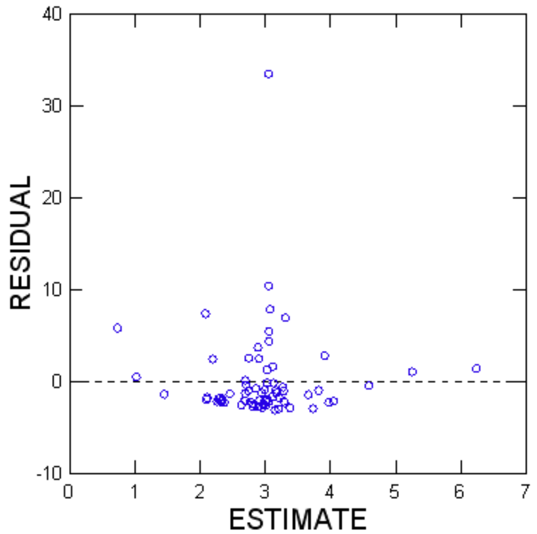
Regression Model: $C_{out} = 0.06\ C_{thru} + 0.12\ C_{si} + 70.40$

Plot of Residuals vs Predicted Values



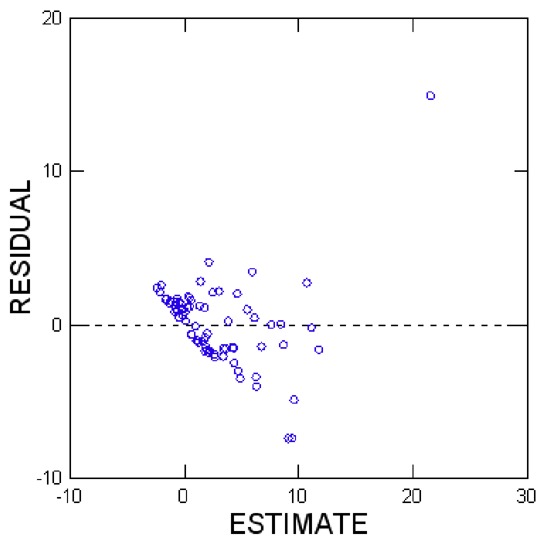
Regression Model: $L_{out} = 0.33\ L_{thru} - 0.21\ L_{si} + 3.06$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.09\ Q_{thru} + 0.04\ Q_{si} + 2.67\ P_m - 0.005\ C_{thru} + 0.01\ C_{si} - 4.51$

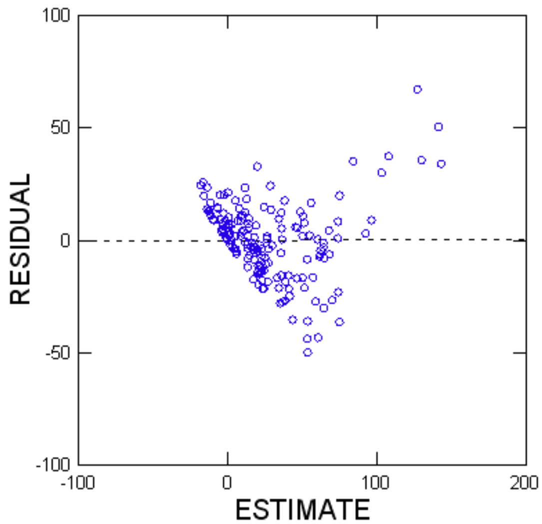
Plot of Residuals vs Predicted Values



4. Entire Period

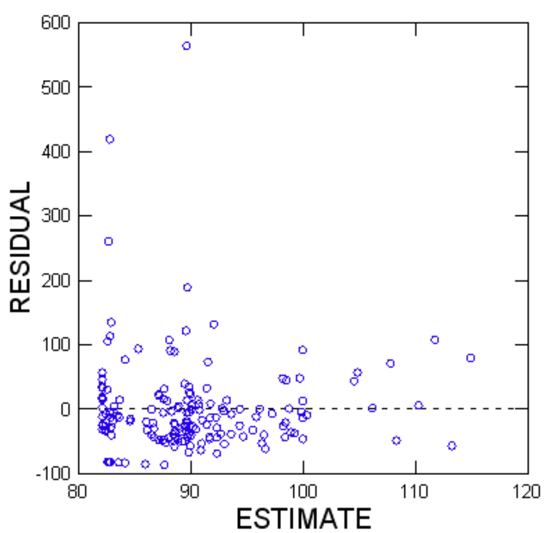
Regression Model: $Q_{out} = 0.76\ Q_{thru} - 0.42\ Q_{si} + 14.43\ P_m - 6.88$

Plot of Residuals vs Predicted Values



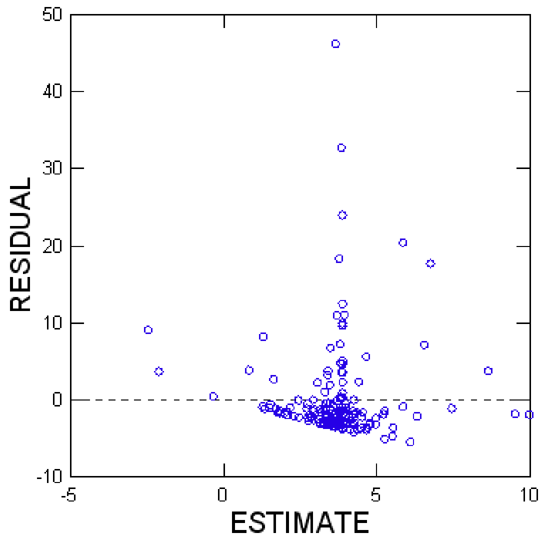
Regression Model: $C_{out} = 0.08\ C_{thru} + 0.01\ C_{si} + 2.17$

Plot of Residuals vs Predicted Values



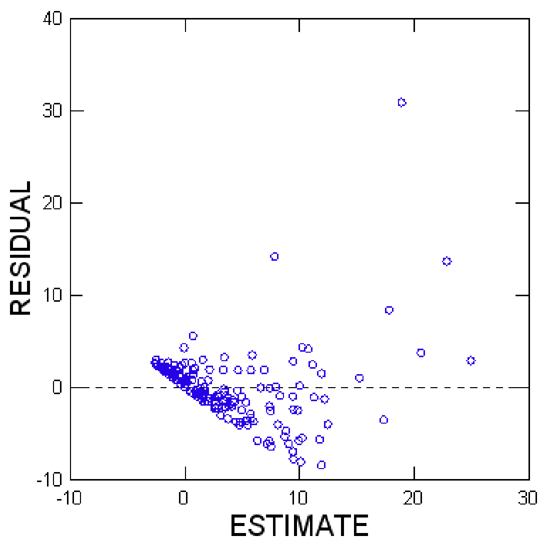
Regression Model: $L_{out} = 0.60\ L_{thru} - 0.56\ L_{si} + 3.90$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.06\ Q_{thru} + 0.004\ Q_{si} + 2.76\ P_m - 0.003\ C_{thru} + 0.009\ C_{si} - 3.74$

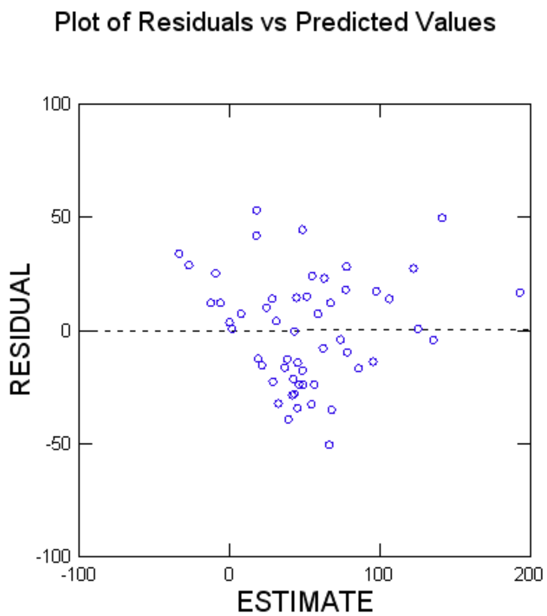
Plot of Residuals vs Predicted Values



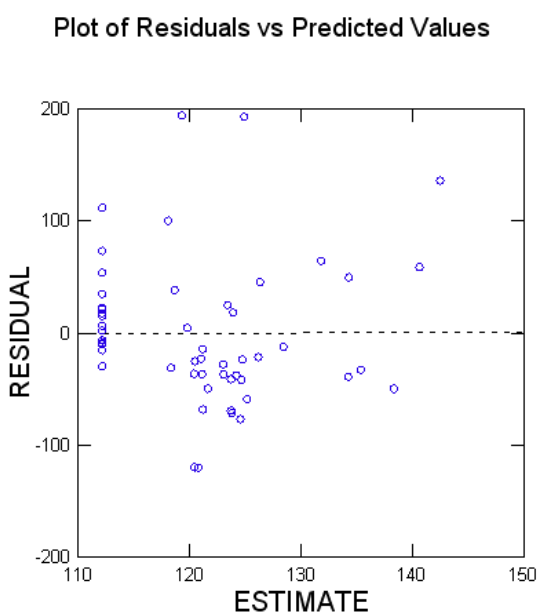
Residual Plots for Four Time Periods for Hydrologic Sub-Basin S6/S7 during Wet Season

1. Base Period

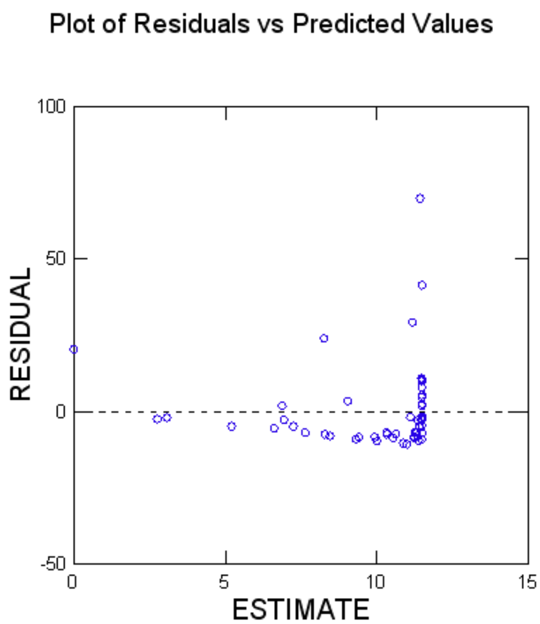
Regression Model: $Q_{out} = 1.41\ Q_{thru} - 0.69\ Q_{si} + 12.85\ P_m - 12.72$



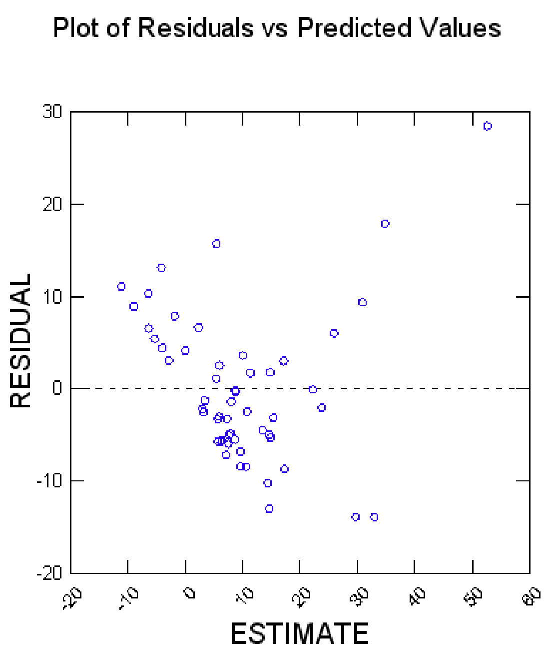
Regression Model: $C_{out} = 0.03\ C_{thru} + 0.16\ C_{si} + 112.24$



Regression Model: $L_{out} = -1.93\ L_{thru} - 0.95\ L_{si} + 11.51$



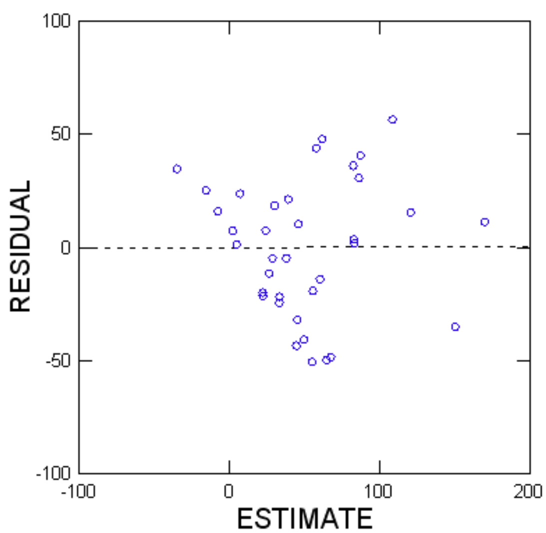
Regression Model: $L_{out} = 0.47\ Q_{thru} - 0.09\ Q_{si} + 4.06\ P_m + 0.005\ C_{thru} + 0.029\ C_{si} - 13.83$



2. Pre-BMP Period

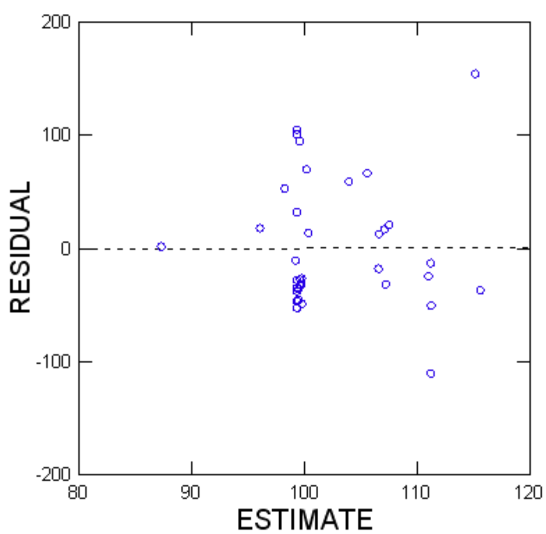
Regression Model: $Q_{out} = 1.34\ Q_{thru} - 0.84\ Q_{si} + 9.69\ P_m - 0.88$

Plot of Residuals vs Predicted Values



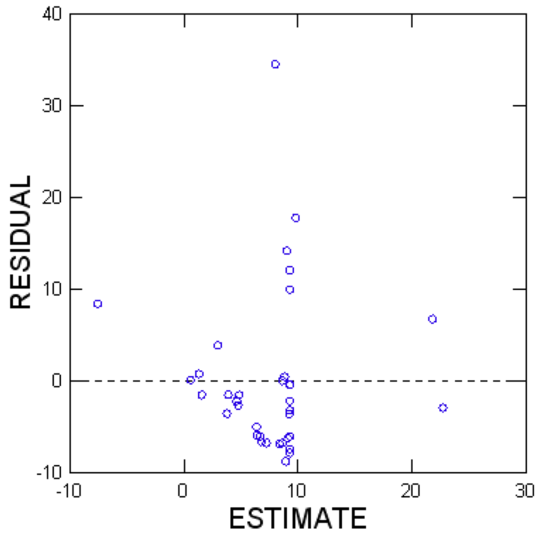
Regression Model: $C_{out} = -\ 0.20\ C_{thru} + 0.20\ C_{si} + 99.39$

Plot of Residuals vs Predicted Values



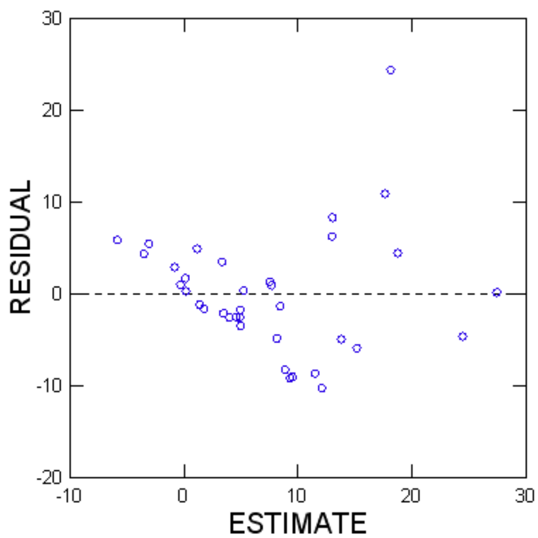
Regression Model: $L_{out} = 2.42\ L_{thru} - 2.34\ L_{si} + 9.34$

Plot of Residuals vs Predicted Values



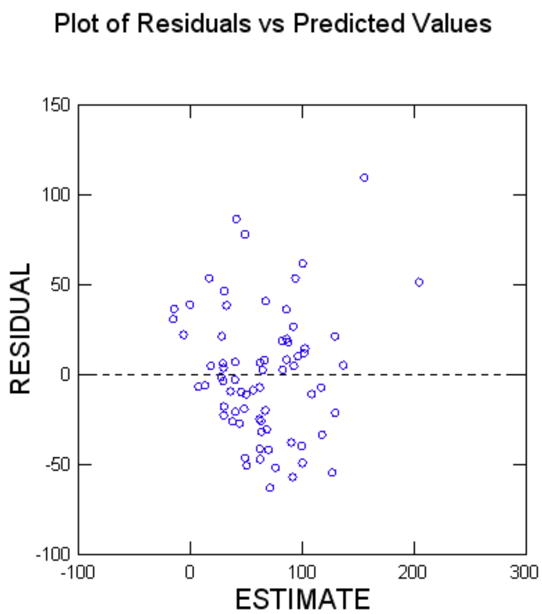
Regression Model: $L_{out} = 0.23\ Q_{thru} - 0.09\ Q_{si} + 2.13\ P_m - 0.053\ C_{thru} + 0.045\ C_{si} - 5.42$

Plot of Residuals vs Predicted Values

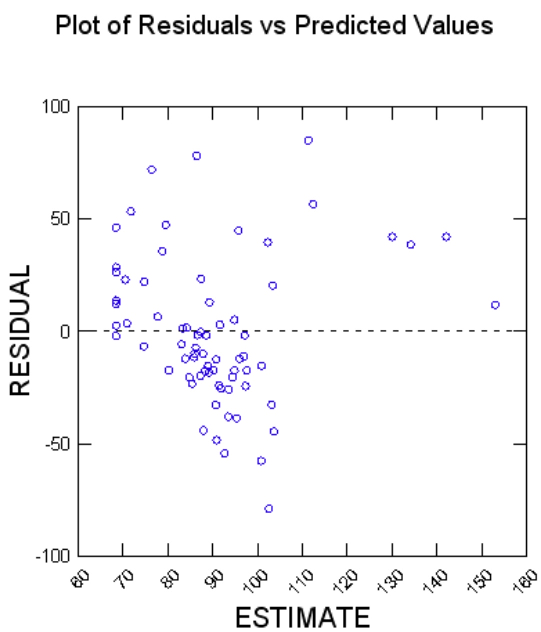


3. BMP Period

Regression Model: $Q_{out} = -1.04\ Q_{thru} + 0.89\ Q_{si} + 14.24\ P_m - 32.47$

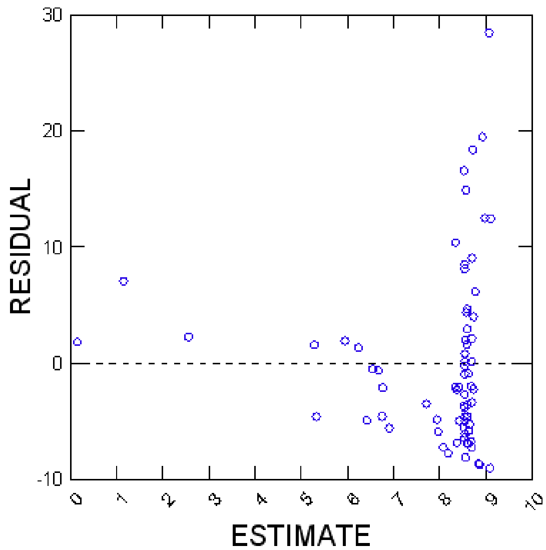


Regression Model: $C_{out} = 0.03\ C_{thru} + 0.25\ C_{si} + 68.61$



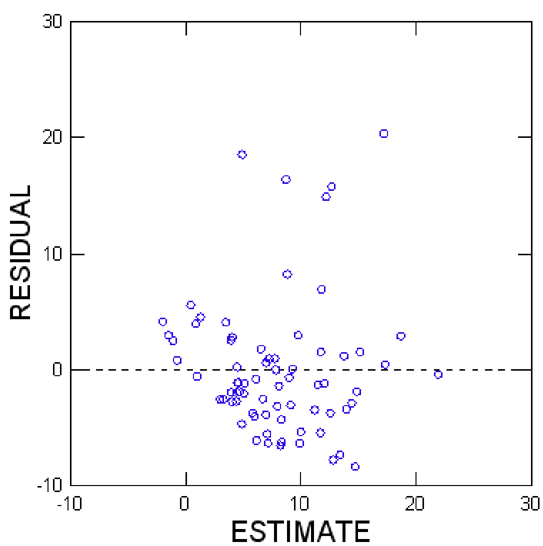
Regression Model: $L_{out} = -2.50\ L_{thru} + 0.15\ L_{si} + 8.56$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = -0.06\ Q_{thru} + 0.08\ Q_{si} + 1.64\ P_m - 0.02\ C_{thru} + 0.027\ C_{si} - 4.43$

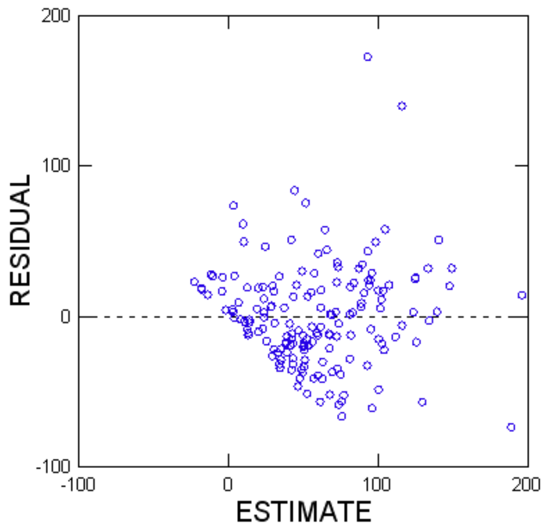
Plot of Residuals vs Predicted Values



4. Entire Period

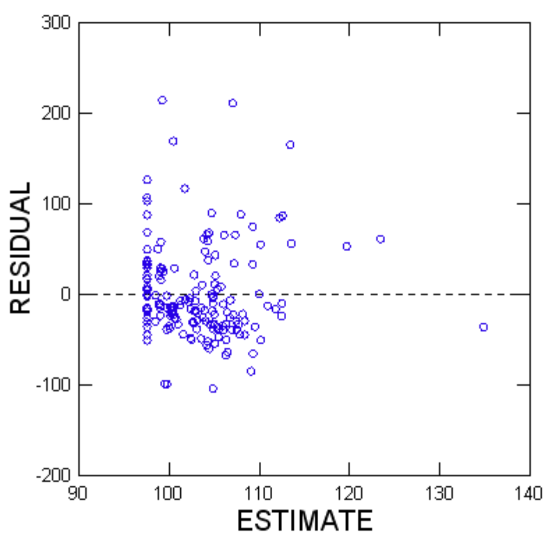
Regression Model: $Q_{out} = 0.98\ Q_{thru} - 0.13\ Q_{si} + 13.62\ P_m - 22.81$

Plot of Residuals vs Predicted Values

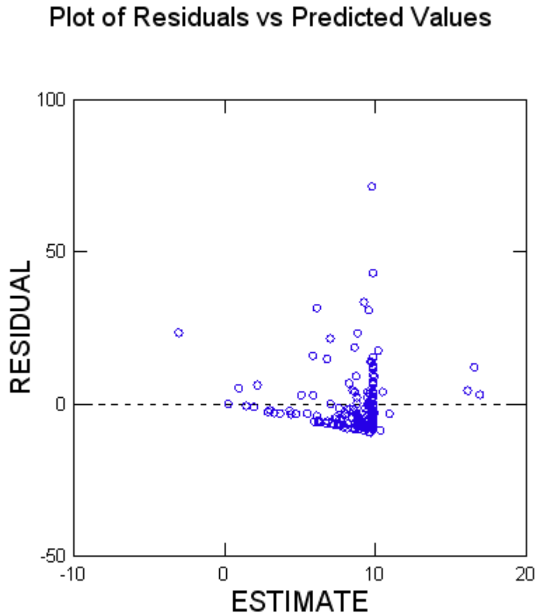


Regression Model: $C_{out} = 0.06\ C_{thru} + 0.04\ C_{si} + 97.64$

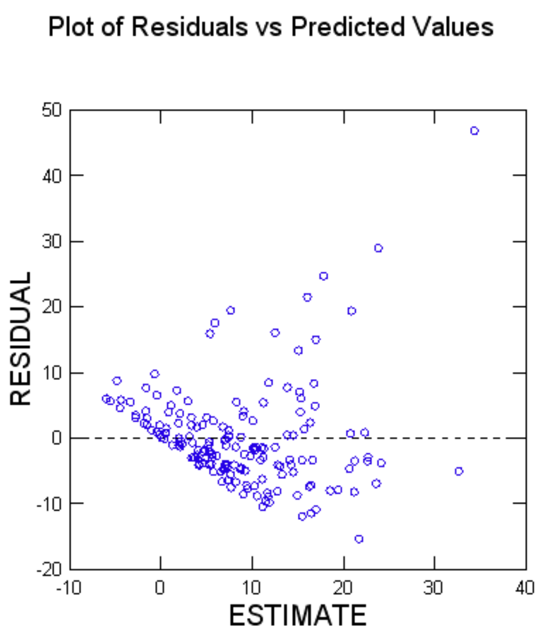
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 1.27\ L_{thru} - 1.10\ L_{si} + 9.88$



Regression Model: $L_{out} = 0.15\ Q_{thru} - 0.007\ Q_{si} + 2.55\ P_m - 0.003\ C_{thru} + 0.002\ C_{si} - 6.81$



	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall	Rainfall (in)	IN	OUT	Thru	Supplemental Inflow
May-79	13.79	15.17	1.44	12.34	1.08	2.65	0.13	0.95	0.00	4.88	63.70	141.57	74.70	62.38
Jun-79	85.56	2.17	0.72	84.84	6.51	0.14	0.07	6.45	0.00	3.41	61.70	51.55	74.40	61.57
Jul-79	11.43	15.79	0.00	11.43	0.99	1.67	0.00	0.99	0.00	6.79	70.40	85.57	0.00	70.39
Aug-79	1.53	32.68	0.43	1.10	0.14	4.21	0.04	0.11	0.00	6.31	75.70	104.26	71.00	77.63
Sep-79	0.00	131.21	0.00	0.00	0.00	19.10	0.00	0.00	0.00	11.55	0.00	117.96	0.00	0.00
Oct-79	1.03	59.96	0.00	1.03	0.10	6.06	0.00	0.10	0.00	2.47	74.80	81.90	0.00	74.76
Nov-79	0.00	61.56	0.00	0.00	0.00	8.83	0.00	0.00	0.00	3.89	0.00	116.18	0.00	0.00
Dec-79	1.16	23.74	1.06	0.10	0.11	2.06	0.08	0.02	0.00	2.36	74.40	70.25	64.70	176.16
Jan-80	32.48	62.11	17.88	14.59	2.72	14.90	1.37	1.35	0.00	4.72	67.80	194.39	62.20	74.67
Feb-80	1.38	13.03	0.00	1.38	0.13	1.25	0.00	0.13	0.00	1.20	74.20	77.70	0.00	74.23
Mar-80	3.42	17.33	0.00	3.42	0.34	1.87	0.00	0.34	0.00	2.50	80.00	87.27	0.00	79.99
Apr-80	2.05	40.78	0.21	1.84	0.10	4.10	0.02	0.09	0.00	4.51	41.20	81.55	61.40	38.94
May-80	21.47	31.21	1.05	20.41	1.14	3.22	0.08	1.06	0.00	5.53	43.08	83.48	61.30	42.13
Jun-80	39.00	3.67	1.49	37.51	3.06	0.24	0.11	2.94	0.00	2.87	63.47	53.86	61.00	63.57
Jul-80	4.44	21.81	0.10	4.34	0.26	2.86	0.01	0.25	0.00	5.48	47.47	106.28	61.10	47.15
Aug-80	1.40	42.86	0.00	1.40	0.09	6.56	0.00	0.09	0.00	4.45	49.40	123.97	0.00	49.39
Sep-80	0.00	79.30	0.00	0.00	0.00	13.14	0.00	0.00	0.00	6.24	0.00	134.24	0.00	0.00
Oct-80	10.33	2.47	0.50	9.83	0.61	0.26	0.04	0.57	0.00	1.63	47.50	83.70	61.50	46.79
Nov-80	4.72	13.26	0.20	4.52	0.26	0.65	0.02	0.24	0.00	3.01	44.20	39.53	61.50	43.45
Dec-80	1.66	2.99	0.47	1.19	0.08	0.14	0.04	0.05	0.00	0.70	40.93	37.96	61.70	32.64
Jan-81	11.79	0.00	0.00	11.79	0.55	0.00	0.00	0.55	0.00	0.56	37.80	0.00	0.00	37.85
Feb-81	7.75	10.11	1.16	6.58	0.44	1.48	0.09	0.35	0.00	2.20	45.65	118.37	61.90	42.74
Mar-81	21.95	0.81	3.64	18.31	1.79	0.04	0.35	1.44	0.00	1.15	66.11	37.90	78.70	63.57
Apr-81	71.82	10.09	15.26	56.57	7.32	0.84	1.51	5.81	0.00	0.39	82.58	67.50	80.00	83.25
May-81	45.88	6.34	6.34	39.54	2.94	0.56	0.41	2.53	0.00	4.70	51.90	71.30	51.80	51.85
Jun-81	19.07	0.32	1.92	17.15	2.12	0.05	0.16	1.96	0.00	4.26	90.20	115.60	68.10	92.61
Jul-81	23.56	0.00	0.00	23.56	1.56	0.00	0.00	1.56	0.00	5.34	53.60	0.00	0.00	53.60
Aug-81	1.15	209.92	0.00	1.15	0.07	81.15	0.00	0.07	0.00	16.10	46.10	313.13	0.00	46.14
Sep-81	0.00	93.12	0.00	0.00	0.00	21.25	0.00	0.00	0.00	4.79	0.00	184.87	0.00	0.00
Oct-81	8.39	0.00	0.63	7.76	0.44	0.00	0.08	0.36	0.00	0.41	42.30	0.00	98.30	37.74
Nov-81	3.51	52.11	0.00	3.51	0.18	22.02	0.00	0.18	0.00	4.08	42.10	342.32	0.00	42.06
Dec-81	16.21	0.00	0.00	16.21	0.89	0.00	0.00	0.89	0.00	0.31	44.30	0.00	0.00	44.34
Jan-82	6.31	0.16	0.00	6.31	0.38	0.10	0.00	0.38	0.00	0.44	49.30	501.10	0.00	49.29
Feb-82	2.94	8.73	0.00	2.94	0.19	2.10	0.00	0.19	0.00	2.47	53.20	195.30	0.00	53.22
Mar-82	4.51	54.45	0.00	4.51	0.33	14.57	0.00	0.33	0.00	4.90	58.60	216.78	0.00	58.61
Apr-82	18.76	3.09	5.65	13.11	1.51	0.85	0.82	0.69	0.00	2.28	65.10	223.08	117.20	42.67
May-82	29.73	81.59	5.16	24.57	2.60	31.97	0.77	1.83	0.00	9.19	70.80	317.43	120.50	60.34
Jun-82	0.00	191.20	0.00	0.00	0.00	52.76	0.00	0.00	0.00	12.01	0.00	223.56	0.00	0.00
Jul-82	0.00	66.20	0.00	0.00	0.00	8.59	0.00	0.00	0.00	5.59	0.00	105.15	0.00	0.00
Aug-82	0.00	95.24	0.00	0.00	0.00	9.63	0.00	0.00	0.00	7.02	0.00	81.93	0.00	0.00
Sep-82	0.00	126.20	0.00	0.00	0.00	15.96	0.00	0.00	0.00	10.77	0.00	102.51	0.00	0.00
Oct-82	0.00	71.27	0.00	0.00	0.00	9.05	0.00	0.00	0.00	2.42	0.00	102.85	0.00	0.00
Nov-82	0.00	0.76	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.88	0.00	50.03	0.00	0.00
Dec-82	4.43	0.00	0.00	4.43	0.60	0.00	0.00	0.60	0.00	0.74	108.90	0.00	0.00	108.89
Jan-83	0.43	61.30	0.00	0.43	0.06	7.37	0.00	0.06	0.00	4.02	116.10	97.31	0.00	116.08
Feb-83	0.00	133.46	0.00	0.00	0.00	13.75	0.00	0.00	0.00	7.66	0.00	83.50	0.00	0.00
Mar-83	0.00	57.22	0.00	0.00	0.00	4.05	0.00	0.00	0.00	4.31	0.00	57.32	0.00	0.00
Apr-83	6.50	8.26	0.52	5.98	1.08	0.57	0.10	0.98	0.00	1.67	134.90	55.63	158.10	132.89
May-83	52.34	0.62	0.62	51.72	9.03	0.07	0.13	8.90	0.00	1.13	139.70	88.00	162.60	139.45
Jun-83	0.00	69.09	0.00	0.00	0.00	8.64	0.00	0.00	0.00	7.70	0.00	101.30	0.00	0.00
Jul-83	9.27	11.10	1.23	8.05	1.37	1.30	0.26	1.11	0.00	4.84	119.33	94.58	168.40	111.87
Aug-83	0.00	69.84	0.00	0.00	0.00	9.04	0.00	0.00	0.00	6.76	0.00	104.87	0.00	0.00
Sep-83	0.41	79.17	0.00	0.41	0.02	8.48	0.00	0.02	0.00	5.32	40.10	86.78	0.00	40.05
Oct-83	0.84	66.38	0.02	0.81	0.12	8.36	0.00	0.12	0.00	5.05	119.26	102.03	176.90	117.73
Nov-83	4.85	7.14	0.65	4.20	1.02	0.55	0.15	0.87	0.00	0.95	169.94	62.10	182.00	168.05
Dec-83	4.91	44.99	2.68	2.23	1.09	3.38	0.61	0.47	0.00	4.13	179.60	60.87	185.70	172.25
Jan-84	3.75	15.08	0.00	3.75	0.87	1.28	0.00	0.87	0.00	0.26	187.00	68.87	0.00	186.95
Feb-84	30.60	25.78	18.66	11.94	7.21	1.68	4.42	2.79	0.00	1.18	191.00	52.76	192.10	189.35
Mar-84	58.96	74.90	38.40	20.55	13.73	13.60	8.94	4.79	0.00	4.19	188.70	147.13	188.50	188.83
Apr-84	55.50	57.84	29.82	25.67	12.01	10.18	6.48	5.53	0.00	3.99	175.30	142.48	176.10	174.31
May-84	58.16	58.97	0.51	57.65	11.95	20.24	0.10	11.85	0.00	7.51	166.40	278.07	162.50	166.44
Jun-84	23.12	34.87	2.00	21.12	4.44	8.56	0.38	4.06	0.00	3.85	155.70	198.87	155.00	155.70
Jul-84	0.00	86.11	0.00	0.00	0.00	13.74	0.00	0.00	0.00	5.92	0.00	129.23	0.00	0.00
Aug-84	0.00	13.38	0.00	0.00	0.00	2.20	0.00	0.00	0.00	4.28	0.00	133.01	0.00	0.00
Sep-84	13.96	54.37	3.10	10.87	2.09	12.31	0.46	1.62	0.00	6.10	121.00	183.42	120.80	121.04
Oct-84	27.46	16.27	8.38	19.08	3.64	3.93	1.11	2.53	0.00	0.42	107.40	195.71	107.50	107.31
Nov-84	32.54	27.75	11.70	20.84	4.01	4.22	1.44	2.57	0.00	2.56	99.90	123.13	99.80	99.91
Dec-84	27.45	0.00	13.12	14.34	1.99	0.00	0.97	1.02	0.00	0.20	58.70	0.00	59.70	57.83
Jan-85	41.00	1.00	18.36	22.65	2.92	0.13	1.34	1.58	0.00	0.60	57.60	102.44	58.90	56.59
Feb-85	62.40	10.54	45.30	17.11	5.88	0.69	4.25	1.62	0.00	0.11	76.30	52.70	76.10	76.90
Mar-85	112.57	33.70	67.83	44.74	10.03	3.73	6.04	3.99	0.00	1.69	72.20	89.67	72.10	72.30
Apr-85	39.31	38.60	18.32	20.99	3.35	8.44	1.56	1.79	0.00	5.34	69.00	177.23	69.00	68.99

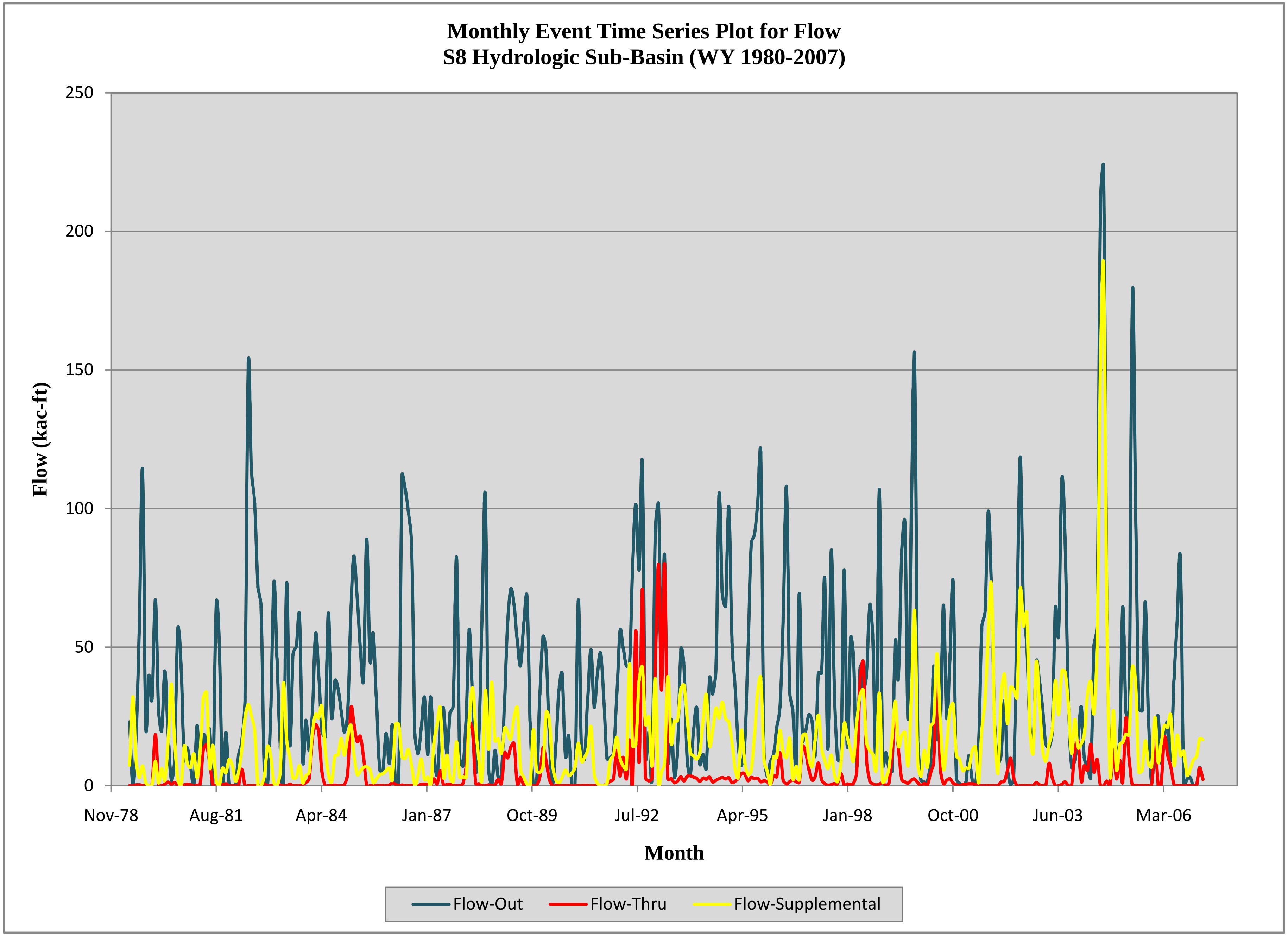
Month	Flow (kac-ft)				Load (mt)					Rainfall (in)	Concentration (ppb)			
	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall		IN	OUT	Thru	Supplemental Inflow
May-85	81.90	15.10	22.51	59.39	6.87	0.88	1.90	4.97	0.00	2.34	68.00	47.00	68.30	67.84
Jun-85	53.00	20.35	1.81	51.19	4.30	2.16	0.15	4.15	0.00	6.43	65.70	85.79	65.80	65.70
Jul-85	0.00	120.33	0.00	0.00	0.00	21.77	0.00	0.00	0.00	9.29	0.00	146.55	0.00	0.00
Aug-85	0.00	32.61	0.00	0.00	0.00	6.66	0.00	0.00	0.00	5.41	0.00	165.50	0.00	0.00
Sep-85	0.13	114.92	0.00	0.13	0.01	22.20	0.00	0.01	0.00	8.61	42.00	156.44	0.00	42.09
Oct-85	1.45	25.14	0.33	1.12	0.09	1.62	0.02	0.07	0.00	4.86	49.61	52.21	51.90	48.93
Nov-85	3.81	15.48	0.41	3.40	0.23	0.80	0.03	0.21	0.00	1.86	49.60	41.98	49.50	49.59
Dec-85	5.69	9.07	0.89	4.80	0.33	0.52	0.05	0.27	0.00	2.01	46.30	46.33	46.90	46.17
Jan-86	3.88	48.28	0.62	3.26	0.20	3.91	0.03	0.17	0.00	3.06	42.00	65.55	42.10	42.06
Feb-86	0.00	31.26	0.00	0.00	0.00	2.71	0.00	0.00	0.00	1.39	0.00	70.21	0.00	0.00
Mar-86	0.00	51.14	0.00	0.00	0.00	6.08	0.00	0.00	0.00	5.64	0.00	96.24	0.00	0.00
Apr-86	33.58	3.91	1.02	32.56	1.96	0.41	0.06	1.90	0.00	0.29	47.21	85.53	47.00	47.22
May-86	36.30	6.21	0.25	36.05	2.16	0.75	0.02	2.14	0.00	4.60	48.20	97.35	49.70	48.18
Jun-86	8.09	149.63	0.35	7.74	0.30	40.25	0.02	0.28	0.00	10.90	29.90	217.88	51.40	28.92
Jul-86	0.00	106.21	0.00	0.00	0.00	16.60	0.00	0.00	0.00	7.08	0.00	126.65	0.00	0.00
Aug-86	0.00	68.61	0.00	0.00	0.00	9.63	0.00	0.00	0.00	7.10	0.00	113.74	0.00	0.00
Sep-86	0.00	35.28	0.00	0.00	0.00	4.19	0.00	0.00	0.00	3.44	0.00	96.19	0.00	0.00
Oct-86	4.70	21.21	0.18	4.53	0.25	2.48	0.01	0.24	0.00	4.55	43.01	94.72	63.10	42.21
Nov-86	2.57	13.27	0.00	2.57	0.17	1.26	0.00	0.17	0.00	1.69	54.50	76.87	0.00	54.49
Dec-86	13.76	30.49	0.00	13.76	0.85	2.92	0.00	0.85	0.00	4.48	49.80	77.55	0.00	49.75
Jan-87	6.52	35.11	0.00	6.52	0.19	3.23	0.00	0.19	0.00	1.50	24.05	74.54	0.00	24.05
Feb-87	7.73	10.93	0.00	7.73	0.18	0.75	0.00	0.18	0.00	1.34	19.26	55.45	0.00	19.25
Mar-87	3.62	43.51	0.00	3.62	0.31	3.46	0.00	0.31	0.00	5.47	69.70	64.41	0.00	69.69
Apr-87	37.22	6.67	1.48	35.74	3.55	0.45	0.15	3.41	0.00	0.22	77.38	54.87	80.90	77.21
May-87	43.95	6.17	2.38	41.57	3.79	0.50	0.24	3.56	0.00	2.52	69.92	65.53	81.00	69.28
Jun-87	61.68	6.69	0.48	61.20	5.06	0.83	0.05	5.02	0.00	5.74	66.47	100.37	81.20	66.38
Jul-87	1.24	30.89	0.38	0.86	0.11	3.13	0.04	0.07	0.00	4.80	71.10	82.18	83.90	65.53
Aug-87	13.06	25.80	0.22	12.83	0.88	3.01	0.02	0.86	0.00	4.67	54.68	94.46	88.10	54.09
Sep-87	3.29	22.54	0.07	3.22	0.23	4.11	0.01	0.22	0.00	4.79	56.87	147.85	91.20	56.19
Oct-87	4.08	42.67	0.16	3.91	0.38	9.01	0.02	0.36	0.00	3.43	74.80	171.11	96.50	73.89
Nov-87	0.00	95.53	0.00	0.00	0.00	16.26	0.00	0.00	0.00	6.91	0.00	137.92	0.00	0.00
Dec-87	5.37	1.57	0.00	5.37	0.37	0.10	0.00	0.37	0.00	0.41	55.10	51.90	0.00	55.09
Jan-88	2.96	14.85	0.13	2.83	0.20	1.83	0.02	0.18	0.00	2.35	54.05	99.52	112.00	51.29
Feb-88	15.38	8.71	11.96	3.42	2.15	1.00	1.72	0.43	0.00	1.53	113.33	93.23	116.40	102.61
Mar-88	51.04	20.40	36.30	14.75	4.93	3.23	3.54	1.39	0.00	1.69	78.22	128.17	79.00	76.38
Apr-88	72.52	17.49	29.35	43.17	6.17	1.82	2.37	3.80	0.00	1.94	68.90	84.40	65.50	71.22
May-88	31.26	9.76	0.39	30.87	3.46	2.07	0.03	3.43	0.00	2.99	89.70	171.59	59.00	90.08
Jun-88	23.31	11.77	0.52	22.79	2.39	2.36	0.04	2.35	0.00	5.50	82.99	162.45	60.50	83.47
Jul-88	5.57	128.06	0.00	5.57	0.54	42.52	0.00	0.54	0.00	9.63	79.30	269.02	0.00	79.30
Aug-88	0.00	118.88	0.00	0.00	0.00	19.20	0.00	0.00	0.00	8.66	0.00	130.88	0.00	0.00
Sep-88	16.86	6.22	0.00	16.86	1.24	0.46	0.00	1.24	0.00	2.09	59.63	60.15	0.00	59.61
Oct-88	45.03	0.00	0.00	45.03	3.31	0.00	0.00	3.31	0.00	0.44	59.49	0.00	0.00	59.47
Nov-88	22.79	7.64	0.36	22.43	1.84	0.60	0.03	1.81	0.00	1.20	65.40	63.62	70.10	65.32
Dec-88	30.56	1.19	1.12	29.44	3.03	0.09	0.10	2.93	0.00	0.46	80.39	58.00	72.40	80.65
Jan-89	23.56	4.48	1.62	21.93	2.33	0.35	0.16	2.18	0.00	0.72	80.30	63.31	78.80	80.38
Feb-89	40.24	7.23	16.15	24.09	4.89	0.60	2.00	2.89	0.00	0.24	98.40	66.80	100.30	97.01
Mar-89	60.29	9.63	31.42	28.87	6.87	1.05	3.60	3.27	0.00	2.24	92.34	88.65	92.80	91.86
Apr-89	83.12	8.21	36.53	46.59	9.46	1.05	4.11	5.36	0.00	2.94	92.26	104.10	91.10	93.11
May-89	152.28	8.51	48.79	103.49	10.72	0.67	3.44	7.28	0.00	1.57	57.06	64.10	57.10	57.01
Jun-89	110.01	9.09	45.32	64.69	6.78	0.60	2.77	4.00	0.00	4.61	49.85	53.30	49.60	50.11
Jul-89	14.83	13.42	4.72	10.12	1.13	1.46	0.36	0.77	0.00	5.04	61.56	88.11	62.00	61.34
Aug-89	6.34	46.34	1.30	5.05	0.50	8.62	0.11	0.39	0.00	6.62	63.99	150.66	68.50	62.88
Sep-89	0.00	86.50	0.00	0.00	0.00	21.35	0.00	0.00	0.00	8.69	0.00	199.89	0.00	0.00
Oct-89	0.00	24.09	0.00	0.00	0.00	6.06	0.00	0.00	0.00	3.11	0.00	203.90	0.00	0.00
Nov-89	19.17	1.13	0.00	19.17	1.28	0.10	0.00	1.28	0.00	0.91	54.02	68.99	0.00	54.05
Dec-89	9.02	5.65	0.00	9.02	0.67	0.29	0.00	0.67	0.00	1.71	60.50	41.33	0.00	60.46
Jan-90	33.04	1.81	23.66	9.37	3.98	0.11	3.12	0.86	0.00	1.14	97.70	47.70	106.80	74.66
Feb-90	47.08	3.89	35.66	11.42	6.90	0.51	5.24	1.66	0.00	2.67	118.80	106.10	119.10	117.84
Mar-90	90.47	7.33	46.19	44.28	11.19	0.70	5.94	5.25	0.00	1.78	100.20	77.30	104.10	96.02
Apr-90	65.04	1.43	16.64	48.40	5.49	0.10	1.43	4.07	0.00	1.95	68.40	53.80	69.50	68.04
May-90	10.66	1.28	0.00	10.66	1.07	0.12	0.00	1.07	0.00	5.67	81.40	77.93	0.00	81.43
Jun-90	7.49	4.36	1.28	6.22	1.09	0.46	0.11	0.98	0.00	6.17	117.95	85.73	69.60	127.90
Jul-90	3.89	15.02	0.00	3.89	0.29	1.81	0.00	0.29	0.00	7.15	59.39	97.65	0.00	59.38
Aug-90	1.83	19.11	0.00	1.83	0.08	2.81	0.00	0.08	0.00	7.27	36.41	118.88	0.00	36.45
Sep-90	3.10	0.95	0.00	3.10	0.15	0.14	0.00	0.15	0.00	2.71	38.86	123.22	0.00	38.83
Oct-90	0.01	8.91	0.00	0.01	0.00	1.41	0.00	0.00	0.00	3.57	44.70	127.76	0.00	40.84
Nov-90	19.70	0.00	0.00	19.70	0.86	0.00	0.00	0.86	0.00	0.45	35.50	0.00	0.00	35.52
Dec-90	19.34	0.00	0.00	19.34	1.30	0.00	0.00	1.30	0.00	0.81	54.39	0.00	0.00	54.34
Jan-91	5.61	145.19	0.03	5.58	0.40	49.80	0.00	0.40	0.00	8.13	57.90	277.84	85.10	57.71
Feb-91	7.43	9.38	0.51	6.92	0.51	1.33	0.06	0.46	0.00	1.92	56.13	114.92	87.90	53.76
Mar-91	8.98	14.99	0.65	8.33	0.51	2.08	0.07	0.44	0.00	1.83	46.04	112.47	91.00	42.52
Apr-91	17.23	34.38	11.06	6.17	1.93	4.13	1.26	0.67	0.00	4.56	90.90	97.27	92.60	88.02
May-91	49.19	48.77	8.74	40.46	4.69	6.83	0.98	3.71	0.00	5.55	77.24	113.43	90.80	74.29
Jun-91	4.46	85.11	0.00	4.46	0.20	9.24	0.00	0.20	0.00	9.11	36.20	88.02	0.00	36.23

Month	Flow (kac-ft) IN	Flow (kac-ft) OUT	Flow (kac-ft) Flow Thru	Flow (kac-ft) Supplemental Inflow	Load (mt) IN	Load (mt) OUT	Load (mt) Thru	Load (mt) Supplemental Inflow	Load (mt) Rainfall	Rainfall (in)	Concentration (ppb) IN	Concentration (ppb) OUT	Concentration (ppb) Thru	Concentration (ppb) Supplemental Inflow
Jul-91	0.00	117.10	0.00	0.00	0.00	8.81	0.00	0.00	0.00	9.04	0.00	60.95	0.00	0.00
Aug-91	0.37	60.58	0.00	0.37	0.02	5.60	0.00	0.02	0.00	4.21	39.30	74.86	0.00	39.41
Sep-91	0.00	56.53	0.00	0.00	0.00	3.20	0.00	0.00	0.00	4.89	0.00	45.94	0.00	0.00
Oct-91	0.00	31.75	0.00	0.00	0.00	1.81	0.00	0.00	0.00	2.63	0.00	46.14	0.00	0.00
Nov-91	15.04	5.15	0.00	15.04	1.09	0.35	0.00	1.09	0.00	2.53	58.51	54.58	0.00	58.47
Dec-91	15.07	7.91	0.51	14.56	1.02	0.55	0.03	0.99	0.00	0.45	54.70	56.37	48.30	54.97
Jan-92	38.60	0.08	25.84	12.76	2.11	0.01	1.35	0.76	0.00	0.71	44.20	52.91	42.30	48.06
Feb-92	28.88	29.70	20.01	8.88	1.74	2.37	1.19	0.55	0.00	2.93	48.90	64.66	48.40	49.95
Mar-92	61.83	11.76	40.31	21.52	4.76	1.45	3.07	1.69	0.00	1.66	62.45	99.82	61.80	63.55
Apr-92	55.66	9.64	31.17	24.49	5.04	1.10	2.79	2.25	0.00	3.27	73.35	92.77	72.60	74.34
May-92	124.58	15.06	55.15	69.43	11.59	1.33	5.08	6.51	0.00	1.26	75.39	71.63	74.70	75.97
Jun-92	15.67	115.18	8.94	6.73	1.43	27.57	0.81	0.62	0.00	14.99	73.75	193.88	73.30	74.35
Jul-92	84.04	136.30	73.36	10.68	7.02	28.52	6.08	0.94	0.00	3.37	67.60	169.54	67.10	71.20
Aug-92	11.11	165.17	4.96	6.15	0.88	23.16	0.37	0.50	0.00	11.19	63.90	113.60	61.10	66.12
Sep-92	75.21	181.20	75.21	0.00	5.67	19.78	5.61	0.06	0.00	7.26	61.10	88.37	60.40	0.00
Oct-92	15.08	31.03	0.32	14.76	2.08	2.41	0.04	2.04	0.00	2.11	111.99	63.04	111.50	111.99
Nov-92	6.23	72.65	0.03	6.20	0.85	7.07	0.00	0.84	0.00	4.56	110.30	78.78	108.30	110.28
Dec-92	1.40	4.32	0.00	1.40	0.17	0.39	0.00	0.17	0.00	0.64	100.60	72.85	0.00	100.59
Jan-93	41.62	191.86	41.62	0.00	4.89	24.36	4.84	0.05	0.00	8.09	95.20	102.86	94.20	0.00
Feb-93	93.94	119.50	93.56	0.39	10.50	7.96	10.34	0.16	0.00	1.39	90.50	53.98	89.60	325.27
Mar-93	47.14	63.11	39.77	7.37	4.89	4.88	4.07	0.82	0.00	3.05	84.00	62.67	82.90	90.05
Apr-93	122.34	105.47	100.46	21.89	12.98	12.27	10.38	2.60	0.00	2.49	86.00	94.28	83.70	96.28
May-93	59.94	9.95	0.06	59.88	7.22	0.82	0.01	7.21	0.00	3.73	97.60	67.12	96.30	97.56
Jun-93	22.24	36.49	2.68	19.56	2.50	3.28	0.30	2.21	0.00	7.20	91.10	72.76	89.40	91.35
Jul-93	24.00	2.48	0.65	23.35	2.49	0.20	0.07	2.42	0.00	4.38	83.90	66.97	82.20	83.94
Aug-93	21.88	33.30	1.01	20.87	2.14	2.06	0.10	2.04	0.00	5.72	79.10	50.13	77.10	79.14
Sep-93	0.00	109.94	0.00	0.00	0.00	7.08	0.00	0.00	0.00	6.53	0.00	52.18	0.00	0.00
Oct-93	0.00	101.88	0.00	0.00	0.00	8.88	0.00	0.00	0.00	6.11	0.00	70.60	0.00	0.00
Nov-93	5.97	9.90	0.00	5.97	0.52	0.43	0.00	0.52	0.00	1.60	70.26	35.32	59.00	70.24
Dec-93	11.29	1.39	0.10	11.19	0.77	0.18	0.01	0.77	0.00	0.68	55.41	107.07	54.20	55.46
Jan-94	0.50	31.90	0.17	0.33	0.05	2.46	0.02	0.04	0.00	4.60	83.70	62.58	78.30	86.68
Feb-94	0.00	59.11	0.00	0.00	0.00	7.32	0.00	0.00	0.00	4.06	0.00	100.34	0.00	0.00
Mar-94	16.48	19.37	0.56	15.92	2.23	1.50	0.08	2.15	0.00	3.78	109.50	62.56	109.50	109.51
Apr-94	16.98	19.13	0.00	16.98	2.01	2.11	0.00	2.01	0.00	2.23	95.70	89.57	119.40	95.64
May-94	34.70	3.06	0.67	34.03	5.86	0.37	0.12	5.74	0.00	4.13	136.70	97.67	139.00	136.63
Jun-94	1.46	82.19	0.45	1.01	0.23	11.11	0.07	0.15	0.00	7.62	126.00	109.49	130.70	123.96
Jul-94	0.40	55.47	0.00	0.40	0.04	8.82	0.00	0.04	0.00	6.63	82.70	128.80	0.00	82.68
Aug-94	0.00	124.58	0.00	0.00	0.00	12.05	0.00	0.00	0.00	8.73	0.00	78.32	0.00	0.00
Sep-94	6.79	123.87	6.79	0.00	0.52	14.29	0.51	0.01	0.00	7.78	62.10	93.50	61.40	0.00
Oct-94	64.98	167.70	64.92	0.05	5.04	20.30	4.98	0.06	0.00	7.88	62.80	98.06	62.10	917.26
Nov-94	43.18	194.35	43.18	0.00	3.39	26.22	3.35	0.04	0.00	7.02	63.60	109.32	62.90	0.00
Dec-94	0.00	177.13	0.00	0.00	0.00	27.79	0.00	0.00	0.00	10.42	0.00	127.06	0.00	0.00
Jan-95	3.84	52.96	3.17	0.67	0.34	2.93	0.26	0.08	0.00	2.34	71.08	44.88	66.30	93.60
Feb-95	21.48	44.09	15.38	6.10	1.81	2.64	1.27	0.53	0.00	2.25	68.18	48.55	67.10	70.64
Mar-95	50.22	52.23	35.75	14.46	4.28	2.49	3.01	1.27	0.00	2.26	69.00	38.58	68.20	71.05
Apr-95	68.88	41.64	37.16	31.71	5.96	2.68	3.18	2.78	0.00	1.97	70.10	52.04	69.30	71.09
May-95	32.08	7.32	1.84	30.24	2.84	0.40	0.16	2.68	0.00	2.65	71.60	43.77	70.90	71.67
Jun-95	4.18	51.40	0.00	4.18	0.37	5.00	0.00	0.37	0.00	9.10	72.10	78.84	0.00	72.13
Jul-95	0.00	106.17	0.00	0.00	0.00	9.30	0.00	0.00	0.00	8.36	0.00	71.02	0.00	0.00
Aug-95	0.00	142.23	0.00	0.00	0.00	16.63	0.00	0.00	0.00	11.92	0.00	94.74	0.00	0.00
Sep-95	0.02	108.33	0.00	0.02	0.00	8.29	0.00	0.00	0.00	7.04	68.70	61.97	0.00	68.83
Oct-95	0.00	147.66	0.00	0.00	0.00	17.03	0.00	0.00	0.00	8.91	77.60	93.41	76.80	0.00
Nov-95	31.32	22.10	16.65	14.67	3.06	1.06	1.61	1.45	0.00	0.58	79.25	38.96	78.40	80.12
Dec-95	69.55	55.93	52.41	17.15	7.66	4.08	5.80	1.86	0.00	0.87	89.20	59.06	89.60	87.68
Jan-96	70.17	72.42	67.26	2.91	10.43	7.59	9.90	0.53	0.00	1.73	120.40	84.90	119.20	147.71
Feb-96	44.21	15.44	22.23	21.97	9.60	1.64	5.42	4.18	0.00	0.43	176.00	85.83	197.60	153.98
Mar-96	11.18	17.27	2.37	8.81	1.83	2.02	0.59	1.23	0.00	4.83	132.50	94.92	203.00	113.47
Apr-96	49.99	16.34	20.69	29.30	8.07	1.89	3.37	4.71	0.00	1.85	130.80	93.74	131.80	130.11
May-96	15.84	60.02	1.63	14.21	1.98	6.21	0.20	1.78	0.00	8.53	101.20	83.76	97.40	101.63
Jun-96	3.20	113.49	0.00	3.20	0.33	13.23	0.00	0.33	0.00	9.24	84.60	94.45	89.20	84.54
Jul-96	16.82	47.16	0.12	16.70	1.41	6.45	0.01	1.40	0.00	4.09	67.90	110.70	88.20	67.71
Aug-96	5.17	24.46	0.29	4.88	0.43	2.03	0.03	0.40	0.00	7.38	68.10	67.39	87.90	66.97
Sep-96	6.11	26.30	0.00	6.11	0.56	2.76	0.00	0.56	0.00	4.02	73.85	84.92	0.00	73.90
Oct-96	9.98	71.18	8.71	1.27	1.02	7.54	0.93	0.09	0.00	5.15	82.40	85.80	86.50	54.70
Nov-96	16.16	19.69	7.87	8.29	1.64	2.15	0.84	0.80	0.00	1.31	82.19	88.58	86.10	78.43
Dec-96	37.11	0.11	16.35	20.76	3.92	0.01	1.70	2.22	0.00	0.43	85.60	48.40	84.50	86.47
Jan-97	16.62	10.79	12.37	4.25	1.73	0.43	1.27	0.46	0.00	1.65	84.28	32.24	83.40	86.73
Feb-97	5.44	1.02	4.80	0.65	0.56	0.16	0.48	0.07	0.00	1.70	82.70	124.00	81.90	88.85
Mar-97	14.35	6.48	0.00	14.35	1.45	5.22	0.00	1.45	0.00	2.39	81.80	653.28	80.40	81.80
Apr-97	11.86	25.25	1.58	10.28	1.18	6.56	0.16	1.02	0.00	3.55	80.60	210.48	79.70	80.71
May-97	8.89	19.75	0.00	8.89	0.86	1.89	0.00	0.86	0.00	4.59	78.80	77.71	0.00	78.79
Jun-97	0.53	97.84	0.00	0.53	0.05	10.50	0.00	0.05	0.00	9.90	76.60	86.92	0.00	76.65
Jul-97	1.45	37.96	0.18	1.26	0.14	4.79	0.02	0.12	0.00	7.05	76.50	102.18	75.60	76.67
Aug-97	0.00	74.43	0.00	0.00	0.00	7.54	0.00	0.00	0.00	6.96	0.00	82.12	0.00	0.00

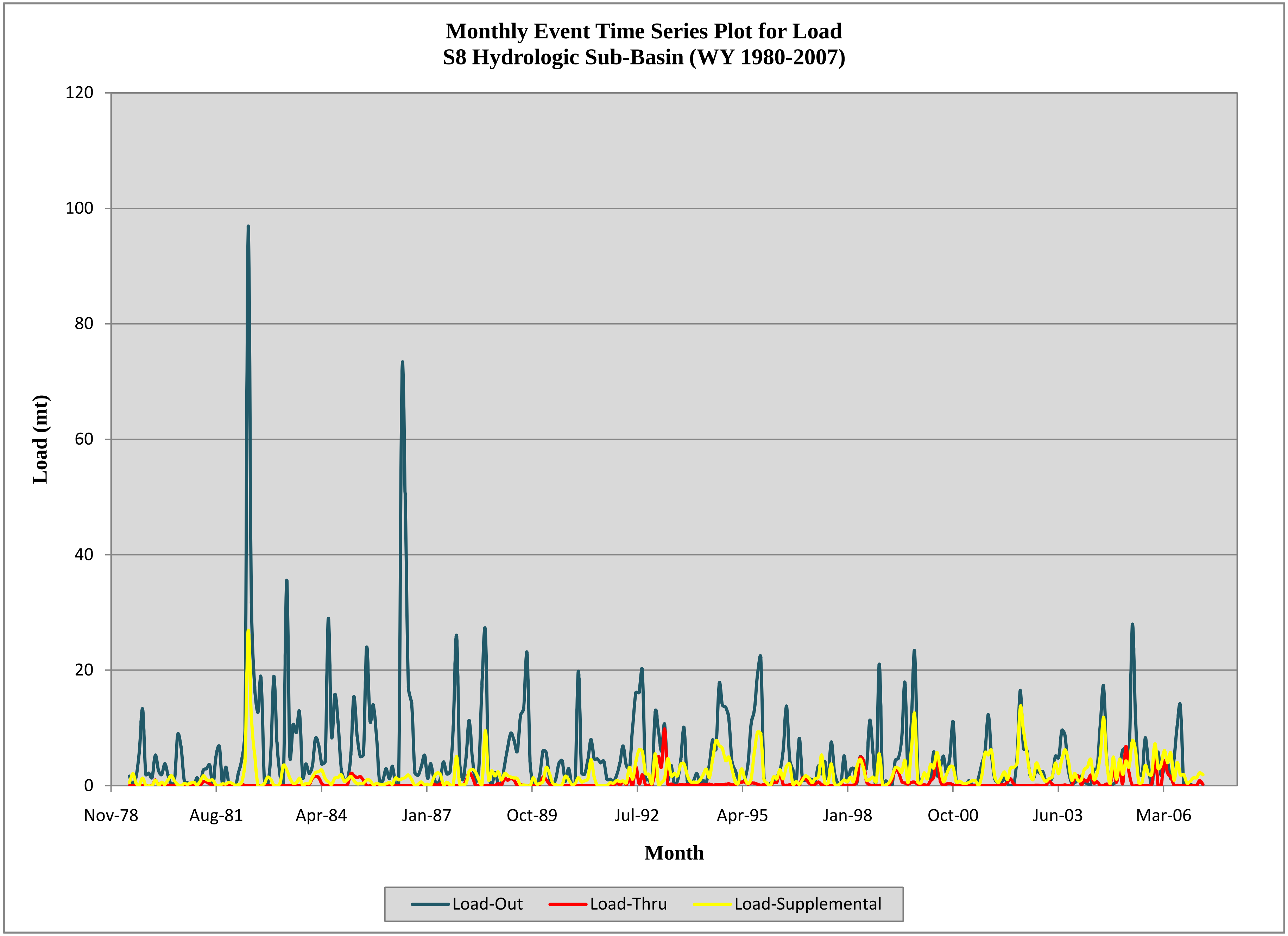
	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall	Rainfall (in)	IN	OUT	Thru	Supplemental Inflow
Sep-97	0.00	39.19	0.00	0.00	0.00	3.90	0.00	0.00	0.00	5.83	0.00	80.64	0.00	0.00
Oct-97	25.22	22.36	8.94	16.28	1.83	2.13	0.78	1.04	0.00	0.94	58.70	77.23	71.10	51.95
Nov-97	11.20	16.86	6.99	4.20	0.87	1.38	0.63	0.24	0.00	3.14	62.74	66.13	72.40	46.73
Dec-97	0.00	94.95	0.00	0.00	0.00	13.42	0.00	0.00	0.00	5.70	0.00	114.55	0.00	0.00
Jan-98	0.00	11.73	0.00	0.00	0.00	0.80	0.00	0.00	0.00	1.44	0.00	55.40	0.00	0.00
Feb-98	0.00	60.91	0.00	0.00	0.00	7.37	0.00	0.00	0.00	4.95	0.00	98.02	0.00	0.00
Mar-98	0.11	60.88	0.00	0.11	0.00	8.45	0.00	0.00	0.00	4.69	34.50	112.52	0.00	34.40
Apr-98	47.72	24.13	19.98	27.74	5.10	2.90	2.11	2.99	0.00	1.05	86.60	97.36	85.80	87.19
May-98	56.47	38.75	22.73	33.74	6.69	4.78	2.65	4.04	0.00	1.84	96.00	99.83	94.40	97.06
Jun-98	52.81	11.80	7.28	45.53	6.85	1.25	1.02	5.83	0.00	2.64	105.00	85.80	113.20	103.68
Jul-98	15.47	15.56	1.33	14.14	1.85	1.49	0.17	1.68	0.00	5.91	96.90	77.41	106.00	95.99
Aug-98	0.09	32.14	0.08	0.00	0.01	2.95	0.01	0.00	0.00	6.79	87.40	74.34	92.60	0.00
Sep-98	2.31	94.67	0.00	2.31	0.23	10.13	0.00	0.23	0.00	8.22	81.60	86.68	0.00	81.64
Oct-98	18.12	15.88	10.40	7.72	1.49	1.46	0.89	0.60	0.00	1.53	66.66	74.27	69.20	63.32
Nov-98	3.81	165.66	1.20	2.61	0.28	36.48	0.10	0.18	0.00	9.52	59.31	178.37	66.60	55.93
Dec-98	4.18	0.15	0.00	4.18	0.51	0.03	0.00	0.51	0.00	1.04	99.60	163.87	101.00	99.54
Jan-99	1.81	7.32	0.08	1.73	0.27	0.34	0.01	0.25	0.00	2.06	118.70	37.89	116.20	118.84
Feb-99	13.67	14.75	8.09	5.57	2.29	0.94	1.34	0.95	0.00	0.96	135.60	51.49	134.20	137.74
Mar-99	53.64	21.75	21.76	31.88	7.50	1.44	3.04	4.46	0.00	0.30	113.20	53.48	113.00	113.35
Apr-99	88.51	27.03	49.38	39.13	8.95	2.78	4.89	4.06	0.00	0.85	82.00	83.35	80.20	84.09
May-99	36.61	33.62	17.67	18.94	2.95	6.83	1.40	1.55	0.00	4.51	65.20	164.51	64.20	66.14
Jun-99	2.19	72.54	0.67	1.52	0.20	6.31	0.06	0.14	0.00	11.18	72.47	70.50	71.60	72.85
Jul-99	0.00	69.29	0.00	0.00	0.00	8.29	0.00	0.00	0.00	6.69	0.00	96.90	0.00	0.00
Aug-99	0.75	26.93	0.04	0.71	0.09	4.67	0.01	0.09	0.00	4.80	100.20	140.54	99.10	100.32
Sep-99	0.71	106.72	0.56	0.15	0.11	18.69	0.08	0.02	0.00	9.11	119.60	141.88	118.40	124.86
Oct-99	0.06	162.55	0.06	0.00	0.01	25.09	0.01	0.00	0.00	9.38	127.10	125.03	125.70	0.00
Nov-99	7.25	21.49	5.04	2.21	1.30	2.20	0.92	0.37	0.00	1.27	145.07	82.97	148.50	137.23
Dec-99	30.14	19.65	17.32	12.82	6.04	2.18	3.47	2.57	0.00	0.57	162.36	89.68	162.20	162.44
Jan-00	31.43	21.21	14.22	17.22	6.99	2.58	3.12	3.87	0.00	0.93	180.30	98.69	177.90	182.15
Feb-00	5.94	6.30	0.00	5.94	1.37	0.51	0.00	1.37	0.00	0.71	186.39	65.60	0.00	186.41
Mar-00	27.00	16.58	7.84	19.16	6.40	2.29	1.85	4.55	0.00	2.95	192.10	111.83	191.60	192.27
Apr-00	40.12	56.78	17.63	22.49	8.46	10.17	3.76	4.70	0.00	4.70	170.90	145.11	172.80	169.45
May-00	84.96	26.42	24.54	60.42	13.60	1.92	3.96	9.64	0.00	2.26	129.64	59.02	130.80	129.19
Jun-00	58.24	8.59	3.67	54.58	7.54	0.77	0.62	6.93	0.00	4.18	104.86	72.93	135.90	102.81
Jul-00	0.00	34.69	0.00	0.00	0.00	3.51	0.00	0.00	0.00	8.74	0.00	82.01	0.00	0.00
Aug-00	7.60	35.62	0.00	7.60	0.67	3.35	0.00	0.67	0.00	3.89	71.22	76.11	0.00	71.18
Sep-00	0.14	55.23	0.00	0.14	0.01	8.65	0.00	0.01	0.00	6.67	45.00	126.93	0.00	44.92
Oct-00	3.49	128.09	0.00	3.49	0.14	23.45	0.00	0.14	0.00	4.99	32.10	148.30	0.00	32.12
Nov-00	25.79	0.14	0.00	25.79	1.14	0.03	0.00	1.14	0.00	0.29	35.96	186.90	0.00	35.92
Dec-00	21.25	0.00	0.00	21.25	7.53	0.00	0.00	7.53	0.00	0.29	287.12	0.00	0.00	287.10
Jan-01	12.49	0.20	0.00	12.49	3.72	0.04	0.00	3.72	0.00	0.79	241.31	178.41	0.00	241.26
Feb-01	10.52	0.00	0.00	10.52	1.98	0.00	0.00	1.98	0.00	0.04	152.70	0.00	0.00	152.71
Mar-01	13.39	17.66	2.04	11.36	2.64	1.68	0.45	2.19	0.00	4.44	159.60	76.94	178.20	156.29
Apr-01	18.19	0.73	0.00	18.19	3.39	0.14	0.00	3.39	0.00	0.16	150.90	160.00	0.00	150.93
May-01	22.73	0.01	0.01	22.72	3.54	0.00	0.00	3.54	0.00	4.44	126.20	23.50	115.00	126.17
Jun-01	0.00	17.06	0.00	0.00	0.00	2.41	0.00	0.00	0.00	5.41	0.00	114.59	0.00	0.00
Jul-01	4.30	109.95	0.00	4.30	0.32	11.48	0.00	0.32	0.00	10.26	60.40	84.63	0.00	60.36
Aug-01	26.46	122.16	0.00	26.46	1.23	12.69	0.00	1.23	0.00	6.68	37.70	84.21	0.00	37.71
Sep-01	6.89	108.37	0.00	6.89	0.22	12.94	0.00	0.22	0.00	10.98	25.50	96.73	0.00	25.46
Oct-01	0.00	70.94	0.00	0.00	0.00	5.81	0.00	0.00	0.00	3.51	0.00	66.34	0.00	0.00
Nov-01	7.98	17.30	0.00	7.98	0.21	1.02	0.00	0.21	0.00	1.33	21.72	47.61	0.00	21.69
Dec-01	12.08	5.94	0.00	12.08	0.35	0.36	0.00	0.35	0.00	2.25	23.63	49.56	0.00	23.65
Jan-02	6.54	11.19	0.00	6.54	0.40	0.56	0.00	0.40	0.00	0.75	49.54	40.80	75.90	49.52
Feb-02	8.23	51.60	0.26	7.96	0.79	5.32	0.03	0.76	0.00	3.88	77.48	83.59	83.80	77.22
Mar-02	13.68	3.31	0.00	13.68	0.78	0.09	0.00	0.78	0.00	0.95	46.23	21.60	88.40	46.23
Apr-02	34.93	2.88	2.25	32.69	4.26	0.08	0.31	3.95	0.00	1.37	98.74	22.97	111.70	97.87
May-02	59.91	2.96	2.43	57.48	6.56	0.14	0.27	6.28	0.00	2.35	88.62	38.13	90.80	88.56
Jun-02	24.98	84.53	2.12	22.86	2.52	6.04	0.21	2.30	0.00	9.31	81.67	57.83	82.00	81.65
Jul-02	5.58	100.95	0.00	5.58	0.97	8.77	0.00	0.97	0.00	7.73	141.00	70.41	0.00	141.01
Aug-02	12.86	29.47	2.74	10.12	1.45	2.01	0.30	1.15	0.00	5.27	91.57	55.39	89.70	92.09
Sep-02	1.92	23.28	0.00	1.92	0.26	1.63	0.00	0.26	0.00	3.48	109.29	56.63	0.00	109.24
Oct-02	25.71	7.25	2.36	23.35	2.61	0.38	0.29	2.32	0.00	1.95	82.27	42.30	99.30	80.50
Nov-02	14.82	15.47	0.12	14.70	0.74	0.85	0.02	0.73	0.00	1.86	40.60	44.48	113.00	39.96
Dec-02	7.29	30.24	0.41	6.88	0.64	1.68	0.04	0.59	0.00	3.16	70.70	45.14	83.40	69.93
Jan-03	70.35	19.01	42.14	28.21	5.99	0.70	3.58	2.42	0.00	0.67	68.98	29.85	68.80	69.35
Feb-03	34.98	20.55	28.88	6.10	4.11	1.86	3.42	0.69	0.00	1.65	95.18	73.14	96.00	91.63
Mar-03	8.14	55.98	3.76	4.39	1.28	4.70	0.62	0.66	0.00	4.75	127.13	67.99	132.60	122.37
Apr-03	39.50	36.91	15.58	23.92	4.37	2.84	1.65	2.71	0.00	2.90	89.63	62.26	86.00	91.89
May-03	29.08	37.26	3.75	25.32	3.08	3.05	0.41	2.67	0.00	5.34	85.89	66.28	88.20	85.55
Jun-03	4.39	85.44	0.00	4.39	0.48	7.69	0.00	0.48	0.00	7.84	88.50	72.94	0.00	88.45
Jul-03	5.19	21.11	0.00	5.19	0.42	1.67	0.00	0.42	0.00	6.36	66.31	64.21	0.00	66.34
Aug-03	9.49	118.96	0.00	9.49	0.98	10.79	0.00	0.98	0.00	8.18	83.20	73.53	0.00	83.23
Sep-03	3.12	47.66	0.00	3.12	0.36	3.95	0.00	0.36	0.00	6.06	93.20	67.22	0.00	93.16
Oct-03	14.20	16.46	0.27	13.92	1.59	1.37	0.04	1.55	0.00	1.05	90.66	67.64	109.80	90.24

Month	Flow (kac-ft) IN	Flow (kac-ft) OUT	Flow (kac-ft) Flow Thru	Flow (kac-ft) Supplemental Inflow	Load (mt) IN	Load (mt) OUT	Load (mt) Thru	Load (mt) Supplemental Inflow	Load (mt) Rainfall	Rainfall (in)	Concentration (ppb) IN	Concentration (ppb) OUT	Concentration (ppb) Thru	Concentration (ppb) Supplemental Inflow
Nov-03	19.23	12.99	1.59	17.64	2.23	0.59	0.19	2.05	0.00	2.13	94.00	37.07	95.10	93.93
Dec-03	12.73	15.85	4.38	8.35	1.28	0.99	0.45	0.83	0.00	1.88	81.51	50.81	83.20	80.63
Jan-04	29.50	11.22	4.45	25.05	2.43	0.53	0.28	2.15	0.00	1.81	66.77	38.09	51.60	69.47
Feb-04	18.76	39.17	0.27	18.49	0.99	2.06	0.02	0.97	0.00	2.71	42.72	42.57	67.10	42.36
Mar-04	46.88	9.57	3.78	43.10	5.55	0.31	0.44	5.11	0.00	0.42	95.93	26.03	93.50	96.12
Apr-04	41.61	8.39	5.62	35.99	5.46	0.49	0.76	4.70	0.00	1.31	106.39	47.69	110.20	105.73
May-04	79.95	12.50	12.50	67.45	11.76	0.66	1.90	9.86	0.00	1.12	119.20	43.06	123.10	118.41
Jun-04	24.08	47.29	3.70	20.38	1.75	4.18	0.42	1.33	0.00	6.02	58.74	71.63	91.50	52.83
Jul-04	37.05	52.67	7.63	29.42	3.57	4.60	0.88	2.69	0.00	7.37	78.09	70.75	93.50	74.11
Aug-04	89.72	256.07	0.00	89.72	2.78	21.45	0.00	2.78	0.00	11.05	25.05	67.87	0.00	25.08
Sep-04	65.68	265.43	0.00	65.68	3.40	37.52	0.00	3.40	0.00	9.13	41.96	114.50	0.00	41.96
Oct-04	48.45	77.10	4.58	43.87	2.57	5.98	0.86	1.72	0.00	2.04	43.03	62.80	151.70	31.70
Nov-04	20.57	10.15	7.74	12.82	4.39	0.88	1.65	2.73	0.00	0.67	172.78	70.62	172.80	172.75
Dec-04	71.88	52.95	38.89	32.99	10.14	6.26	7.98	2.16	0.00	0.78	114.32	95.74	166.30	53.04
Jan-05	18.89	9.45	1.79	17.11	3.95	1.06	0.44	3.51	0.00	0.72	169.51	90.45	200.40	166.24
Feb-05	38.18	23.02	9.33	28.84	11.27	4.57	2.82	8.45	0.00	1.21	239.16	160.93	245.10	237.16
Mar-05	6.13	82.44	1.35	4.77	1.12	10.90	0.47	0.65	0.00	5.70	148.23	107.04	282.70	110.12
Apr-05	49.70	28.26	26.34	23.36	11.86	6.66	6.20	5.67	0.00	1.62	193.33	190.84	190.60	196.41
May-05	36.92	37.47	6.81	30.11	7.38	7.81	1.41	5.97	0.00	5.36	162.07	168.98	167.70	160.73
Jun-05	7.07	150.89	0.00	7.07	1.02	17.74	0.00	1.02	0.00	10.95	116.50	95.22	0.00	116.43
Jul-05	9.27	67.36	0.19	9.08	1.25	6.66	0.02	1.23	0.00	6.30	108.88	80.08	86.00	109.31
Aug-05	0.96	37.39	0.40	0.56	0.12	3.41	0.05	0.07	0.00	5.12	100.83	73.87	111.20	93.59
Sep-05	5.99	49.89	0.00	5.99	0.98	5.27	0.00	0.98	0.00	3.93	131.86	85.48	0.00	131.85
Oct-05	8.55	105.96	0.00	8.55	3.62	21.55	0.00	3.62	0.00	7.93	343.60	164.68	0.00	343.53
Nov-05	4.33	19.63	0.12	4.21	1.80	2.79	0.04	1.76	0.00	2.13	336.80	115.12	296.20	337.89
Dec-05	10.15	3.97	2.75	7.39	4.04	0.27	1.15	2.89	0.00	0.34	322.48	55.49	336.90	317.03
Jan-06	48.18	17.79	17.79	30.38	20.16	4.25	7.81	12.34	0.00	0.27	339.00	193.60	355.80	329.06
Feb-06	14.10	42.78	0.16	13.94	4.70	9.41	0.05	4.65	0.00	2.92	270.17	178.29	276.40	270.04
Mar-06	32.55	24.06	2.15	30.41	13.05	6.50	0.84	12.21	0.00	2.27	324.79	218.91	316.50	325.35
Apr-06	48.80	7.94	7.94	40.86	15.51	1.45	2.33	13.18	0.00	0.80	257.40	147.53	237.20	261.31
May-06	44.80	35.98	11.18	33.61	14.90	8.18	3.66	11.24	0.00	4.22	269.49	184.21	265.00	270.96
Jun-06	39.86	28.28	4.93	34.94	11.14	6.01	1.40	9.74	0.00	5.40	226.35	172.12	230.50	225.72
Jul-06	8.25	97.53	0.00	8.25	1.45	14.89	0.00	1.45	0.00	8.30	142.08	123.72	0.00	142.06
Aug-06	13.34	117.22	0.05	13.29	2.61	28.41	0.01	2.60	0.00	8.68	158.56	196.29	147.00	158.58
Sep-06	3.43	127.12	0.00	3.43	1.13	27.08	0.00	1.13	0.00	5.53	266.90	172.56	0.00	266.84
Oct-06	35.36	0.78	0.47	34.89	3.38	0.08	0.08	3.30	0.00	0.68	77.43	78.17	133.00	76.68
Nov-06	25.59	5.07	1.73	23.85	5.01	0.37	0.65	4.36	0.00	1.17	158.47	58.84	303.30	147.94
Dec-06	12.29	15.57	0.00	12.29	1.71	1.34	0.00	1.71	0.00	2.28	112.46	69.94	0.00	112.45
Jan-07	20.41	0.19	0.06	20.35	3.25	0.01	0.01	3.23	0.00	0.46	128.80	62.01	146.30	128.72
Feb-07	20.43	0.33	0.31	20.12	3.89	0.01	0.06	3.83	0.00	1.20	154.39	34.12	156.20	154.30
Mar-07	34.14	5.40	5.39	28.75	6.69	0.36	1.18	5.51	0.00	0.26	158.70	54.07	178.00	155.13
Apr-07	25.70	1.55	0.40	25.30	4.69	0.08	0.08	4.62	0.00	1.58	147.90	42.57	153.30	147.76

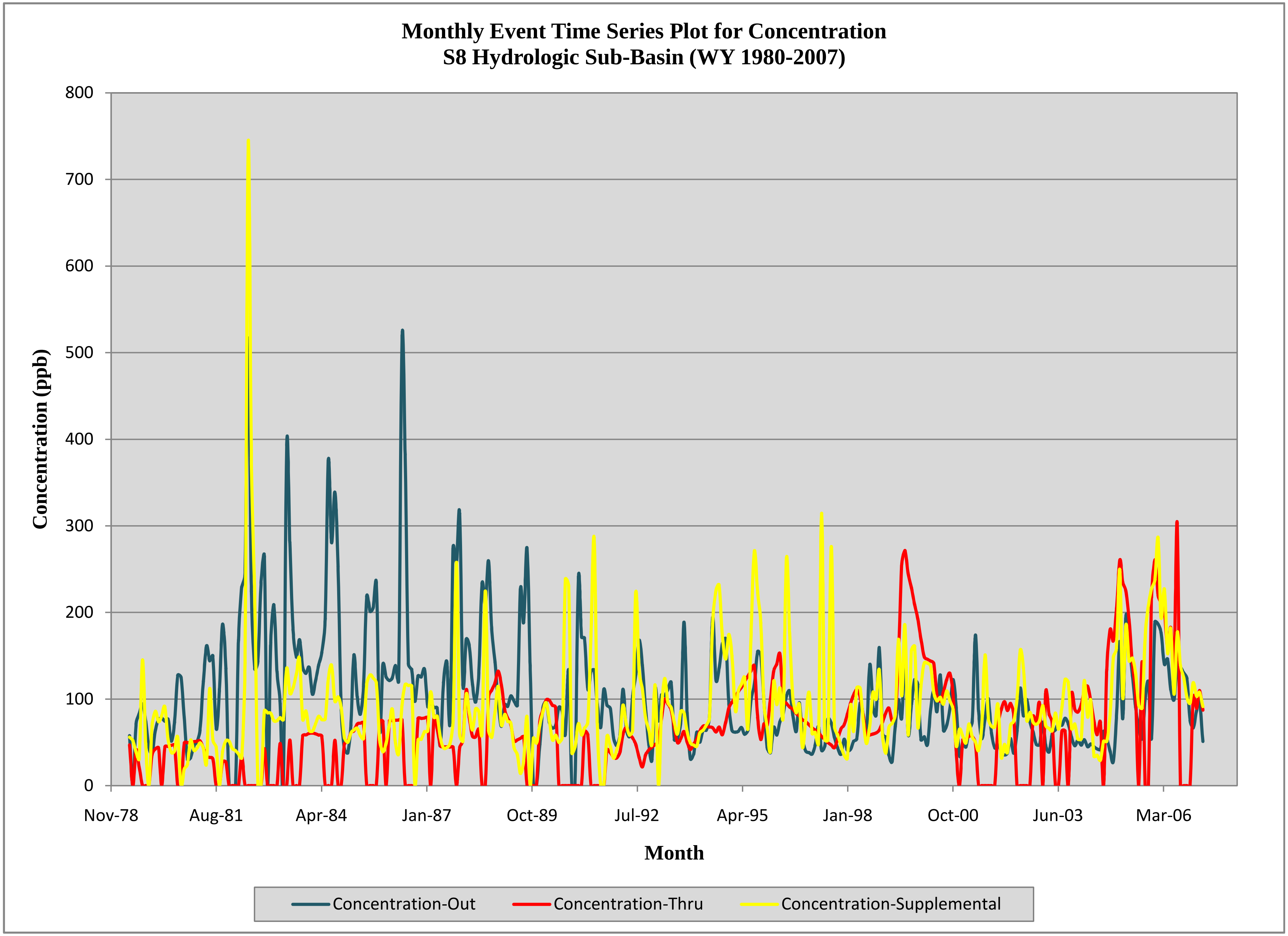
Appendix C
Monthly Dataset and Plots for Hydrologic Sub-Basin S8



Monthly Event Time Series Plot for Flow
S8 Hydrologic Sub-Basin (WY 1980-2007)
Flow (kac-ft)
250
200
150
100
50
0
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Flow-Out
Flow-Thru
Flow-Supplemental



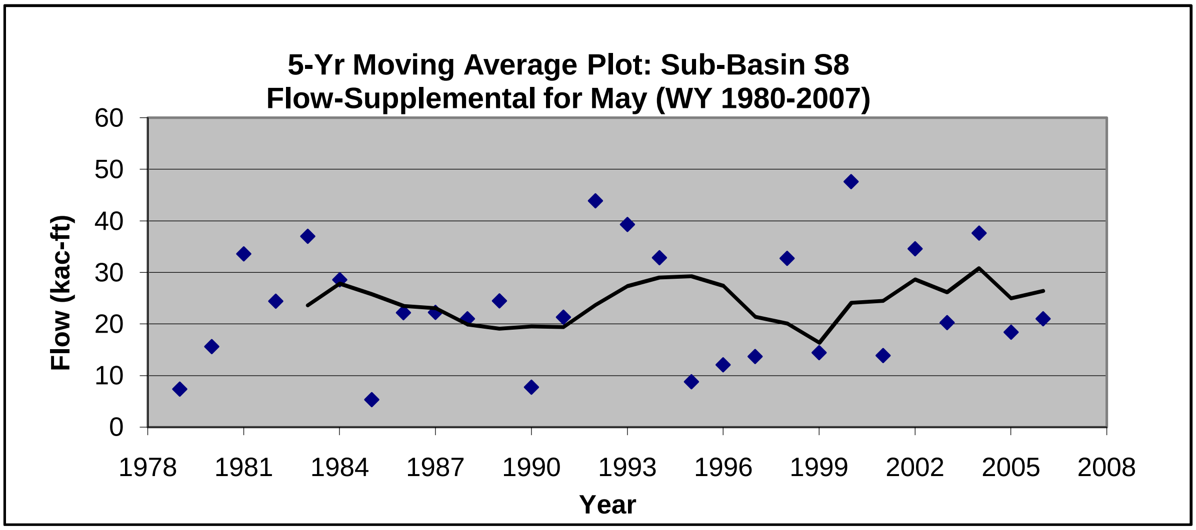
Monthly Event Time Series Plot for Load
S8 Hydrologic Sub-Basin (WY 1980-2007)
120
100
80
60
40
20
0
Load (mt)
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Load-Out
Load-Thru
Load-Supplemental

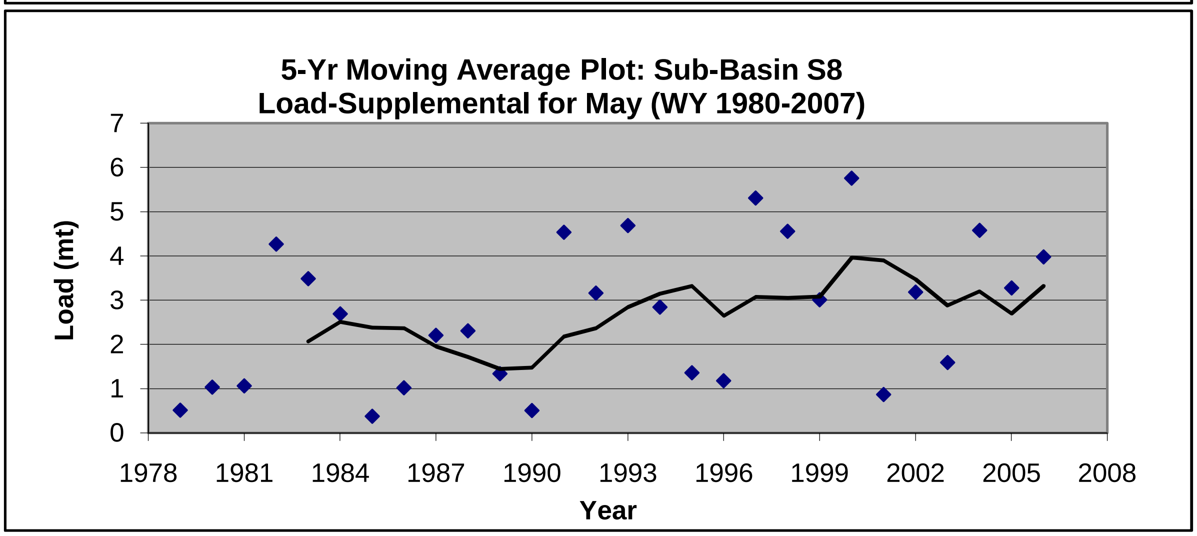


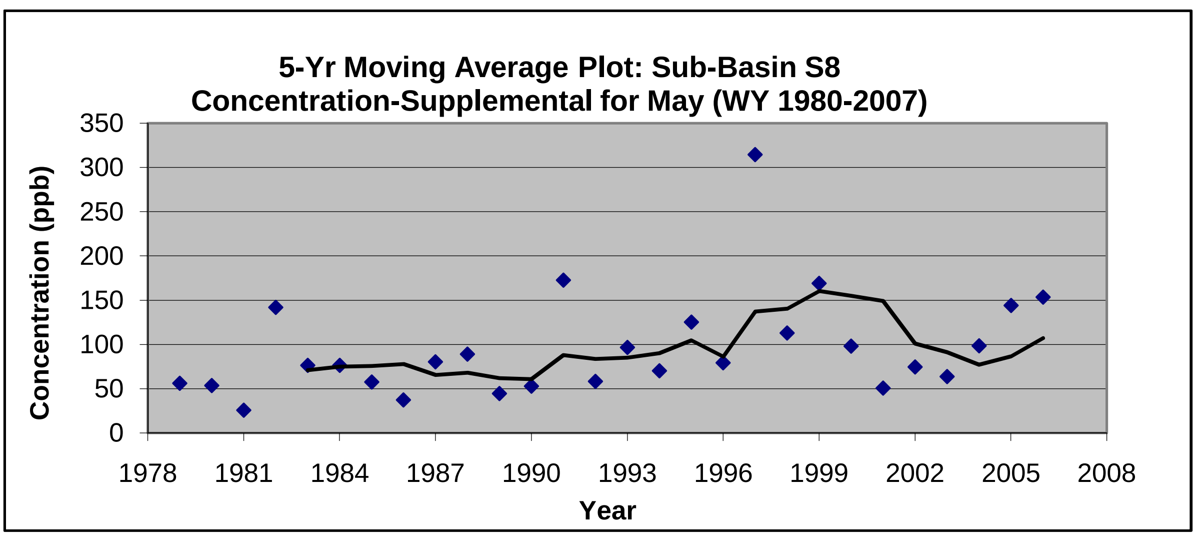
Monthly Event Time Series Plot for Concentration
S8 Hydrologic Sub-Basin (WY 1980-2007)
Concentration (ppb)
800
700
600
500
400
300
200
100
0
Nov-78
Aug-81
Apr-84
Jan-87
Oct-89
Jul-92
Apr-95
Jan-98
Oct-00
Jun-03
Mar-06
Month
Concentration-Out
Concentration-Thru
Concentration-Supplemental

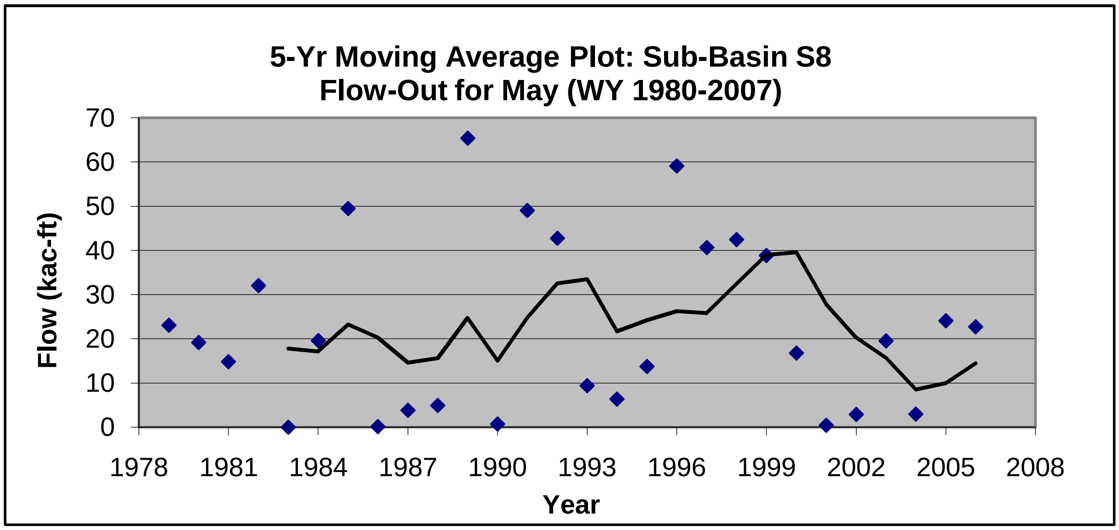
Hydrologic Sub-Basin S8 (May)

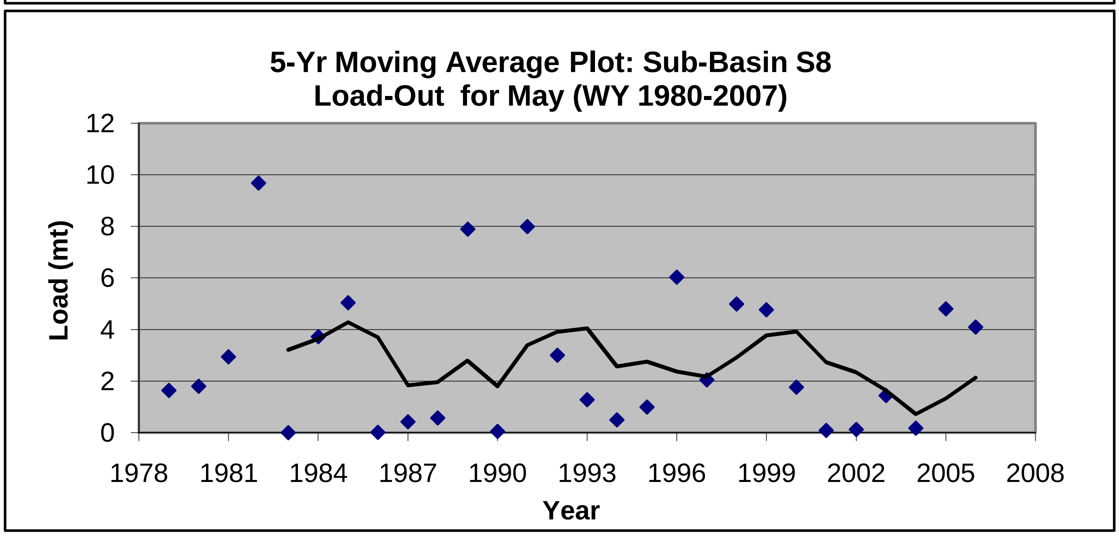
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	23.65	22.30	2.67	2.78	95.34	100.13
Standard Error	2.19	3.66	0.30	0.52	11.07	9.37
Median	21.75	19.31	2.77	1.79	77.68	89.90
Standard Deviation	11.60	19.38	1.61	2.74	58.56	48.70
Sample Variance	134.57	375.49	2.60	7.51	3429.27	2372.04
Kurtosis	-0.77	-0.60	-1.18	0.17	6.28	1.48
Skewness	0.31	0.66	0.23	0.99	2.12	1.16
Range	42.34	65.42	5.38	9.68	288.78	207.61
Minimum	5.30	0.00	0.38	0.00	25.63	37.46
Maximum	47.63	65.42	5.76	9.68	314.42	245.07
Sum	662.26	624.41	74.66	77.96	2669.61	2703.42
Count	28	28	28	28	28	27
Quartile-1	14.29	4.62	1.15	0.48	57.07	59.79
Quartile-2	21.75	19.31	2.77	1.79	77.68	87.68
Quartile-3	33.07	39.31	4.05	4.78	115.81	123.89
Confidence intervals	4.30	7.18	0.60	1.01	21.69	19.27

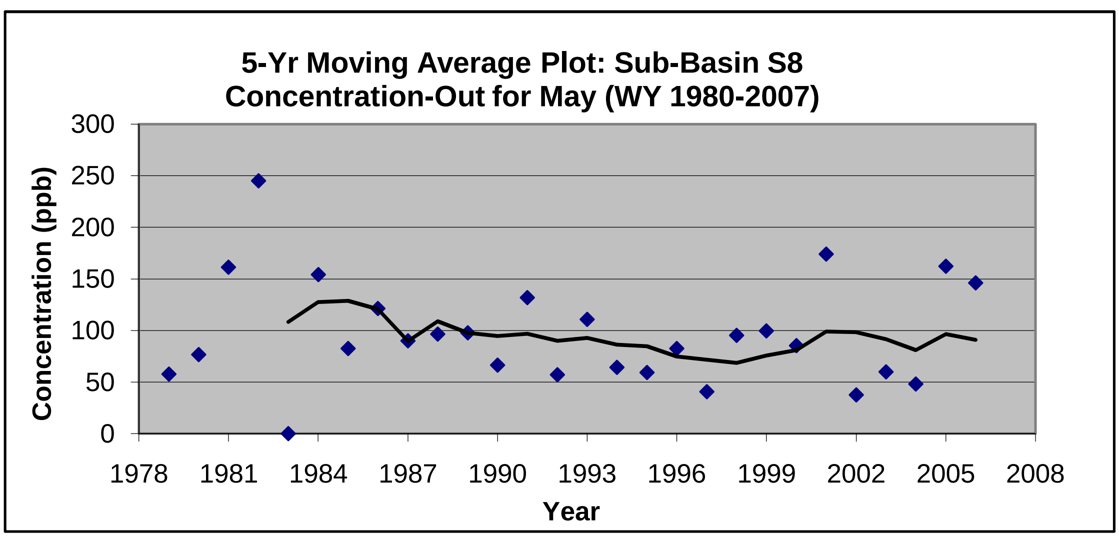

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for May (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for May (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
7
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for May (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

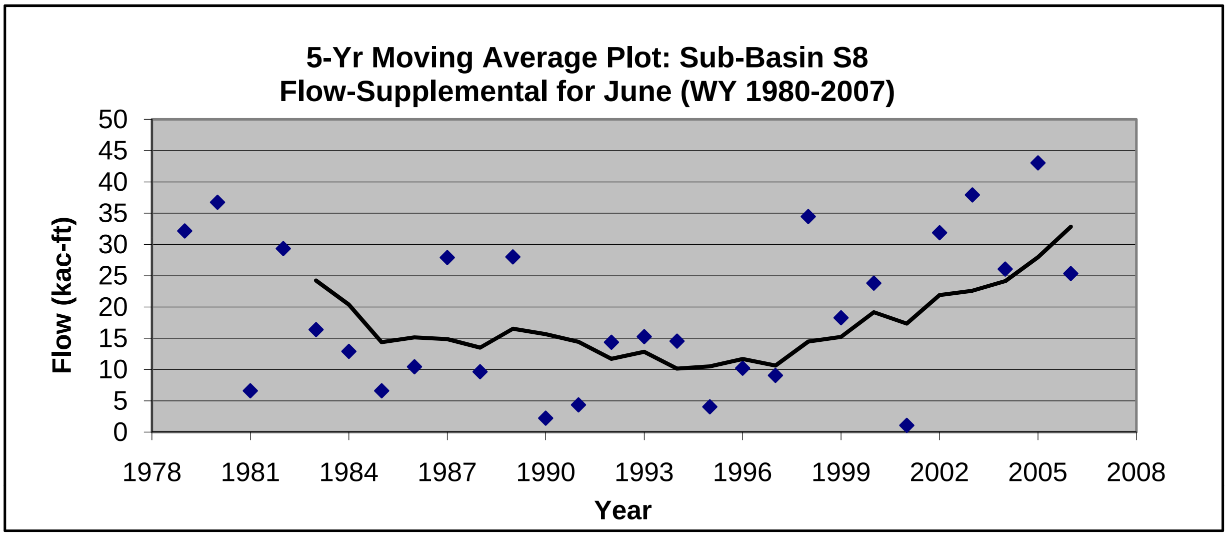

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for May (WY 1980-2007)
Flow (kac-ft)
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

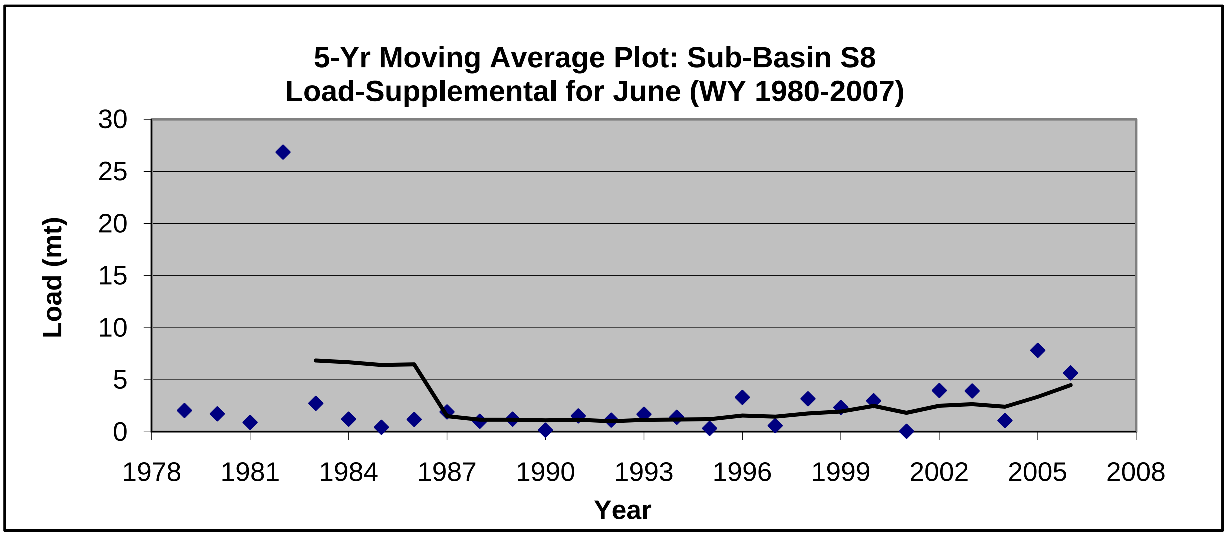

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for May (WY 1980-2007)
Load (mt)
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

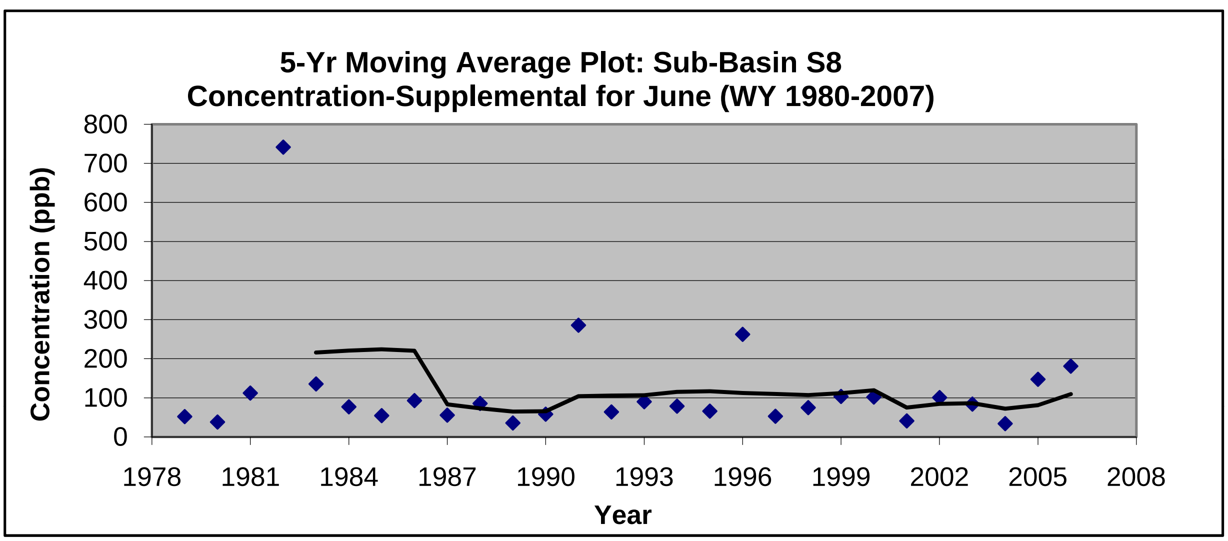

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for May (WY 1980-2007)
Concentration (ppb)
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

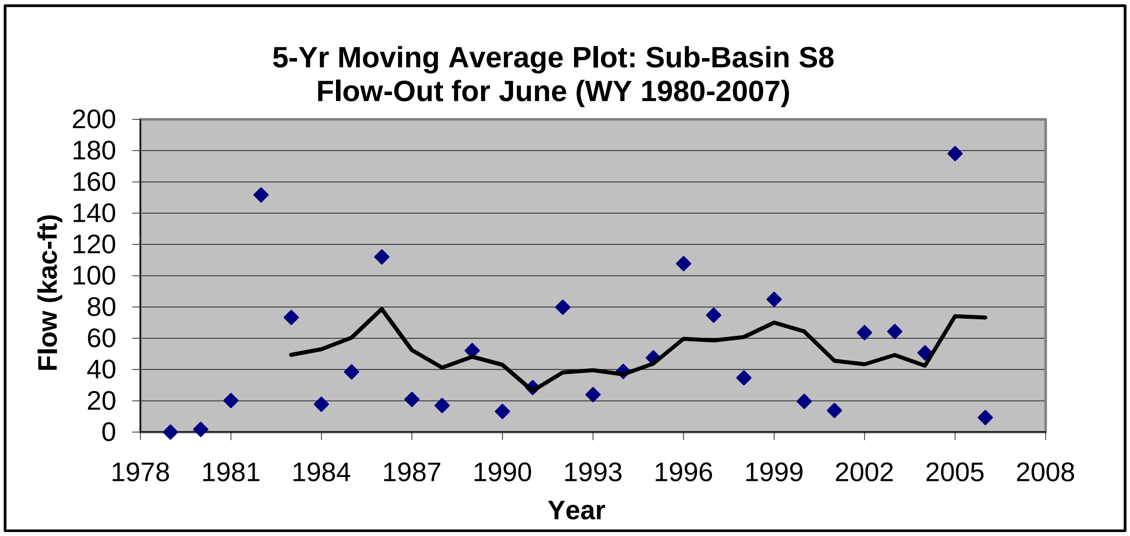
Hydrologic Sub-Basin S8 (June)

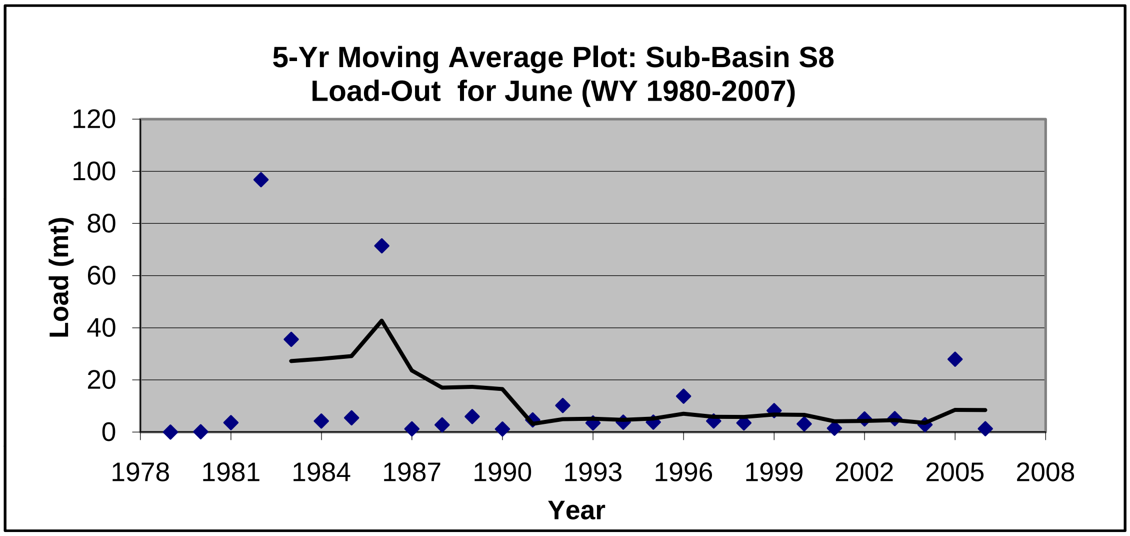
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	19.02	51.35	2.95	11.80	118.11	137.12
Standard Error	2.30	8.38	0.94	4.18	25.84	24.70
Median	15.81	38.61	1.61	4.00	81.12	103.50
Standard Deviation	12.16	44.35	4.99	22.14	136.73	128.34
Sample Variance	147.82	1966.68	24.91	490.32	18695.63	16471.57
Kurtosis	-1.12	1.56	21.03	9.20	16.86	4.88
Skewness	0.29	1.32	4.38	3.04	3.85	2.38
Range	41.94	178.07	26.79	96.77	707.80	471.84
Minimum	1.07	0.00	0.05	0.00	33.95	45.08
Maximum	43.01	178.07	26.85	96.77	741.75	516.92
Sum	532.43	1437.76	82.53	330.41	3307.02	3702.20
Count	28	28	28	28	28	27
Quartile-1	9.49	19.15	1.07	2.79	55.34	64.47
Quartile-2	15.81	38.61	1.61	4.00	81.12	98.09
Quartile-3	28.33	73.62	3.04	6.53	105.82	128.38
Confidence intervals	4.50	16.43	1.85	8.20	50.65	50.77

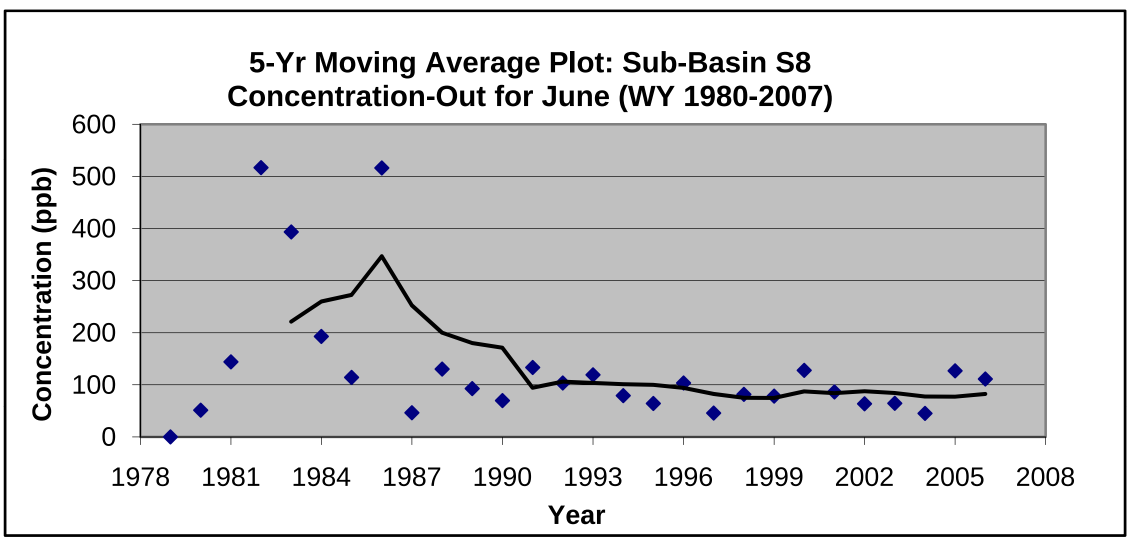

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for June (WY 1980-2007)
Flow (kac-ft)
50
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for June (WY 1980-2007)
Load (mt)
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for June (WY 1980-2007)
Concentration (ppb)
800
700
600
500
400
300
200
100
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

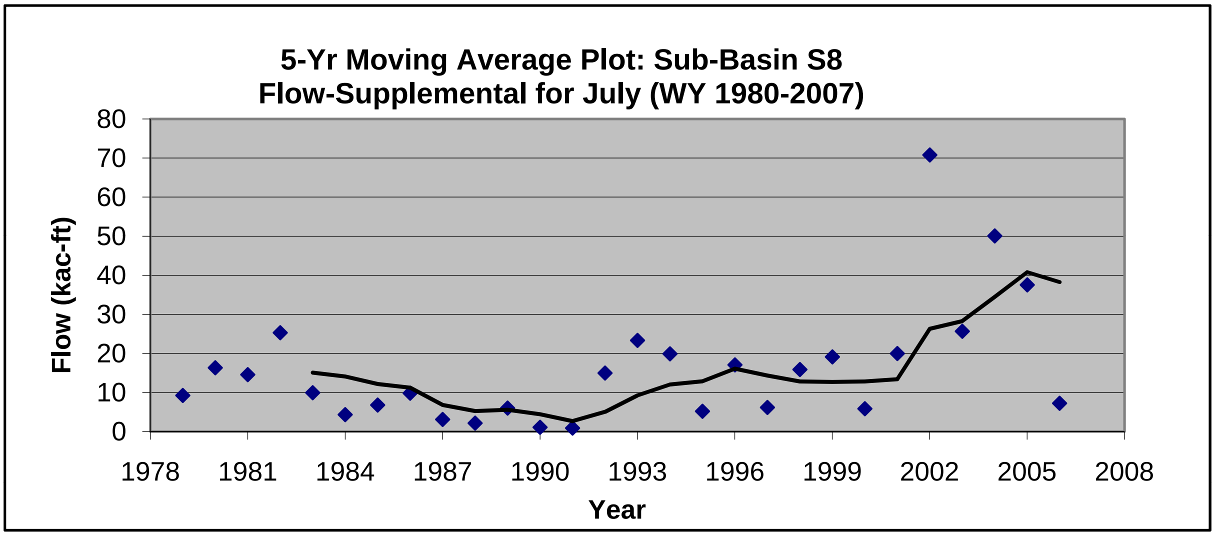

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for June (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
140
160
180
200
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for June (WY 1980-2007)
Load (mt)
0
20
40
60
80
100
120
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for June (WY 1980-2007)
Concentration (ppb)
0
100
200
300
400
500
600
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S8 (July)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	16.02	54.34	2.42	10.58	106.91	141.12
Standard Error	2.94	6.72	0.63	2.20	14.58	17.60
Median	12.27	48.73	1.06	4.97	83.61	104.49
Standard Deviation	15.57	35.53	3.32	11.65	77.17	93.13
Sample Variance	242.36	1262.68	11.04	135.74	5955.86	8673.37
Kurtosis	5.16	-1.01	5.89	4.09	4.47	1.23
Skewness	2.07	0.33	2.42	1.90	1.78	1.35
Range	69.86	117.63	13.61	50.36	364.87	340.09
Minimum	0.92	0.95	0.07	0.17	14.12	42.41
Maximum	70.78	118.58	13.68	50.54	378.99	382.50
Sum	448.63	1521.65	67.70	296.26	2993.55	3951.34
Count	28	28	28	28	28	28
Quartile-1	5.99	31.79	0.61	3.61	52.01	73.07
Quartile-2	12.27	48.73	1.06	4.97	83.61	104.49
Quartile-3	19.92	87.55	2.56	16.19	136.56	200.20
Confidence intervals	5.77	13.16	1.23	4.32	28.59	34.50


5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for July (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
1978
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1984
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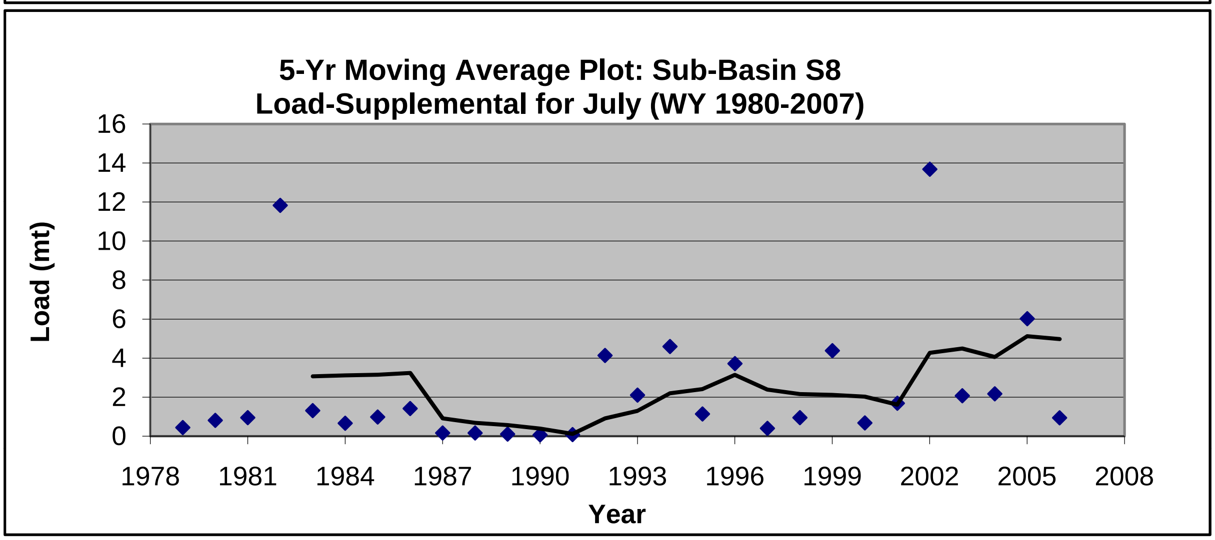
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for July (WY 1980-2007)
Load (mt)
0
2
4
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8
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1984
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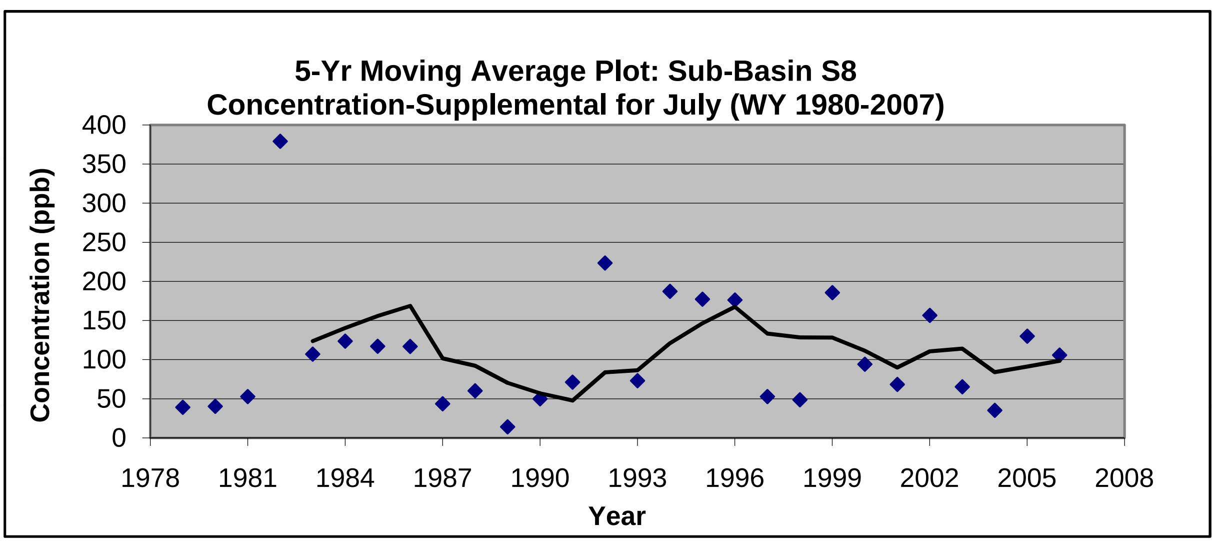
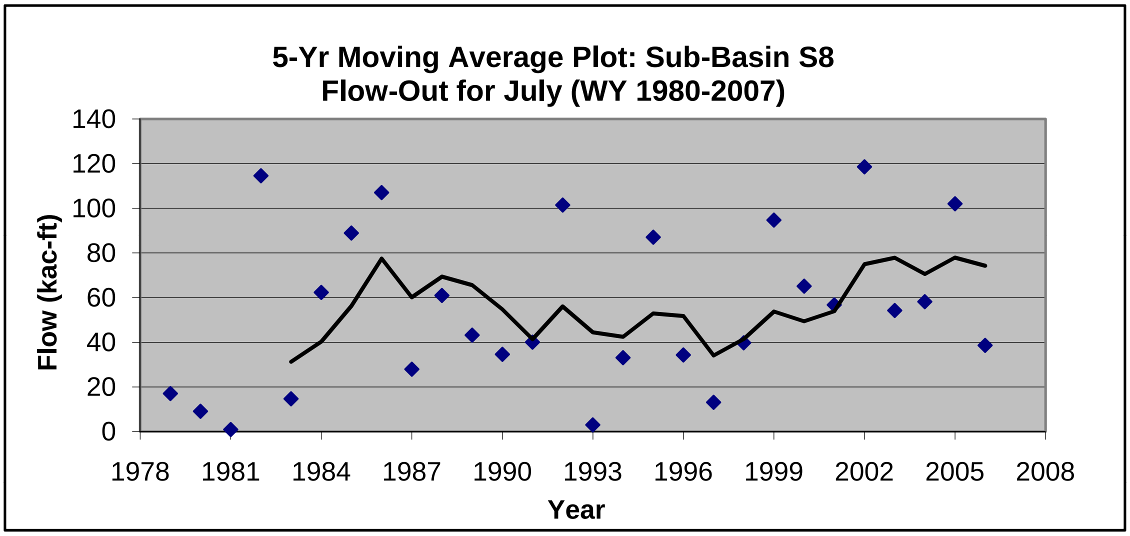
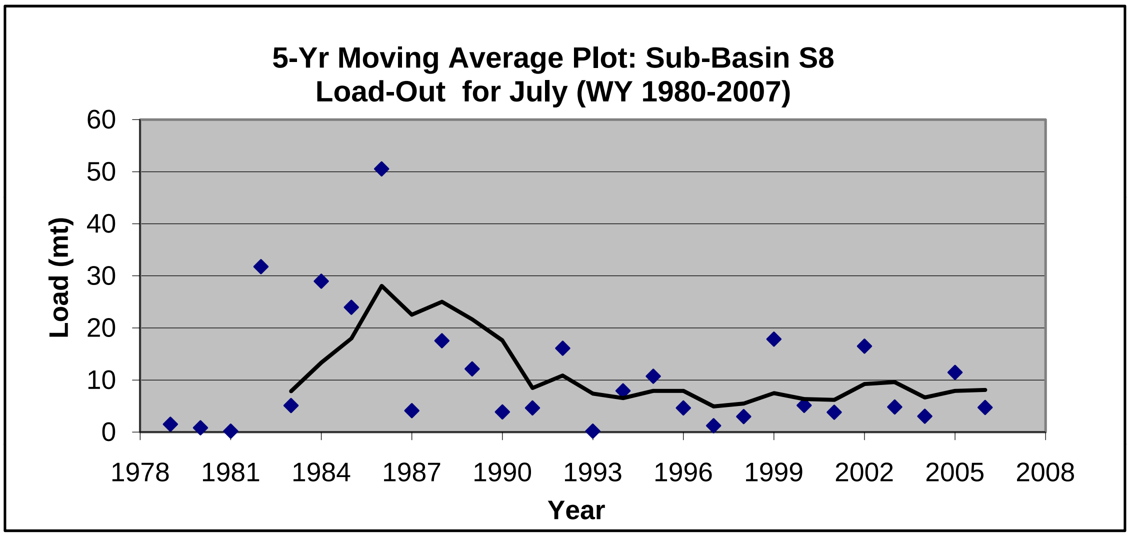
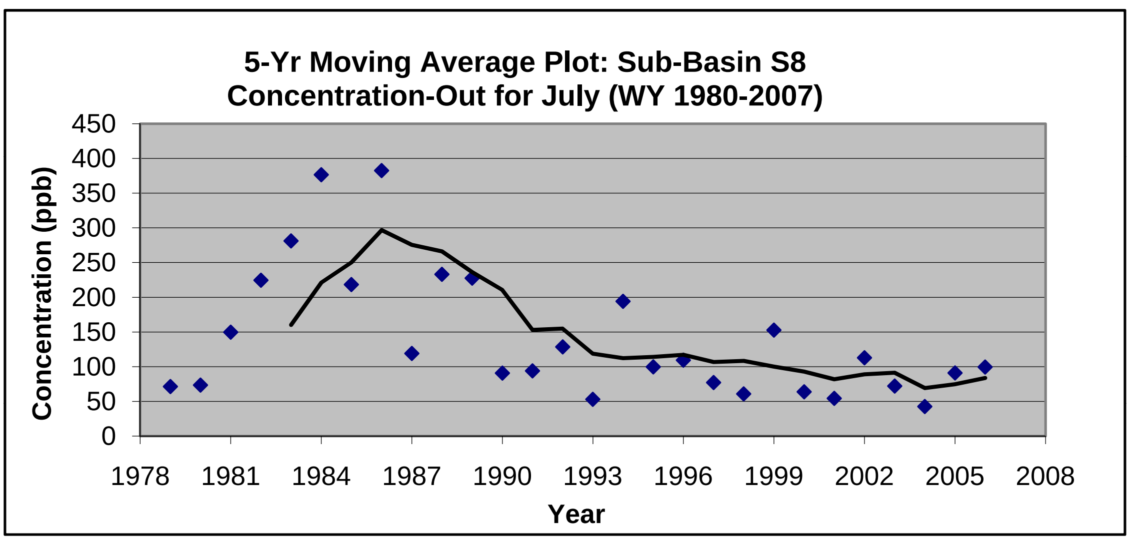
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for July (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

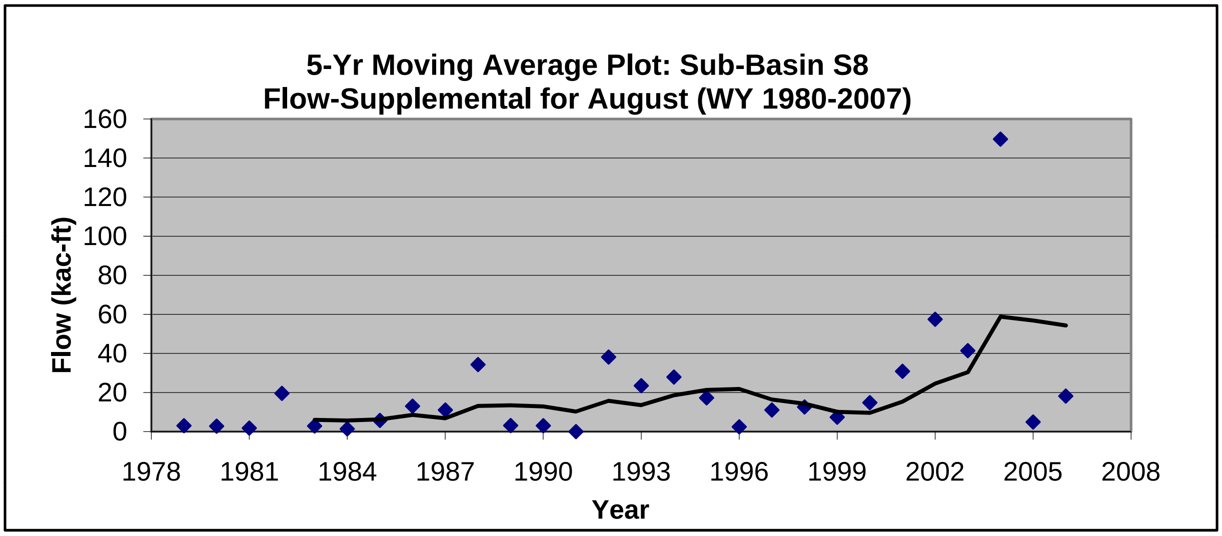

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for July (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
140
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

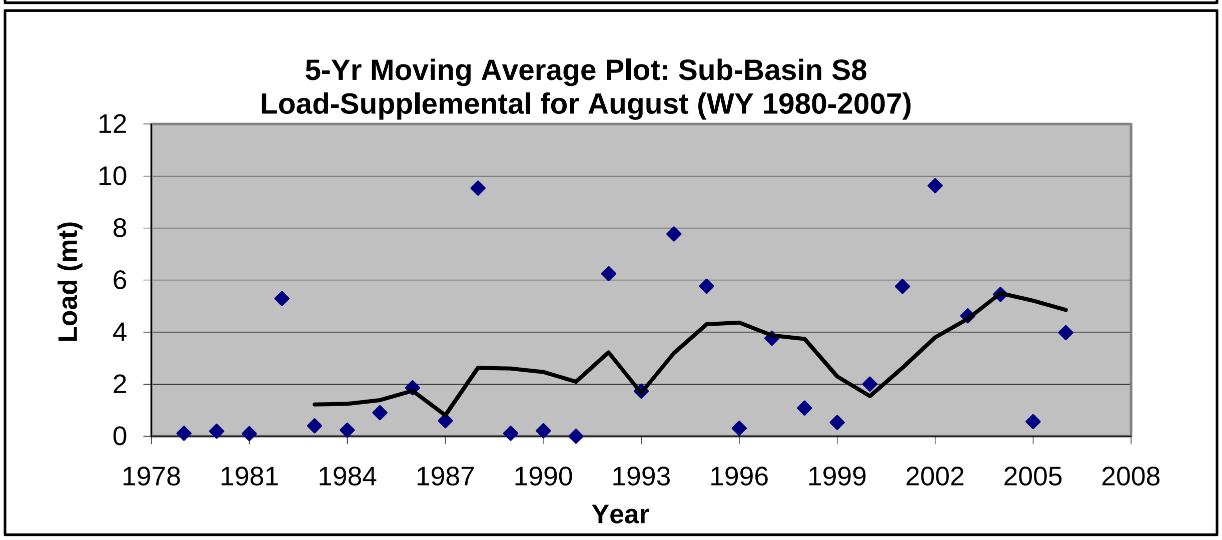

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for July (WY 1980-2007)
Load (mt)
0
10
20
30
40
50
60
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

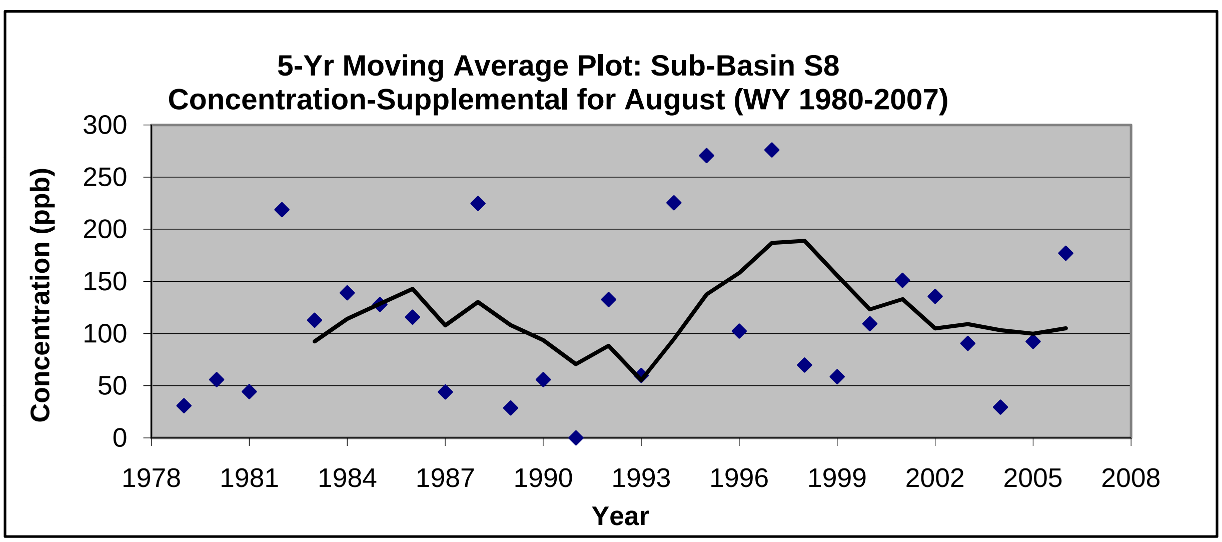

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for July (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
350
400
450
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

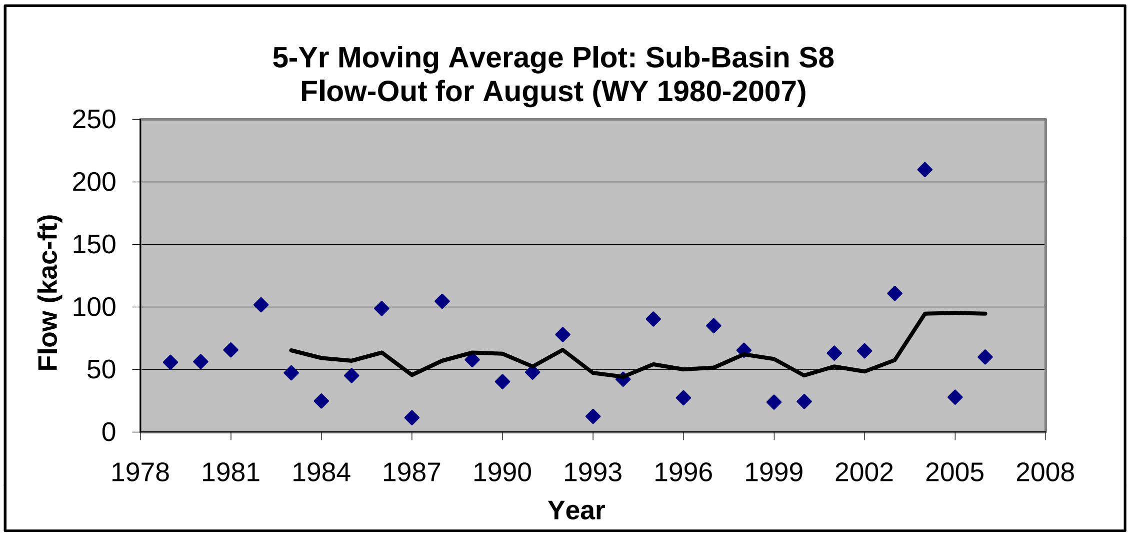
Hydrologic Sub-Basin S8 (August)

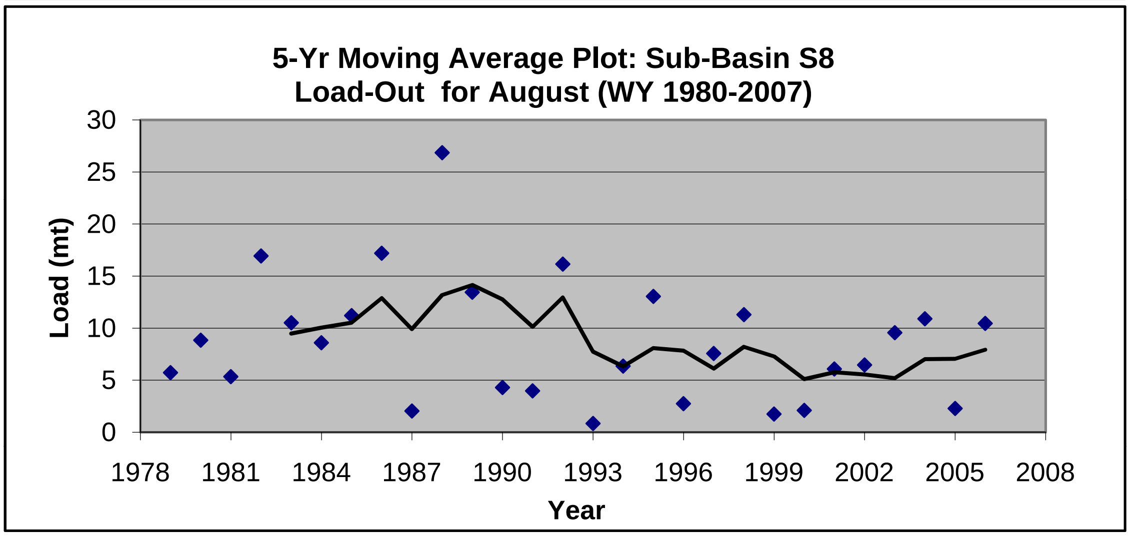
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	19.99	62.24	2.81	8.66	117.72	116.75
Standard Error	5.53	7.61	0.58	1.12	14.12	10.90
Median	11.82	57.01	1.41	8.09	109.35	101.62
Standard Deviation	29.28	40.29	3.05	5.92	73.38	57.70
Sample Variance	857.37	1623.56	9.29	35.05	5385.18	3329.59
Kurtosis	14.69	5.59	-0.29	1.81	-0.28	0.78
Skewness	3.49	1.84	0.93	1.10	0.78	1.01
Range	149.73	198.27	9.62	26.00	247.41	238.77
Minimum	0.00	11.51	0.00	0.84	28.57	42.03
Maximum	149.73	209.78	9.62	26.85	275.99	280.81
Sum	559.59	1742.79	78.76	242.49	3178.36	3269.06
Count	28	28	28	28	27	28
Quartile-1	3.04	37.18	0.29	4.21	55.85	69.78
Quartile-2	11.82	57.01	1.41	8.09	105.87	101.62
Quartile-3	24.60	79.63	5.33	11.23	142.00	141.67
Confidence intervals	10.85	14.92	1.13	2.19	29.03	21.37

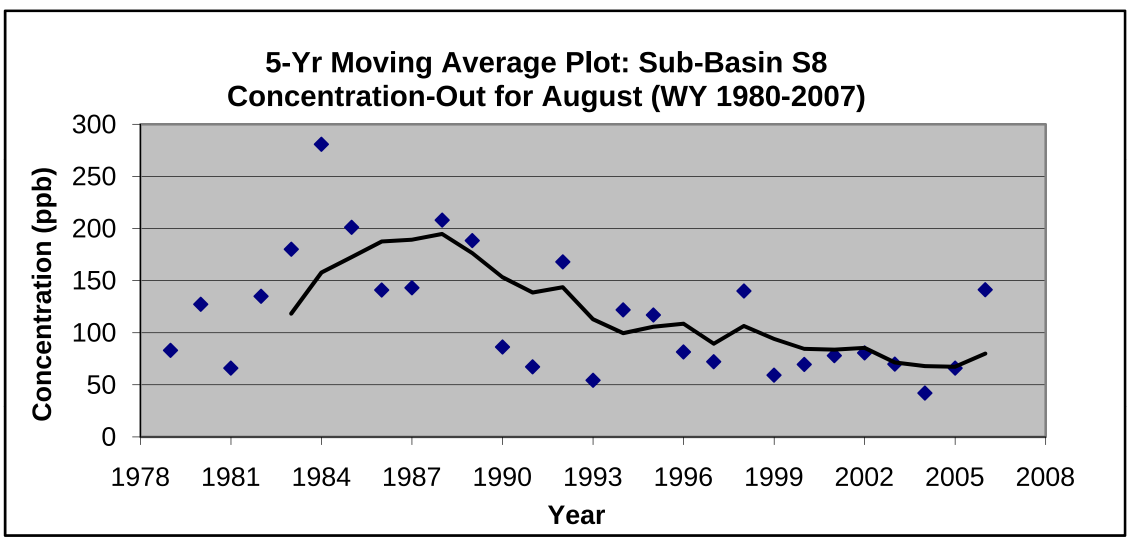

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for August (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
140
160
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for August (WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for August (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

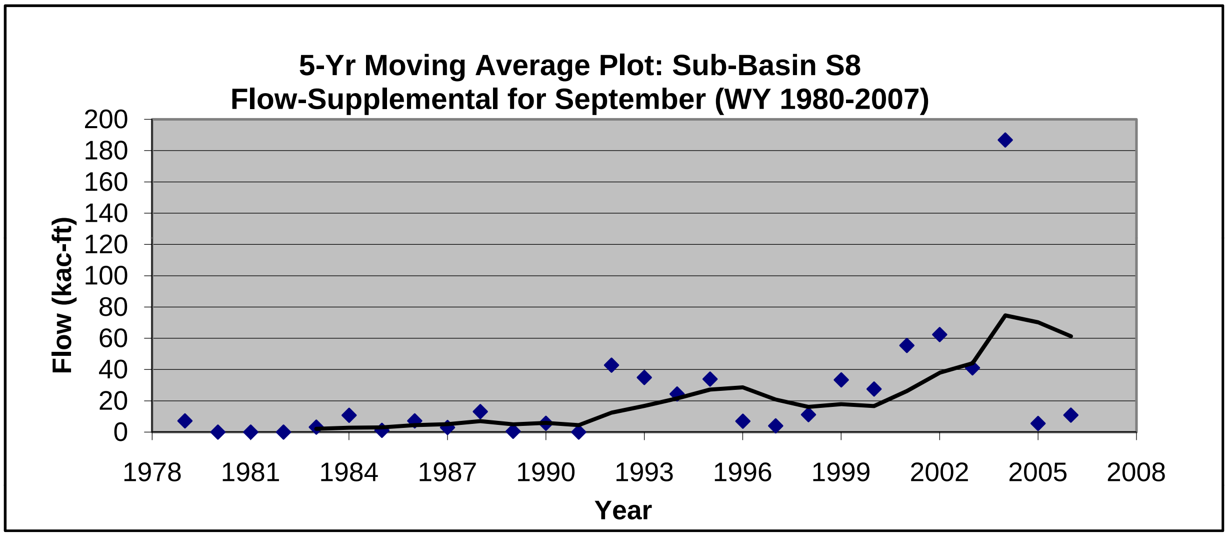

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for August (WY 1980-2007)
Flow (kac-ft)
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

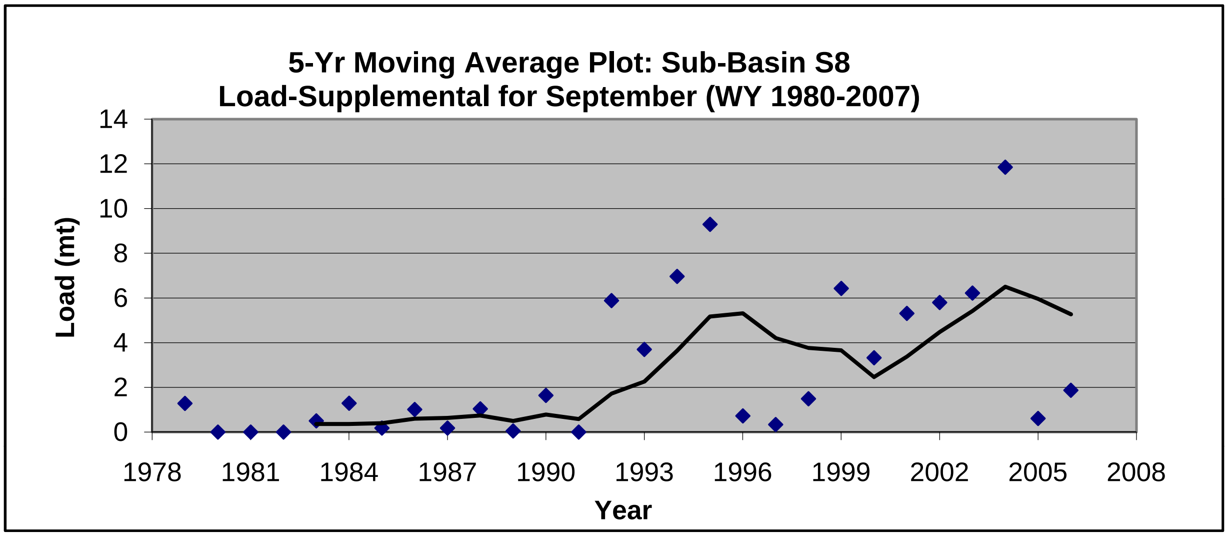

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for August (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

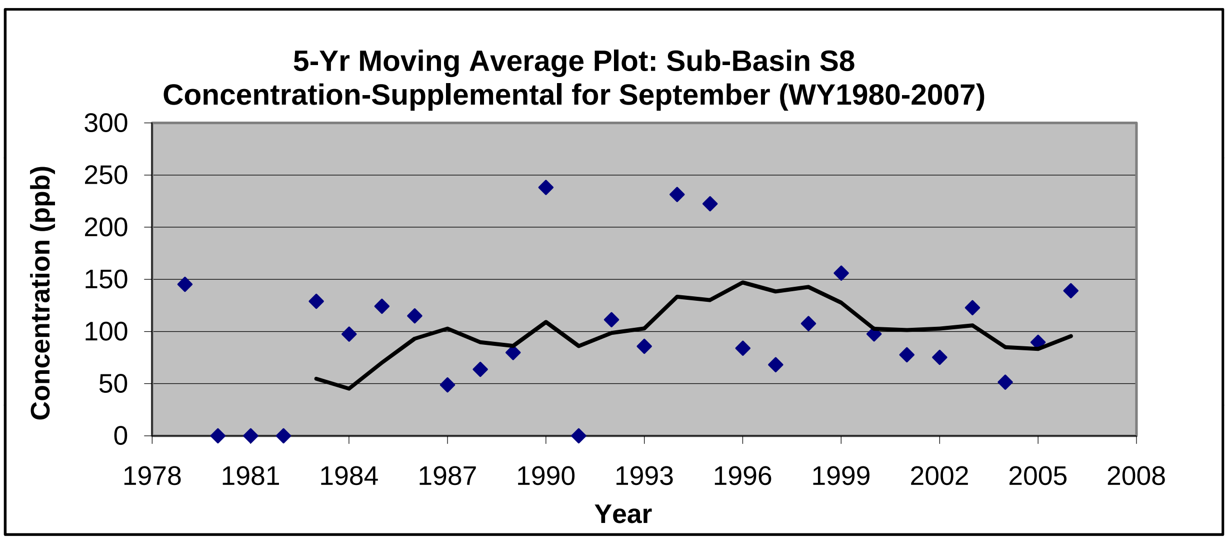

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for August (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

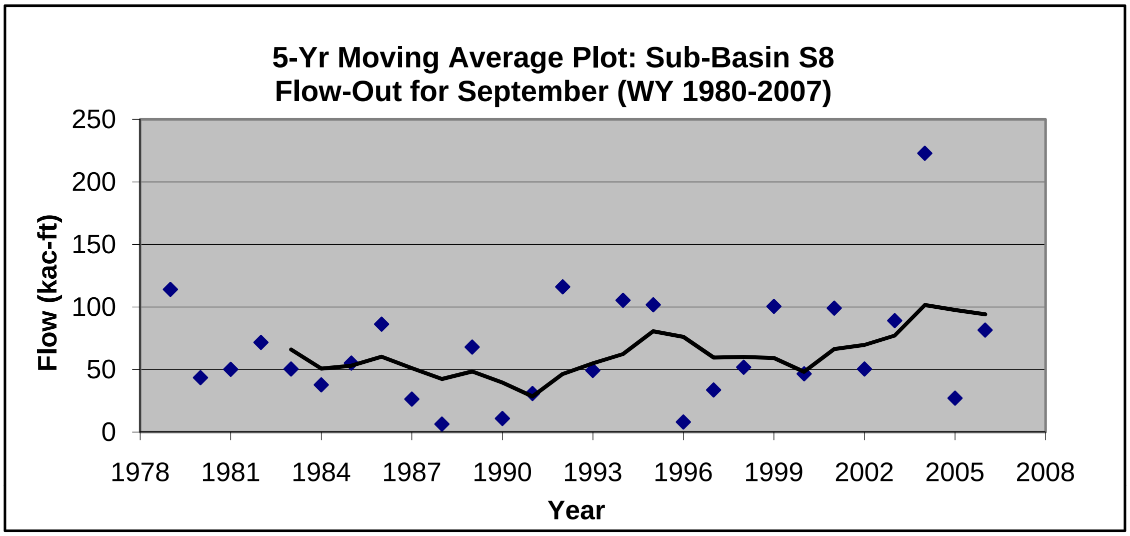
Hydrologic Sub-Basin S8 (September)

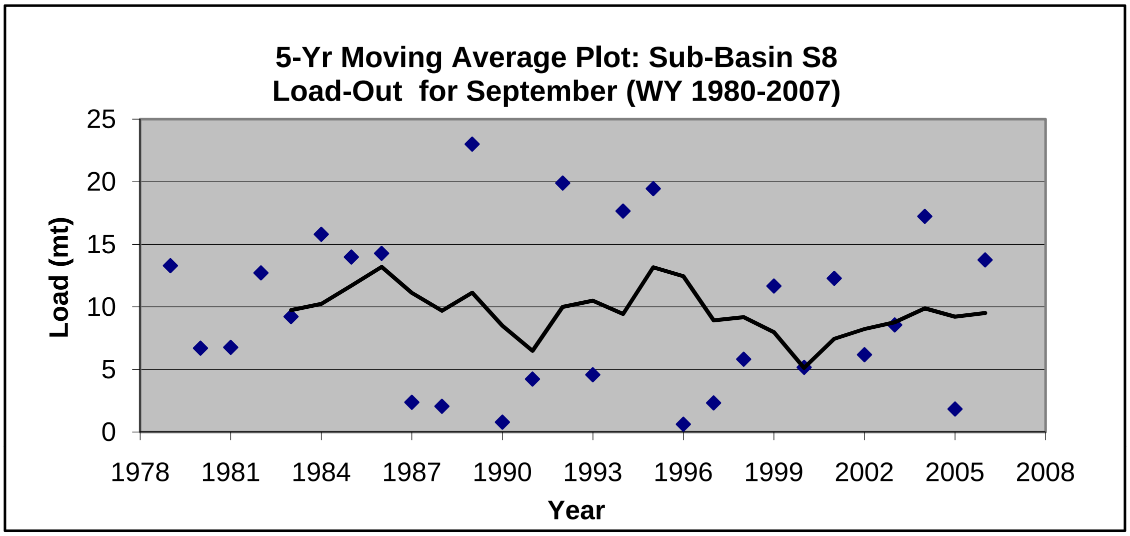
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	22.58	65.49	2.75	9.72	115.10	125.25
Standard Error	6.97	8.46	0.61	1.23	10.80	13.12
Median	8.91	51.12	1.28	8.89	102.67	104.84
Standard Deviation	36.86	44.74	3.22	6.48	52.91	69.44
Sample Variance	1358.88	2001.85	10.37	42.04	2799.81	4821.77
Kurtosis	15.01	4.40	0.97	-1.02	0.93	2.74
Skewness	3.53	1.58	1.29	0.30	1.20	1.67
Range	186.79	216.40	11.85	22.38	189.40	283.68
Minimum	0.00	6.40	0.00	0.62	48.83	55.10
Maximum	186.79	222.80	11.85	23.01	238.23	338.78
Sum	632.23	1833.74	76.94	272.22	2762.49	3506.96
Count	28	28	28	28	24	28
Quartile-1	3.10	36.75	0.29	4.49	67.05	77.17
Quartile-2	8.91	51.12	1.28	8.89	93.60	104.84
Quartile-3	33.48	91.59	5.43	14.05	125.42	140.16
Confidence intervals	13.65	16.57	1.19	2.40	48.83	25.72

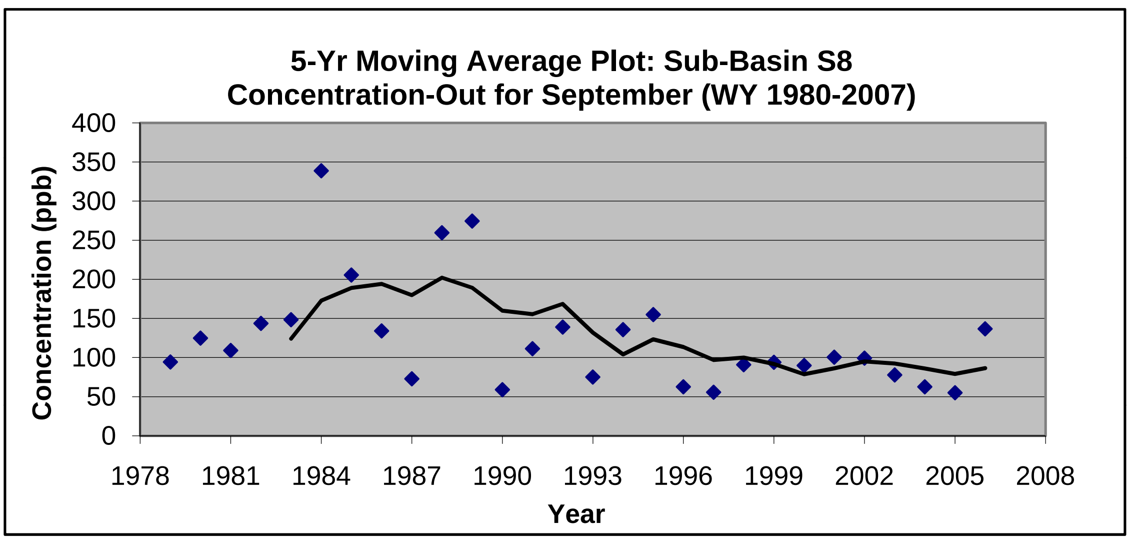

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for September (WY 1980-2007)
Flow (kac-ft)
200
180
160
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for September (WY 1980-2007)
Load (mt)
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for September (WY1980-2007)
Concentration (ppb)
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

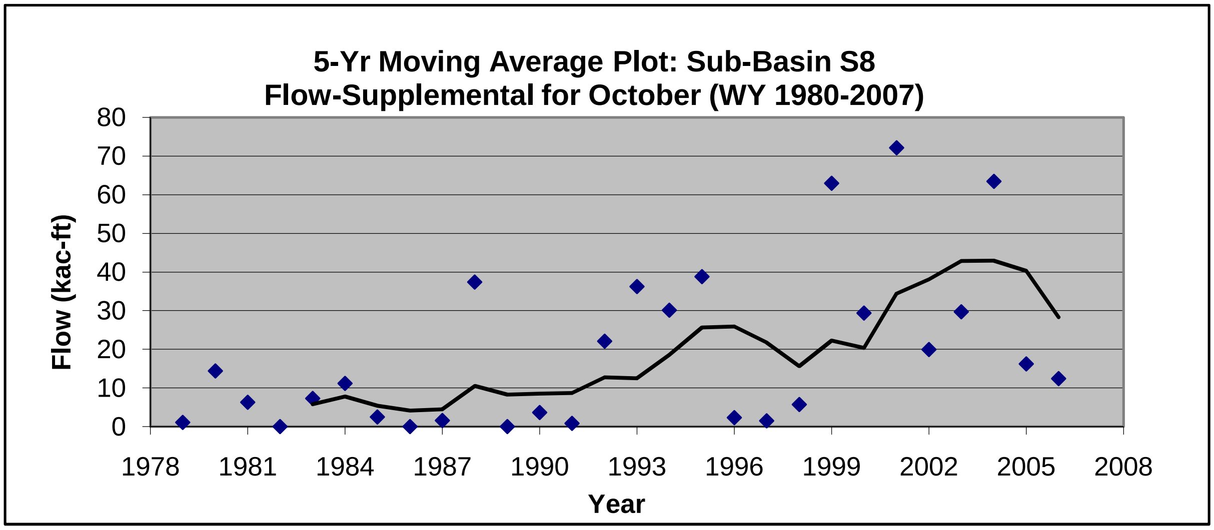

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for September (WY 1980-2007)
Flow (kac-ft)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for September (WY 1980-2007)
Load (mt)
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for September (WY 1980-2007)
Concentration (ppb)
400
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S8 (October)

	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	18.88	40.56	2.42	6.73	101.63	132.07
Standard Error	3.96	7.03	0.57	1.27	10.50	12.00
Median	11.79	29.77	1.36	4.21	87.76	122.42
Standard Deviation	20.95	37.20	3.04	6.73	52.52	63.49
Sample Variance	438.83	1383.48	9.22	45.32	2757.93	4030.63
Kurtosis	0.76	2.03	3.70	0.48	0.05	-0.33
Skewness	1.24	1.35	1.85	1.10	0.76	0.74
Range	72.11	153.86	12.50	23.25	211.22	231.72
Minimum	0.00	0.10	0.00	0.02	19.41	43.77
Maximum	72.11	153.97	12.50	23.28	230.62	275.49
Sum	528.77	1135.63	67.68	188.52	2540.73	3697.85
Count	28	28	28	28	25	28
Quartile-1	2.11	10.01	0.24	1.12	54.57	80.83
Quartile-2	11.79	29.77	1.36	4.21	84.32	122.42
Quartile-3	29.81	66.67	3.55	10.30	120.45	171.58
Confidence intervals	7.76	13.78	1.12	2.49	21.68	23.52


5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for October (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
1978
1981
1984
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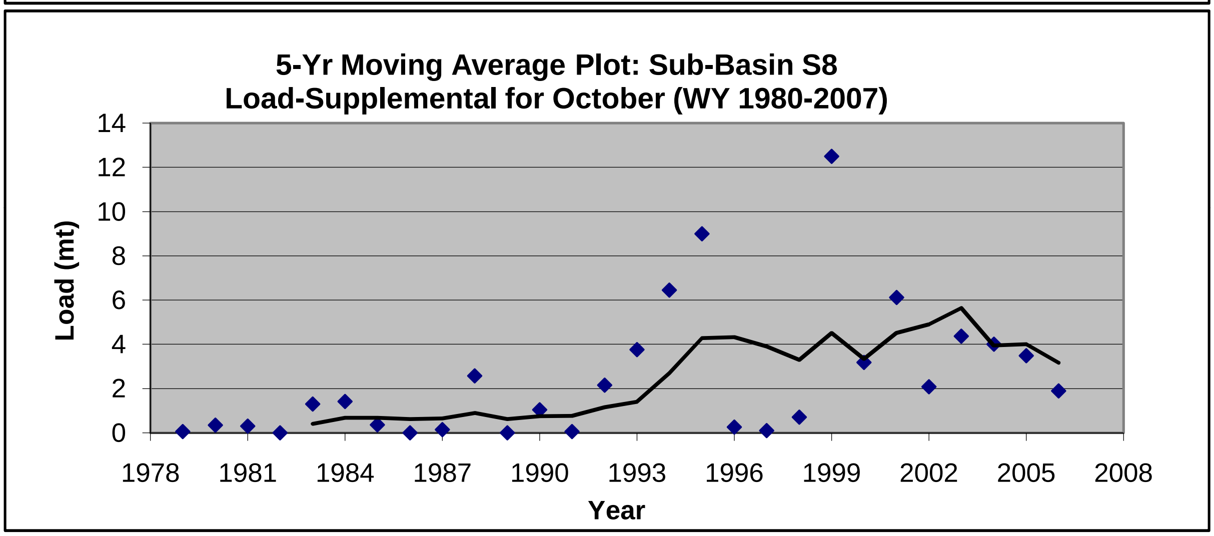
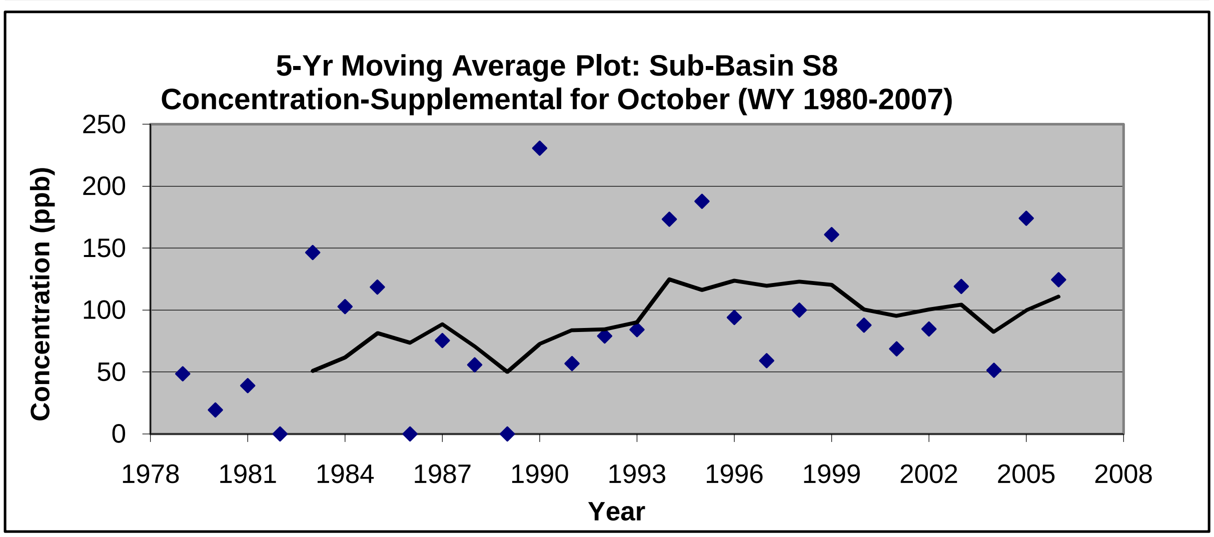
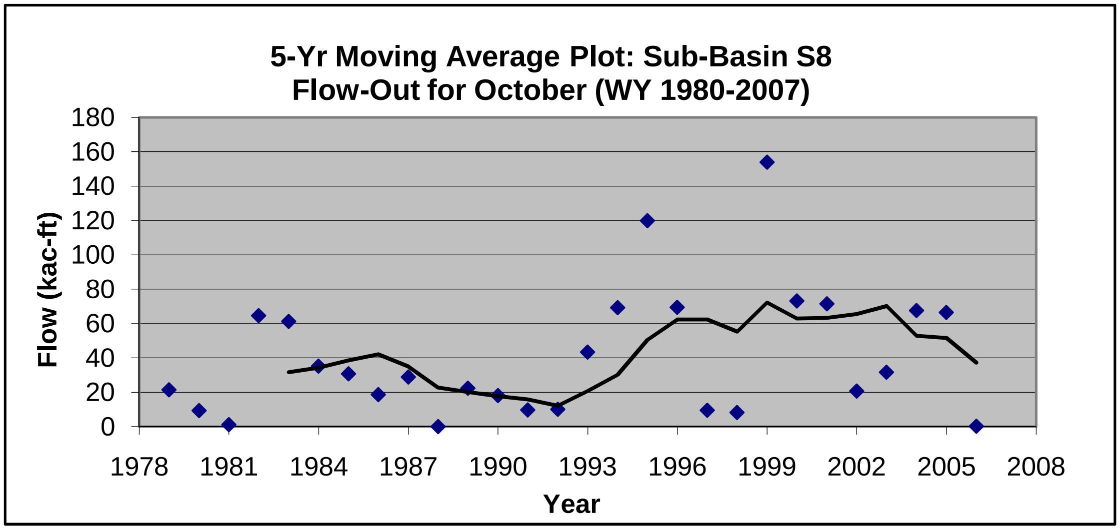
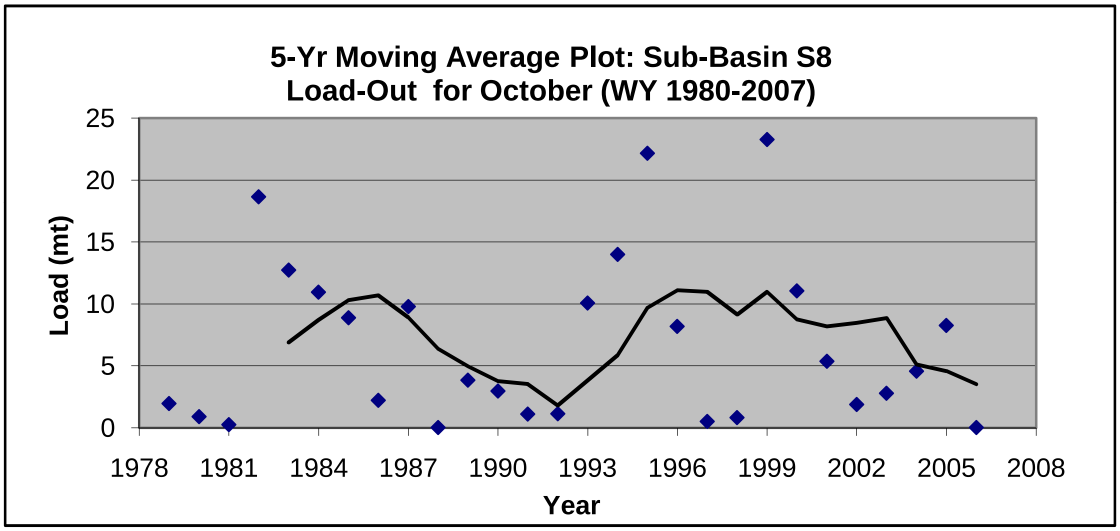
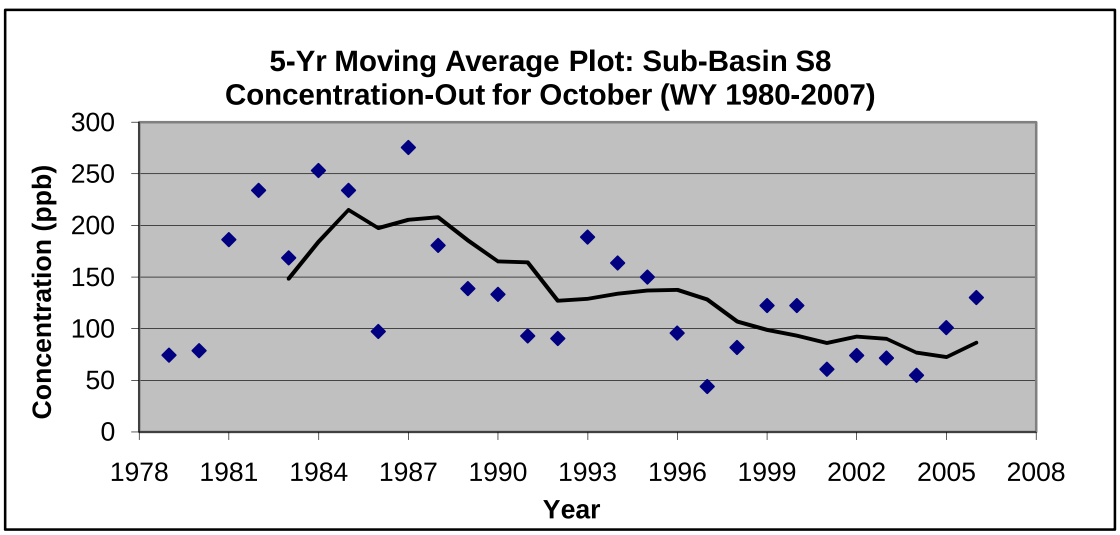
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for October (WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
14
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for October (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

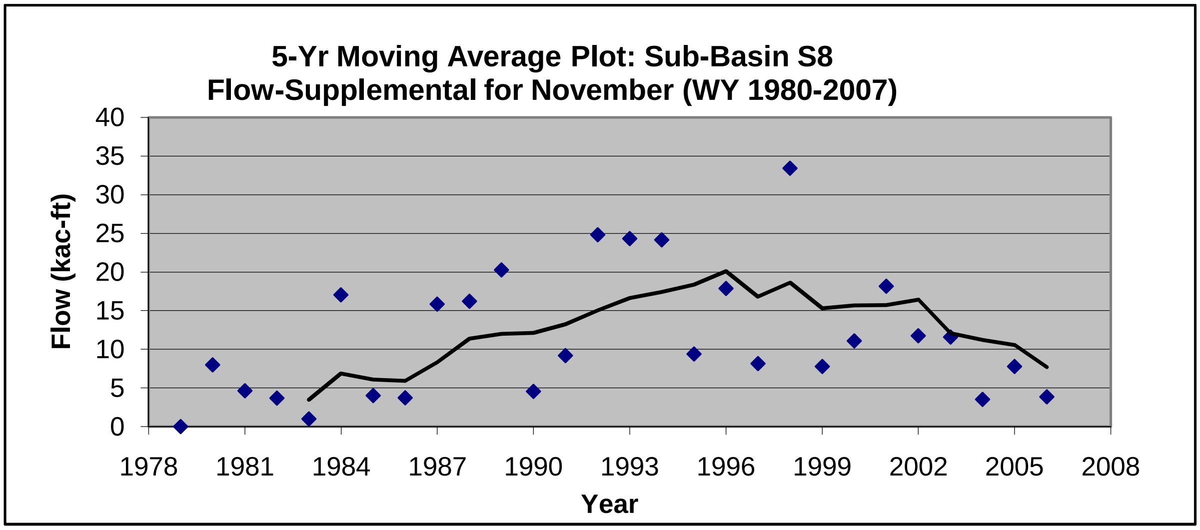

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for October (WY 1980-2007)
Flow (kac-ft)
180
160
140
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

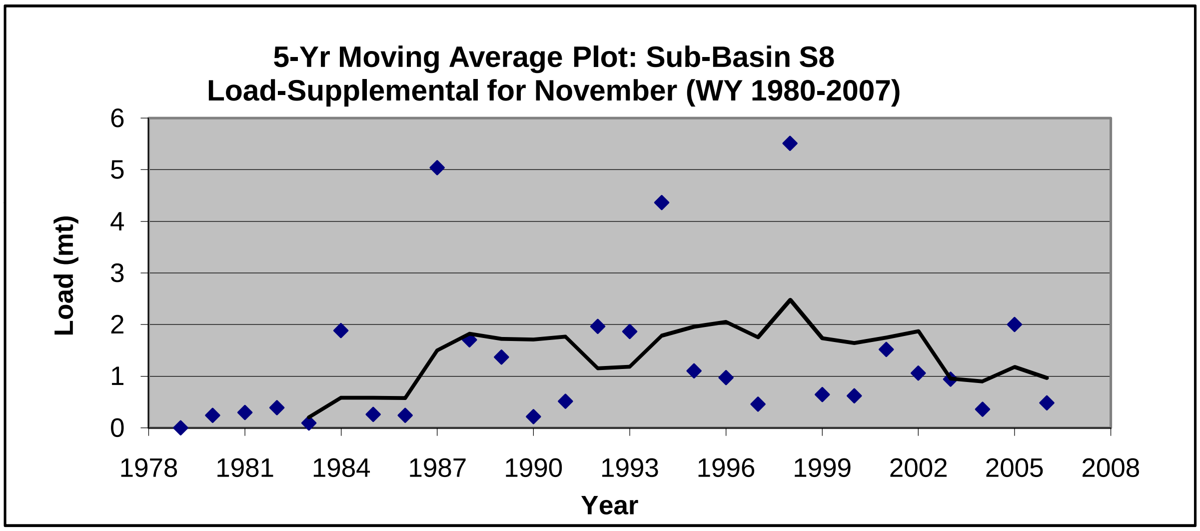

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for October (WY 1980-2007)
Load (mt)
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

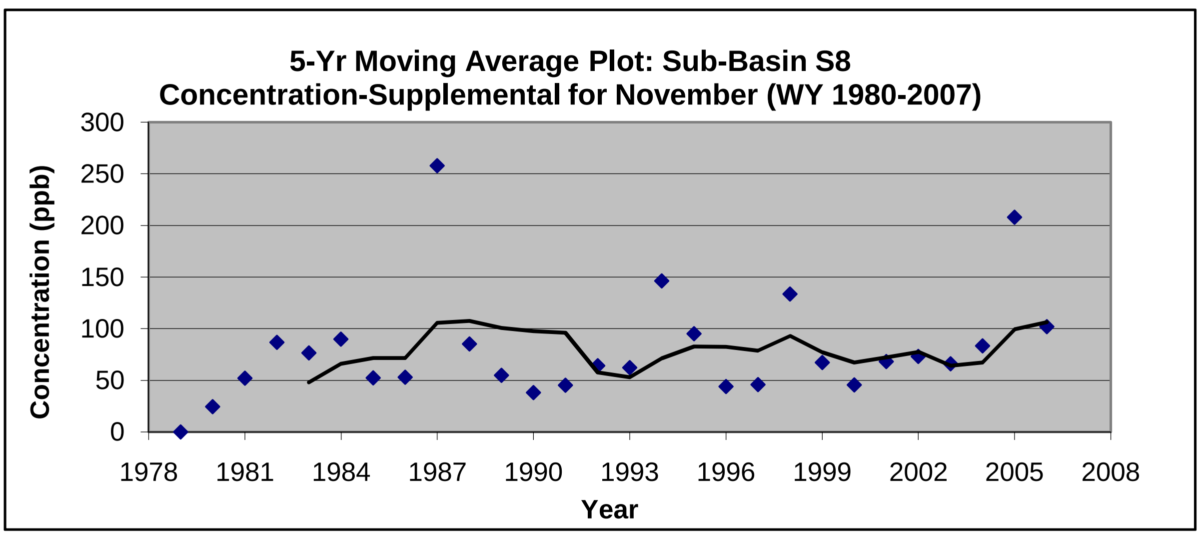

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for October (WY 1980-2007)
Concentration (ppb)
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

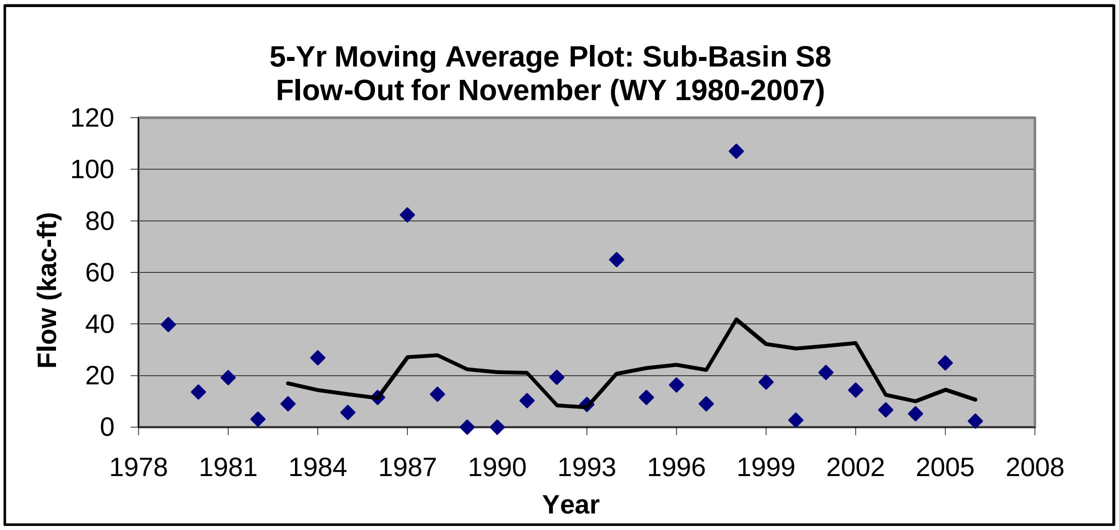
Hydrologic Sub-Basin S8 (November)

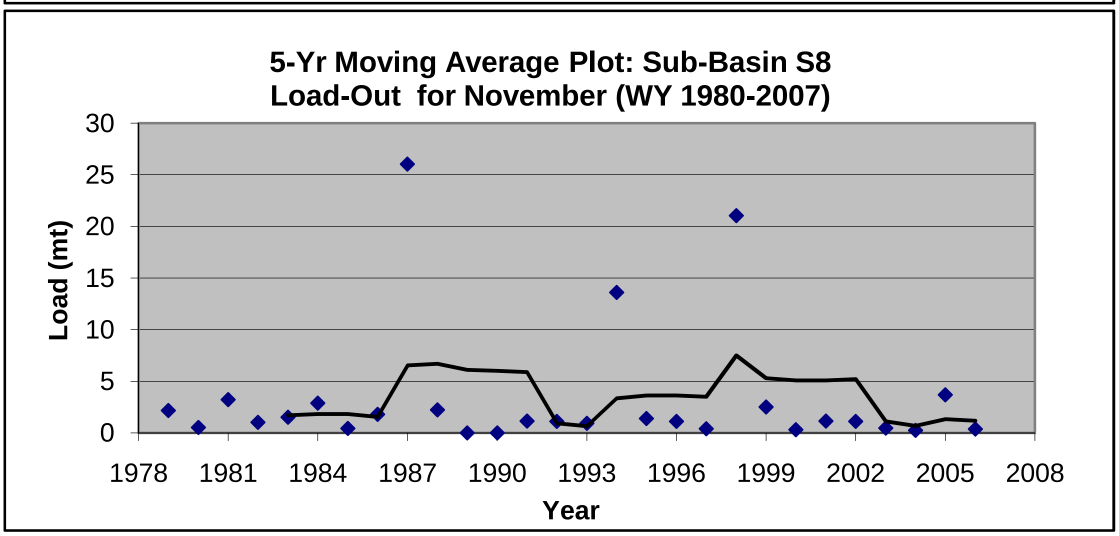
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	11.63	20.21	1.29	3.30	82.21	102.77
Standard Error	1.59	4.74	0.27	1.19	9.97	12.08
Median	9.29	12.12	0.79	1.13	67.33	89.26
Standard Deviation	8.42	25.09	1.45	6.28	51.82	61.60
Sample Variance	70.86	629.63	2.09	39.48	2685.32	3794.51
Kurtosis	0.07	5.58	3.17	7.87	5.03	1.46
Skewness	0.80	2.38	1.91	2.91	2.15	1.22
Range	33.43	106.98	5.51	26.03	233.42	233.73
Minimum	0.00	0.00	0.00	0.00	24.41	30.27
Maximum	33.43	106.98	5.51	26.03	257.83	264.00
Sum	325.77	566.02	36.14	92.29	2219.63	2672.09
Count	28	28	28	28	27	26
Quartile-1	4.42	6.39	0.35	0.45	50.36	46.47
Quartile-2	9.29	12.12	0.79	1.13	66.62	87.94
Quartile-3	17.24	19.76	1.75	2.31	87.39	128.92
Confidence intervals	3.12	9.29	0.54	2.33	20.50	24.88

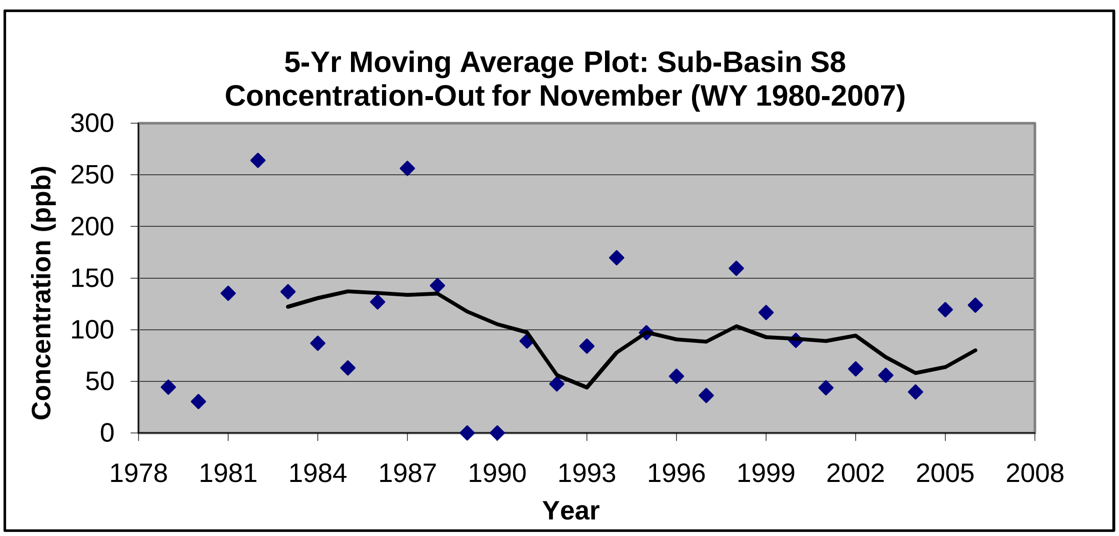

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for November (WY 1980-2007)
Flow (kac-ft)
0
5
10
15
20
25
30
35
40
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for November (WY 1980-2007)
Load (mt)
0
1
2
3
4
5
6
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for November (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

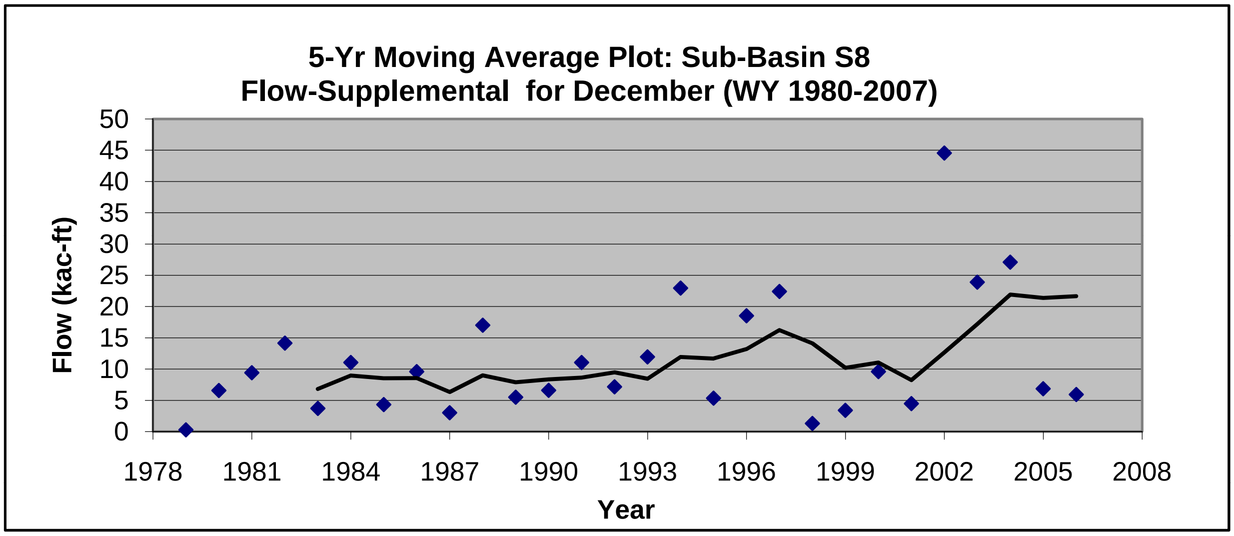

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for November (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for November (WY 1980-2007)
Load (mt)
0
5
10
15
20
25
30
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

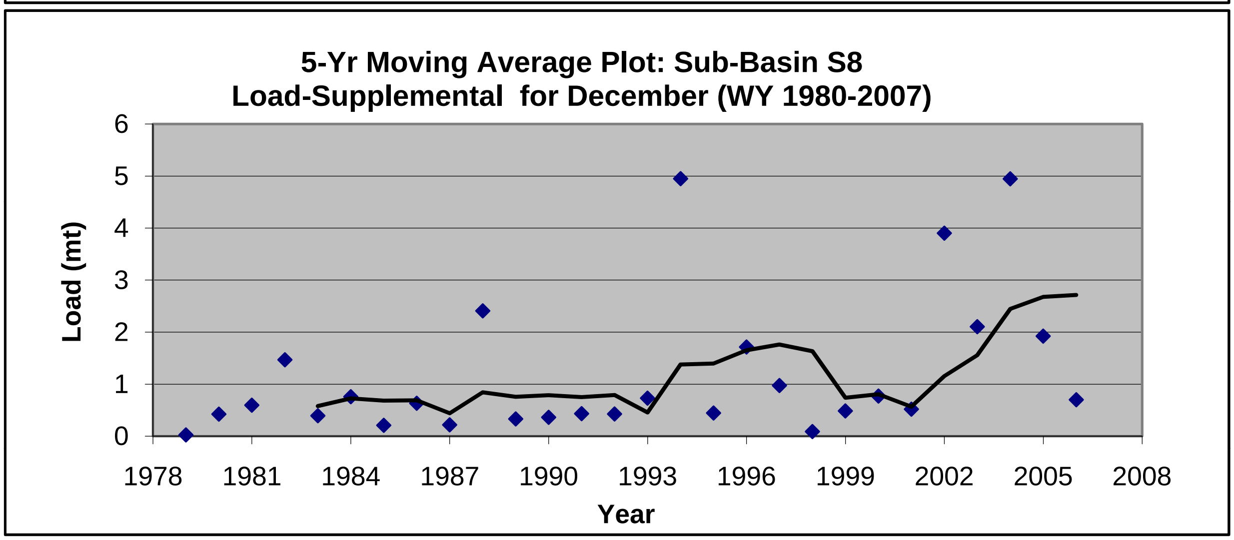

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for November (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
300
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S8 (December)

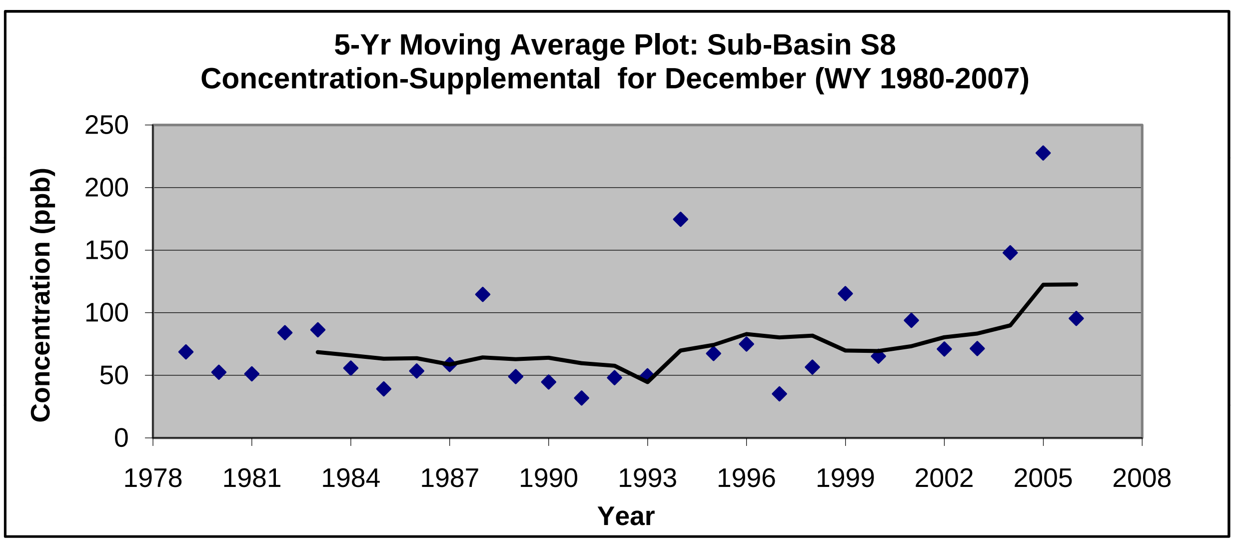
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	11.35	15.14	1.18	1.39	77.96	71.32
Standard Error	1.84	4.47	0.26	0.46	8.36	12.49
Median	8.30	7.06	0.61	0.39	66.31	50.41
Standard Deviation	9.74	23.65	1.36	2.45	44.26	61.17
Sample Variance	94.83	559.28	1.85	6.02	1959.05	3741.35
Kurtosis	3.77	7.00	2.97	11.40	4.24	10.87
Skewness	1.75	2.62	1.92	3.11	1.96	3.01
Range	44.28	100.64	4.92	11.69	195.73	286.35
Minimum	0.28	0.00	0.02	0.00	31.81	27.95
Maximum	44.56	100.64	4.95	11.69	227.54	314.30
Sum	317.79	423.81	32.94	38.86	2182.80	1711.60
Count	28	28	28	28	28	24
Quartile-1	5.14	2.57	0.42	0.13	50.78	31.85
Quartile-2	8.30	7.06	0.61	0.39	66.31	46.59
Quartile-3	14.86	19.47	1.53	1.12	88.19	63.25
Confidence intervals	3.61	8.76	0.50	0.91	16.39	25.83



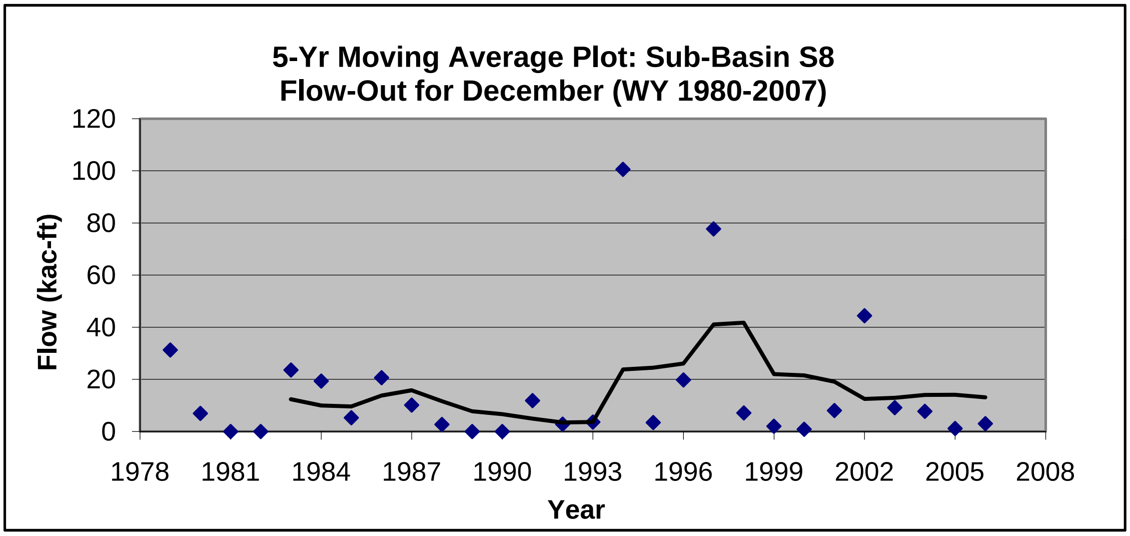
5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for December (WY 1980-2007)
Flow (kac-ft)
50
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



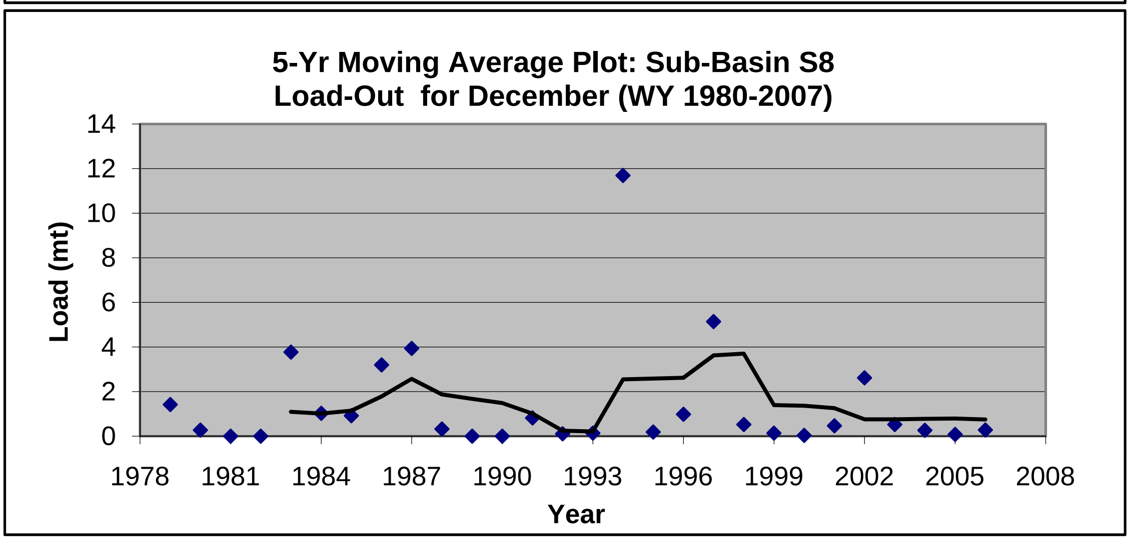
5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for December (WY 1980-2007)
Load (mt)
6
5
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



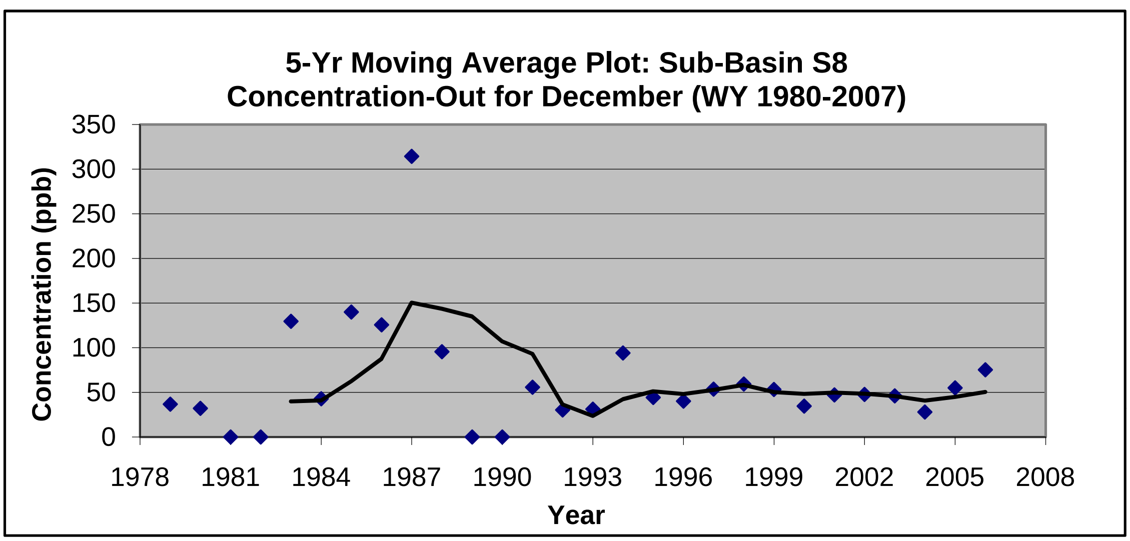
5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for December (WY 1980-2007)
Concentration (ppb)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for December (WY 1980-2007)
Flow (kac-ft)
120
100
80
60
40
20
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year



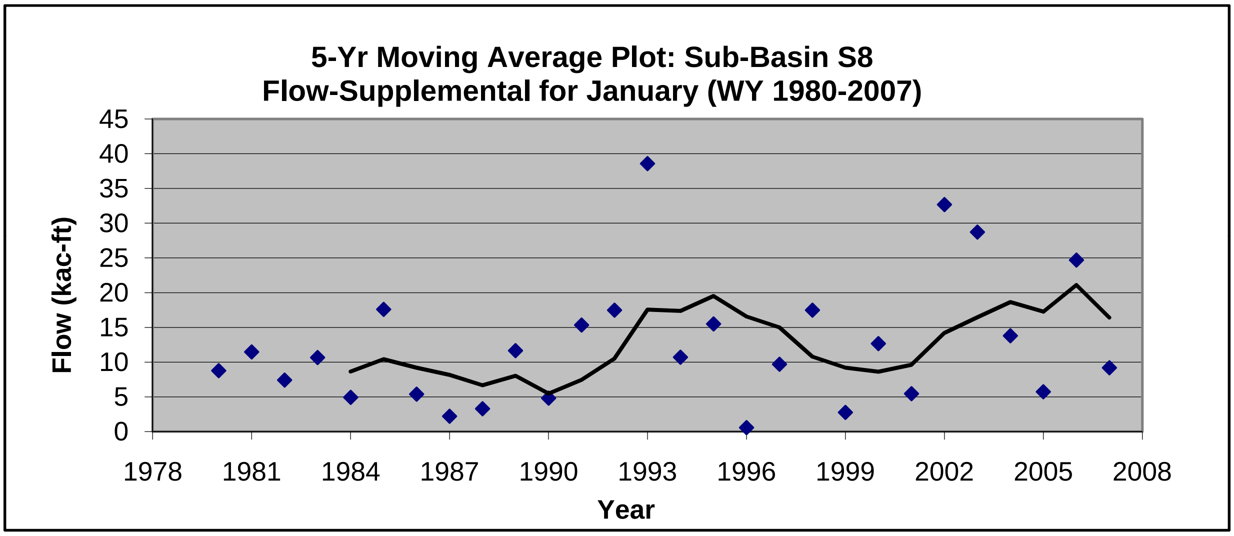
5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for December (WY 1980-2007)
Load (mt)
14
12
10
8
6
4
2
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

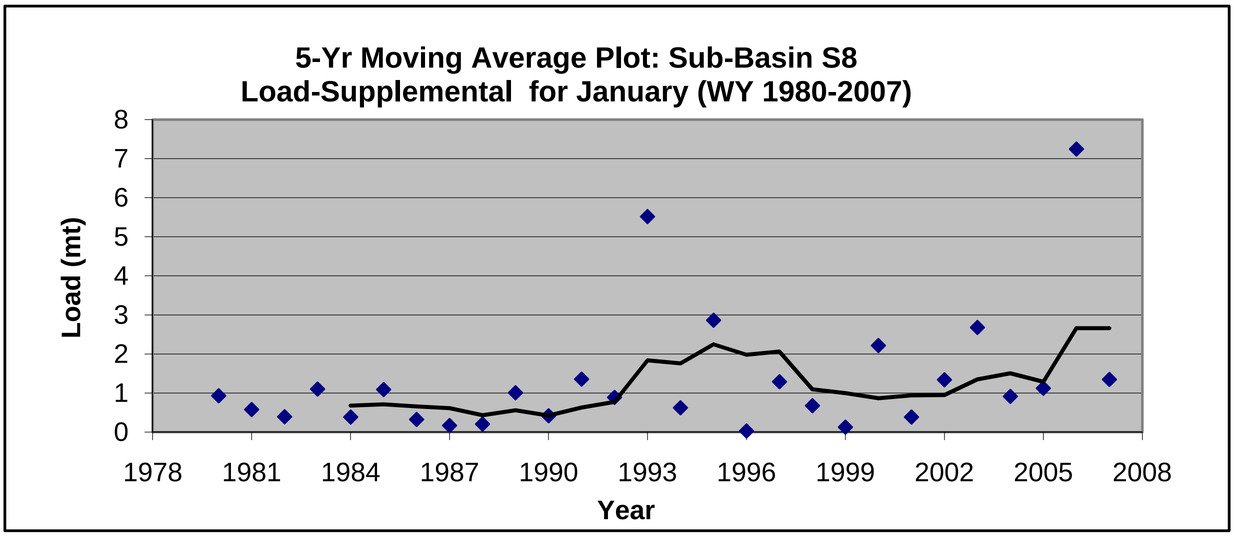


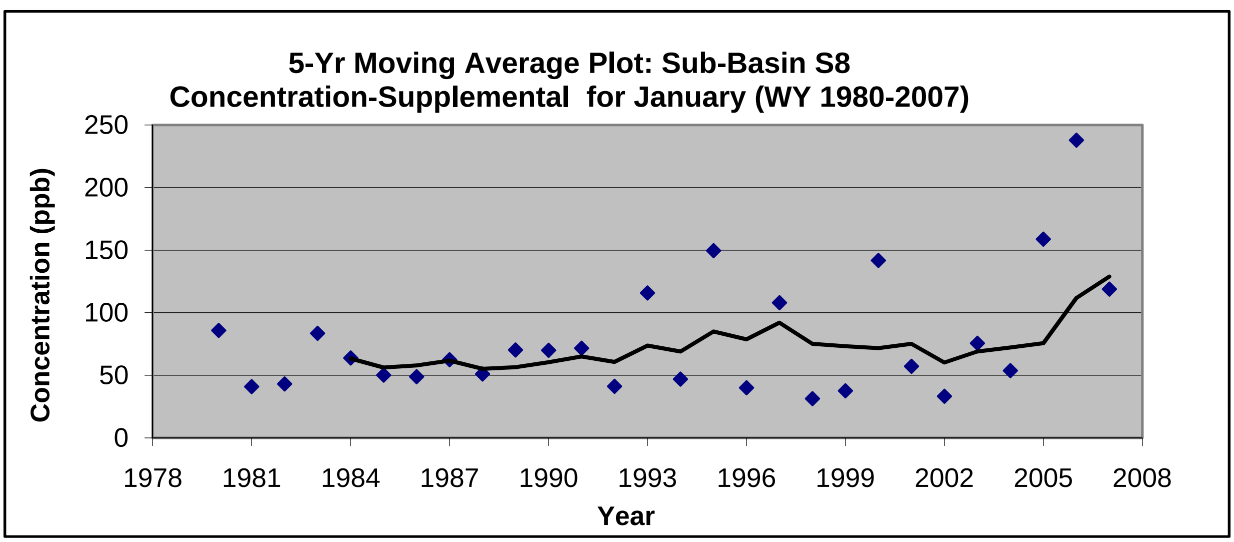
5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for December (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

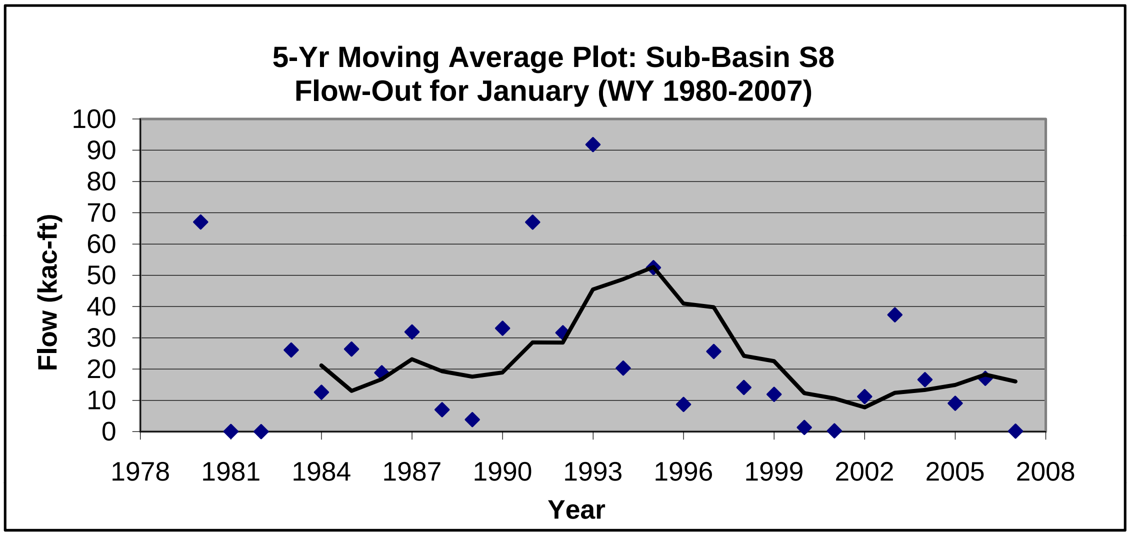
Hydrologic Sub-Basin S8 (January)

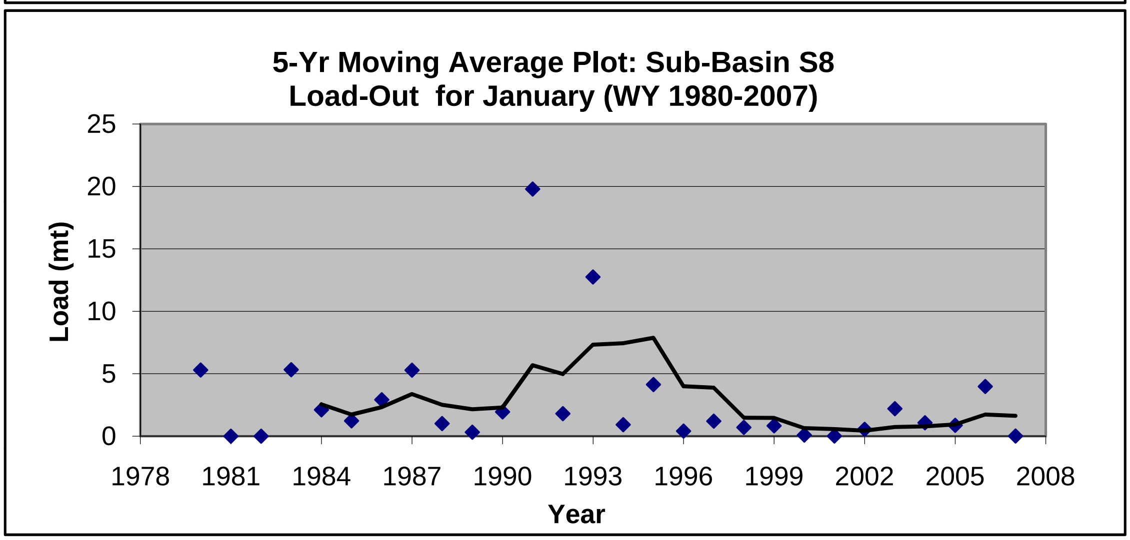
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	12.48	22.98	1.33	2.74	78.14	81.34
Standard Error	1.76	4.32	0.30	0.81	9.02	10.23
Median	10.70	16.83	0.92	1.14	63.10	56.45
Standard Deviation	9.33	22.86	1.61	4.28	47.72	53.16
Sample Variance	87.06	522.47	2.59	18.31	2277.65	2826.01
Kurtosis	1.44	2.14	7.34	9.76	3.43	1.84
Skewness	1.28	1.50	2.62	2.97	1.75	1.53
Range	38.02	91.83	7.22	19.79	206.49	202.78
Minimum	0.57	0.00	0.03	0.00	31.26	36.59
Maximum	38.59	91.83	7.24	19.79	237.75	239.37
Sum	349.34	643.54	37.23	76.85	2188.01	2196.15
Count	28	28	28	28	28	27
Quartile-1	5.45	8.27	0.39	0.52	45.98	44.63
Quartile-2	10.70	16.83	0.92	1.14	63.10	56.40
Quartile-3	16.00	31.71	1.34	3.18	91.37	113.68
Confidence intervals	3.46	8.47	0.60	1.58	17.68	21.03

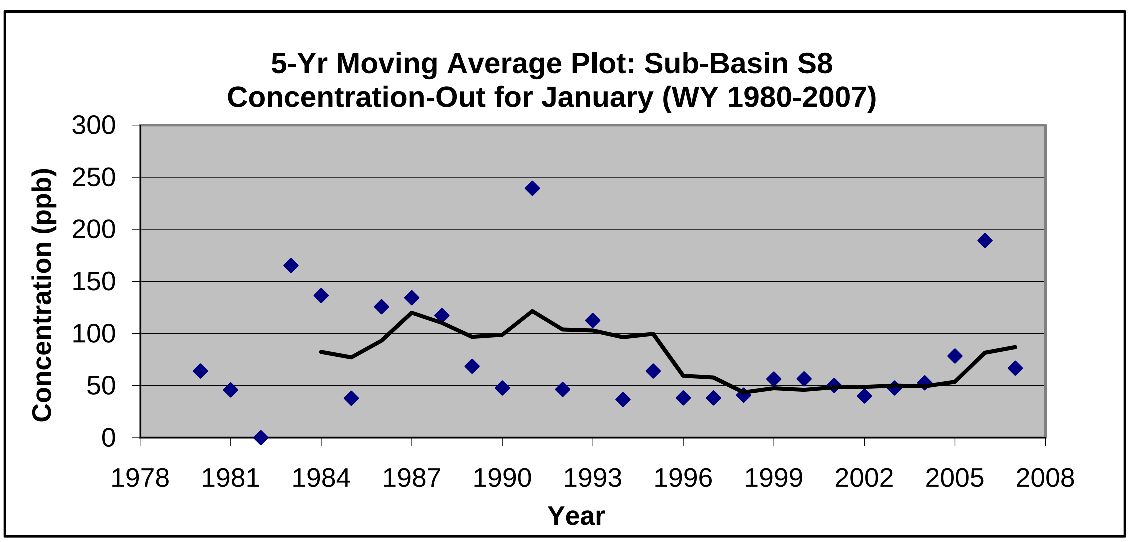

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for January (WY 1980-2007)
Flow (kac-ft)
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for January (WY 1980-2007)
Load (mt)
8
7
6
5
4
3
2
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for January (WY 1980-2007)
Concentration (ppb)
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

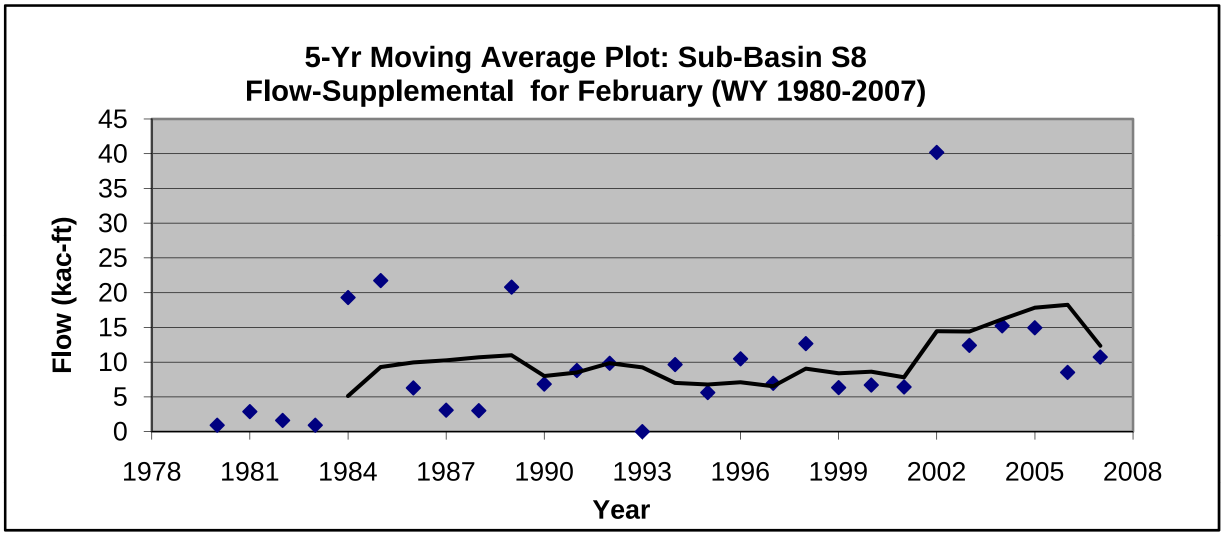

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for January (WY 1980-2007)
Flow (kac-ft)
100
90
80
70
60
50
40
30
20
10
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

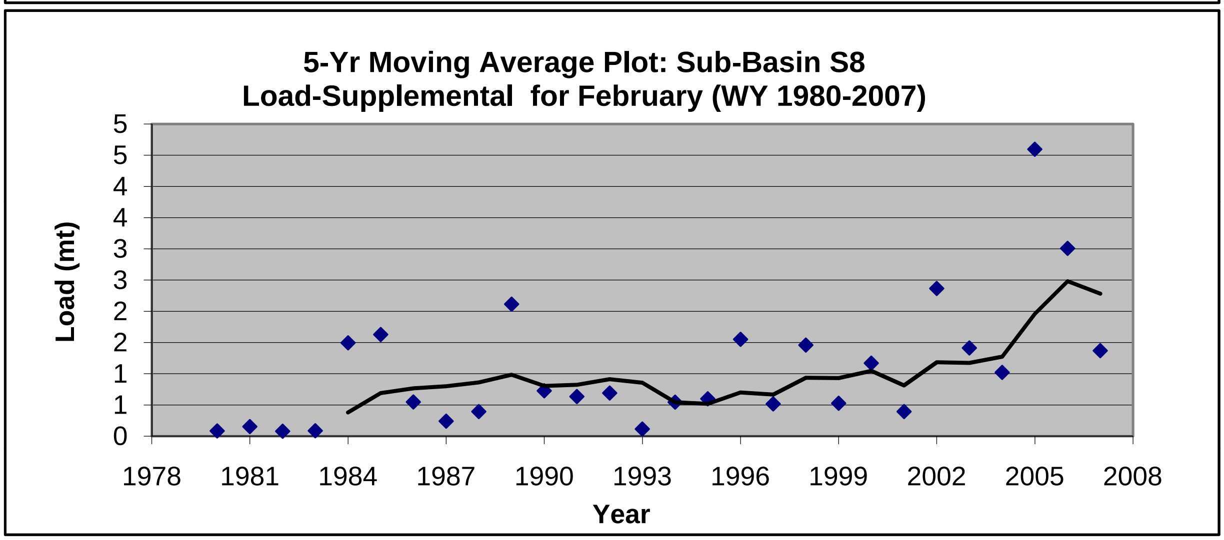

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for January (WY 1980-2007)
Load (mt)
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

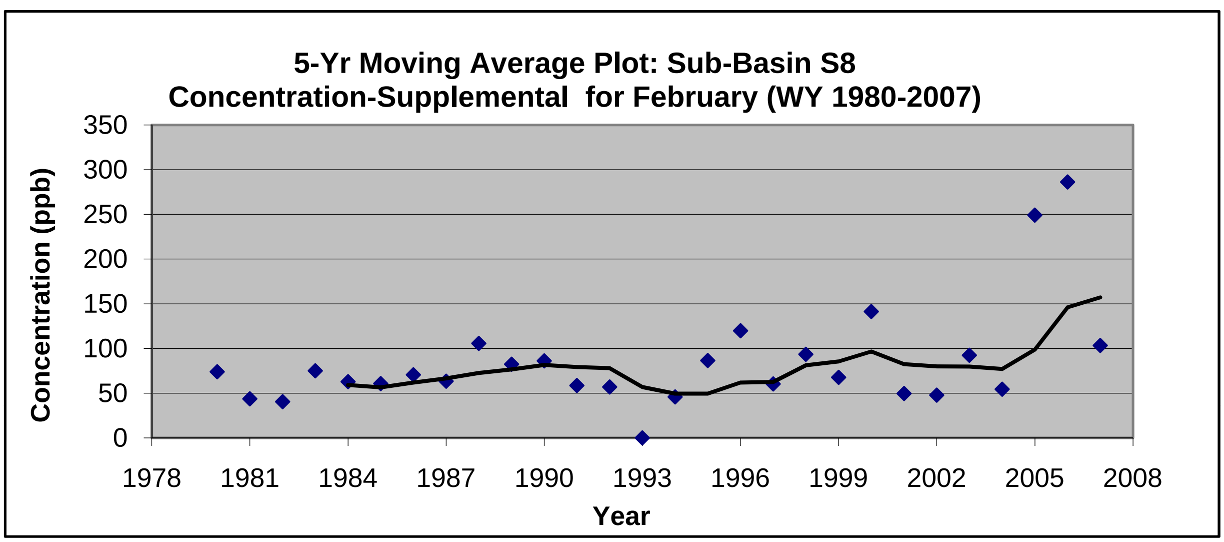

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for January (WY 1980-2007)
Concentration (ppb)
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

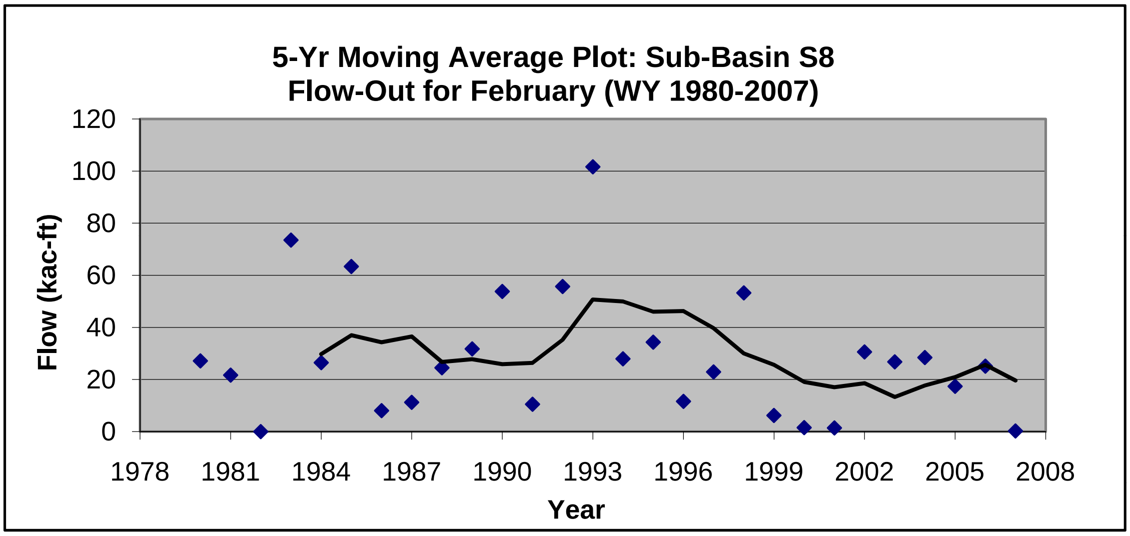
Hydrologic Sub-Basin S8 (February)

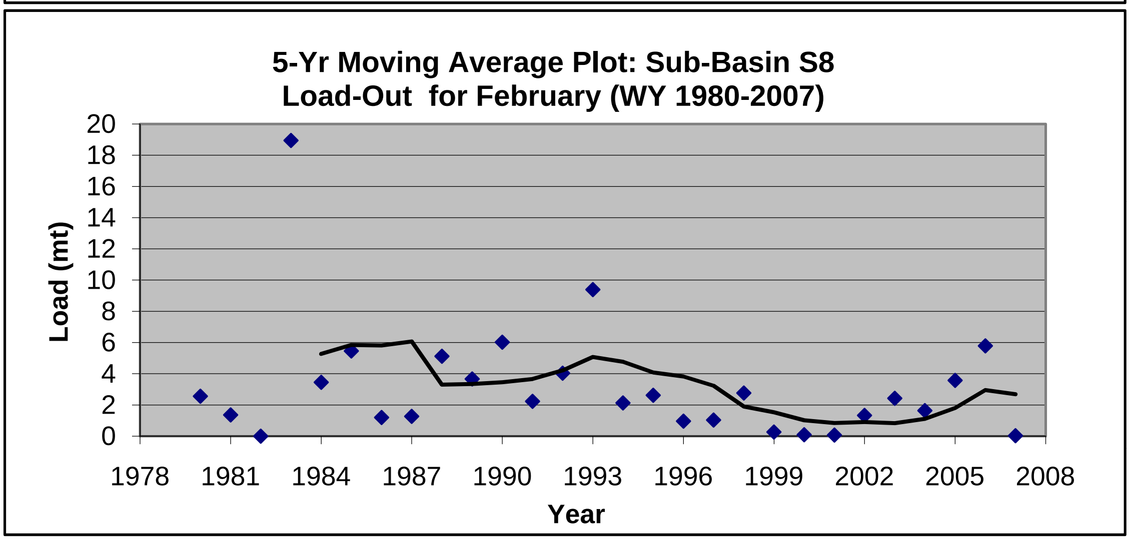
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	9.75	28.48	1.05	3.20	88.03	87.96
Standard Error	1.58	4.57	0.19	0.72	11.05	9.69
Median	7.73	25.79	0.66	2.33	70.50	73.22
Standard Deviation	8.37	24.17	1.02	3.80	57.42	50.34
Sample Variance	70.04	584.06	1.04	14.42	3296.69	2533.75
Kurtosis	5.48	1.88	4.37	10.81	6.65	0.23
Skewness	1.94	1.29	1.86	2.91	2.54	1.14
Range	40.19	101.65	4.52	18.94	245.85	173.64
Minimum	0.00	0.00	0.08	0.00	40.38	35.04
Maximum	40.19	101.65	4.60	18.94	286.23	208.67
Sum	272.88	797.40	29.53	89.47	2376.68	2374.92
Count	28	28	28	28	27	27
Quartile-1	4.99	11.08	0.39	1.16	56.27	47.27
Quartile-2	7.73	25.79	0.66	2.33	69.05	71.52
Quartile-3	12.47	32.41	1.47	3.76	92.59	96.58
Confidence intervals	3.10	8.95	0.38	1.41	21.66	19.91

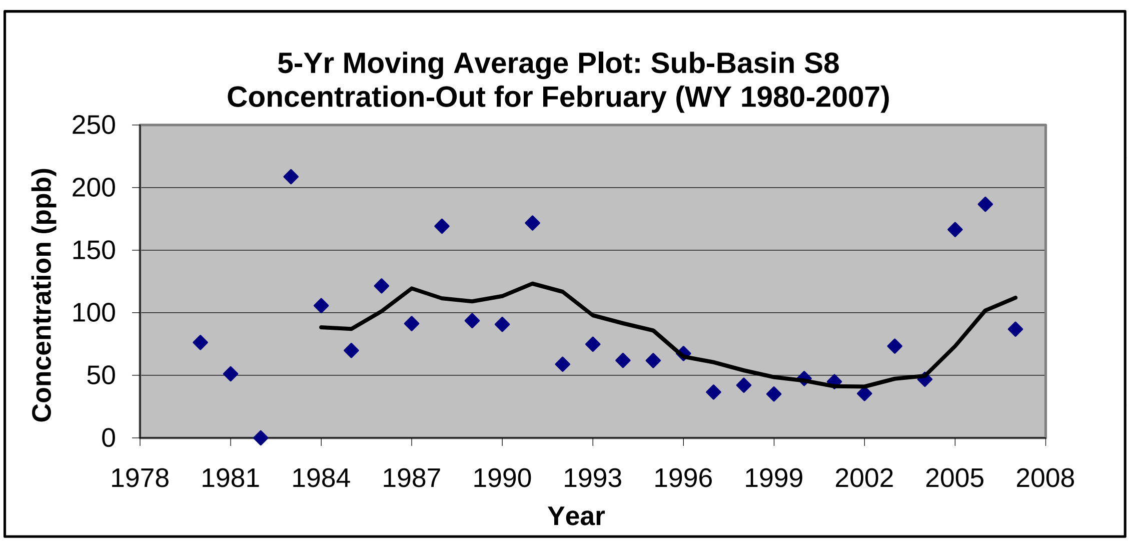

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for February (WY 1980-2007)
Flow (kac-ft)
45
40
35
30
25
20
15
10
5
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for February (WY 1980-2007)
Load (mt)
5
5
4
4
3
3
2
2
1
1
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for February (WY 1980-2007)
Concentration (ppb)
350
300
250
200
150
100
50
0
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

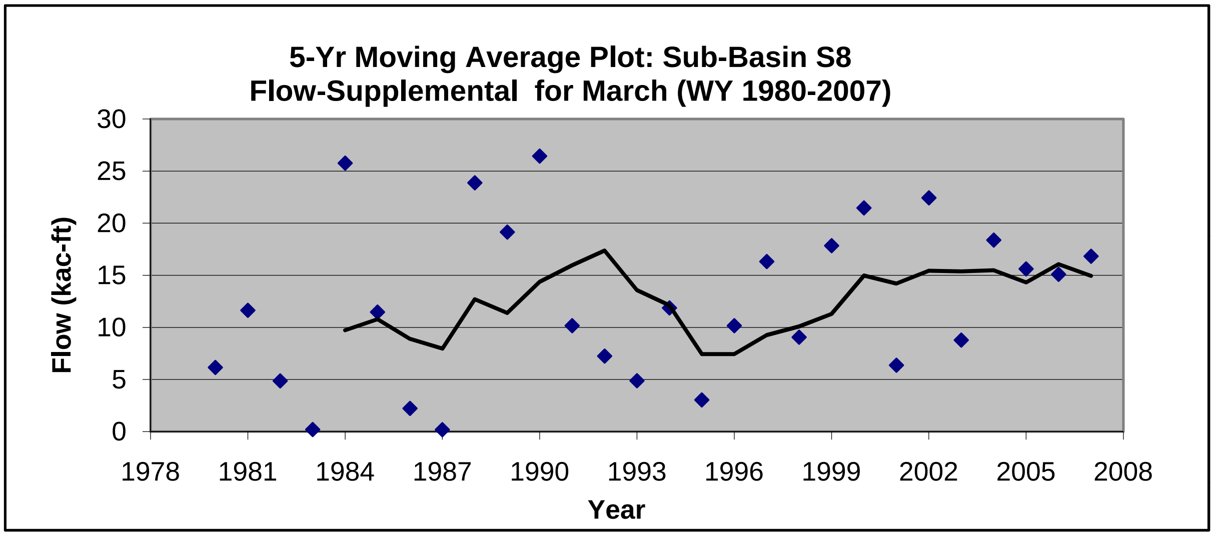

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for February (WY 1980-2007)
Flow (kac-ft)
0
20
40
60
80
100
120
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

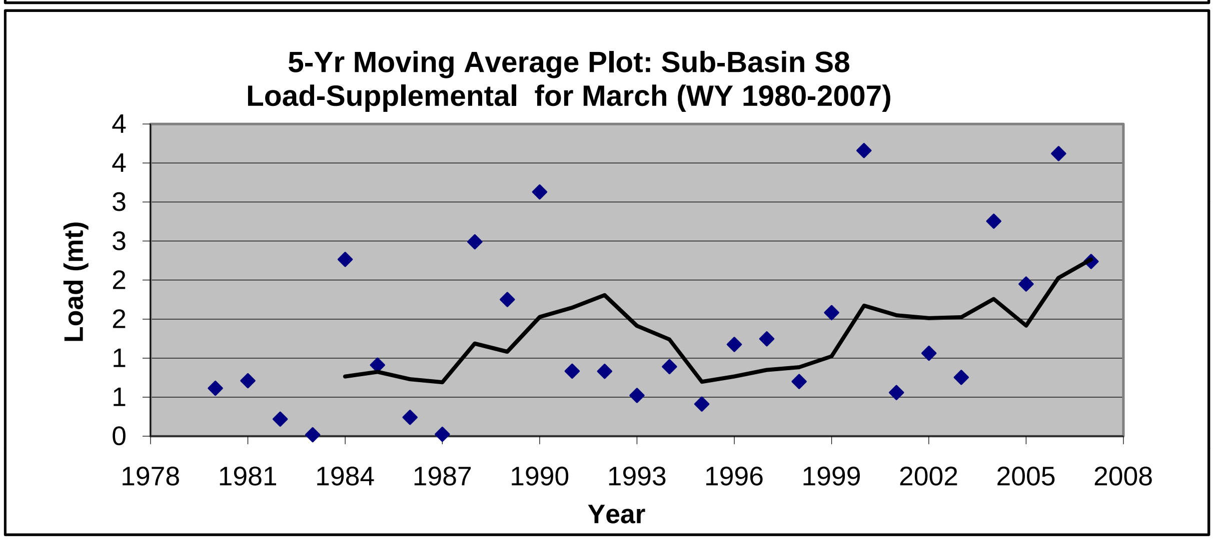

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for February (WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
14
16
18
20
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

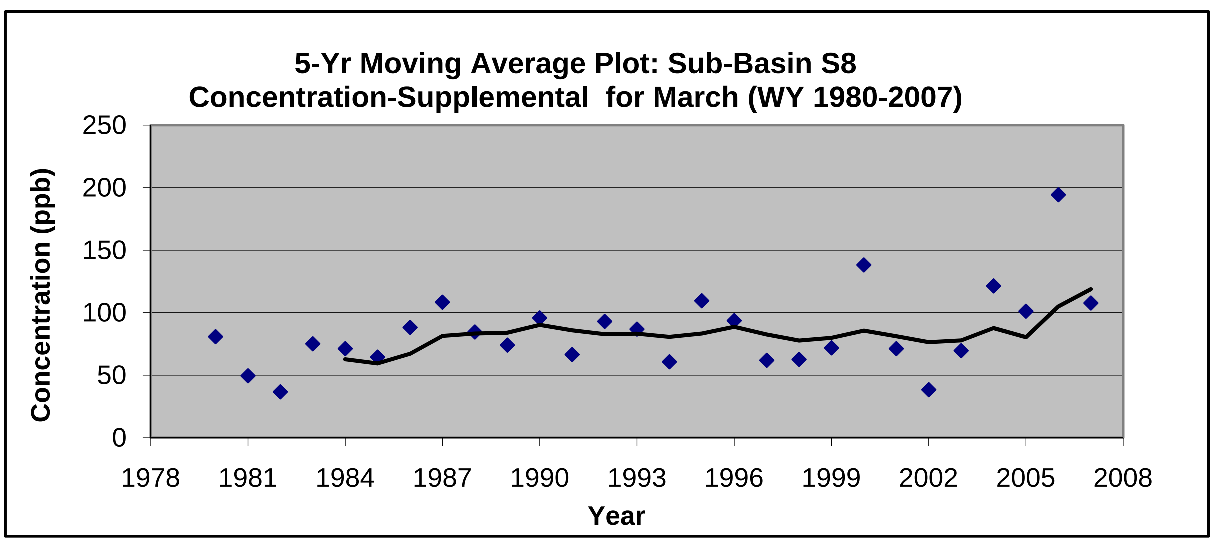

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for February (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

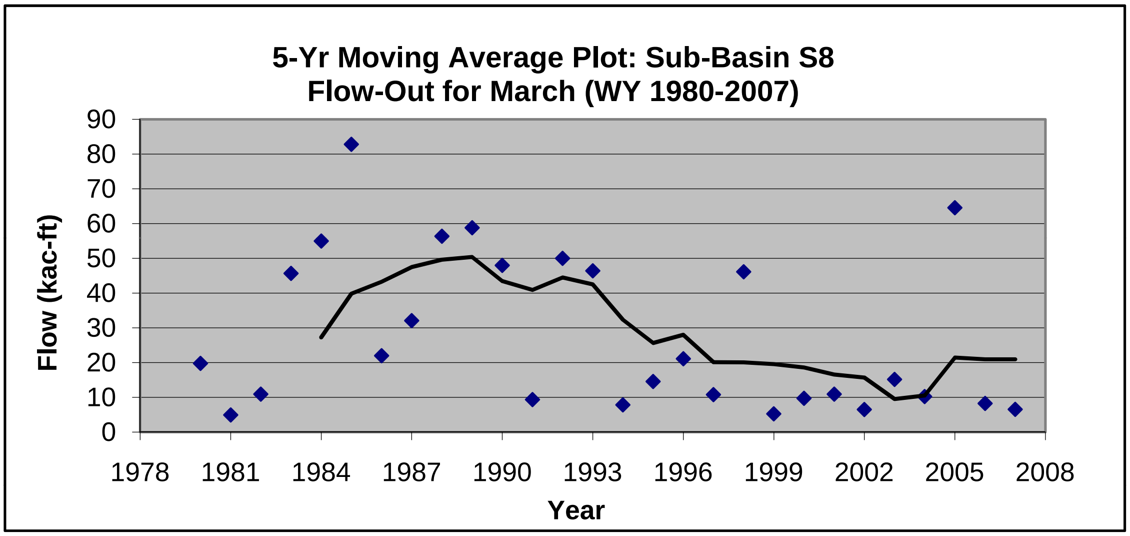
Hydrologic Sub-Basin S8 (March)

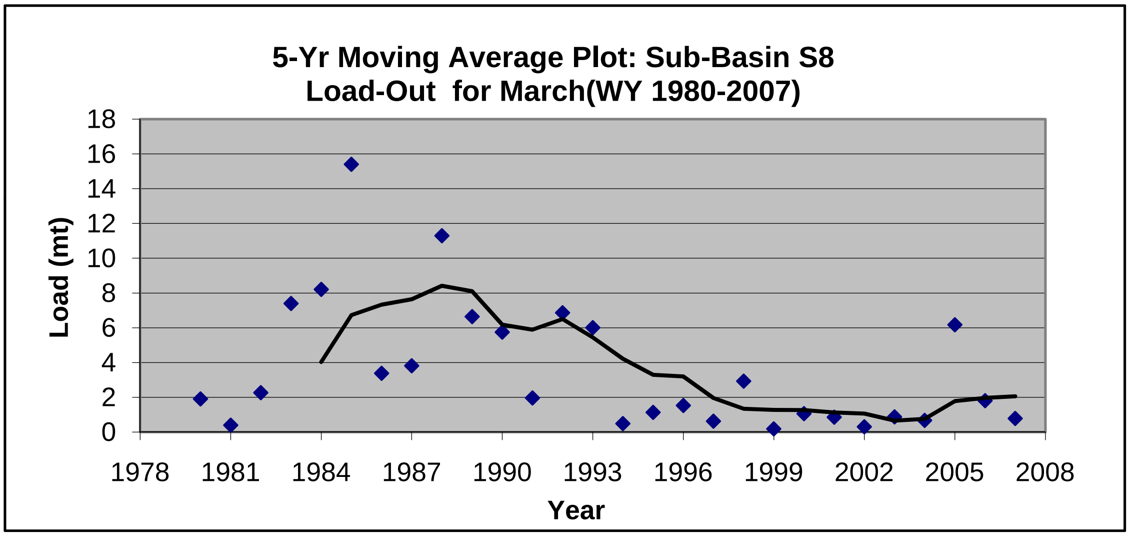
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	12.41	27.82	1.33	3.59	84.88	93.20
Standard Error	1.45	4.28	0.20	0.71	6.03	8.26
Median	11.55	17.46	0.90	1.93	77.88	89.68
Standard Deviation	7.69	22.64	1.06	3.76	31.90	43.72
Sample Variance	59.07	512.56	1.12	14.15	1017.67	1911.46
Kurtosis	-0.94	-0.60	-0.15	2.37	4.11	-0.79
Skewness	0.19	0.79	0.90	1.54	1.52	0.53
Range	26.27	77.85	3.64	15.22	157.71	148.85
Minimum	0.18	4.93	0.02	0.18	36.62	27.95
Maximum	26.45	82.78	3.66	15.41	194.33	176.80
Sum	347.55	779.09	37.17	100.64	2376.56	2609.74
Count	28	28	28	28	28	28
Quartile-1	6.32	9.61	0.60	0.84	65.97	57.19
Quartile-2	11.55	17.46	0.90	1.93	77.88	89.68
Quartile-3	17.98	46.77	2.02	6.05	97.15	121.91
Confidence intervals	2.85	8.39	0.39	1.39	11.82	16.19

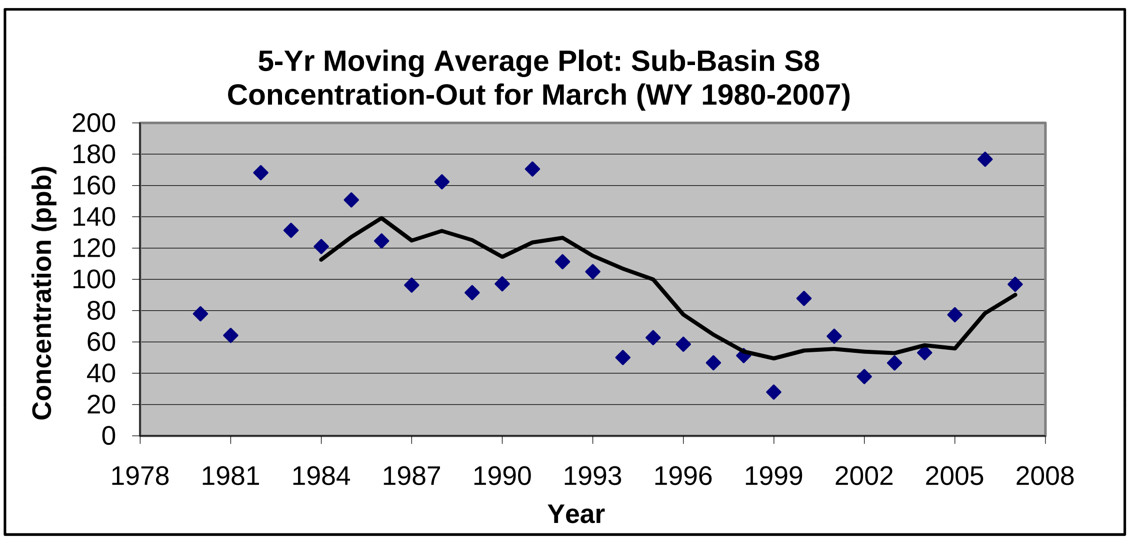

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for March (WY 1980-2007)
Flow (kac-ft)
Year
0
5
10
15
20
25
30
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008


5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for March (WY 1980-2007)
Load (mt)
Year
0
1
1
2
2
3
3
4
4
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for March (WY 1980-2007)
Concentration (ppb)
Year
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008

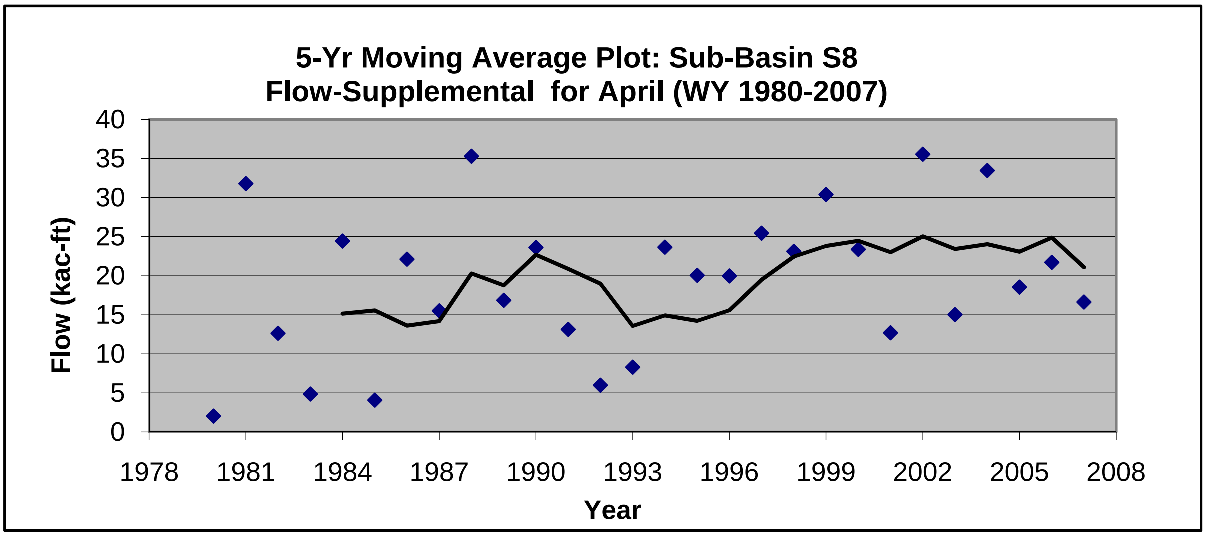

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for March (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
90
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for March(WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
14
16
18
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

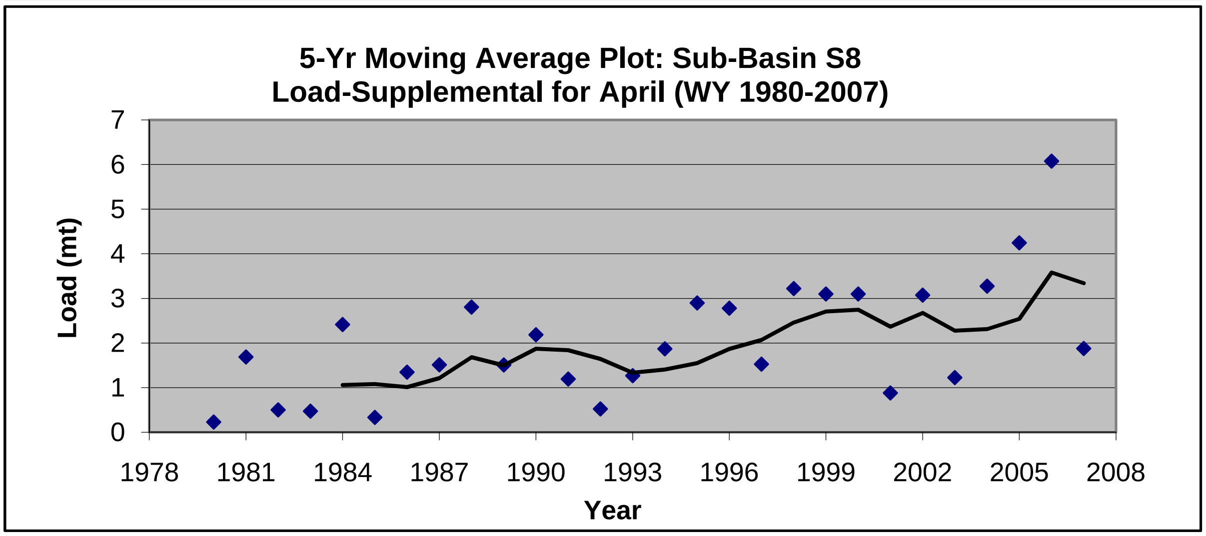

5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for March (WY 1980-2007)
Concentration (ppb)
0
20
40
60
80
100
120
140
160
180
200
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Hydrologic Sub-Basin S8 (April)

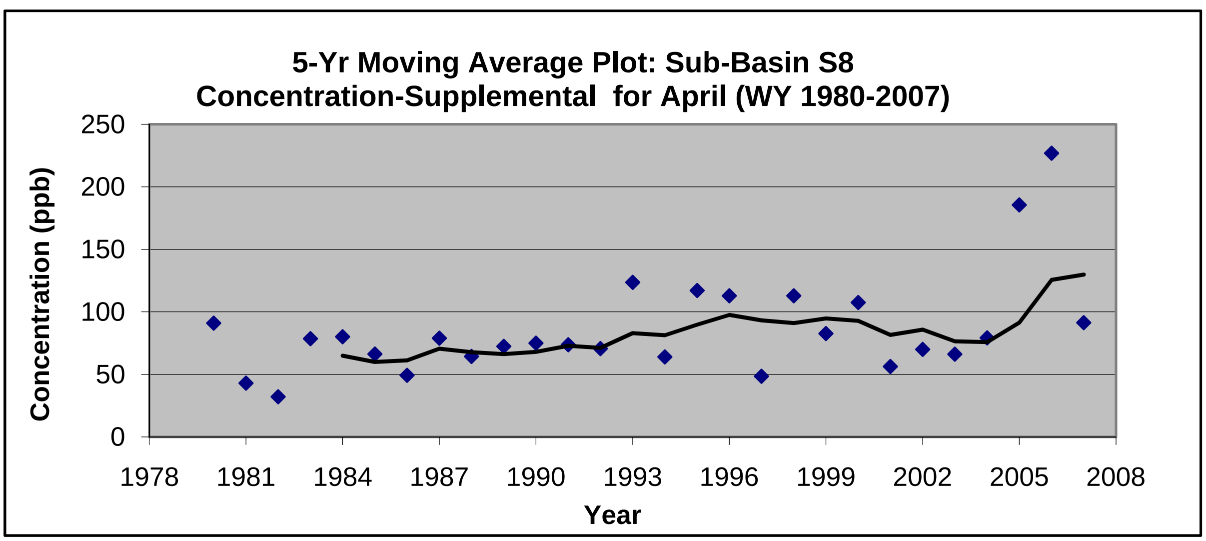
	Flow (kac-ft)		Load (mt)		Concentration (ppb)	
	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow	Supplemental Inflow	Outflow
Mean	19.29	26.69	2.04	3.30	86.43	95.34
Standard Error	1.77	4.23	0.25	0.56	7.75	8.33
Median	20.00	17.92	1.78	2.86	76.76	82.29
Standard Deviation	9.34	22.38	1.33	2.97	40.99	44.08
Sample Variance	87.27	501.08	1.76	8.82	1680.26	1943.28
Kurtosis	-0.59	0.26	1.68	0.12	4.96	2.30
Skewness	-0.05	0.95	1.01	0.91	1.99	1.39
Range	33.52	82.75	5.85	10.64	194.76	190.30
Minimum	2.03	0.26	0.23	0.02	32.11	38.86
Maximum	35.55	83.01	6.08	10.66	226.87	229.15
Sum	540.02	747.19	57.11	92.49	2419.98	2669.50
Count	28	28	28	28	28	28
Quartile-1	13.02	10.13	1.22	0.65	65.68	66.72
Quartile-2	20.00	17.92	1.78	2.86	76.76	82.29
Quartile-3	23.84	40.89	2.94	4.53	95.42	112.70
Confidence intervals	3.46	8.29	0.49	1.10	15.18	16.33



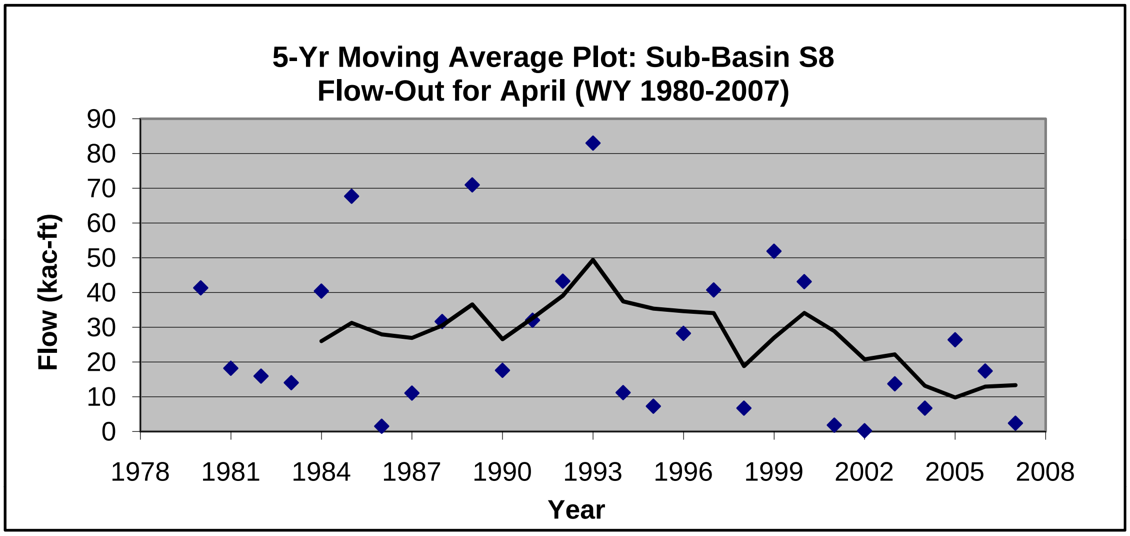
5-Yr Moving Average Plot: Sub-Basin S8
Flow-Supplemental for April (WY 1980-2007)
Flow (kac-ft)
Year

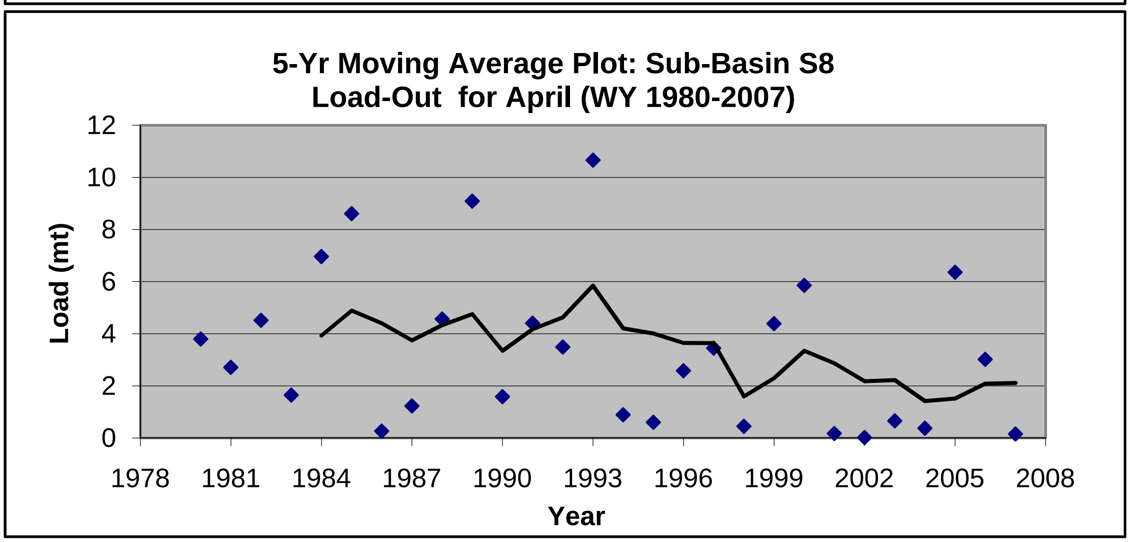


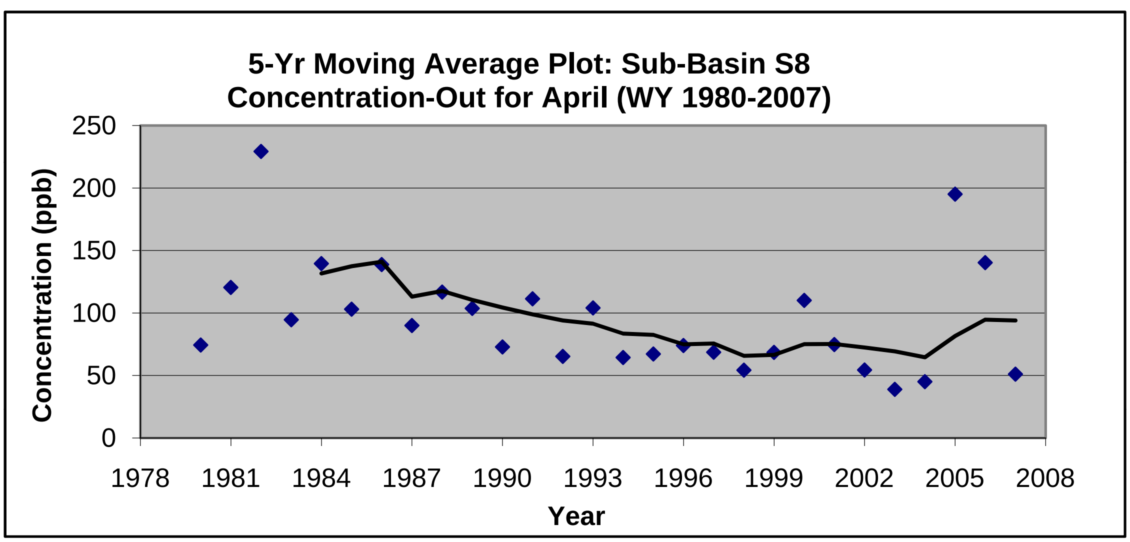
5-Yr Moving Average Plot: Sub-Basin S8
Load-Supplemental for April (WY 1980-2007)
Load (mt)
Year



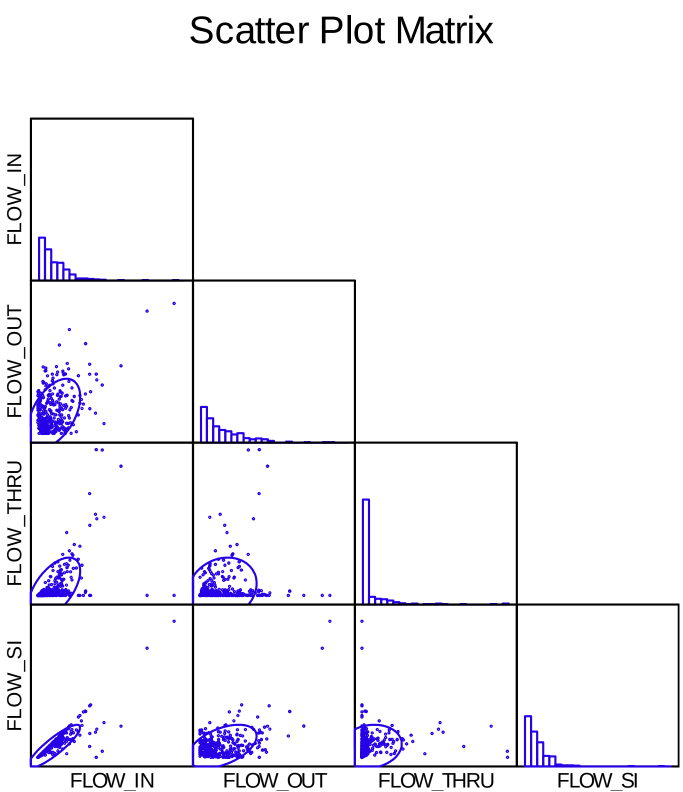
5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Supplemental for April (WY 1980-2007)
Concentration (ppb)
Year

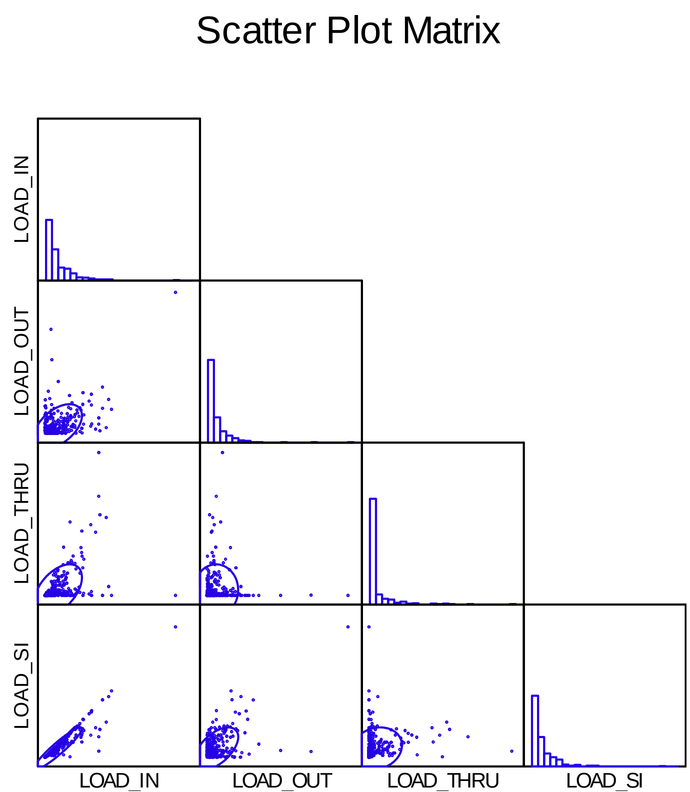

5-Yr Moving Average Plot: Sub-Basin S8
Flow-Out for April (WY 1980-2007)
Flow (kac-ft)
0
10
20
30
40
50
60
70
80
90
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

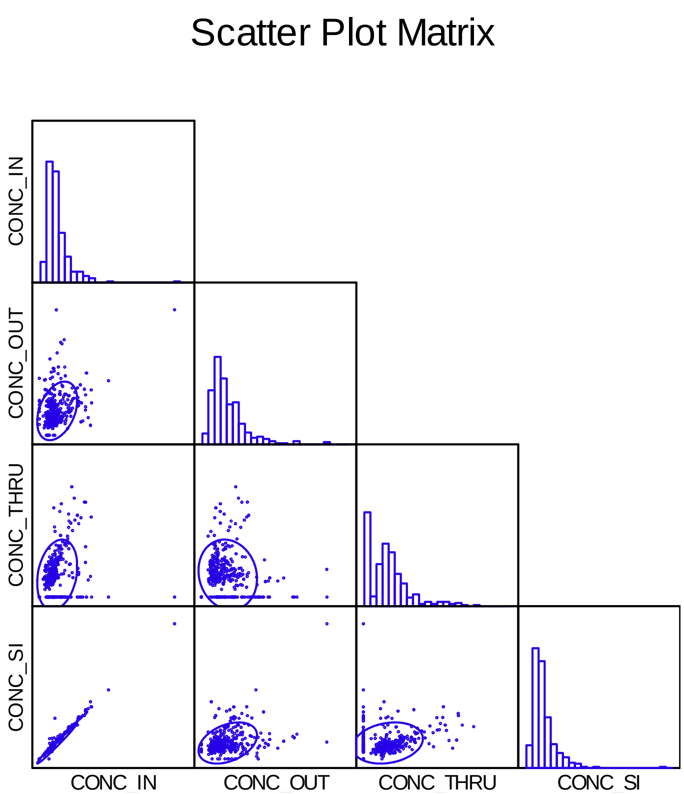

5-Yr Moving Average Plot: Sub-Basin S8
Load-Out for April (WY 1980-2007)
Load (mt)
0
2
4
6
8
10
12
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year


5-Yr Moving Average Plot: Sub-Basin S8
Concentration-Out for April (WY 1980-2007)
Concentration (ppb)
0
50
100
150
200
250
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
Year

Correlation Analyses Plots for Hydrologic Sub-Basin S8



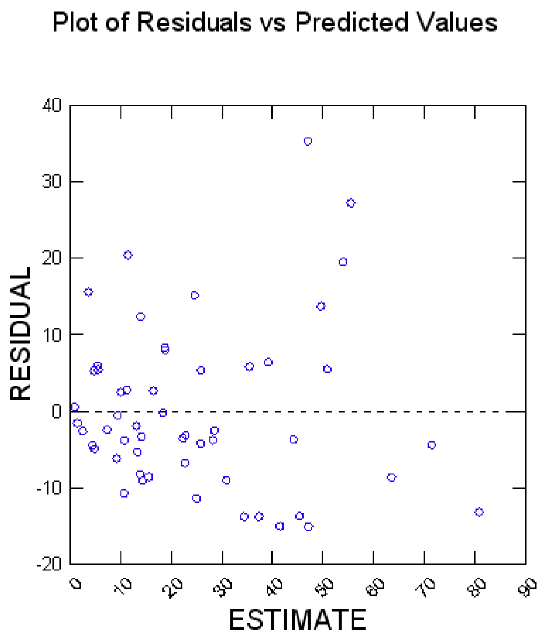




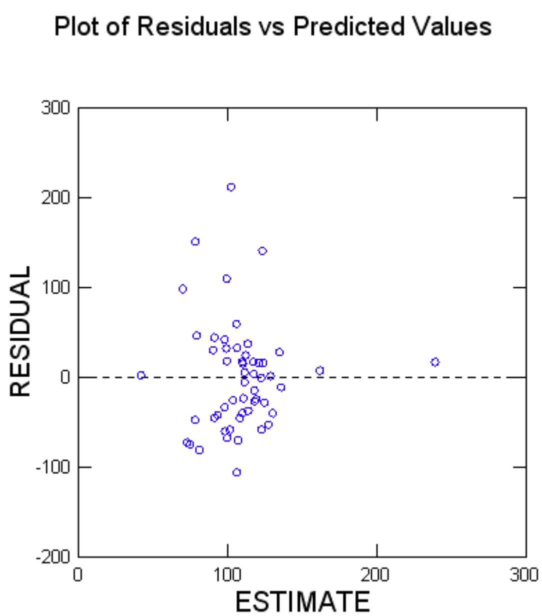
Residual Plots for Four Time Periods for Hydrologic Sub-Basin S8 during Dry Season

1. **Base Period**

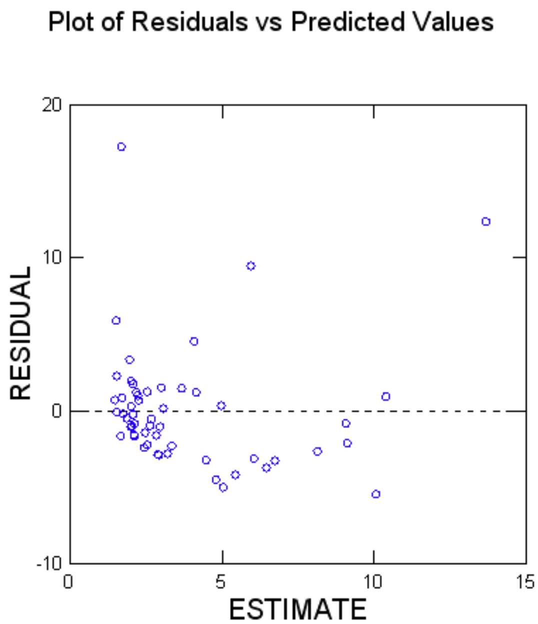
Regression Model: $Q_{out} = 1.86\ Q_{thru} - 0.36\ Q_{si} + 7.20\ P_m + 4.91$



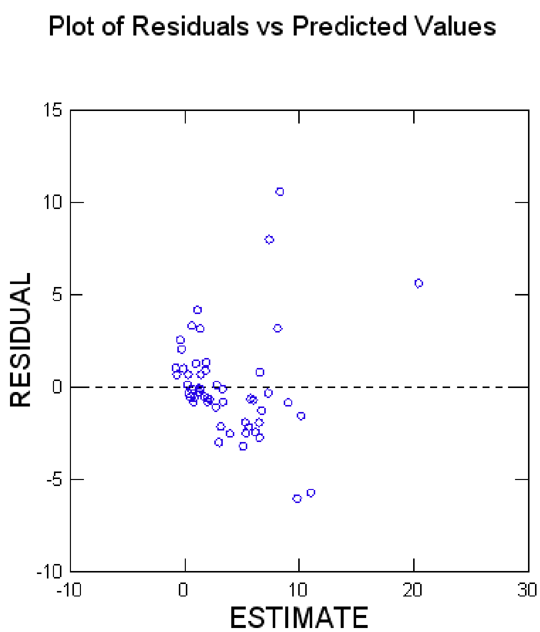
Regression Model: $C_{out} = 0.35\ C_{thru} + 0.76\ C_{si} + 42.40$



Regression Model: $L_{out} = 1.29\ L_{thru} + 2.42\ L_{si} + 1.50$



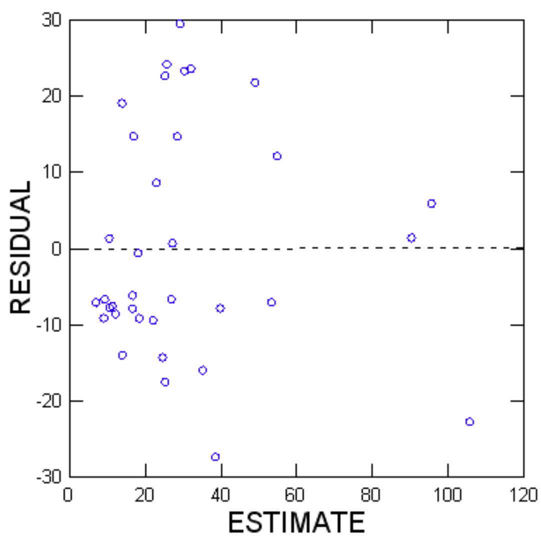
Regression Model: $L_{out} = 0.25\ Q_{thru} - 0.03\ Q_{si} + 0.86\ P_m - 0.017\ C_{thru} + 0.07\ C_{si} - 2.70$



2. Pre-BMP Period

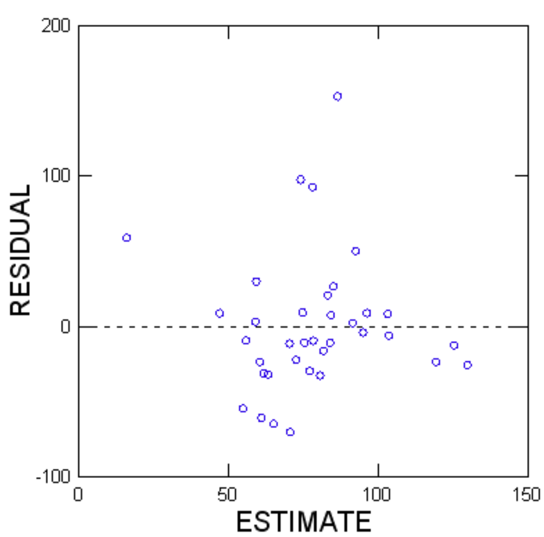
Regression Model: $Q_{out} = 1.00\ Q_{thru} + 0.030\ Q_{si} + 6.31\ P_m + 4.79$

Plot of Residuals vs Predicted Values

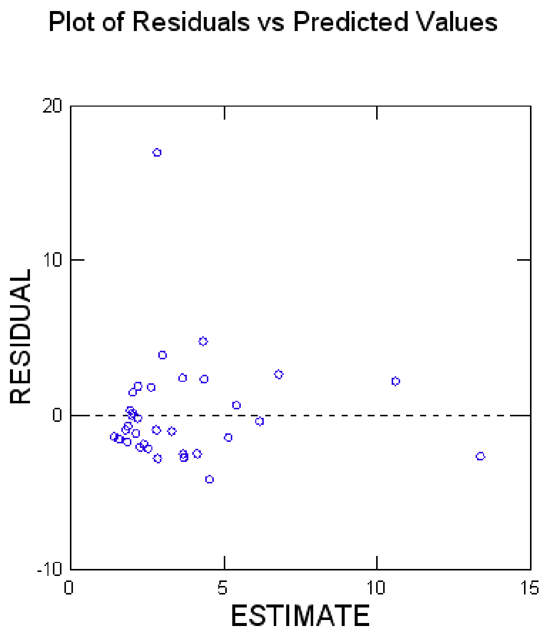


Regression Model: $C_{out} = -0.06\ C_{thru} + 0.94\ C_{si} + 19.24$

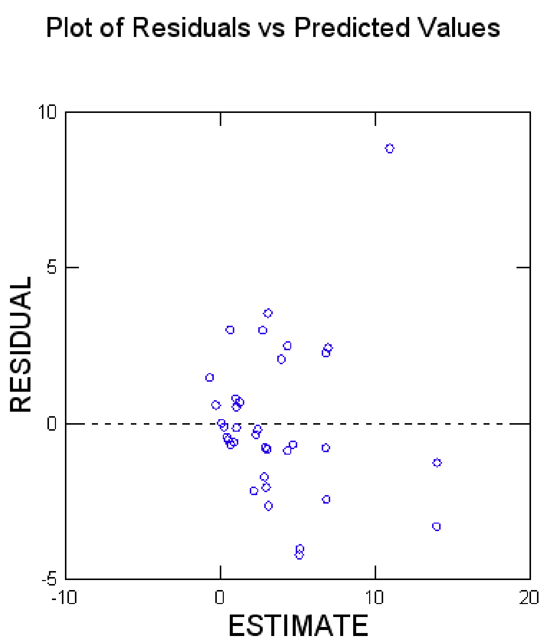
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 1.09\ L_{thru} + 1.22\ L_{si} + 1.19$



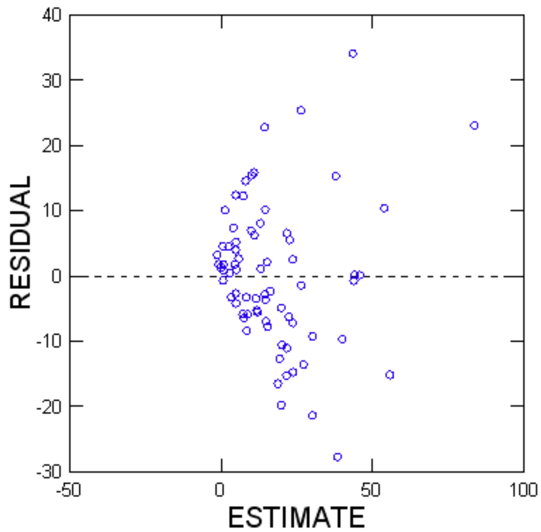
Regression Model: $L_{out} = 0.1\ Q_{thru} - 0.04\ Q_{si} + 1.24\ P_m - 0.02\ C_{thru} + 0.05\ C_{si} - 1.96$



3. BMP Period

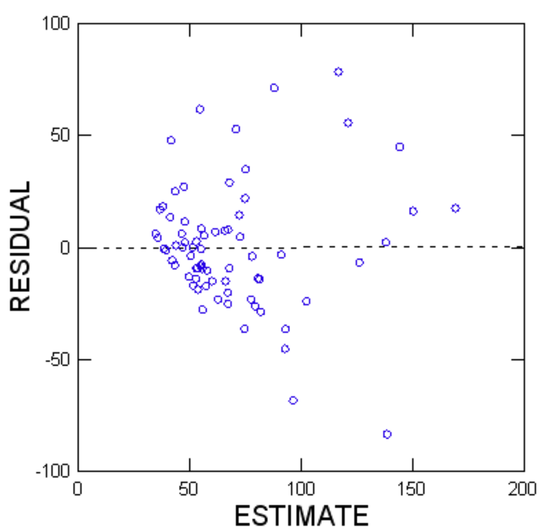
Regression Model: $Q_{out} = 0.21\ Q_{thru} + 0.38\ Q_{si} + 8.27\ P_m - 4.43$

Plot of Residuals vs Predicted Values

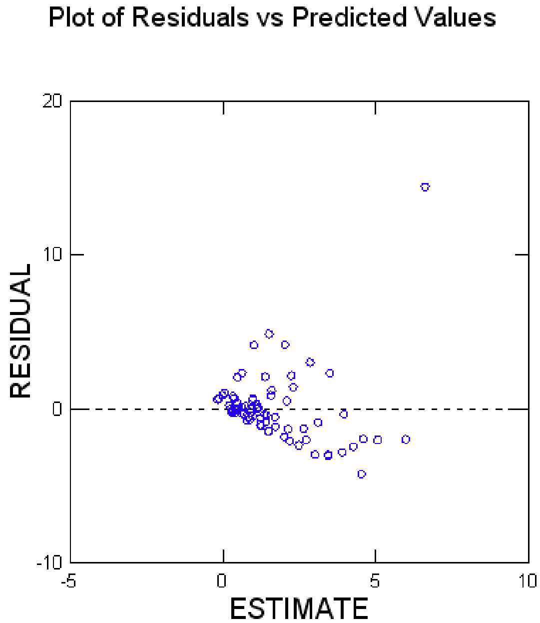


Regression Model: $C_{out} = 0.01\ C_{thru} + 0.52\ C_{si} + 17.83$

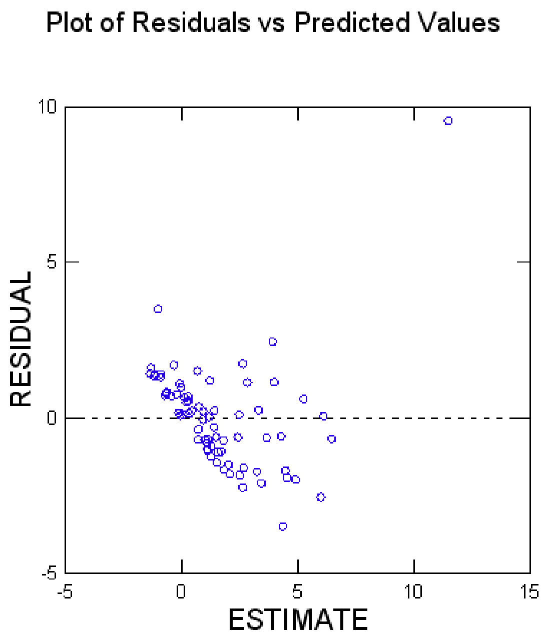
Plot of Residuals vs Predicted Values



Regression Model: L_{out} = -0.52 L_{thru} + 1.24 L_{si} - 0.16



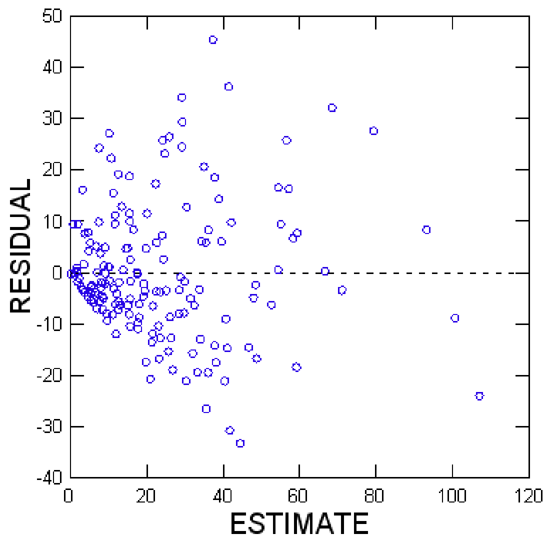
Regression Model: L_{out} = 0.03 Q_{thru} + 0.04 Q_{si} + 1.13 P_m - 0.005 C_{thru} + 0.02 C_{si} – 2.67



4. Entire Period

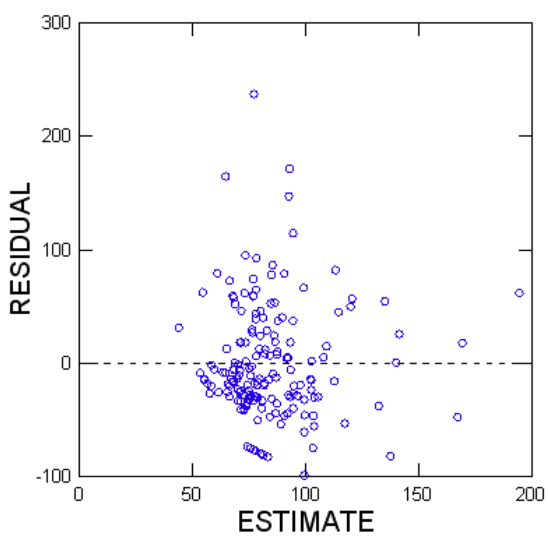
Regression Model: $Q_{out} = 0.97\, Q_{thru} + 0.08\, Q_{si} + 8.40\, P_m - 0.52$

Plot of Residuals vs Predicted Values



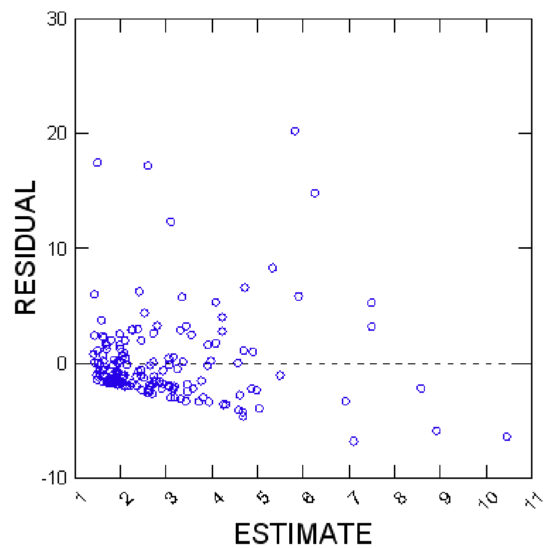
Regression Model: $C_{out} = -0.19\, C_{thru} + 0.55\, C_{si} + 53.74$

Plot of Residuals vs Predicted Values



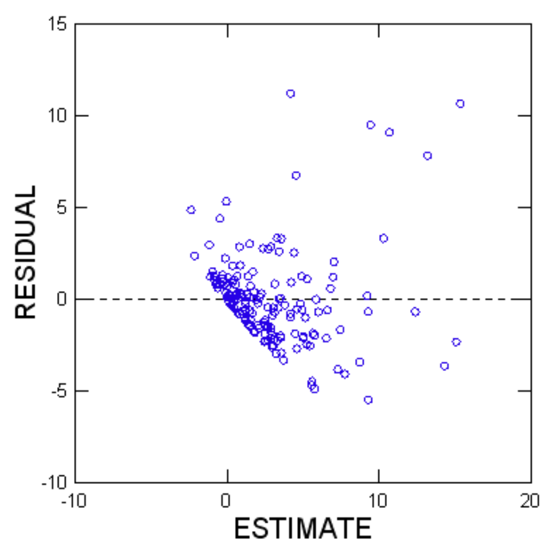
Regression Model: $L_{out} = 0.51\ L_{thru} - 0.87\ L_{si} + 1.42$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.12\ Q_{thru} + 0.01\ Q_{si} + 1.25\ P_m - 0.02\ C_{thru} - 0.03\ C_{si} - 1.62$

Plot of Residuals vs Predicted Values

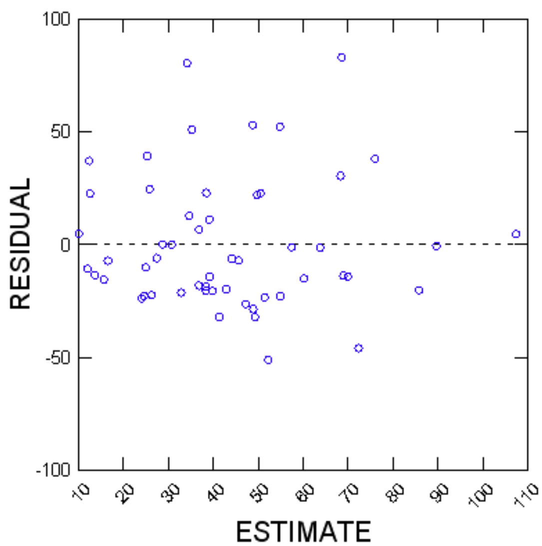


Residual Plots for Four Time Periods for Hydrologic Sub-Basin S8 during Wet Season

1. Base Period

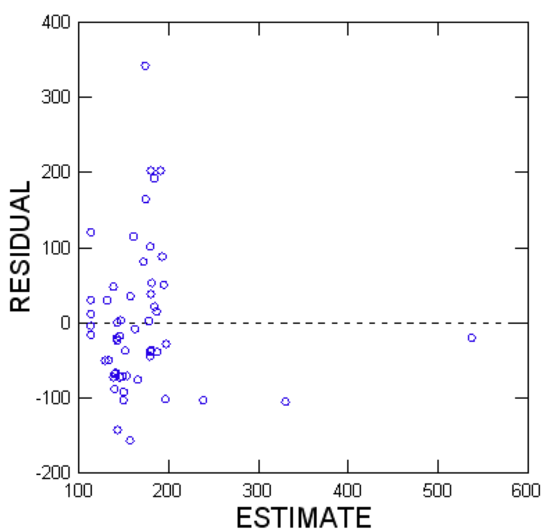
Regression Model: $Q_{out} = -0.99\ Q_{thru} - 0.13\ Q_{si} + 6.99\ P_m - 11.54$

Plot of Residuals vs Predicted Values

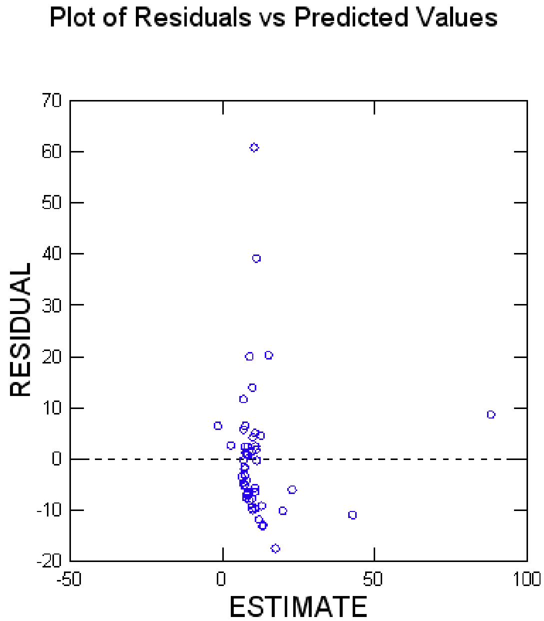


Regression Model: $C_{out} = 0.10\ C_{thru} - 0.57\ C_{si} + 114.34$

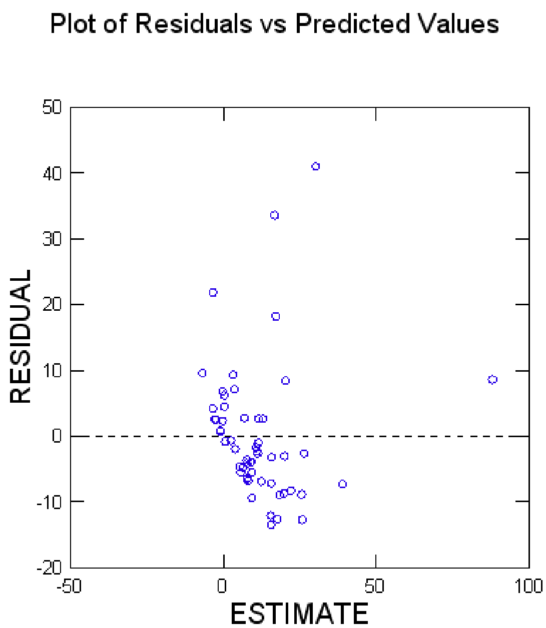
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = -6.00\ L_{thru} + 3.02\ L_{si} + 7.16$



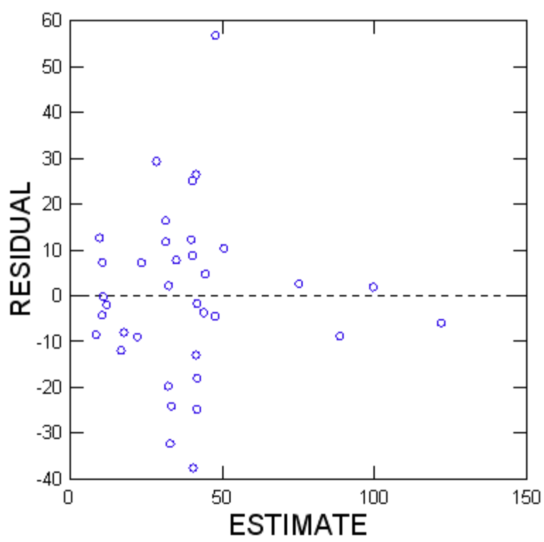
Regression Model: $L_{out} = -\ 0.30\ Q_{thru} - 0.11\ Q_{si} + 1.89\ P_m + 0.026\ C_{thru} + 0.11\ C_{si} - 6.89$



2. Pre-BMP Period

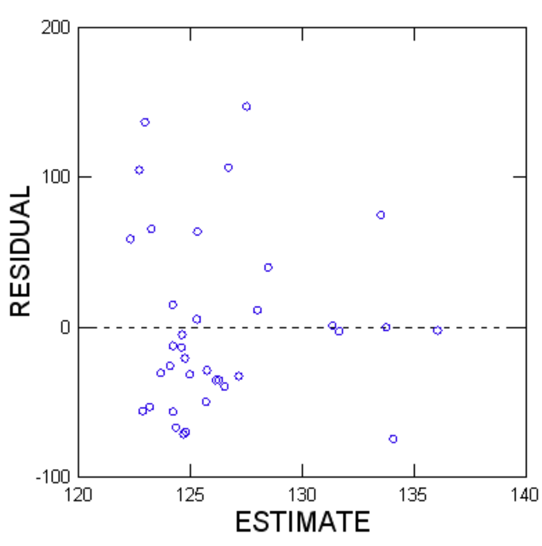
Regression Model: $Q_{out} = 1.28\ Q_{thru} + 0.22\ Q_{si} + 5.15\ P_m + 0.11$

Plot of Residuals vs Predicted Values



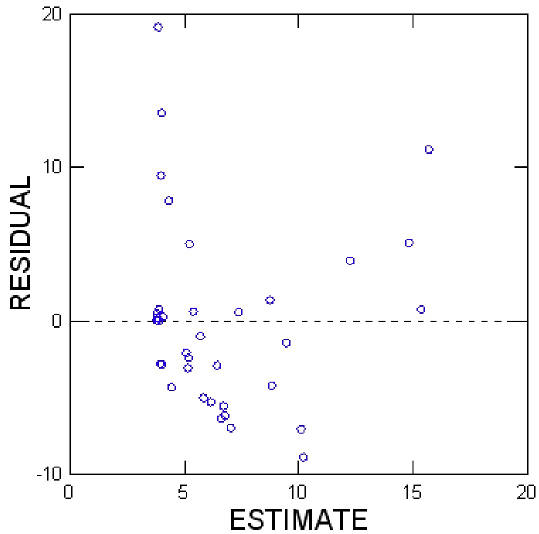
Regression Model: $C_{out} = -0.04\ C_{thru} + 0.04\ C_{si} + 124.25$

Plot of Residuals vs Predicted Values



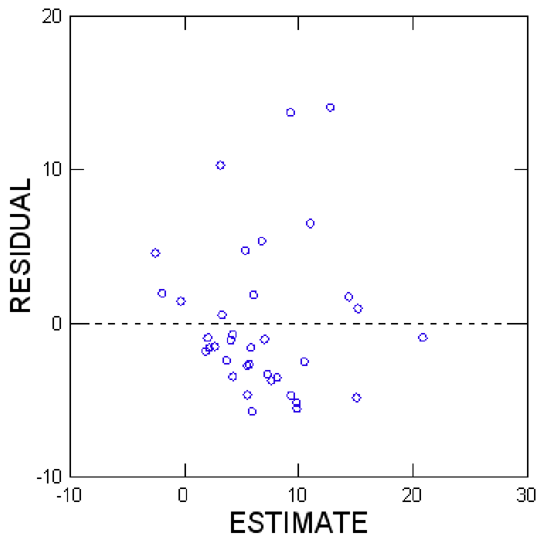
Regression Model: $L_{out} = 1.95\ L_{thru} + 1.25\ L_{si} + 3.82$

Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = 0.17\ Q_{thru} + 0.10\ Q_{si} + 0.94\ P_m - 0.07\ C_{thru} + 0.002\ C_{si} + 1.53$

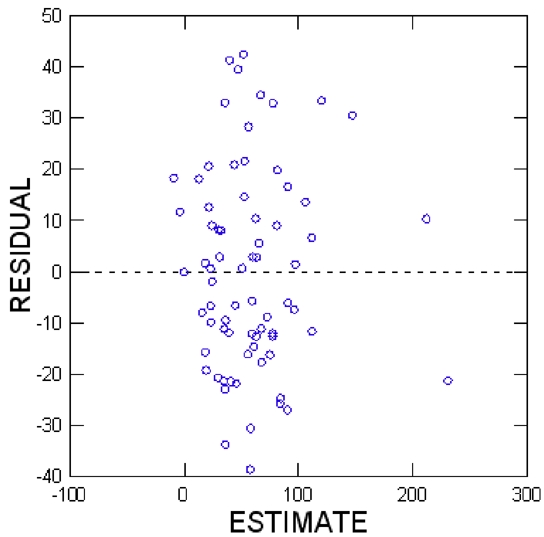
Plot of Residuals vs Predicted Values



3. BMP Period

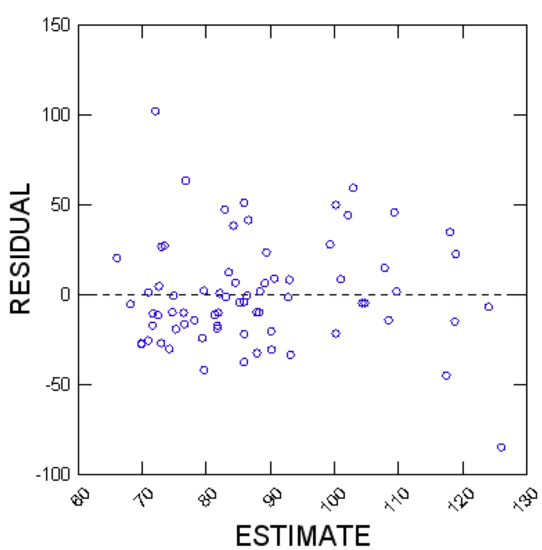
Regression Model: $Q_{out} = -0.31\ Q_{thru} + 0.88\ Q_{si} + 8.63\ P_m - 17.76$

Plot of Residuals vs Predicted Values

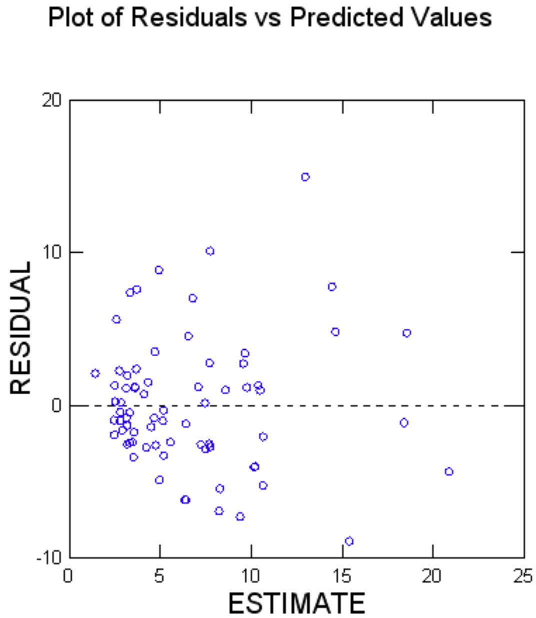


Regression Model: $C_{out} = 0.08\ C_{thru} + 0.20\ C_{si} + 57.85$Regression Model:

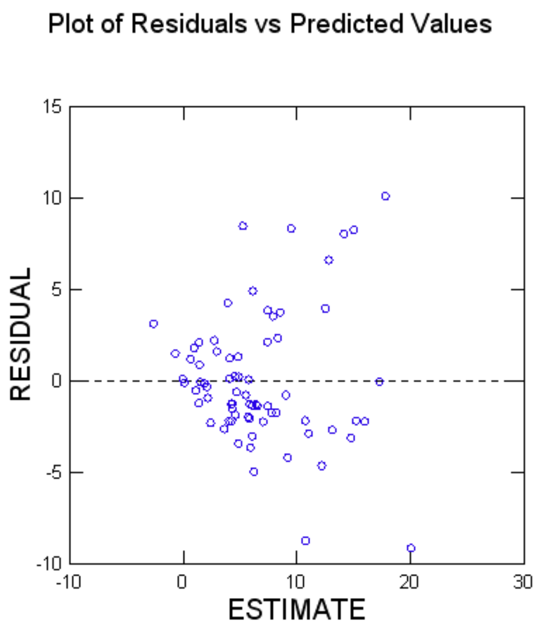
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = -1.19\ L_{thru} + 1.35\ L_{si} + 2.40$



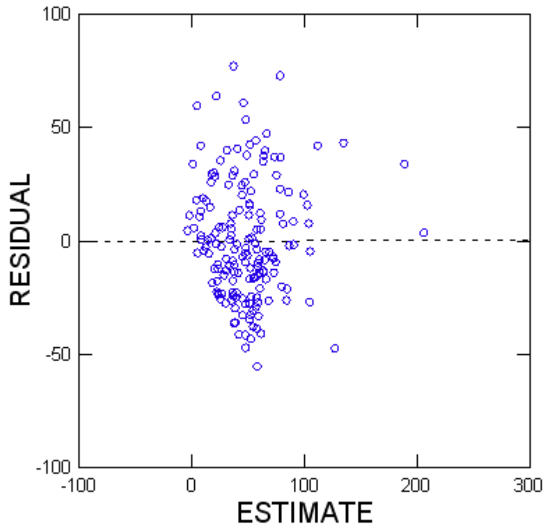
Regression Model: $L_{out} = -0.02\ Q_{thru} + 0.07\ Q_{si} + 1.00\ P_m - 0.005\ C_{thru} + 0.035\ C_{si} - 5.95$



4. Entire Period

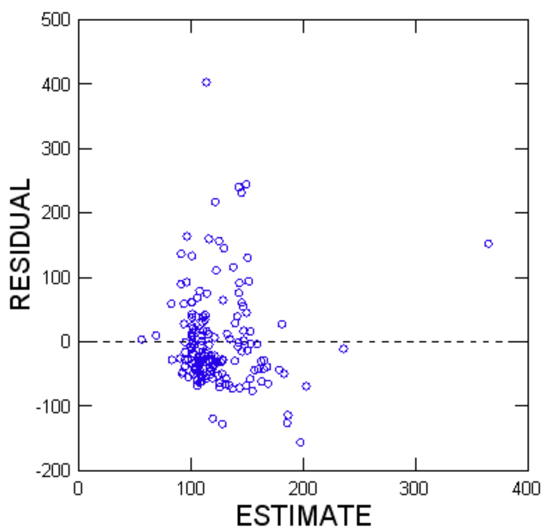
Regression Model: $Q_{out} = 0.34\ Q_{thru} + 0.76\ Q_{si} + 7.62\ P_m - 9.91$

Plot of Residuals vs Predicted Values

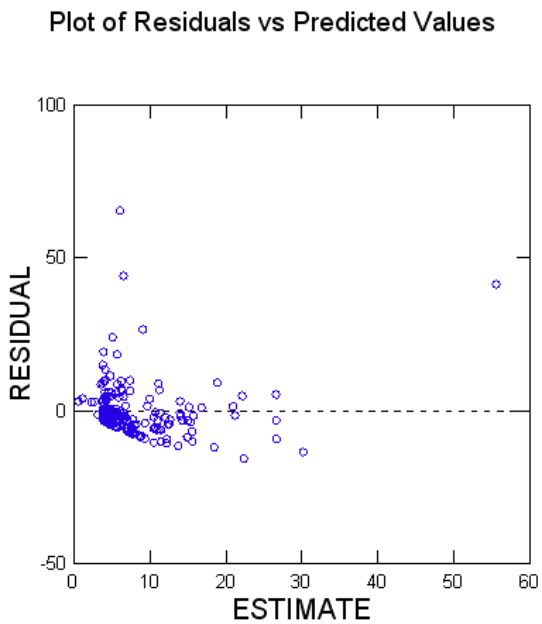


Regression Model: $C_{out} = -0.27\ C_{thru} + 0.35\ C_{si} + 101.61$

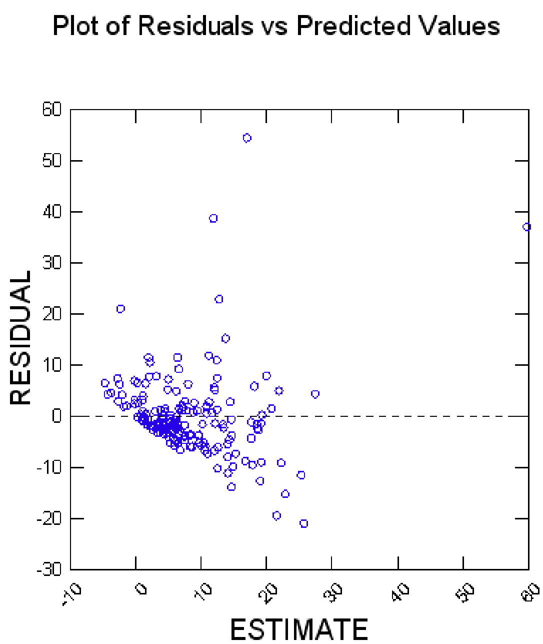
Plot of Residuals vs Predicted Values



Regression Model: $L_{out} = -2.12\ L_{thru} + 1.93\ L_{si} + 3.88$



Regression Model: $L_{out} = 0.05\ Q_{thru} + 0.02\ Q_{si} + 1.28\ P_m - 0.04\ C_{thru} + 0.07\ C_{si} - 4.76$



	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	**IN**	**OUT**	**Flow Thru**	**Supplemental Inflow**	**IN**	**OUT**	**Thru**	**Supplemental Inflow**	**Rainfall**	**Rainfall (in)**	**IN**	**OUT**	**Thru**	**Supplemental Inflow**
May-79	7.44	23.05	0.06	7.38	0.51	1.64	0.00	0.51	0.00	4.66	55.90	57.70	47.10	55.92
Jun-79	32.16	0.00	0.00	32.16	2.06	0.00	0.00	2.06	0.00	1.22	51.90	0.00	0.00	51.87
Jul-79	9.55	17.07	0.30	9.25	0.46	1.50	0.02	0.45	0.00	5.64	39.10	71.20	41.40	39.00
Aug-79	3.33	55.73	0.33	3.00	0.12	5.72	0.01	0.11	0.00	8.49	29.90	83.09	21.20	30.82
Sep-79	7.14	114.03	0.00	7.14	1.28	13.29	0.00	1.28	0.00	9.38	145.20	94.43	0.00	145.23
Oct-79	1.07	21.33	0.00	1.07	0.06	1.95	0.00	0.06	0.00	2.31	48.40	74.26	0.00	48.40
Nov-79	0.00	39.78	0.00	0.00	0.00	2.17	0.00	0.00	0.00	2.75	0.00	44.20	0.00	0.00
Dec-79	0.36	31.31	0.08	0.28	0.03	1.42	0.00	0.02	0.00	2.93	61.60	36.71	35.80	68.64
Jan-80	27.23	67.06	18.45	8.78	1.90	5.30	0.97	0.93	0.00	4.92	56.40	63.97	42.40	85.85
Feb-80	1.39	27.18	0.46	0.93	0.11	2.56	0.03	0.08	0.00	1.87	63.80	76.25	43.60	73.84
Mar-80	6.16	19.76	0.00	6.16	0.61	1.90	0.00	0.61	0.00	2.82	80.80	77.98	0.00	80.75
Apr-80	2.59	41.36	0.56	2.03	0.26	3.80	0.03	0.23	0.00	4.22	81.00	74.37	44.90	90.94
May-80	16.88	19.12	1.29	15.59	1.10	1.81	0.07	1.03	0.00	4.55	52.90	76.70	45.40	53.54
Jun-80	37.25	1.75	0.53	36.72	1.76	0.11	0.03	1.73	0.00	2.67	38.40	51.40	46.50	38.24
Jul-80	17.49	9.08	1.14	16.34	0.88	0.82	0.07	0.81	0.00	4.76	40.70	73.40	46.70	40.25
Aug-80	2.80	56.25	0.00	2.80	0.19	8.84	0.00	0.19	0.00	6.65	55.90	127.32	0.00	55.85
Sep-80	0.00	43.45	0.00	0.00	0.00	6.70	0.00	0.00	0.00	3.64	0.00	124.87	0.00	0.00
Oct-80	14.66	9.30	0.30	14.36	0.36	0.90	0.02	0.34	0.00	1.06	20.00	78.55	49.10	19.41
Nov-80	8.47	13.63	0.48	7.99	0.27	0.51	0.03	0.24	0.00	3.09	25.80	30.27	49.60	24.41
Dec-80	6.96	6.96	0.38	6.58	0.45	0.28	0.02	0.43	0.00	1.06	52.20	32.07	50.00	52.37
Jan-81	11.52	0.03	0.03	11.48	0.58	0.00	0.00	0.58	0.00	0.52	40.90	45.90	50.80	40.89
Feb-81	3.08	21.66	0.20	2.88	0.17	1.37	0.01	0.16	0.00	3.02	44.10	51.11	51.20	43.62
Mar-81	11.82	4.93	0.18	11.63	0.72	0.39	0.01	0.71	0.00	0.89	49.50	64.22	51.70	49.50
Apr-81	44.70	18.24	12.93	31.77	2.38	2.71	0.69	1.69	0.00	0.14	43.20	120.46	43.40	43.03
May-81	48.45	14.81	14.81	33.63	1.69	2.95	0.63	1.06	0.00	2.55	28.30	161.30	34.20	25.63
Jun-81	14.62	20.18	8.03	6.59	1.24	3.59	0.32	0.91	0.00	6.63	68.50	144.11	32.60	112.12
Jul-81	15.01	0.95	0.42	14.58	0.97	0.17	0.02	0.95	0.00	6.18	52.20	149.72	31.10	52.83
Aug-81	1.82	65.57	0.00	1.82	0.10	5.34	0.00	0.10	0.00	10.69	44.30	65.97	0.00	44.31
Sep-81	0.00	50.16	0.00	0.00	0.00	6.76	0.00	0.00	0.00	3.97	0.00	109.20	0.00	0.00
Oct-81	6.67	1.15	0.37	6.29	0.32	0.26	0.01	0.30	0.00	0.26	38.39	186.24	27.20	39.06
Nov-81	5.29	19.20	0.64	4.65	0.32	3.21	0.02	0.30	0.00	1.69	48.91	135.29	27.00	51.87
Dec-81	9.42	0.00	0.00	9.42	0.60	0.00	0.00	0.60	0.00	0.02	51.20	0.00	0.00	51.18
Jan-82	7.42	0.00	0.00	7.42	0.39	0.00	0.00	0.39	0.00	0.39	43.00	0.00	0.00	43.03
Feb-82	1.60	0.00	0.00	1.60	0.08	0.00	0.00	0.08	0.00	0.90	40.40	0.00	0.00	40.38
Mar-82	4.86	10.90	0.00	4.86	0.22	2.26	0.00	0.22	0.00	1.55	36.60	168.14	0.00	36.62
Apr-82	18.55	15.96	5.92	12.63	0.75	4.51	0.25	0.50	0.00	1.59	32.70	229.15	33.90	32.11
May-82	24.40	32.01	0.00	24.40	4.27	9.68	0.00	4.27	0.00	6.70	141.78	245.07	0.00	141.72
Jun-82	29.32	151.65	0.00	29.32	26.85	96.77	0.00	26.85	0.00	8.75	741.80	516.92	0.00	741.75
Jul-82	25.29	114.60	0.00	25.29	11.83	31.77	0.00	11.83	0.00	3.74	379.00	224.54	0.00	378.99
Aug-82	19.58	101.73	0.00	19.58	5.29	16.94	0.00	5.29	0.00	5.73	218.80	134.90	0.00	218.75
Sep-82	0.00	71.69	0.00	0.00	0.00	12.71	0.00	0.00	0.00	5.49	0.00	143.64	0.00	0.00
Oct-82	0.00	64.58	0.00	0.00	0.00	18.67	0.00	0.00	0.00	1.99	0.00	234.10	0.00	0.00
Nov-82	4.29	3.11	0.62	3.67	0.43	1.01	0.03	0.39	0.00	0.64	80.30	264.00	42.70	86.62
Dec-82	14.15	0.00	0.00	14.15	1.47	0.00	0.00	1.47	0.00	0.40	84.10	0.00	0.00	84.07
Jan-83	10.68	26.09	0.00	10.68	1.10	5.32	0.00	1.10	0.00	3.84	83.60	165.32	0.00	83.56
Feb-83	0.93	73.53	0.00	0.93	0.09	18.94	0.00	0.09	0.00	6.88	75.00	208.67	0.00	74.98
Mar-83	0.19	45.64	0.00	0.19	0.02	7.40	0.00	0.02	0.00	4.79	75.00	131.34	0.00	75.01
Apr-83	5.02	14.09	0.17	4.85	0.48	1.64	0.01	0.47	0.00	1.10	77.50	94.52	48.80	78.54
May-83	37.04	0.00	0.00	37.04	3.49	0.00	0.00	3.49	0.00	1.03	76.20	0.00	0.00	76.23
Jun-83	16.39	73.25	0.00	16.39	2.74	35.56	0.00	2.74	0.00	5.92	135.60	393.30	0.00	135.58
Jul-83	10.50	14.73	0.55	9.95	1.35	5.11	0.04	1.31	0.00	2.21	104.15	281.10	52.70	106.92
Aug-83	2.88	47.30	0.00	2.88	0.40	10.51	0.00	0.40	0.00	3.38	112.80	180.10	0.00	112.73
Sep-83	3.14	50.37	0.00	3.14	0.50	9.23	0.00	0.50	0.00	2.12	129.10	148.40	0.00	129.06
Oct-83	7.24	61.29	0.00	7.24	1.31	12.75	0.00	1.31	0.00	4.01	146.30	168.51	0.00	146.31
Nov-83	1.46	9.00	0.45	1.01	0.13	1.52	0.03	0.10	0.00	0.59	70.69	136.70	57.60	76.60
Dec-83	4.85	23.59	1.15	3.70	0.48	3.77	0.08	0.39	0.00	4.41	79.77	129.60	58.70	86.29
Jan-84	7.62	12.58	2.70	4.92	0.59	2.12	0.20	0.39	0.00	0.28	62.54	136.40	60.30	63.77
Feb-84	36.33	26.45	17.03	19.30	2.77	3.45	1.28	1.49	0.00	1.66	61.80	105.57	60.70	62.72
Mar-84	47.85	54.94	22.09	25.77	3.90	8.21	1.63	2.27	0.00	3.74	65.92	121.01	59.80	71.22
Apr-84	43.76	40.45	19.33	24.43	3.81	6.96	1.39	2.41	0.00	1.69	70.54	139.46	58.40	80.06
May-84	33.76	19.60	5.17	28.59	3.05	3.73	0.36	2.69	0.00	5.13	73.30	154.01	57.10	76.21
Jun-84	12.90	17.75	0.00	12.90	1.23	4.22	0.00	1.23	0.00	4.10	77.16	192.73	0.00	77.11
Jul-84	4.35	62.31	0.00	4.35	0.66	28.96	0.00	0.66	0.00	7.58	123.52	376.48	0.00	123.55
Aug-84	1.37	24.82	0.00	1.37	0.24	8.60	0.00	0.24	0.00	4.00	138.98	280.81	0.00	139.01
Sep-84	10.86	37.77	0.18	10.68	1.30	15.80	0.01	1.28	0.00	4.91	96.68	338.78	52.30	97.45
Oct-84	11.19	35.09	0.00	11.19	1.42	10.97	0.00	1.42	0.00	0.38	102.68	253.13	0.00	102.66
Nov-84	17.03	26.93	0.00	17.03	1.89	2.89	0.00	1.89	0.00	2.81	89.70	86.87	0.00	89.69
Dec-84	11.42	19.37	0.37	11.05	0.78	1.02	0.02	0.76	0.00	0.31	55.50	42.76	48.10	55.74
Jan-85	22.14	26.41	4.54	17.60	1.37	1.23	0.28	1.09	0.00	0.99	50.20	37.81	50.60	50.10
Feb-85	49.64	63.38	27.90	21.74	3.74	5.46	2.11	1.63	0.00	0.10	61.00	69.83	61.30	60.65
Mar-85	33.96	82.78	22.50	11.47	2.67	15.41	1.76	0.91	0.00	1.80	63.70	150.77	63.30	64.37
Apr-85	19.97	67.70	15.90	4.07	1.73	8.61	1.40	0.33	0.00	6.66	70.20	103.03	71.20	66.23
May-85	23.10	49.45	17.80	5.30	1.96	5.04	1.59	0.38	0.00	2.76	68.86	82.45	72.20	57.46
Jun-85	16.89	38.46	10.31	6.59	1.36	5.43	0.92	0.44	0.00	6.49	65.40	114.41	72.40	54.40
Jul-85	6.81	88.92	0.00	6.81	0.98	23.96	0.00	0.98	0.00	11.33	117.00	218.30	0.00	117.01

Month	Flow (kac-ft)				Load (mt)					Rainfall (in)	Concentration (ppb)			
	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall		IN	OUT	Thru	Supplemental Inflow
Aug-85	5.74	45.15	0.00	5.74	0.91	11.21	0.00	0.91	0.00	7.10	127.80	201.10	0.00	127.79
Sep-85	1.14	55.08	0.00	1.14	0.18	13.98	0.00	0.18	0.00	8.26	124.20	205.60	0.00	124.21
Oct-85	2.45	30.72	0.00	2.45	0.36	8.88	0.00	0.36	0.00	2.82	118.57	234.03	0.00	118.52
Nov-85	4.08	5.66	0.08	4.00	0.27	0.44	0.01	0.26	0.00	1.44	52.86	62.77	74.00	52.45
Dec-85	4.44	5.33	0.12	4.32	0.22	0.92	0.01	0.21	0.00	1.52	40.06	139.84	74.20	39.05
Jan-86	5.38	18.84	0.00	5.38	0.32	2.92	0.00	0.32	0.00	2.71	48.78	125.62	0.00	48.77
Feb-86	6.53	8.03	0.24	6.29	0.57	1.20	0.02	0.55	0.00	1.44	70.62	121.41	74.90	70.50
Mar-86	3.23	21.96	1.00	2.23	0.34	3.38	0.09	0.24	0.00	3.49	84.17	124.61	75.00	88.26
Apr-86	22.61	1.54	0.51	22.10	1.39	0.26	0.05	1.34	0.00	0.45	49.90	138.70	75.40	49.28
May-86	22.29	0.09	0.09	22.20	1.02	0.01	0.01	1.01	0.00	2.25	37.20	121.20	75.70	37.02
Jun-86	10.66	112.01	0.21	10.45	1.22	71.40	0.02	1.20	0.00	13.97	92.44	516.35	75.90	92.80
Jul-86	9.82	107.03	0.00	9.82	1.42	50.54	0.00	1.42	0.00	6.40	116.80	382.50	0.00	116.82
Aug-86	13.05	98.80	0.00	13.05	1.86	17.19	0.00	1.86	0.00	8.40	115.70	140.90	0.00	115.68
Sep-86	7.11	86.18	0.00	7.11	1.01	14.28	0.00	1.01	0.00	3.55	115.00	134.20	0.00	115.00
Oct-86	0.00	18.60	0.00	0.00	0.00	2.23	0.00	0.00	0.00	3.64	0.00	97.30	0.00	0.00
Nov-86	3.74	11.52	0.00	3.74	0.24	1.80	0.00	0.24	0.00	0.29	52.80	126.80	77.50	52.77
Dec-86	10.07	20.65	0.48	9.59	0.68	3.20	0.05	0.63	0.00	4.47	54.50	125.50	77.70	53.38
Jan-87	2.74	31.90	0.53	2.21	0.22	5.29	0.05	0.17	0.00	0.90	65.49	134.30	78.20	62.43
Feb-87	3.52	11.27	0.42	3.10	0.28	1.27	0.04	0.24	0.00	1.21	65.10	91.30	78.30	63.35
Mar-87	0.18	32.04	0.00	0.18	0.02	3.81	0.00	0.02	0.00	5.89	108.50	96.30	0.00	108.31
Apr-87	17.89	11.07	2.40	15.49	1.74	1.23	0.23	1.51	0.00	0.27	78.95	89.90	79.00	78.99
May-87	22.86	3.80	0.63	22.24	2.26	0.42	0.05	2.20	0.00	2.65	79.90	89.90	65.80	80.29
Jun-87	33.27	20.84	5.37	27.91	2.22	1.19	0.30	1.92	0.00	6.43	54.10	46.30	46.00	55.65
Jul-87	3.43	27.95	0.31	3.12	0.19	4.11	0.02	0.17	0.00	5.83	43.70	119.00	44.90	43.56
Aug-87	11.48	11.51	0.46	11.02	0.62	2.03	0.03	0.60	0.00	3.35	43.94	143.10	44.70	43.94
Sep-87	3.37	26.38	0.40	2.97	0.20	2.37	0.02	0.18	0.00	8.84	48.31	72.90	44.60	48.83
Oct-87	1.58	28.81	0.00	1.58	0.15	9.80	0.00	0.15	0.00	2.51	75.29	275.49	44.30	75.46
Nov-87	15.84	82.40	0.00	15.84	5.04	26.03	0.00	5.04	0.00	6.66	257.88	255.97	0.00	257.83
Dec-87	3.14	10.14	0.12	3.01	0.22	3.93	0.01	0.22	0.00	0.12	58.05	314.30	44.10	58.54
Jan-88	4.05	7.04	0.76	3.29	0.26	1.02	0.05	0.21	0.00	1.47	51.22	117.30	52.30	51.00
Feb-88	10.04	24.54	7.02	3.03	1.35	5.12	0.96	0.40	0.00	1.60	109.20	169.07	110.70	105.64
Mar-88	46.66	56.35	22.78	23.87	4.73	11.29	2.24	2.49	0.00	1.70	82.10	162.40	79.50	84.49
Apr-88	55.11	31.68	19.82	35.29	4.20	4.56	1.40	2.80	0.00	2.28	61.79	116.75	57.10	64.37
May-88	21.86	4.89	0.82	21.04	2.36	0.58	0.06	2.31	0.00	2.19	87.60	96.50	56.40	88.80
Jun-88	10.33	16.96	0.70	9.63	1.07	2.73	0.06	1.02	0.00	7.54	84.00	130.20	64.50	85.44
Jul-88	2.19	61.01	0.00	2.19	0.16	17.55	0.00	0.16	0.00	9.76	60.03	233.00	0.00	60.04
Aug-88	34.35	104.58	0.00	34.35	9.53	26.85	0.00	9.53	0.00	7.85	224.85	208.00	0.00	224.79
Sep-88	13.43	6.40	0.30	13.13	1.07	2.05	0.04	1.03	0.00	1.45	64.69	259.60	102.00	63.78
Oct-88	37.47	0.10	0.10	37.37	2.58	0.02	0.01	2.57	0.00	0.08	55.80	180.80	110.00	55.68
Nov-88	16.52	12.73	0.31	16.22	1.75	2.24	0.05	1.71	0.00	2.64	85.90	142.50	118.90	85.29
Dec-88	19.33	2.73	2.31	17.02	2.79	0.32	0.38	2.41	0.00	0.30	116.80	95.50	132.20	114.64
Jan-89	12.45	3.85	0.80	11.66	1.12	0.33	0.11	1.01	0.00	0.88	73.10	68.60	116.40	70.14
Feb-89	32.61	31.77	11.82	20.80	3.40	3.67	1.28	2.11	0.00	0.00	84.30	93.59	87.80	82.34
Mar-89	29.14	58.80	10.00	19.14	2.71	6.64	0.96	1.75	0.00	2.23	75.50	91.51	78.10	74.07
Apr-89	30.74	70.97	13.89	16.85	2.71	9.08	1.21	1.51	0.00	4.78	71.50	103.67	70.40	72.38
May-89	39.72	65.42	15.25	24.47	2.31	7.90	0.97	1.34	0.00	3.02	47.10	97.78	51.60	44.28
Jun-89	28.51	52.14	0.51	28.01	1.26	5.97	0.03	1.23	0.00	6.45	35.90	92.68	52.90	35.61
Jul-89	9.04	43.24	3.00	6.03	0.31	12.14	0.20	0.11	0.00	8.28	27.60	227.39	54.70	14.12
Aug-89	3.40	57.78	0.26	3.14	0.13	13.44	0.02	0.11	0.00	5.34	30.63	188.48	56.30	28.57
Sep-89	0.49	67.92	0.00	0.49	0.05	23.01	0.00	0.05	0.00	8.05	79.90	274.46	0.00	79.87
Oct-89	0.00	22.42	0.00	0.00	0.00	3.84	0.00	0.00	0.00	1.91	0.00	138.74	0.00	0.00
Nov-89	20.27	0.00	0.00	20.27	1.37	0.00	0.00	1.37	0.00	0.28	54.70	0.00	0.00	54.73
Dec-89	5.51	0.00	0.00	5.51	0.33	0.00	0.00	0.33	0.00	1.45	48.90	0.00	0.00	48.90
Jan-90	8.08	33.05	3.26	4.83	0.72	1.95	0.30	0.42	0.00	0.93	71.70	47.76	74.20	69.94
Feb-90	20.50	53.82	13.66	6.84	2.20	6.02	1.48	0.73	0.00	1.91	87.00	90.64	87.50	86.01
Mar-90	35.29	47.94	8.85	26.45	4.21	5.75	1.08	3.13	0.00	1.74	96.60	97.11	99.00	95.82
Apr-90	25.80	17.60	2.19	23.61	2.45	1.58	0.27	2.19	0.00	1.68	77.00	72.86	98.60	74.98
May-90	7.79	0.71	0.02	7.77	0.51	0.06	0.00	0.51	0.00	6.09	52.90	66.40	92.70	52.82
Jun-90	2.26	13.23	0.03	2.23	0.16	1.14	0.00	0.16	0.00	4.22	58.70	69.63	90.40	58.32
Jul-90	1.09	34.64	0.00	1.09	0.07	3.87	0.00	0.07	0.00	6.27	49.95	90.56	0.00	49.91
Aug-90	3.05	40.27	0.00	3.05	0.21	4.29	0.00	0.21	0.00	8.42	55.86	86.30	0.00	55.85
Sep-90	5.58	10.80	0.00	5.58	1.64	0.79	0.00	1.64	0.00	1.91	238.25	59.06	0.00	238.23
Oct-90	3.64	18.04	0.00	3.64	1.04	2.97	0.00	1.04	0.00	1.94	230.66	133.20	0.00	230.62
Nov-90	4.56	0.00	0.00	4.56	0.21	0.00	0.00	0.21	0.00	0.68	38.00	0.00	0.00	38.02
Dec-90	6.61	0.00	0.00	6.61	0.36	0.00	0.00	0.36	0.00	0.34	44.60	0.00	0.00	44.61
Jan-91	15.35	66.99	0.00	15.35	1.36	19.79	0.00	1.36	0.00	7.87	71.62	239.37	0.00	71.62
Feb-91	8.79	10.54	0.00	8.79	0.64	2.23	0.00	0.64	0.00	1.86	58.49	171.62	0.00	58.51
Mar-91	10.25	9.33	0.09	10.16	0.84	1.96	0.01	0.83	0.00	2.12	66.46	170.50	62.30	66.50
Apr-91	13.20	32.07	0.08	13.13	1.20	4.41	0.01	1.19	0.00	5.50	73.57	111.35	58.60	73.65
May-91	21.31	49.07	0.00	21.31	4.54	8.00	0.00	4.54	0.00	6.94	172.52	131.95	0.00	172.50
Jun-91	4.34	28.42	0.00	4.34	1.53	4.68	0.00	1.53	0.00	7.87	286.10	133.40	0.00	286.02
Jul-91	0.92	40.04	0.00	0.92	0.08	4.65	0.00	0.08	0.00	8.08	71.07	93.97	0.00	71.14
Aug-91	0.00	47.82	0.00	0.00	0.00	3.97	0.00	0.00	0.00	6.12	0.00	67.27	0.00	0.00
Sep-91	0.00	30.79	0.00	0.00	0.00	4.23	0.00	0.00	0.00	4.59	0.00	111.40	0.00	0.00
Oct-91	1.61	9.76	0.77	0.84	0.10	1.12	0.04	0.06	0.00	3.24	49.33	92.94	41.40	56.66

	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	**IN**	**OUT**	**Flow Thru**	**Supplemental Inflow**	**IN**	**OUT**	**Thru**	**Supplemental Inflow**	**Rainfall**	**Rainfall (in)**	**IN**	**OUT**	**Thru**	**Supplemental Inflow**
Nov-91	10.81	10.30	1.61	9.20	0.59	1.13	0.08	0.51	0.00	2.86	44.07	89.00	38.00	45.09
Dec-91	13.50	11.89	2.46	11.05	0.53	0.82	0.10	0.43	0.00	0.49	32.00	55.71	32.80	31.81
Jan-92	30.18	31.64	12.69	17.49	1.39	1.81	0.50	0.89	0.00	0.83	37.29	46.23	32.00	41.11
Feb-92	13.37	55.71	3.54	9.83	0.86	4.04	0.17	0.69	0.00	3.74	52.27	58.75	39.20	56.92
Mar-92	17.48	49.99	10.24	7.24	1.58	6.87	0.75	0.83	0.00	1.70	73.22	111.26	59.20	92.97
Apr-92	8.47	43.30	2.50	5.97	0.73	3.49	0.21	0.52	0.00	3.36	69.72	65.31	67.40	70.69
May-92	60.42	42.71	16.52	43.90	4.37	3.00	1.22	3.16	0.00	0.84	58.62	56.98	59.60	58.26
Jun-92	14.43	79.86	0.08	14.34	1.13	10.20	0.01	1.13	0.00	16.62	63.72	103.50	55.00	63.74
Jul-92	70.86	101.47	55.87	14.99	7.41	16.09	3.28	4.14	0.00	4.84	84.74	128.40	47.50	223.55
Aug-92	46.60	77.86	8.43	38.17	6.58	16.14	0.34	6.25	0.00	10.93	114.46	167.95	32.40	132.57
Sep-92	113.68	116.01	70.89	42.79	7.77	19.90	1.89	5.88	0.00	4.29	55.39	139.00	21.60	111.36
Oct-92	24.92	10.09	2.87	22.05	2.28	1.12	0.13	2.15	0.00	0.71	73.94	90.30	35.30	78.98
Nov-92	26.54	19.28	1.74	24.80	2.06	1.12	0.09	1.97	0.00	4.45	62.74	47.23	41.30	64.21
Dec-92	9.86	2.82	2.68	7.18	0.57	0.11	0.15	0.43	0.00	0.48	47.10	30.30	44.50	48.09
Jan-93	80.64	91.83	42.05	38.59	7.99	12.75	2.48	5.52	0.00	6.81	80.27	112.48	47.70	115.79
Feb-93	79.92	101.65	79.92	0.00	5.15	9.39	5.04	0.12	0.00	1.91	52.30	74.80	51.10	0.00
Mar-93	39.36	46.38	34.47	4.89	3.83	6.01	3.31	0.52	0.00	2.30	78.80	104.90	77.70	86.76
Apr-93	88.09	83.01	79.80	8.29	11.07	10.66	9.80	1.27	0.00	3.48	101.77	104.00	99.50	123.68
May-93	41.78	9.36	2.48	39.30	4.97	1.28	0.29	4.68	0.00	4.23	96.44	110.70	94.60	96.55
Jun-93	17.74	23.89	2.50	15.24	1.97	3.51	0.27	1.70	0.00	6.88	89.78	119.11	87.20	90.16
Jul-93	24.42	2.98	1.08	23.33	2.19	0.19	0.09	2.10	0.00	6.64	72.80	52.93	67.00	73.04
Aug-93	25.16	12.56	1.67	23.49	1.84	0.84	0.10	1.73	0.00	4.88	59.12	54.36	49.80	59.77
Sep-93	38.07	49.22	3.16	34.91	3.91	4.57	0.21	3.70	0.00	6.40	83.23	75.24	54.50	85.82
Oct-93	37.93	43.28	1.69	36.23	3.89	10.08	0.13	3.76	0.00	4.18	83.11	188.69	62.50	84.08
Nov-93	27.70	8.77	3.38	24.32	2.08	0.91	0.21	1.87	0.00	1.25	60.78	83.90	50.20	62.26
Dec-93	15.52	3.66	3.58	11.94	0.92	0.14	0.18	0.73	0.00	0.58	47.80	31.17	41.70	49.58
Jan-94	13.79	20.34	3.07	10.72	0.80	0.92	0.18	0.62	0.00	3.00	47.23	36.59	48.10	46.97
Feb-94	12.30	27.95	2.66	9.64	0.72	2.13	0.18	0.55	0.00	3.11	47.59	61.87	54.10	45.80
Mar-94	13.44	7.83	1.57	11.88	1.01	0.48	0.12	0.89	0.00	2.97	61.00	50.09	62.90	60.74
Apr-94	26.35	11.22	2.71	23.64	2.10	0.89	0.23	1.87	0.00	4.83	64.55	64.33	68.80	64.01
May-94	35.21	6.36	2.33	32.88	3.04	0.50	0.20	2.84	0.00	4.26	69.98	64.17	68.50	70.06
Jun-94	17.61	38.75	3.08	14.53	1.67	3.79	0.26	1.41	0.00	7.00	76.63	79.26	67.80	78.47
Jul-94	21.24	33.08	1.35	19.89	4.71	7.93	0.11	4.60	0.00	6.92	179.54	194.17	67.00	187.17
Aug-94	29.96	42.22	2.01	27.95	7.93	6.36	0.15	7.77	0.00	7.48	214.35	121.98	62.10	225.29
Sep-94	26.93	105.33	2.56	24.37	7.18	17.65	0.21	6.96	0.00	7.40	215.87	135.84	67.60	231.44
Oct-94	33.12	69.31	2.98	30.14	6.67	14.00	0.22	6.45	0.00	4.10	163.10	163.60	58.80	173.36
Nov-94	26.65	65.02	2.49	24.16	4.59	13.60	0.22	4.36	0.00	6.50	139.48	169.44	73.20	146.31
Dec-94	25.81	100.64	2.85	22.95	5.26	11.69	0.32	4.95	0.00	7.68	165.18	94.11	89.50	174.58
Jan-95	16.60	52.45	1.10	15.50	2.99	4.14	0.13	2.86	0.00	2.89	146.04	63.90	96.30	149.57
Feb-95	7.22	34.34	1.61	5.62	0.80	2.62	0.20	0.60	0.00	1.69	90.00	61.80	102.60	86.40
Mar-95	5.66	14.53	2.62	3.04	0.76	1.13	0.35	0.41	0.00	2.03	109.02	62.80	108.40	109.48
Apr-95	24.34	7.31	4.30	20.05	3.50	0.61	0.60	2.90	0.00	1.22	116.54	67.19	113.60	117.11
May-95	13.12	13.69	4.31	8.81	2.00	1.00	0.64	1.36	0.00	4.06	123.49	59.38	120.50	124.91
Jun-95	5.82	47.51	1.78	4.04	0.61	3.77	0.28	0.33	0.00	8.63	84.35	64.28	126.50	65.82
Jul-95	8.18	87.09	2.98	5.20	1.63	10.71	0.49	1.14	0.00	7.15	161.11	99.68	132.70	177.27
Aug-95	19.81	90.35	2.55	17.26	6.20	13.04	0.44	5.76	0.00	9.82	253.60	116.95	138.40	270.58
Sep-95	36.52	101.66	2.68	33.84	9.55	19.44	0.26	9.30	0.00	8.18	211.93	154.95	78.60	222.49
Oct-95	40.17	119.88	1.37	38.80	9.08	22.18	0.09	8.99	0.00	10.46	183.20	149.87	53.40	187.76
Nov-95	11.19	11.51	1.80	9.39	1.26	1.38	0.16	1.10	0.00	0.24	91.33	96.90	71.40	95.11
Dec-95	6.74	3.46	1.39	5.36	0.56	0.19	0.12	0.45	0.00	0.63	67.76	44.30	69.20	67.39
Jan-96	1.10	8.68	0.53	0.57	0.09	0.41	0.07	0.03	0.00	1.23	69.40	38.20	100.60	40.06
Feb-96	14.22	11.60	3.74	10.48	2.16	0.96	0.61	1.55	0.00	0.48	123.10	67.34	132.00	119.85
Mar-96	13.44	21.08	3.27	10.17	1.74	1.52	0.57	1.18	0.00	3.66	105.03	58.53	140.50	93.62
Apr-96	31.83	28.27	11.87	19.96	5.01	2.58	2.23	2.78	0.00	2.07	127.37	73.99	151.90	112.85
May-96	14.14	59.10	2.05	12.09	1.43	6.03	0.25	1.18	0.00	9.64	82.12	82.67	99.40	79.12
Jun-96	10.85	107.69	0.64	10.22	3.39	13.77	0.08	3.31	0.00	11.60	252.64	103.57	95.10	262.48
Jul-96	18.46	34.29	1.37	17.09	3.87	4.63	0.15	3.72	0.00	4.01	169.93	109.30	90.80	176.26
Aug-96	4.57	27.31	2.12	2.46	0.54	2.75	0.23	0.31	0.00	6.44	95.91	81.59	88.30	102.39
Sep-96	8.39	8.05	1.41	6.98	0.87	0.62	0.14	0.72	0.00	3.27	83.91	62.61	83.20	84.06
Oct-96	3.56	69.32	1.27	2.29	0.39	8.19	0.13	0.27	0.00	6.08	89.14	95.72	80.40	93.98
Nov-96	31.91	16.32	14.05	17.86	2.29	1.10	1.32	0.97	0.00	2.09	58.06	54.85	75.90	44.08
Dec-96	30.54	19.79	12.01	18.54	2.81	0.98	1.10	1.71	0.00	0.29	74.61	40.10	74.20	74.90
Jan-97	15.39	25.67	5.69	9.70	1.79	1.21	0.49	1.29	0.00	1.19	94.08	38.19	70.30	107.96
Feb-97	8.93	22.91	1.98	6.95	0.68	1.03	0.16	0.52	0.00	1.18	61.66	36.58	66.60	60.23
Mar-97	19.51	10.77	3.18	16.33	1.50	0.62	0.25	1.25	0.00	2.35	62.26	46.72	64.20	61.84
Apr-97	33.67	40.73	8.24	25.43	2.15	3.45	0.62	1.52	0.00	5.92	51.59	68.59	61.10	48.55
May-97	15.79	40.64	2.11	13.68	5.46	2.05	0.15	5.31	0.00	4.52	280.00	40.81	56.70	314.42
Jun-97	9.82	74.74	0.76	9.06	0.64	4.22	0.05	0.59	0.00	7.32	52.92	45.71	53.50	52.91
Jul-97	6.34	13.13	0.17	6.17	0.41	1.25	0.01	0.40	0.00	5.63	52.65	76.99	49.80	52.71
Aug-97	11.45	84.93	0.40	11.05	3.79	7.57	0.02	3.76	0.00	7.51	267.97	72.17	47.00	275.99
Sep-97	4.70	33.70	0.74	3.96	0.37	2.32	0.04	0.33	0.00	4.55	64.31	55.74	43.80	68.14
Oct-97	2.19	9.46	0.72	1.47	0.15	0.51	0.05	0.11	0.00	0.92	57.29	43.77	53.60	59.18
Nov-97	12.51	8.98	4.35	8.16	0.81	0.40	0.35	0.46	0.00	3.73	52.69	36.32	65.50	45.80
Dec-97	22.56	77.74	0.15	22.41	0.99	5.14	0.01	0.97	0.00	4.78	35.37	53.58	70.30	35.16
Jan-98	18.14	14.11	0.66	17.47	0.74	0.71	0.07	0.67	0.00	1.71	33.11	40.82	82.20	31.26

Month	Flow (kac-ft)				Load (mt)					Rainfall (in)	Concentration (ppb)			
	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall		IN	OUT	Thru	Supplemental Inflow
Feb-98	13.09	53.27	0.42	12.66	1.51	2.77	0.05	1.46	0.00	4.54	93.44	42.10	95.60	93.35
Mar-98	9.97	46.11	0.92	9.05	0.82	2.92	0.12	0.70	0.00	5.66	66.57	51.32	104.80	62.69
Apr-98	28.26	6.72	5.14	23.12	3.93	0.45	0.71	3.22	0.00	0.80	112.59	54.27	111.00	112.88
May-98	71.20	42.43	38.45	32.75	9.41	4.99	4.85	4.56	0.00	2.62	107.09	95.18	102.20	112.77
Jun-98	78.94	34.70	44.50	34.44	7.59	3.50	4.41	3.18	0.00	2.69	77.87	81.56	80.20	74.82
Jul-98	25.86	39.80	9.98	15.88	1.66	2.98	0.71	0.95	0.00	7.29	51.98	60.64	57.30	48.67
Aug-98	14.19	65.42	1.61	12.58	1.20	11.30	0.12	1.08	0.00	9.82	68.54	139.98	58.50	69.82
Sep-98	11.86	51.85	0.68	11.19	1.54	5.82	0.05	1.49	0.00	6.88	104.94	90.99	59.70	107.62
Oct-98	5.97	8.24	0.26	5.71	0.72	0.83	0.02	0.70	0.00	1.09	98.18	81.60	61.00	99.84
Nov-98	34.02	106.98	0.59	33.43	5.56	21.04	0.05	5.51	0.00	9.13	132.37	159.31	64.30	133.58
Dec-98	2.41	7.16	1.10	1.31	0.19	0.52	0.10	0.09	0.00	0.78	64.52	59.25	74.00	56.50
Jan-99	2.90	11.91	0.13	2.77	0.14	0.83	0.01	0.13	0.00	2.19	39.66	56.34	84.20	37.62
Feb-99	7.35	6.21	1.02	6.33	0.64	0.27	0.11	0.53	0.00	0.86	70.62	35.04	89.50	67.59
Mar-99	29.14	5.24	11.29	17.84	2.62	0.18	1.04	1.58	0.00	0.46	72.91	27.95	74.60	71.88
Apr-99	57.40	51.91	27.01	30.39	5.79	4.39	2.70	3.10	0.00	1.66	81.80	68.44	80.80	82.62
May-99	27.47	38.86	13.05	14.42	5.39	4.77	2.39	3.01	0.00	4.62	159.05	99.45	148.10	168.98
Jun-99	20.52	84.82	2.24	18.28	3.05	8.20	0.71	2.34	0.00	10.82	120.32	78.34	256.20	103.72
Jul-99	20.53	94.74	1.41	19.12	4.85	17.84	0.47	4.38	0.00	6.22	191.46	152.59	271.50	185.51
Aug-99	8.24	23.92	0.88	7.36	0.80	1.75	0.27	0.53	0.00	4.05	78.58	59.33	245.10	58.58
Sep-99	35.39	100.50	2.03	33.36	7.00	11.67	0.57	6.43	0.00	11.73	160.24	94.03	228.10	156.09
Oct-99	65.28	153.97	2.36	62.93	13.10	23.28	0.61	12.50	0.00	9.68	162.62	122.44	208.80	160.85
Nov-99	8.88	17.44	1.11	7.77	0.91	2.51	0.26	0.65	0.00	0.77	82.97	116.49	192.60	67.33
Dec-99	3.47	2.08	0.07	3.41	0.50	0.14	0.01	0.48	0.00	0.25	116.25	53.13	169.10	115.24
Jan-00	13.49	1.32	0.82	12.67	2.37	0.09	0.15	2.22	0.00	0.88	142.14	56.45	148.50	141.73
Feb-00	6.95	1.54	0.25	6.70	1.21	0.09	0.05	1.17	0.00	1.12	141.58	47.43	145.90	141.35
Mar-00	26.22	9.71	4.75	21.46	4.50	1.05	0.84	3.66	0.00	1.89	139.13	87.85	143.80	138.12
Apr-00	32.15	43.14	8.79	23.36	4.63	5.86	1.53	3.10	0.00	4.55	116.63	109.99	141.00	107.47
May-00	90.51	16.74	42.87	47.63	11.29	1.77	5.53	5.76	0.00	1.44	101.06	85.46	104.50	97.94
Jun-00	29.96	19.61	6.17	23.79	3.74	3.09	0.74	3.00	0.00	4.62	101.05	127.78	97.40	102.01
Jul-00	6.66	65.12	0.79	5.87	0.79	5.12	0.11	0.68	0.00	6.62	95.90	63.75	108.60	94.18
Aug-00	16.81	24.47	1.95	14.86	2.30	2.10	0.29	2.01	0.00	4.76	110.87	69.53	122.10	109.35
Sep-00	30.01	46.62	2.46	27.55	3.72	5.17	0.39	3.32	0.00	6.44	100.34	89.81	129.50	97.73
Oct-00	30.33	73.17	0.93	29.39	3.30	11.06	0.12	3.18	0.00	6.37	88.27	122.40	104.10	87.76
Nov-00	11.47	2.73	0.38	11.09	0.64	0.30	0.02	0.62	0.00	0.14	45.11	89.52	36.40	45.44
Dec-00	9.60	0.89	0.00	9.60	0.77	0.04	0.00	0.77	0.00	0.72	65.23	34.60	0.00	65.23
Jan-01	5.90	0.28	0.43	5.47	0.41	0.02	0.03	0.39	0.00	0.71	56.89	50.10	53.10	57.15
Feb-01	6.93	1.41	0.50	6.43	0.43	0.08	0.03	0.39	0.00	0.25	49.81	44.84	52.80	49.60
Mar-01	7.11	10.91	0.75	6.37	0.61	0.86	0.05	0.56	0.00	4.90	69.69	63.73	57.10	71.18
Apr-01	13.43	1.86	0.73	12.70	0.93	0.17	0.05	0.88	0.00	0.07	56.33	74.69	56.80	56.26
May-01	14.30	0.44	0.41	13.89	0.89	0.09	0.02	0.87	0.00	2.95	50.36	173.93	48.90	50.44
Jun-01	1.07	13.80	0.00	1.07	0.05	1.47	0.00	0.05	0.00	6.04	40.94	86.23	0.00	40.90
Jul-01	19.98	56.77	0.00	19.98	1.69	3.80	0.00	1.69	0.00	7.90	68.39	54.27	0.00	68.39
Aug-01	30.88	63.11	0.00	30.88	5.75	6.08	0.00	5.75	0.00	5.89	150.96	78.06	0.00	150.95
Sep-01	55.37	99.01	0.00	55.37	5.31	12.28	0.00	5.31	0.00	7.71	77.70	100.47	0.00	77.70
Oct-01	72.11	71.42	0.00	72.11	6.12	5.36	0.00	6.12	0.00	2.33	68.71	60.81	0.00	68.70
Nov-01	18.14	21.22	0.00	18.14	1.52	1.14	0.00	1.52	0.00	1.30	67.99	43.59	0.00	67.98
Dec-01	4.50	8.04	0.02	4.48	0.52	0.47	0.00	0.52	0.00	2.15	93.81	47.08	69.20	93.89
Jan-02	34.03	11.22	1.35	32.68	1.49	0.56	0.15	1.34	0.00	0.80	35.39	40.07	87.40	33.22
Feb-02	41.89	30.58	1.70	40.19	2.57	1.34	0.20	2.37	0.00	3.52	49.68	35.43	97.00	47.69
Mar-02	27.87	6.48	5.43	22.44	1.64	0.30	0.58	1.06	0.00	2.00	47.75	37.89	86.70	38.37
Apr-02	45.46	0.26	9.91	35.55	4.24	0.02	1.16	3.07	0.00	1.08	75.52	54.34	94.90	70.06
May-02	37.41	2.85	2.81	34.60	3.46	0.13	0.28	3.18	0.00	2.88	74.98	37.46	81.40	74.42
Jun-02	31.86	63.60	0.00	31.86	3.97	5.00	0.00	3.97	0.00	9.31	100.94	63.65	0.00	100.91
Jul-02	70.78	118.58	0.00	70.78	13.68	16.49	0.00	13.68	0.00	7.80	156.56	112.66	0.00	156.55
Aug-02	57.46	64.91	0.00	57.46	9.62	6.46	0.00	9.62	0.00	5.18	135.70	80.63	0.00	135.67
Sep-02	62.38	50.39	0.00	62.38	5.80	6.18	0.00	5.80	0.00	3.58	75.27	99.37	0.00	75.27
Oct-02	19.91	20.57	0.00	19.91	2.08	1.88	0.00	2.08	0.00	2.23	84.59	74.02	0.00	84.57
Nov-02	11.79	14.40	0.05	11.74	1.06	1.10	0.00	1.06	0.00	1.61	73.12	61.87	80.00	73.07
Dec-02	45.69	44.46	1.14	44.56	4.00	2.62	0.10	3.90	0.00	3.82	70.94	47.70	72.00	70.93
Jan-03	28.99	37.36	0.27	28.72	2.71	2.20	0.03	2.68	0.00	0.98	75.69	47.63	94.00	75.52
Feb-03	12.40	26.81	0.00	12.40	1.41	2.42	0.00	1.41	0.00	1.30	92.38	73.22	0.00	92.34
Mar-03	8.87	15.16	0.09	8.78	0.77	0.87	0.01	0.75	0.00	2.56	69.89	46.59	107.90	69.52
Apr-03	23.08	13.74	8.07	15.01	2.05	0.66	0.82	1.23	0.00	2.95	71.84	38.86	82.40	66.12
May-03	23.13	19.50	2.88	20.25	1.84	1.44	0.25	1.59	0.00	6.84	64.57	59.92	71.50	63.59
Jun-03	37.90	64.24	0.00	37.90	3.92	5.12	0.00	3.92	0.00	6.66	83.82	64.53	0.00	83.78
Jul-03	25.67	54.22	0.00	25.67	2.07	4.82	0.00	2.07	0.00	6.39	65.33	72.09	0.00	65.32
Aug-03	41.96	110.78	0.54	41.42	4.67	9.56	0.04	4.63	0.00	6.87	90.16	69.87	63.00	90.50
Sep-03	42.42	89.11	1.42	41.00	6.33	8.56	0.11	6.22	0.00	9.11	120.80	77.82	63.00	122.79
Oct-03	29.70	31.62	0.00	29.70	4.37	2.79	0.00	4.37	0.00	0.59	119.16	71.45	0.00	119.13
Nov-03	11.78	6.64	0.18	11.60	0.97	0.46	0.02	0.94	0.00	1.48	66.55	55.68	106.00	65.92
Dec-03	36.27	9.18	12.38	23.89	3.45	0.52	1.35	2.10	0.00	2.02	77.11	46.09	88.30	71.30
Jan-04	29.83	16.63	16.04	13.79	2.60	1.08	1.68	0.91	0.00	2.38	70.53	52.57	85.00	53.67
Feb-04	16.68	28.45	1.45	15.23	1.19	1.64	0.17	1.02	0.00	2.45	57.80	46.80	94.00	54.32
Mar-04	25.62	10.21	7.23	18.39	3.73	0.67	0.97	2.75	0.00	0.12	117.90	53.17	109.00	121.32
Apr-04	39.12	6.76	5.65	33.46	4.08	0.38	0.80	3.27	0.00	1.21	84.40	44.97	114.80	79.25

	Flow (kac-ft)				Load (mt)						Concentration (ppb)			
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Supplemental Inflow	Rainfall	Rainfall (in)	IN	OUT	Thru	Supplemental Inflow
May-04	52.65	2.96	15.01	37.64	6.39	0.18	1.81	4.58	0.00	0.92	98.33	48.12	97.90	98.47
Jun-04	31.01	50.62	4.95	26.06	1.55	2.82	0.46	1.09	0.00	6.91	40.50	45.08	75.00	33.95
Jul-04	59.57	58.15	9.50	50.06	2.87	3.04	0.69	2.18	0.00	7.02	38.95	42.41	58.80	35.19
Aug-04	149.73	209.78	0.00	149.73	5.45	10.89	0.00	5.45	0.00	13.53	29.51	42.03	73.10	29.49
Sep-04	186.79	222.80	0.00	186.79	11.85	17.23	0.00	11.85	0.00	7.58	51.40	62.68	0.00	51.39
Oct-04	65.05	67.59	1.65	63.40	4.28	4.58	0.27	4.01	0.00	1.78	53.35	54.87	134.00	51.25
Nov-04	3.61	5.22	0.09	3.53	0.38	0.25	0.02	0.36	0.00	0.46	85.56	39.50	180.30	83.16
Dec-04	40.13	7.74	13.03	27.09	7.64	0.27	2.69	4.95	0.00	0.84	154.12	27.95	167.20	147.84
Jan-05	8.18	9.07	2.45	5.73	1.74	0.88	0.61	1.12	0.00	0.83	172.05	78.33	203.20	158.73
Feb-05	24.10	17.39	9.16	14.94	7.54	3.57	2.94	4.60	0.00	0.97	253.49	166.45	260.40	249.18
Mar-05	16.97	64.54	1.36	15.61	2.34	6.17	0.39	1.95	0.00	6.33	111.86	77.44	235.00	101.15
Apr-05	43.04	26.41	24.51	18.53	11.04	6.36	6.80	4.25	0.00	1.95	207.79	195.05	224.60	185.57
May-05	28.02	24.04	9.59	18.43	5.54	4.81	2.27	3.28	0.00	5.84	160.28	162.06	191.40	144.06
Jun-05	43.02	178.07	0.00	43.01	7.82	27.91	0.00	7.82	0.00	14.76	147.34	126.99	140.60	147.34
Jul-05	37.76	102.03	0.19	37.57	6.05	11.46	0.02	6.02	0.00	6.05	129.81	90.93	104.00	129.90
Aug-05	4.90	27.91	0.00	4.90	0.56	2.28	0.00	0.56	0.00	8.35	92.34	66.10	0.00	92.32
Sep-05	5.58	27.06	0.09	5.49	0.62	1.84	0.02	0.61	0.00	5.75	90.62	55.10	143.00	89.74
Oct-05	16.21	66.36	0.00	16.21	3.48	8.27	0.00	3.48	0.00	7.77	174.13	101.00	0.00	174.11
Nov-05	7.79	24.94	0.00	7.79	2.00	3.68	0.00	2.00	0.00	1.97	208.03	119.40	0.00	208.00
Dec-05	6.92	1.17	0.07	6.85	1.94	0.08	0.02	1.92	0.00	0.15	227.53	55.00	217.80	227.54
Jan-06	41.28	17.02	16.60	24.68	12.59	3.98	5.34	7.24	0.00	0.20	247.04	189.20	260.80	237.75
Feb-06	8.79	25.14	0.28	8.51	3.08	5.79	0.08	3.01	0.00	3.36	284.17	186.60	219.70	286.23
Mar-06	15.33	8.25	0.24	15.09	3.68	1.80	0.06	3.62	0.00	1.26	194.62	176.80	211.40	194.33
Apr-06	39.11	17.42	17.41	21.70	10.41	3.02	4.33	6.08	0.00	0.95	215.58	140.25	201.50	226.87
May-06	32.18	22.71	11.14	21.04	6.17	4.10	2.19	3.98	0.00	3.17	155.41	146.16	159.50	153.20
Jun-06	32.10	9.24	6.75	25.35	7.19	1.27	1.52	5.67	0.00	3.19	181.51	111.17	182.70	181.11
Jul-06	7.51	38.65	0.26	7.25	0.99	4.74	0.04	0.95	0.00	6.58	106.83	99.38	137.30	105.68
Aug-06	18.35	59.95	0.14	18.21	4.03	10.45	0.05	3.98	0.00	10.03	177.95	141.20	302.80	177.00
Sep-06	10.87	81.44	0.00	10.87	1.87	13.75	0.00	1.87	0.00	5.60	139.19	136.76	0.00	139.18
Oct-06	12.38	0.15	0.00	12.38	1.90	0.02	0.00	1.90	0.00	0.83	124.40	130.00	0.00	124.42
Nov-06	3.83	2.32	0.00	3.83	0.48	0.35	0.00	0.48	0.00	0.97	101.99	123.70	0.00	102.02
Dec-06	5.94	3.01	0.00	5.94	0.70	0.28	0.00	0.70	0.00	1.35	95.37	75.24	0.00	95.38
Jan-07	9.21	0.14	0.02	9.19	1.35	0.01	0.00	1.35	0.00	0.22	118.82	66.70	103.00	118.82
Feb-07	10.99	0.26	0.26	10.73	1.40	0.03	0.03	1.37	0.00	1.09	103.00	86.81	89.40	103.31
Mar-07	23.26	6.53	6.42	16.84	3.11	0.78	0.87	2.24	0.00	0.18	108.24	96.80	109.70	107.68
Apr-07	18.94	2.41	2.32	16.62	2.13	0.15	0.25	1.88	0.00	2.01	90.90	51.00	87.20	91.40

Appendix D
Task 6 Final Report

LETTER REPORT
TASK 6: INITIAL DATA ANALYSIS
EAA BASIN DATA EVALUATION (PHASE II)
(CONTRACT # ST061287-WO03)

FINAL LETTER REPORT

PHASE II, TASK 6
INITIAL DATA ANALYSIS
EAA BASIN DATA EVALUATION

(APRIL 2008)

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1.0 OBJECTIVES AND SCOPE

The primary objective of the Phase II of this project is to develop a basin level data evaluation (flows, load, concentrations, and rainfall) for trends, changes, and significance that will help determine whether historical data supports characterization of a direct effect between inflow lake concentration and EAA Basin and Sub-Basin performance.

As part of the data compilation and statistical analysis the relative trends of total phosphorus concentrations from the lake and total phosphorus loads from the lake will be developed.

The technical tasks and deliverables of the project scope were documented in the Statement of Work (SOW), and are not repeated here. This letter report presents the activities completed under Task 6: Initial Data Analysis. The primary purpose of this task is to perform basic statistics on selected datasets that would help in refining the final analysis in Task 8. This task includes the following components of analysis.

- dataset selection
- significant events identification
- data synthesis and statistical analysis
- dataset documentation report

2.0 DATASET SELECTION

2.1 General Assumptions

The general assumptions that are inherent to the basis of analysis for the project are listed below. The assumptions specific to methods of analysis are described later in respective sections of this letter report.

- The data analyses were performed at hydrologic sub-basin level (not at station or structure level); however, in some instances a single structure may represent the outflow for a sub-basin. The EAA basin constitutes sub-basins S2, S3, S5A, S6, S7, and S8. The sub-basins S2 and S3 are administrative sub-basins. For the purpose of this project, these sub-basins are designated as District sub-basins or sub-basins. The hydrologic sub-basins are defined as follows: a) hydrologic sub-basin S5A consisting of S5A sub-basin; b) hydrologic sub-basin S6/S7 consisting of S2, S6, and S7 sub-basins; and c) hydrologic sub-basin S8 consisting of S3 and S8 sub-basins.

- For the purpose of this project, the hydrologic parameters (datasets) include only rainfall, flow, load, and concentration. The data used for evaluation included daily and monthly datasets that have been provided by the District.

- All hydrologic datasets consisting of daily and monthly records were reduced to sub-basin level to the SFWMD water year format (from May 1 to April 30) for the period from WY 1980 to WY 2007.

- For the purpose of this project, the Base period extends from WY 1980 to WY 1988 (from May 1, 1979 to April 30, 1988); Pre-BMP period extends from WY 1989 to WY 1994 (from May 1, 1988 to April 30, 1994); and BMP period extends from WY 1996 to WY 2007 (from May 1, 1995 to April 30, 2007). The full BMP implementation started in WY 1996. WY 1995 is excluded as a transitional BMP implementation year.

- Flow datasets may include inflow, flow through, and outflow (total values).

- Concentration datasets represent total phosphorous or TP concentration obtained from grab, composite, or combined methodologies.

- All data provided by the District were checked for and passed through the District's quality assurance and quality control program. Therefore, adjustments to the datasets were not necessary.

2.2 Data Collection and Dataset Preparation

For the purpose of this analysis, the District provided all station/structure level datasets. The data received from the District are summarized below in Tables 2.1a through 2.1c for the hydrologic sub-basins S5A, S6/S7, and S8, respectively. These tables were checked for accuracy against the "Data Definition Table" provided by the District. The rainfall dataset information is summarized in Table 2.2. Further details on the data grouping for this study are described in the next sections.

The various types of data obtained from the District for this study are listed below.

- Rainfall at gauging stations
- Thiessen weights of rainfall gauges for relevant sub-basins
- Flows at stations or structures including basin inflow, basin outflow, and flow through as appropriate
- Loads at stations or structures including incoming, outgoing, and flow through as appropriate
- Concentrations at stations or structures including incoming, outgoing, and flow through as appropriate

The general definition of the flow terms summarized in Tables 2.1a through 2.1c is given below and explained further in the next section of this report.

- Basin Inflow represents total inflow to a District sub-basin through a structure/station
- Basin Outflow represents total outflow from a District sub-basin through a structure/station
- Flow Through represents the quantity of flow that is expected to flow through a canal system through a sub-basin.

The data for each station were inspected for discontinuity, and then stations having no records ("None" in the Tables 2.1 through 2.1c) were discarded from further analyses. The stations G204, G205, and G206 were therefore discarded for preparation of datasets for hydrologic sub-basin S8.

Table 2.1a Summary of Information for Hydrologic Sub-Basin S5A Dataset

District Sub-Basin	Station / Structure	Periods of Available Records		
		Basin Inflow	**Basin Outflow**	**Flow Thru**
S5A	S5A	10/26/1978-4/30/2007	10/1/1978-4/30/2007	None
	S5A Thru	None	None	11/3/1978-4/30/2007
	G250	None	5/6/1994-7/2/1999	None
	S352	10/24/1978– 04/30/2007	5/4/1981– 4/30/2007	None
	EBPS	7/2/2001-4/30/2007	None	None
Hydrologic Sub-Basin S5A		S5A_IN+S352OUT+EBPS	S5AOUT+G250+S352OUT	S5ATHRU
Sources: The sources of the available data include the following files provided by the District: "dailyFile1.prn" and "dailyFile2.prn" transmitted on 09-21-2007 and "Parsedfordaily" transmitted on 11-27-2007				

Table 2.1b Summary of Information for Hydrologic Sub-Basin S6/S7 Dataset

District Sub-Basin	Station / Structure	Periods of Available Records		
		Basin Inflow	**Basin Outflow**	**Flow Thru**
S2	S2	10/26/1978-4/30/2007	10/1/1978-4/30/2007	None
S6	S6	4/24/1980-4/30/2007	10/2/1978-4/30/2007	None
	G328	None	4/14/2000-4/30/2007	None
S7	S7	7/14/1983-1/8/2005	10/2/1978-1/8/2005	None
	ESPS	12/27/2001-4/30/2007	None	None
	G370	None	10/1/2003-4/30/2007	None
	G371	7/25/2006-4/30/2007	4/21/2006-4/30/2007	None
	G376A[1]	2/27/2004-1/8/2005	None	None
	G376D[2]	2/27/2004-1/8/2005	None	None
	G379A[3]	9/17/2004-10/11/2004	None	None
	G379D[4]	9/17/2004-10/11/2004	None	None
	S150	10/29/1981-1/8/2005	11/14/1978-1/8/2005	None
S6+S7	S6S7 thru	None	None	1/15/1979-4/30/2007
Hydrologic Sub-Basin S2		S2IN+S6IN+S7IN+ESPS+G371IN+ G376A+G376D+G379A+G379D+ S150	S2OUT+S6OUT+G328+ S7OUT+G370OUT+G371OUT +S150	S6S7THR

Notes: [1] G376A represents combination of G376A, G376B, G376C
[2] G376D represents combination of G376D, G376E, G376F
[3] G379A represents combination of G379A, G379B, G379C
[4] G379D represents combination of G379D, G379E, G379F

Sources: The sources of the available data include the following files provided by the District: “dailyFile1.prn” and “dailyFile2.prn” transmitted on 09-21-2007 and “Parsedfordaily” transmitted on 11-27-2007

Table 2.1c Summary of Information for Hydrologic Sub-Basin S8 Dataset

District Sub-Basin	Station / Structure	Periods of Available Records		
		Basin Inflow	Basin Outflow	Flow Thru
S3	S3	10/25/1978-4/30/2007	11/7/1978-4/30/2007	None
	G136	6/9/1983-4/30/2007	None	None
S8	S8 thru U	None	None	12/8/1978-4/30/2007
	S8	1/8/1984-1/8/2005	10/1/1978-1/8/2005	None
	HOLEY [1]	1/15/1991-1/8/2005	None	None
	G204	None	None	None
	G205	None	None	None
	G206	None	None	None
	G344A	10/15/1999-7/22/2005	None	None
	G344B	10/15/1999-7/22/2005	10/25/1999-7/22/2005	None
	G344C	10/15/1999-7/22/2005	None	None
	G344D	10/15/1999-7/22/2005	10/24/1999-7/22/2005	None
	G349B	None	5/19/2000-7/22/2005	None
	G357	None	3/21/2001-1/8/2005	None
	G381A	6/9/2004-10/27/2004	None	None
	G381C	6/9/2004-10/27/2004	None	None
	G402A	10/3/2001-1/8/2005	None	None
	G402B	10/3/2001-1/8/2005	None	None
	G402C	10/3/2001-1/8/2005	None	None
	G402D	10/3/2001-3/30/2004	None	None
	G404	None	5/6/2000-1/8/2005	None
	G410	None	7/17/2001-7/22/2005	None
	G88	9/13/1979-6/30/2000	None	None
	G600	None	3/20/1997-4/30/2005	None
	G605	None	None	None
	G606	11/24/1997-6/30/2000	None	None
	SSDD	7/20/2004-4/30/2007	None	None
	G372	None	10/30/2003-4/30/2007	None
	G373	None	4/10/2006-4/30/2007	None
	G373BC	None	6/6/2005-7/21/2005	None
	SFCD	8/3/2005-4/30/2007	None	None
	G507	None	12/1/2003-7/22/2005	None
	G350B	None	5/19/2000-7/22/2005	None
Hydrologic Sub-Basin S3		S3IN+S150IN+G136+S8IN+Holey/ G200+G344A+G344B+G344C+ G344D+G381A+G381C+G402A+ G402B+G402C+G402D+G88+ G606+SSDD+SFCD	S3OUT+S150OUT+S8+ G344BOUT+G344DOUT+ G349B+G357+G404+G410+ G600+G372OUT+G373OUT+ G373BC+G507+G350B	S8THRU

Notes: [1] HOLEY is also documented as G200

Sources: The sources of the available data include the following files provided by the District: “dailyFile1.prn” and “dailyFile2.prn” transmitted on 09-21-2007 and “Parsedfordaily” transmitted on 11-27-2007

Table 2.2 Summary of Information for Rainfall Dataset

District Sub-basin	Station / Structure	Periods of Available Records	
		Daily Data	Monthly Data
S8	ALICO	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S7, S8,	MIAMILO	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S6, S7, S8	SOUTHBAY	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S5A, S6, S7,	BELLEGL	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S5A, S6,	PAHOKEE	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S5A	S5A	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S5A, S6, S7	S6	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S6, S7	S7	10/1/1978 – 4/30/2007	10/1978 – 4/2007
S7, S8	S8	10/1/1978 – 4/30/2007	10/1978 – 4/2007
NA	EAA1	10/01/1991 – 4/30/2007	10/1978 – 4/2007
NA	EAA2	10/31/1991 – 4/30/2007	10/1978 – 4/2007
NA	EAA3	10/14/1991 – 4/30/2007	10/1978 – 4/2007
NA	EAA4	03/17/1992 – 4/30/2007	10/1978 – 4/2007
NA	EAA5	11/05/1991 – 4/30/2007	10/1978 – 4/2007
NA	PAIGE	09/01/1982 – 4/30/2007	10/1978 – 4/2007

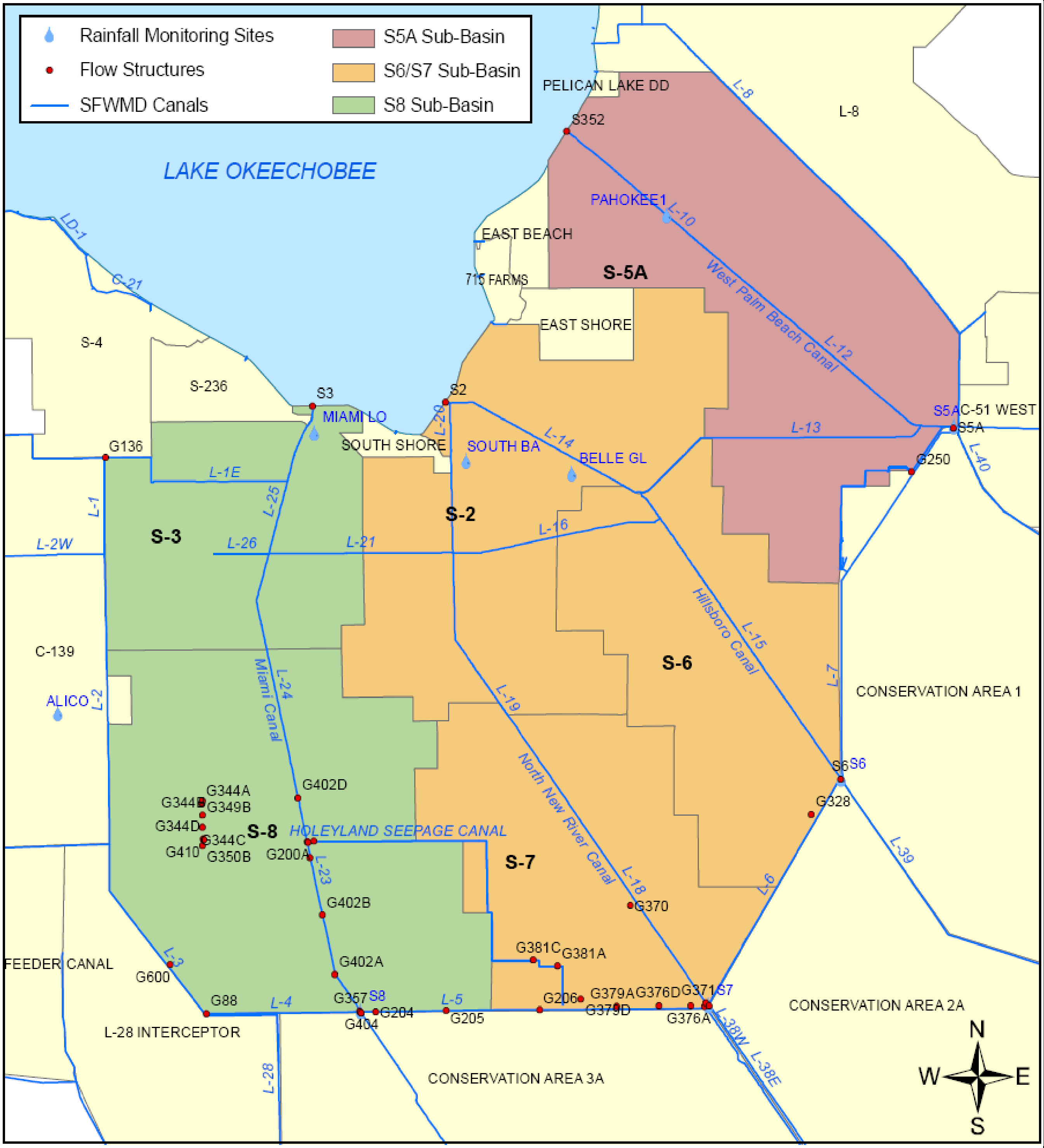
Notes: "NA" indicates not applicable for the current evaluation; not used for further analyses
Sources: The sources of the available data include the following files provided by the District: "EAARainfallDaily.xls", "EAARainfallMonthly.xls" and "RainfallThiessenWeights.xls" transmitted on 09-26-2007

3.0 SIGNIFICANT EVENTS IDENTIFICATION

The primary objective of this sub-task is to develop event datasets for each hydrologic sub-basin, and then identify the significant event dataset for all the hydrologic sub-basins that can be used in developing parametric relationships in Task 8. The event dataset represents a dataset for specific event duration. For the purpose of this project, three event datasets corresponding to 7-day, 14-day, monthly event durations were developed and analyzed.

As indicated in Tables 2.1a through 2.1c, the records for the remaining (non-discarded) stations were combined or grouped together to make up the datasets for corresponding hydrologic sub-basins. In other words, all the data were reduced to three datasets corresponding to the three hydrologic sub-basins S5A, S6/S7, and S8. Figure 3.1 presents the layout of these three hydrologic sub-basins along with the administrative or District sub-basins.

The final datasets were prepared for flow, load and concentration from the above indicated stations. The rainfall datasets for the hydrologic sub-basins were estimated based on Thiessen weights and list of appropriate rainfall stations for the corresponding three hydrologic sub-basins as indicated in Table 2.2. The Thiessen weights for appropriate stations were provided by the District, which are summarized below in Table 3.1.



Note: S-2, S-3, S-5A, S-6, S-7 and S-8 are District Sub-Basins.

Layout of Hydrologic Sub-Basins S5A, S6/S7, S8

FIGURE 3.1

FILE NUMBER 06008.03

Table 3.1 Thiessen Weights for Basin Rainfall Estimation

Basin / Sub-basin	Rainfall Station								
	ALICO	MIAMILO	SOUTHBAY	BELLEGL	PAHOKEE	S5A	S6	S7	S8
EAA	0.0974	0.1076	0.0844	0.1617	0.1438	0.0989	0.0763	0.0592	0.1743
S5A				0.079	0.5491	0.3579	0.014		
S6			0.0632	0.4865	0.0517		0.3809	0.0177	
S7		0.0413	0.2934	0.1477			0.0454	0.3069	0.1653
S8	0.3516	0.1938	0.0131						0.4415

These datasets (one set of data for each of the three hydrologic sub-basins) were then used for all further analyses. The flow and rainfall datasets were then used to develop the event datasets for identification of significant events. The daily rainfall and flow records were grouped to develop the 7-day and 14-day event datasets. The monthly rainfall and flow records were grouped to develop the monthly event datasets. These event datasets for flow and rainfall were used to identify the common or relevant event for further analyses. Each flow dataset consisted of four sub-datasets as described below.

- Inflow. This is the flow coming into a particular sub-basin from all sources, although primarily this originates from the Lake Okeechobee. This also includes supplemental inflow and flow through. The stations/structures and the corresponding data file representing the inflow are listed in Table 2.1a through 2.1c.
- Flow Through. This is the quantity of flow that is expected to flow through the canal system. This is not a measured parameter; rather it is calculated from a conditional formula established by Rule 40E-63. The flow through amount is zero when there is a release from the Lake Okeechobee into the sub-basin and no sub-basin outflow. The estimated flow-through values for the sub-basins were provided by the District. The stations/structures and the corresponding data file representing the flow-through are listed in Table 2.1a through 2.1c.
- Supplemental Inflow. This is the quantity of flow being withdrawn from the sub-basin for supplemental water use including for irrigation purpose. The estimated supplemental inflow quantities for the sub-basins were not provided by the District. This is calculated for each hydrologic sub-basin by subtracting the flow through quantities from the corresponding basin inflow values.
- Outflow. This is the amount of flow being discharged from a sub-basin at the sub-basin outlet. This includes the flow through and runoff from the sub-basin. The stations/structures and the corresponding data file representing the outflow are listed in Table 2.1a through 2.1c.

The characteristics of the flow and rainfall event datasets are summarized below in Table 3.2, which includes the percentage of records with zero values for each event period and for each hydrologic sub-basin.

Table 3.2 Summary of Event Dataset Characteristics

Parameter		Percentage of Records with Zero Values		
		7-Day Event	14-Day Event	Monthly Event
Hydrologic Sub-Basin S5A (WY 1980 through 2007)				
Flow	Inflow	26	17	7
	Flow Through	70	61	44
	Supplemental Inflow	28	18	9
	Outflow	26	16	6
Rainfall		7	1	0
Hydrologic Sub-Basin S6/S7 (WY 1980 through 2007)				
Flow	Inflow	31	23	14
	Flow Through	60	50	36
	Supplemental Inflow	34	25	16
	Outflow	20	12	3
Rainfall		6	1	0
Hydrologic Sub-Basin S8 (WY 1980 through 2007)				
Flow	Inflow	10	6	3
	Flow Through	46	38	26
	Supplemental Inflow	11	7	3
	Outflow	10	5	3
Rainfall		13	3	0

The hyetograph plots of inflow vs. outflow and rainfall vs. outflow for the entire period of analysis (WY 1980 through 2007) for the three events (weekly, biweekly and monthly) are presented in Appendices A.1 through A.3 for the three hydrologic sub-basins S5A, S6/S7, and S8, respectively. As can be seen from these plots and the above summary table, there are sufficient common data values among inflow-outflow-rainfall for all three events. In order to better visualize and assist in selecting one event for further analyses, the hyetograph plots for each event were compared in pair of parameters (e.g., inflow-outflow and rainfall-outflow) and the common non-zero values were counted for pair or triplet of parameters (e.g., inflow-outflow, rainfall-outflow, and rainfall-inflow-outflow). The summary of these counts are expressed in percentage for each combination of parameters in Table 3.3 for the three events for each hydrologic sub-basin.

Table 3.3 Summary of Comparison for Parameter Combination

Parameter Combination	Percentage of Records with Non-Zero Values		
	7-Day Event	14-Day Event	Monthly Event
Hydrologic Sub-Basin S5A (WY 1980 through 2007)			
Inflow and Outflow	50	68	87
Rainfall and Outflow	71	83	94
Inflow, Outflow, and Rainfall	48	67	87
Hydrologic Sub-Basin S6/S7 (WY 1980 through 2007)			
Inflow and Outflow	51	67	83
Rainfall and Outflow	76	88	97
Inflow, Outflow, and Rainfall	48	66	83
Hydrologic Sub-Basin S8 (WY 1980 through 2007)			
Inflow and Outflow	82	89	94
Rainfall and Outflow	80	93	97
Inflow, Outflow, and Rainfall	72	87	94

Based on the information presented above, the monthly event datasets have the largest number of non-zero data pairs (least number of zero values), which is likely to be of greater help in developing parametric relationships in Task 8. Therefore, the monthly event is selected for further analyses that will be utilized for development of the interrelationship between various parameters. The biweekly (14-day) event may also be used for this purpose; however, considering the evaluation of datasets for large sub-basins and high degree of non-sparse common datasets, we believe the monthly event is likely to provide more stable relationships. For the same reasons as presented above, the weekly (7-day) event dataset is rejected from further consideration.

4.0 PRELIMINARY STATISTICAL ANALYSIS

This section presents the results of preliminary statistical analyses performed on the monthly event datasets as identified in the previous section of this letter report. The datasets for the rainfall, inflow, flow through, irrigation, and outflow were prepared in the previous section. The corresponding datasets for the load and concentration were also grouped to develop one combined dataset for each hydrologic sub-basin that would be utilized for further statistical analyses. The concentration data for the monthly event were computed by flow weighted mean concentration method at the hydrologic sub-basin level. The load data were computed by multiplying flow with concentration also at hydrologic sub-basin level. All datasets for this event are presented in tabular format in Appendices C.1 through C.3 for the three hydrologic sub-basins S5A, S6/S7, and S8, respectively.

The following preliminary statistical analyses were performed on these datasets, which included the univariate analyses. The analyses were completed on individual datasets separately for each hydrologic sub-basin. The primary purpose of these univariate analyses was to document the characteristics of the event datasets (flows, load, concentration, and rainfall) for trends, changes, and significance at sub-basin level that would help in refining the final analysis in Task 8 to determine whether historical data supports characterization of a direct effect between inflow lake concentration and EAA Basin and Sub-Basin performance. The interrelationships between various parameters including trend and regression analyses will be performed in Task 8 and documented in a separate report. The results of the statistical analyses for the sub-basins are presented in the following subsections.

There are 11 monthly event datasets for each hydrologic sub-basin, which consisted of rainfall, flows (inflow, outflow, supplemental inflow, and flow through), concentrations (inflow, outflow, and flow through), and loads (inflow, outflow, and flow through). The following statistical analyses were performed on each dataset for each sub-basin and for each of the four time periods (described later in this section of the letter report).

- Statistical Descriptor and Normality Tests
    - Mean, Median, Standard Error, Standard Deviation, Variance
    - Range, Minimum, Maximum, Quartiles
    - Kurtosis, Skewness, Confidence Interval
- Time Series Plots and Visual Trend Analysis
- Box-and-Whisker Plots
- Correlations

The above statistical analyses were performed on four time periods for each event dataset. The four time periods are defined as:

- Base Period: WY 1980 through 1988
- Pre-BMP Period: WY 1989 through 1994
- BMP Period: WY 1996 through 2007
- Entire Period: WY 1980 through 2007

4.1 Monthly Event Analysis for Hydrologic Sub-Basin S5A

Table 4.1a through Table 4.1d present the descriptive statistics on the 11 monthly datasets (i.e., 11 sets of monthly data) for this hydrologic sub-basin for the base period, pre-BMP period, BMP period, and entire period, respectively.

Table 4.1a Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S5A for Base Period (WY 1980-1988)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.23	4449	11014	199	4250	111.6	176.9	98.8	1165	5318	49
Standard Error	0.30	424	1141	64	406	6.6	7.4	3.5	115	663	18
Median	3.62	3202	6212	0	3032	99.1	166.9	94.2	785	2138	0
Standard Deviation	3.11	4411	11858	664	4219	64.2	71.4	22.4	1197	6896	182
Sample Variance	9.69	2E+07	1E+08	4E+05	2E+07	4121	5093	503.1	1E+06	5E+07	33318
Kurtosis	0.58	2.73	1.00	64.33	3.25	7.3	0.6	-0.3	1	3	78
Skewness	0.96	1.52	1.30	7.38	1.58	2.3	0.8	0.5	1	2	8
Range	14.41	21969	49398	6219	21969	386.2	343.0	94.2	4575	31423	1785
Minimum	0.11	0	0	0	0	28.7	33.0	61.4	0	0	0
Maximum	14.52	21969	49398	6219	21969	414.9	376.0	155.6	4575	31423	1785
Quartile-1	1.88	1113	2067	0	1113	70.2	124.7	81.5	200	708	0
Quartile-2	3.62	3202	6212	0	3032	99.1	166.9	94.2	785	2138	0
Quartile-3	5.89	6480	15889	139	6324	130.3	215.3	117.3	1759	6888	38
Confidence intervals	0.59	832	2236	125	796	12.8	14.5	6.8	226	1301	34

Note: Concentration statistics exclude the zero events

Table 4.1b Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S5A for Pre-BMP Period (WY 1989-1994)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.20	5700	11666	1583	4117	148.5	187.0	123.0	1837	5495	445
Standard Error	0.37	671	1469	460	468	6.3	6.8	5.4	206	784	128
Median	3.58	3851	7234	0	2711	135.9	179.0	119.1	1317	2948	0
Standard Deviation	3.15	5693	12462	3901	3973	52.0	57.3	31.2	1751	6657	1088
Sample Variance	9.90	3E+07	2E+08	2E+07	2E+07	2706	3282	975.0	3E+06	4E+07	1E+06
Kurtosis	0.62	1.00	1.51	7.35	1.20	0.7	1.5	-0.67	1.04	2.49	9.00
Skewness	1.06	1.31	1.43	2.85	1.28	0.9	0.9	0.26	1.28	1.76	3.00
Range	12.02	22281	49888	17965	15911	230.4	300.4	122.9	7618	26509	5609
Minimum	0.23	0	0	0	0	59.8	78.0	68.4	0	0	0
Maximum	12.24	22281	49888	17965	15911	290.2	378.3	191.3	7618	26509	5609
Quartile-1	1.77	1337	2485	0	1219	113.9	152.8	95.6	532	924	0
Quartile-2	3.58	3851	7234	0	2711	135.9	179.0	119.1	1317	2948	0
Quartile-3	5.60	7200	17569	529	5736	168.1	210.6	150.4	2389	7079	154
Confidence intervals	0.73	1315	2879	901	918	12.3	13.4	10.6	404	1538	251

Note: Concentration statistics exclude the zero events

Table 4.1c Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S5A for BMP Period (WY 1996-2007)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.15	7283	14376	3415	3868	219.5	141.3	196.7	3577	5723	1610
Standard Error	0.27	601	1112	486	296	10.3	5.1	6.1	300	561	239
Median	3.49	4719	11498	545	2569	192.4	137.0	186.3	2584	3845	250
Standard Deviation	3.25	7217	13346	5830	3551	120.5	61.0	63.0	3599	6729	2866
Sample Variance	10.53	5E+07	2E+08	3E+07	1E+07	14523	3718	3969	1E+07	5E+07	8E+06
Kurtosis	0.79	1.44	2.40	6.93	1.75	17.93	0.44	1.34	3.61	11.72	8.00
Skewness	0.96	1.36	1.47	2.51	1.37	3.39	0.73	0.96	2.00	2.65	2.65
Range	16.08	32329	69470	31917	18226	974.3	311.2	346.4	20626	49205	17101
Minimum	0.02	0	0	0	0	61.7	23.0	77.6	0	0	0
Maximum	16.11	32329	69470	31917	18226	1036	334.2	424.0	20626	49205	17101
Quartile-1	1.44	1799	4425	0	1386	150	96.7	151.2	917	1192	0
Quartile-2	3.49	4719	11498	545	2569	192.4	137.0	186.3	2584	3845	250
Quartile-3	6.23	10585	19783	4393	5545	253.1	174.0	232.7	4884	7476	1719
Confidence intervals	0.53	1179	2180	952	580	20.2	10.1	12.0	588	1099	468

Note: Concentration statistics exclude the zero events

Table 4.1d Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S5A for Entire Period (WY 1980-2007)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.26	6039	13086	2040	3999	167.1	162.2	158.3	2384	5677	853
Standard Error	0.17	340	709	252	212	5.8	3.7	4.8	154	369	114
Median	3.62	3851	9296	55	2648	142.4	153.2	144.2	1444	3152	16
Standard Deviation	3.20	6236	12992	4628	3879	102.6	65.4	66.5	2828	6767	2098
Sample Variance	10.18	4E+07	2E+08	2E+07	2E+07	10522	4279	4425	8E+06	5E+07	4E+06
Kurtosis	0.45	2.20	1.51	11.88	2.30	20.25	0.79	1.4	7.71	6.03	18
Skewness	0.92	1.51	1.33	3.22	1.44	3.27	0.76	1.1	2.33	2.05	4
Range	16.08	32329	69470	31917	21969	1007	355.3	362.6	20626	49205	17101
Minimum	0.02	0	0	0	0	28.7	23.0	61.4	0	0	0
Maximum	16.11	32329	69470	31917	21969	1036	378.3	424.0	20626	49205	17101
Quartile-1	1.78	1371	3106	0	1140	105.5	117.9	107.0	485	986	0
Quartile-2	3.62	3851	9296	55	2648	142.4	153.2	144.2	1444	3152	16
Quartile-3	6.21	8953	18883	1354	5759	207.4	196.5	192.1	3425	7901	393
Confidence intervals	0.34	667	1389	494	415	11.4	7.2	9.5	302	723	224

Note: Concentration statistics exclude the zero events

The Box-and-Whisker plots for the four periods (base period, pre-BMP period, BMP period, and entire period) for this hydrologic sub-basin for the monthly datasets of flow, load, concentration, and rainfall are presented in Appendix B.1. The time series plots for the extended period for all the datasets are also presented in Appendix B.1. The four flow datasets are plotted on the same time series plot for better visual comparison of the relative trends and magnitudes. Similarly, the three load datasets are plotted together and the concentration datasets are plotted together. In addition, inflow, outflow and rainfall datasets are plotted together to help visualize the relative trends and similarities. The analyses for development of interrelationships between the parameters will be performed in Task 8 and documented in a separate report.

4.2 Monthly Event Analysis for Hydrologic Sub-Basin S6/S7

Table 4.2a through Table 4.2d present the descriptive statistics on the 11 monthly datasets (i.e., 11 sets of monthly data) for this hydrologic sub-basin for the base period, pre-BMP period, BMP period, and entire period, respectively.

Table 4.2a Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S6/S7 for Base Period (WY 1980-1988)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.01	8307	19702	2137	6170	75.7	115.5	92.3	1720	6832	513
Standard Error	0.28	1118	2019	514	826	4.5	7.1	5.6	271.4	1074	134
Median	4.05	2412	12836	95	2255	65.4	96.2	75.4	332	2964	16
Standard Deviation	2.95	11620	20977	5344	8585	40.9	72.3	43.4	2820	11164	1393
Sample Variance	8.68	1E+08	4E+08	3E+07	7E+07	1674	5222	1882	8E+06	1E+08	2E+06
Kurtosis	2.11	3.00	3.35	14.74	3.60	1.46	8.40	-0.03	5.54	20.43	17.35
Skewness	1.13	1.79	1.69	3.57	1.93	1.48	2.42	1.1	2.33	3.91	3.96
Range	16.00	56752	1E+05	34198	42774	171.7	463.2	150	13729	81146	8938
Minimum	0.11	0	0	0	0	19.3	37.9	42.1	0	0	0
Maximum	16.10	56752	1E+05	34198	42774	191.0	501.1	192.1	13729	81146	8938
Quartile-1	1.68	370	4398	0	214	48.0	70.5	61.5	64	747	0
Quartile-2	4.05	2412	12836	95	2255	65.4	96.2	75.4	332	2964	16
Quartile-3	5.47	12369	29855	747	8630	78.7	133.9	113.1	2129	8686	147
Confidence intervals	0.56	2192	3956	1008	1619	8.7	14.0	11.0	532	2106	263

Note: Concentration statistics exclude the zero events

Table 4.2b Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S6/S7 for Pre-BMP Period (WY 1989-1994)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	3.96	14858	20135	6646	8212	73.2	93.9	79.2	2774	5727	1272
Standard Error	0.35	2035	2971	1392	1140	2.7	6.0	2.9	385	1152	274
Median	3.08	8532	7162	258	5239	73.3	77.9	78.3	1362	1651	42
Standard Deviation	3.00	17266	25214	11815	9672	21.7	49.5	19.7	3265	9773	2327
Sample Variance	9.01	3E+08	6E+08	1E+08	9E+07	470.6	2453	388.8	1E+07	1E+08	5E+06
Kurtosis	1.42	2.42	1.07	3.90	5.91	-0.78	3.89	-0.71	2	8	5
Skewness	1.13	1.65	1.44	2.06	2.15	0.17	1.87	0.19	1	3	2
Range	14.80	76774	96727	50646	52175	83.3	242.5	77.1	12984	49797	10382
Minimum	0.24	0	0	0	0	35.5	35.3	42.3	0	0	0
Maximum	15.00	76774	96727	50646	52175	118.8	277.8	119.4	12984	49797	10382
Quartile-1	1.70	2823	3065	0	1863	57.5	62.6	61.9	476	462	0
Quartile-2	3.08	8532	7162	258	5239	73.3	77.9	78.3	1362	1651	42
Quartile-3	5.68	21411	29987	8814	11040	90.7	107.1	91.8	4708	6888	1369
Confidence intervals	0.69	3988	5824	2729	2234	5.4	11.7	5.6	754	2257	537

Note: Concentration statistics exclude the zero events

Table 4.2c Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S6/S7 for BMP Period (WY 1996-2007)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.00	10715	22354	2838	7876	115.9	93.0	130.7	3143	5463	886
Standard Error	0.26	899	1997	455	666	6.0	5.4	6.8	314	579	141
Median	3.15	6893	12993	205	5516	94.0	79.5	107.9	1673	2814	59
Standard Deviation	3.15	10784	23968	5455	7995	69.4	64.5	67.1	3770	6946	1697
Sample Variance	9.90	1E+08	6E+08	3E+07	6E+07	4813	4163	4504	1E+07	5E+07	3E+06
Kurtosis	-0.68	1.06	4.96	11.30	3.75	2.34	39.70	1.96	3.58	6.37	9.26
Skewness	0.66	1.26	1.94	3.09	1.66	1.55	4.95	1.57	1.82	2.34	2.87
Range	11.90	45233	1E+05	33908	45233	322	631.7	304.2	20158	37524	9900
Minimum	0.04	0	0	0	0	21.7	21.6	51.6	0	0	0
Maximum	11.90	45233	1E+05	33908	45233	343.6	653.3	355.8	20158	37524	9900
Quartile-1	1.25	2508	6214	0	2108	73.8	59.8	85.8	419	924	0
Quartile-2	3.15	6893	12993	205	5516	94.0	79.5	107.9	1673	2814	59
Quartile-3	6.12	16612	30698	3456	11841	142.1	105.8	155.5	4286	7412	896
Confidence intervals	0.51	1761	3915	891	1306	11.8	10.6	13.3	616	1134	277

Note: Concentration statistics exclude the zero events

Table 4.2d Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S6/S7 for Entire Period (WY 1980-2007)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.06	10890	21907	3639	7251	93.8	100.0	106.5	2576	6157	867
Standard Error	0.17	706	1311	420	467	3.3	3.5	3.9	185	503	97
Median	3.53	6037	12502	193	4109	78.5	84.9	88.2	1135	2647	37
Standard Deviation	3.05	12942	24040	7708	8554	56.7	64.0	56.7	3384	9213	1784
Sample Variance	9.31	2E+08	6E+08	6E+07	7E+07	3219	4102	3211	1E+07	8E+07	3E+06
Kurtosis	0.36	3.52	2.96	10.69	4.39	5.29	21.95	4.38	3.87	17.17	9.09
Skewness	0.85	1.74	1.66	3.06	1.88	2.07	3.53	1.97	1.90	3.38	2.87
Range	16.10	76774	1E+05	50646	52175	324.3	631.7	313.7	20158	81146	10382
Minimum	0.04	0	0	0	0	19.3	21.6	42.1	0	0	0
Maximum	16.10	76774	1E+05	50646	52175	343.6	653.3	355.8	20158	81146	10382
Quartile-1	1.58	1492	4580	0	708	58.9	62.8	69.3	195	701	0
Quartile-2	3.53	6037	12502	193	4109	78.5	84.9	88.2	1135	2647	37
Quartile-3	5.91	16473	30759	2836	10663	110.1	114.6	119.4	3660	8208	822
Confidence intervals	0.33	1384	2570	824	915	6.5	7.0	7.6	362	985	191

Note: Concentration statistics exclude the zero events

The Box-and-Whisker plots for the four periods (base period, pre-BMP period, BMP period, and entire period) for this hydrologic sub-basin for the monthly datasets of flow, load, concentration, and rainfall are presented in Appendix B.2. The time series plots for the extended period for all the datasets are also presented in Appendix B.2. The four flow datasets are plotted on the same time series plot for better visual comparison of the relative trends and magnitudes. Similarly, the three load datasets are plotted together and the concentration datasets are plotted together. In addition, inflow, outflow and rainfall datasets are plotted together to help visualize the relative trends and similarities. The analyses for development of interrelationships between the parameters will be performed in Task 8 and documented in a separate report.

4.3 Monthly Event Analysis for Hydrologic Sub-Basin S8

Table 4.3a through Table 4.3d present the descriptive statistics on the 11 monthly datasets (i.e., 11 sets of monthly data) for this hydrologic sub-basin for the base period, pre-BMP period, BMP period, and entire period, respectively.

Table 4.3a Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S8 for Base Period (WY 1980-1988)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	3.56	6552	17268	1402	5150	84.0	147.8	55.4	1447	7810	204
Standard Error	0.27	643	1511	302	464	8.1	9.4	2.1	282	1295	46
Median	2.82	4056	12441	88	3509	65.4	127.1	51.4	644	3658	11
Standard Deviation	2.80	6688	15702	3145	4819	81.6	94.5	16.6	2934	13463	482
Sample Variance	7.87	4E+07	2E+08	1E+07	2E+07	6664	8936	277.0	9E+06	2E+08	2E+05
Kurtosis	1.09	1.28	1.56	4.94	0.52	43.33	3.77	0.59	54.08	22.12	6.49
Skewness	1.05	1.40	1.31	2.45	1.16	5.87	1.73	0.53	6.65	4.23	2.69
Range	13.90	27786	76457	14064	18676	721.8	486.6	89.5	26848	96769	2237
Minimum	0.02	0	0	0	0	20.0	30.3	21.2	0	0	0
Maximum	14.00	27786	76457	14064	18676	742.0	516.9	110.7	26848	96769	2237
Quartile-1	1.44	1667	5772	0	1518	50.0	82.6	44.7	242	1260	0
Quartile-2	2.82	4056	12441	88	3509	65.4	127.1	51.4	644	3658	11
Quartile-3	5.22	8866	25315	317	7466	88.3	168.9	71.4	1524	8849	49
Confidence intervals	0.53	1261	2961	593	909	15.8	18.3	4.1	553	2539	91

Note: Concentration statistics exclude the zero events

Table 4.3b Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S8 for Pre-BMP Period (WY 1989-1994)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	3.95	11279	17334	3830	7449	77.6	108.5	65.7	2131	5172	559
Standard Error	0.37	1325	1762	1032	702	5.8	6.8	3.5	276	709	167
Median	3.17	7781	14923	828	5931	66.5	94.7	59.2	1363	3247	101
Standard Deviation	3.11	11244	14950	8753	5957	48.0	56.1	25.3	2339	6015	1414
Sample Variance	9.68	1E+08	2E+08	8E+07	4E+07	2301	3150	638.2	5E+06	4E+07	2E+06
Kurtosis	2.48	4.44	0.04	10.04	-0.18	8.08	0.97	-0.15	3.68	2.64	26.90
Skewness	1.22	1.94	0.87	3.23	0.81	2.75	1.16	0.70	1.90	1.72	4.74
Range	16.60	57311	58490	40290	22134	258.5	244.2	110.6	11070	26847	9804
Minimum	0.00	0	0	0	0	27.6	30.3	21.6	0	0	0
Maximum	16.60	57311	58490	40290	22134	286.1	274.5	132.2	11070	26847	9804
Quartile-1	1.70	4039	5047	0	2805	52.3	67.1	48.1	584	916	0
Quartile-2	3.17	7781	14923	828	5931	66.5	94.7	59.2	1363	3247	101
Quartile-3	6.16	14823	25473	1725	11279	83.2	132.3	87.2	2615	6698	292
Confidence intervals	0.72	2597	3453	2022	1376	11.3	13.3	6.8	540	1389	327

Note: Concentration statistics exclude the zero events

Table 4.3c Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S8 for BMP Period (WY 1996-2007)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	4.00	12894	19288	2009	10886	106.7	78.7	113.1	3259	4157	586
Standard Error	0.27	1046	1708	311.5	972	4.7	3.2	5.3	251	441	96
Median	3.06	9428	12228	565	8089	91.8	67.9	95.0	2135	2237	118
Standard Deviation	3.29	12554	20494	3738	11662	56.0	38.1	58.3	3015	5287	1156
Sample Variance	10.80	2E+08	4E+08	1E+07	1E+08	3137	1455	3405	9E+06	3E+07	1E+06
Kurtosis	0.01	15.37	4.75	13.84	23.54	1.21	0.68	0.88	1.83	4.77	11.02
Skewness	0.83	3.15	1.90	3.42	4.05	1.25	1.13	1.24	1.46	2.11	3.20
Range	14.70	93631	1E+05	22434	93884	254.7	167.1	266.4	13626	27902	6795
Minimum	0.07	540	70	0	287	29.5	27.9	36.4	54	11	0
Maximum	14.80	94171	1E+05	22434	94171	284.2	195.0	302.8	13680	27914	6795
Quartile-1	1.12	4608	4560	74	4394	68.3	49.6	71.5	927	622	18
Quartile-2	3.06	9428	12228	565	8089	91.8	67.9	95.0	2135	2237	118
Quartile-3	6.40	16413	29438	2178	13717	130.4	97.5	140.5	4535	5149	608
Confidence intervals	0.54	2050	3347	611	1905	9.1	6.2	10.4	492	863	189

Note: Concentration statistics exclude the zero events

Table 4.3d Descriptive Statistics of Monthly Datasets for Hydrologic Sub-Basin S8 for Entire Period (WY 1980-2007)

Descriptor	Rainfall (in)	Flow (cfsd)				Concentration (ppb)			Load (kg)		
		IN	OUT	Flow Thru	Irrigation	IN	OUT	THRU	IN	OUT	THRU
Mean	3.88	10455	18385	2176	8279	94.7	107.6	86.6	2465	5650	446
Standard Error	0.17	589	970	279	488	3.6	3.9	3.2	161	492	57
Median	3.06	7191	13049	328	6004	76.2	90.1	73.1	1426	2922	51
Standard Deviation	3.08	10804	17790	5118	8947	65.1	70.9	50.4	2950	9012	1049
Sample Variance	9.48	1E+08	3E+08	3E+07	8E+07	4241	5024	2542	9E+06	8E+07	1E+06
Kurtosis	0.73	15.12	4.15	26.28	34.03	30.65	7.95	3.54	15.2	40.65	27.48
Skewness	0.95	2.95	1.68	4.62	4.42	4.01	2.28	1.84	2.95	5.17	4.58
Range	16.60	94171	1E+05	40290	94171	721.8	489.0	281.6	26848	96769	9804
Minimum	0.00	0	0	0	0	20.0	27.9	21.2	0	0	0
Maximum	16.60	94171	1E+05	40290	94171	741.8	516.9	302.8	26848	96769	9804
Quartile-1	1.29	3389	5047	0	2827	55.9	59.5	53.4	580	906	0
Quartile-2	3.06	7191	13049	328	6004	76.2	90.1	73.1	1426	2922	51
Quartile-3	6.19	14989	27427	1504	11378	112.7	134.3	100.6	3485	6505	307
Confidence intervals	0.33	1155	1902	547	957	7.1	7.7	6.3	315	964	112

Note: Concentration statistics exclude the zero events

The Box-and-Whisker plots for the four periods (base period, pre-BMP period, BMP period, and entire period) for this hydrologic sub-basin for the monthly datasets of flow, load, concentration, and rainfall are presented in Appendix B.3. The time series plots for the extended period for all the datasets are also presented in Appendix B.3. The four flow datasets are plotted on the same time series plot for better visual comparison of the relative trends and magnitudes. Similarly, the three load datasets are plotted together and the concentration datasets are plotted together. In addition, inflow, outflow and rainfall datasets are plotted together to help visualize the relative trends and similarities. The analyses for development of interrelationships between the parameters will be performed in Task 8 and documented in a separate report.

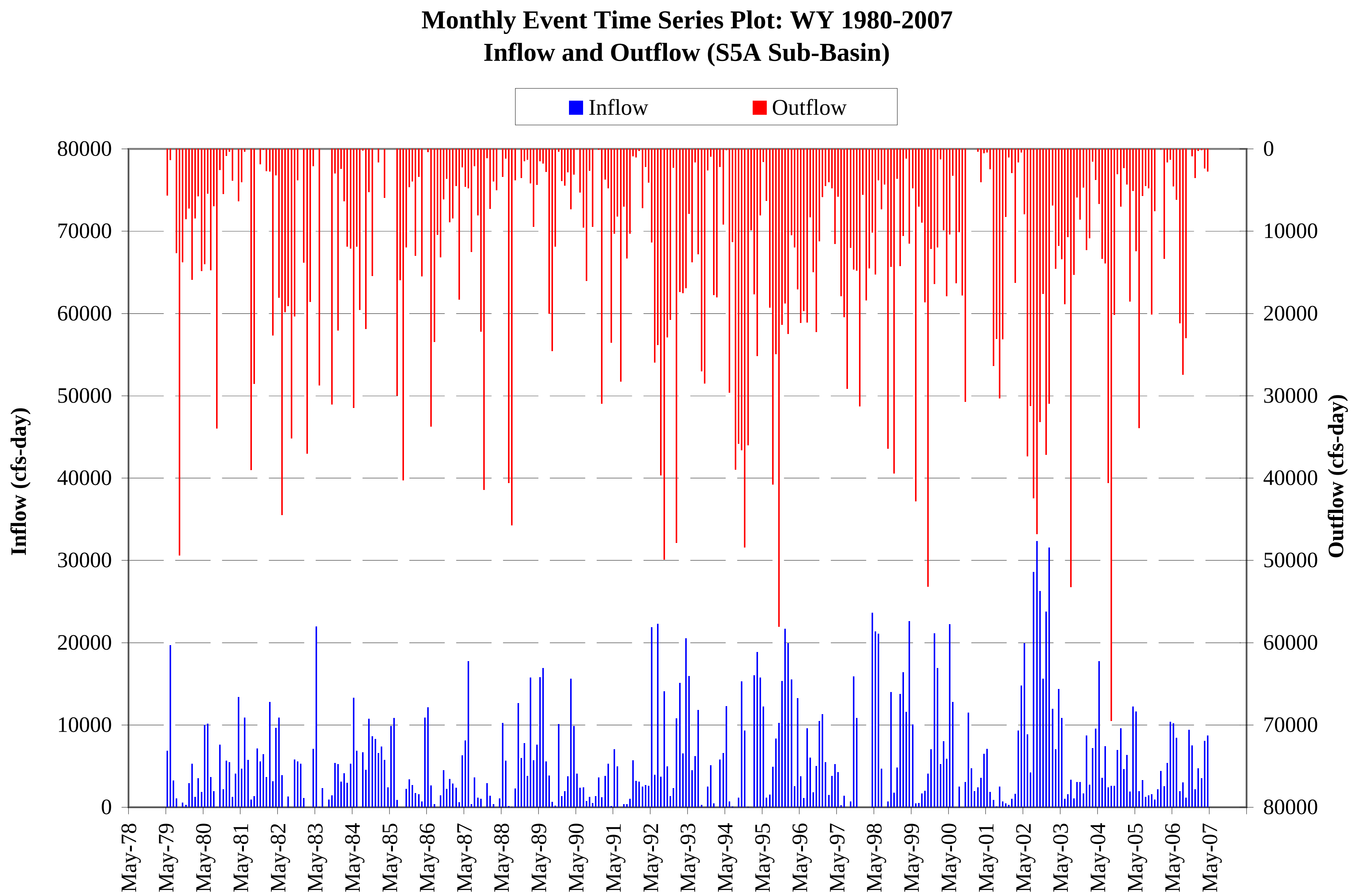
Appendices

Appendix A: Hyetograph Plots
Appendix B: Box-and-Whisker and Time Series Plots
Appendix C: Monthly Event Datasets

Appendix A

Appendix A.1: Hyetograph Plots for Hydrologic Sub-Basin S5A
Appendix A.2: Hyetograph Plots for Hydrologic Sub-Basin S6/S7
Appendix A.3: Hyetograph Plots for Hydrologic Sub-Basin S8

Appendix A.1
Hyetograph Plots for Hydrologic Sub-Basin S5A



Monthly Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S5A Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
80000
70000
60000
50000
40000
30000
20000
10000
0
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
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May-02
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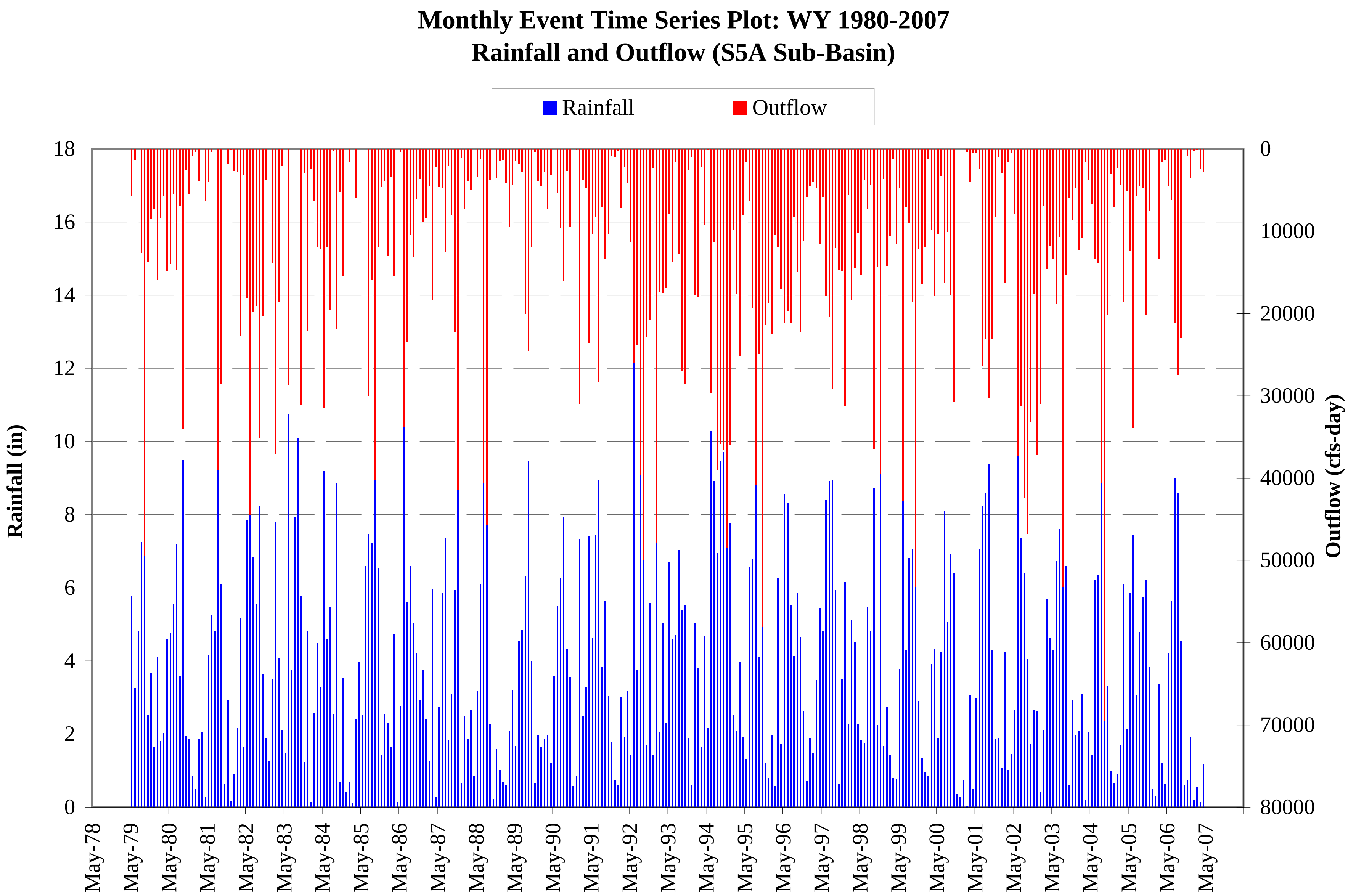
May-04
May-05
May-06
May-07



Monthly Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S5A Sub-Basin)
Rainfall
Outflow
Rainfall (in)
Outflow (cfs-day)
0
2
4
6
8
10
12
14
16
18
0
10000
20000
30000
40000
50000
60000
70000
80000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
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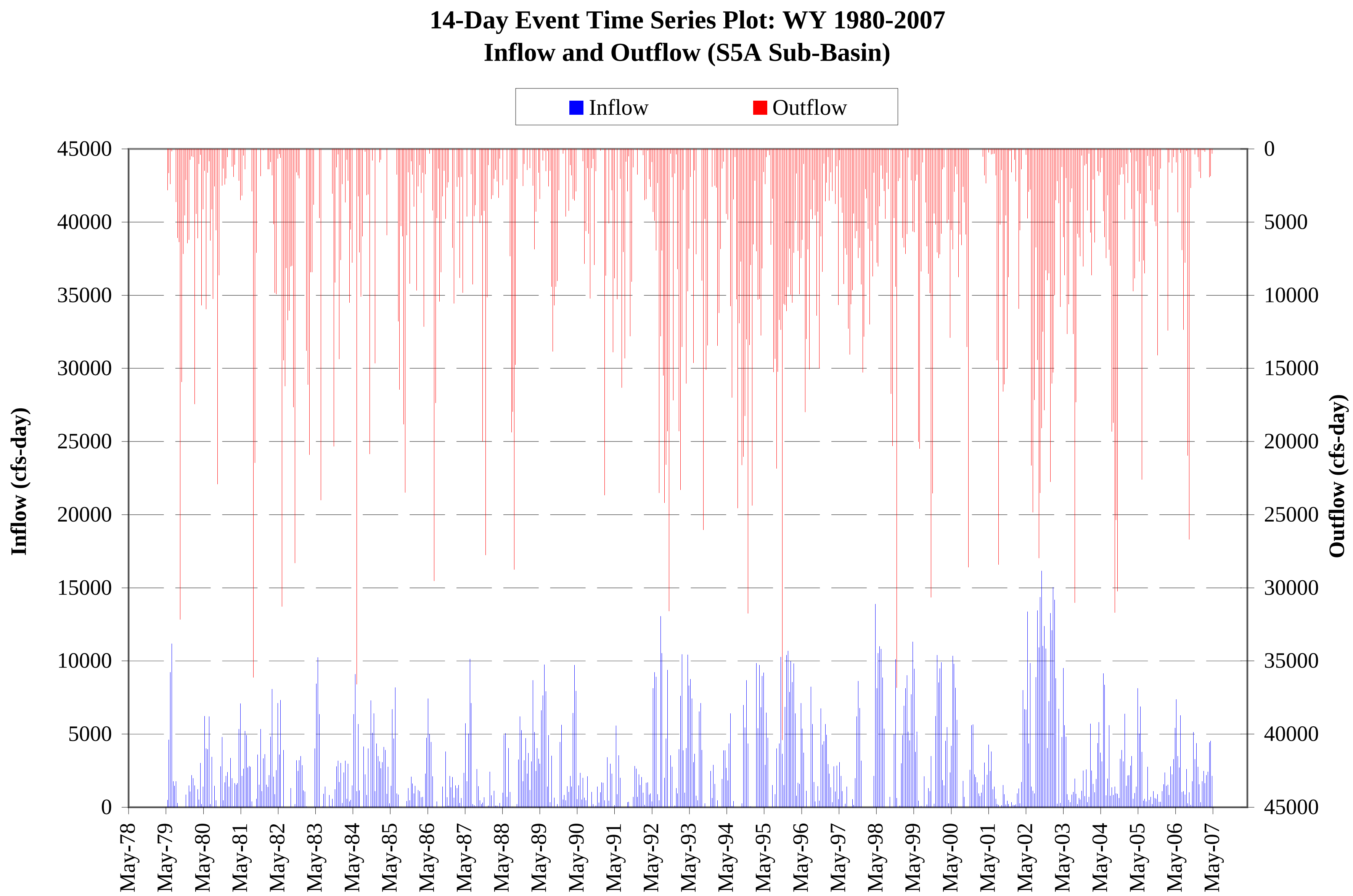
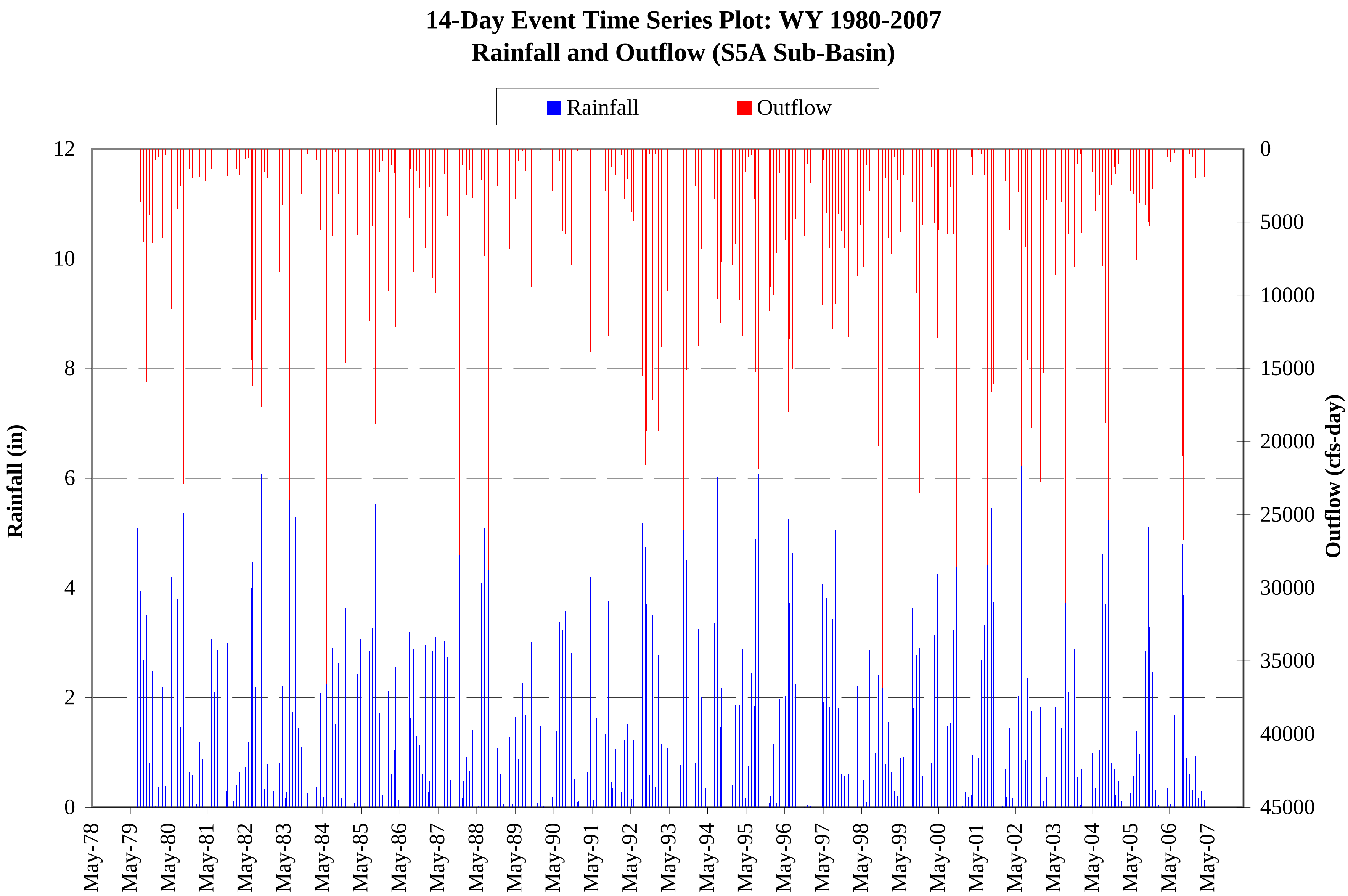
May-03
May-04
May-05
May-06
May-07



14-Day Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S5A Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07



14-Day Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S5A Sub-Basin)
Rainfall
Outflow
Rainfall (in)
Outflow (cfs-day)
12
10
8
6
4
2
0
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
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May-99
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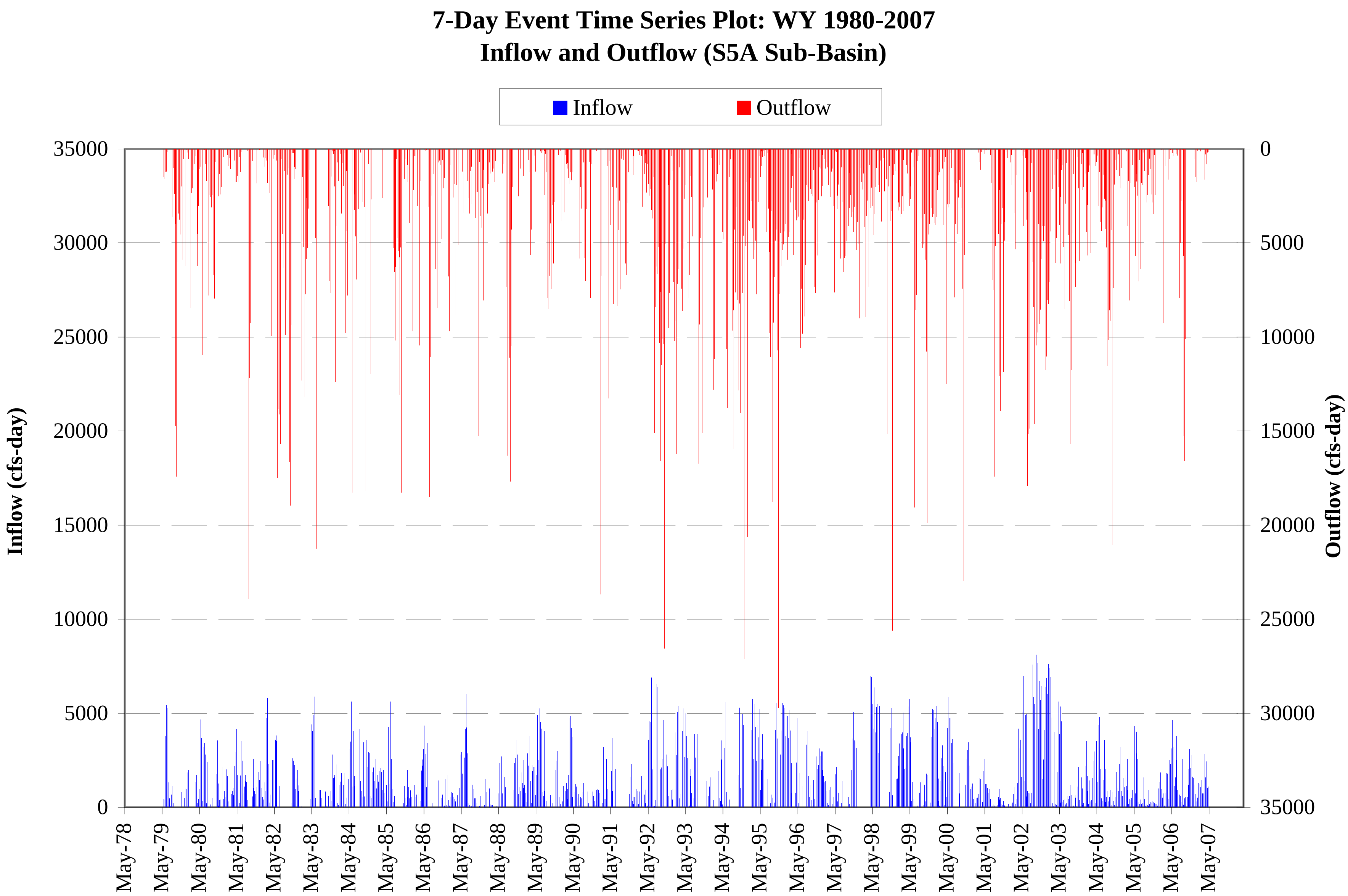
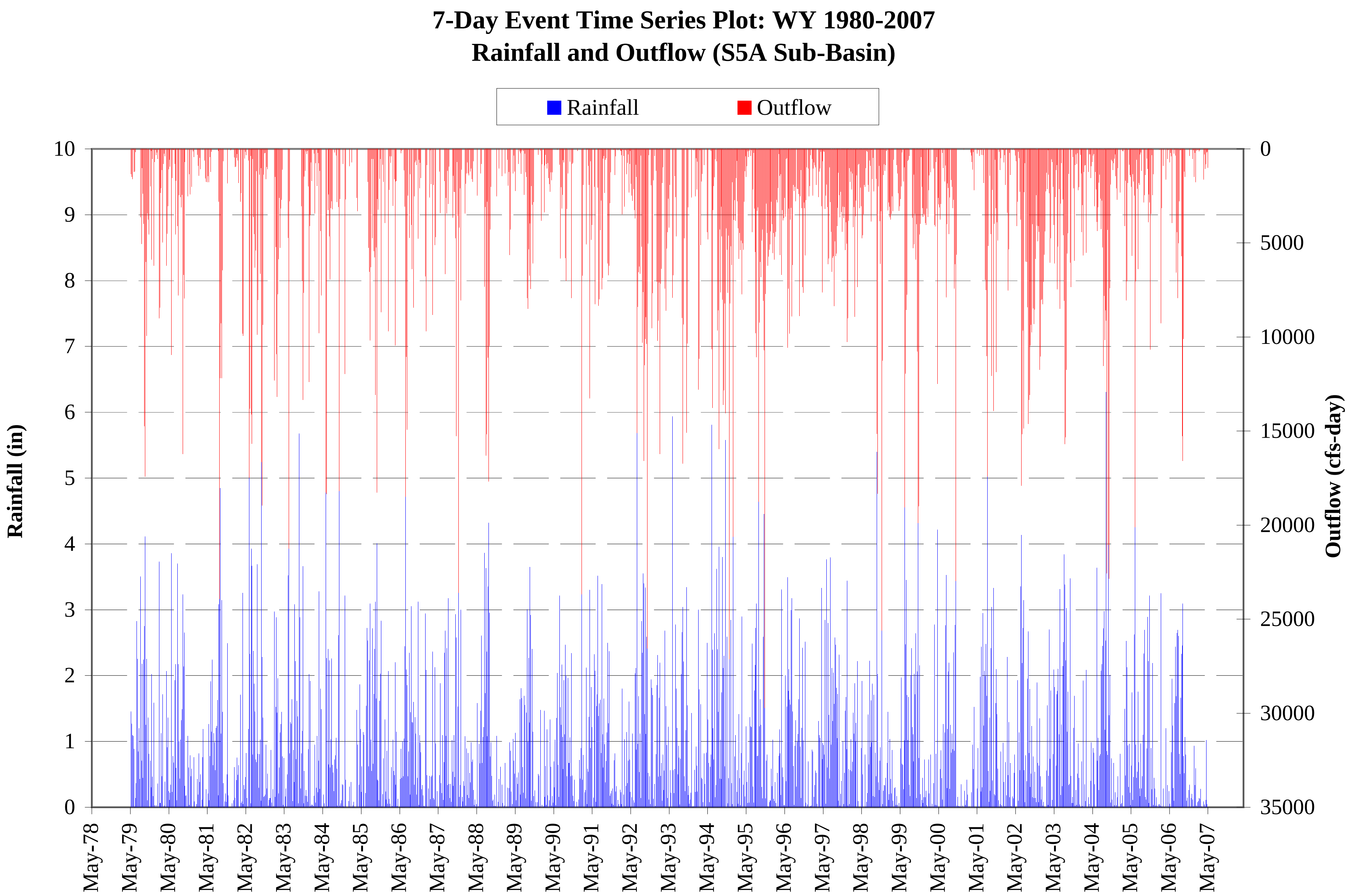
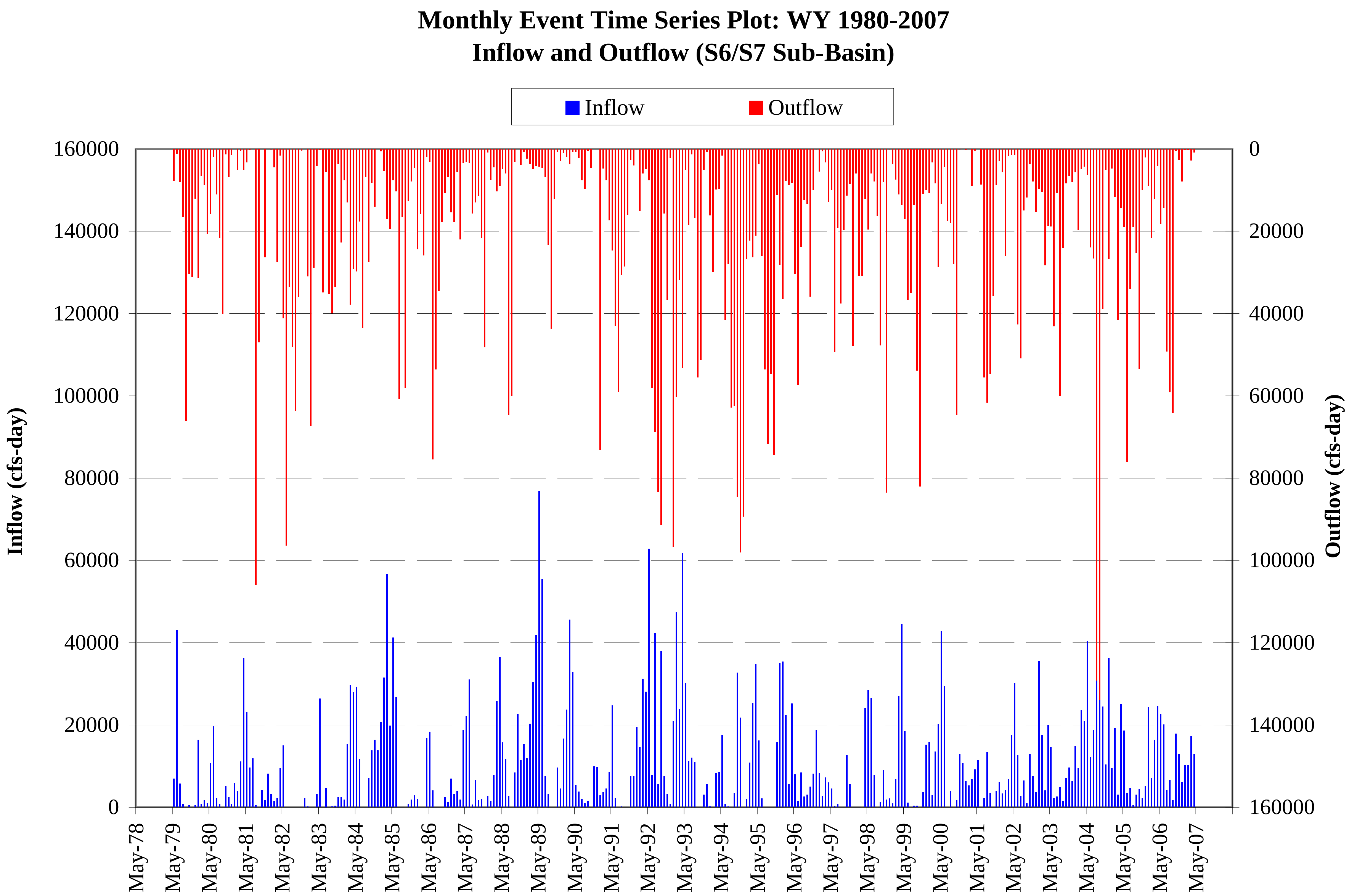
May-03
May-04
May-05
May-06
May-07



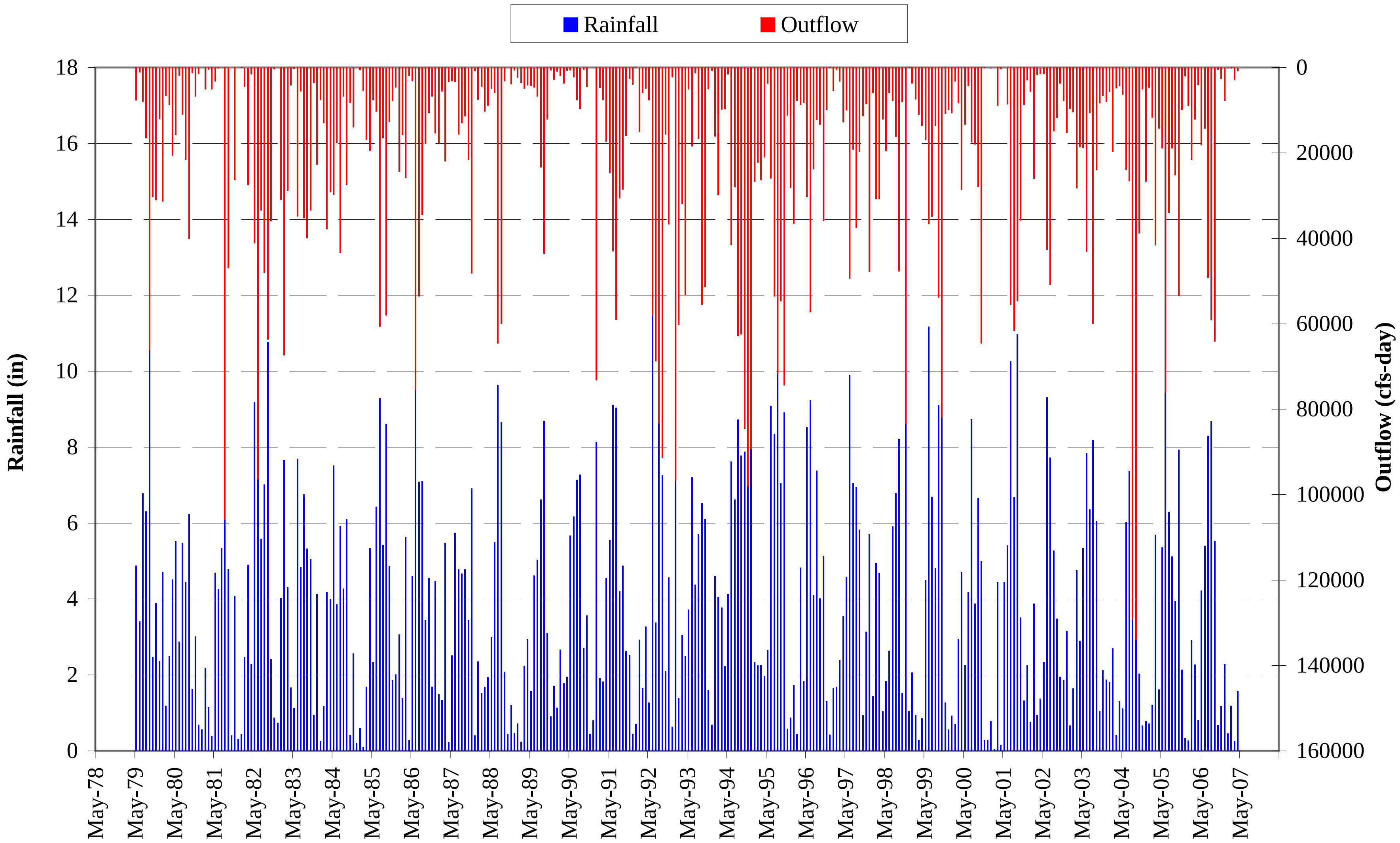
7-Day Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S5A Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
35000
30000
25000
20000
15000
10000
5000
0
0
5000
10000
15000
20000
25000
30000
35000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

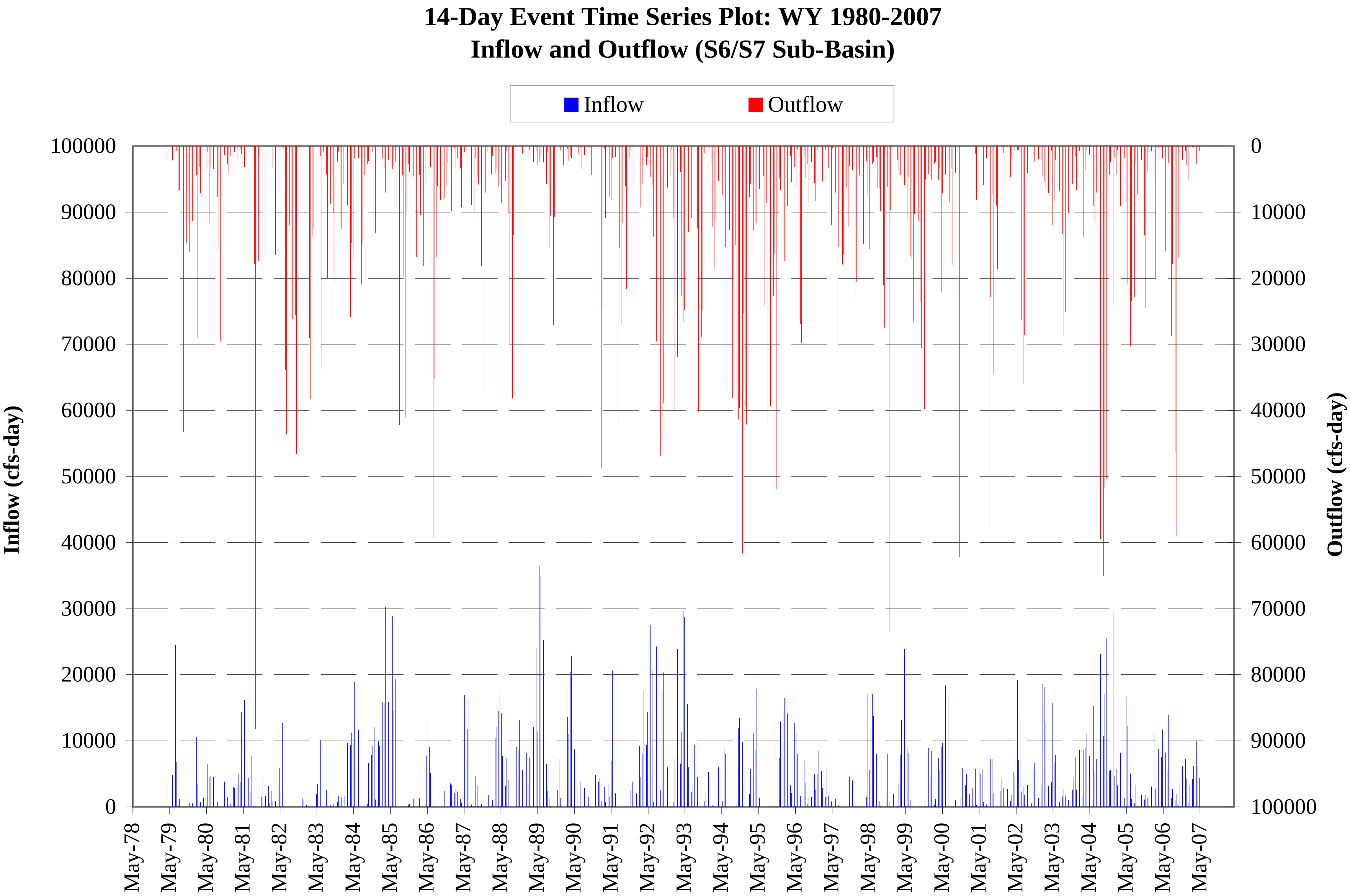

7-Day Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S5A Sub-Basin)
Rainfall
Outflow
Rainfall (in)
Outflow (cfs-day)
0
1
2
3
4
5
6
7
8
9
10
0
5000
10000
15000
20000
25000
30000
35000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Appendix A.2
Hyetograph Plots for Hydrologic Sub-Basin S6/S7

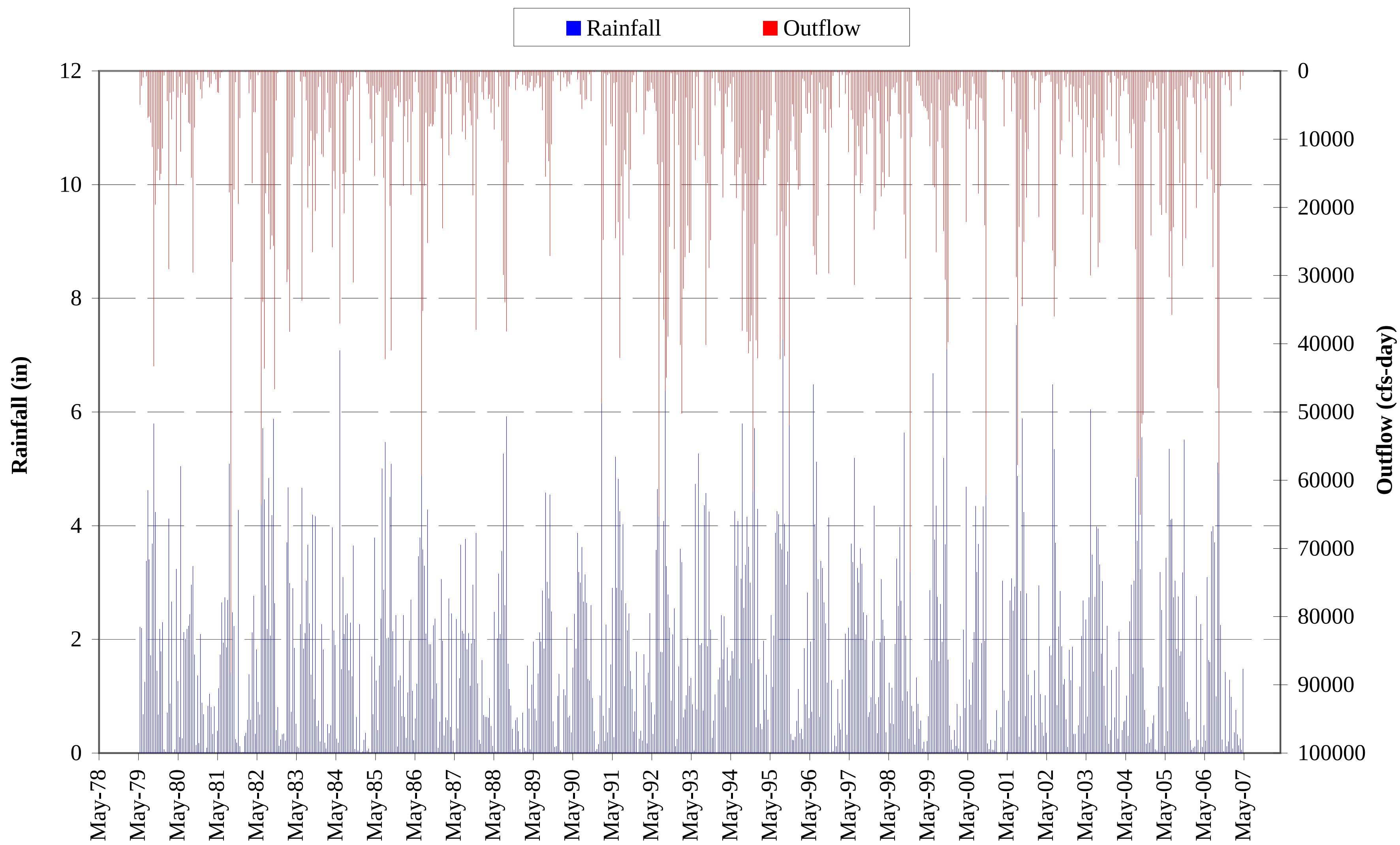

Monthly Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S6/S7 Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
160000
140000
120000
100000
80000
60000
40000
20000
0
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

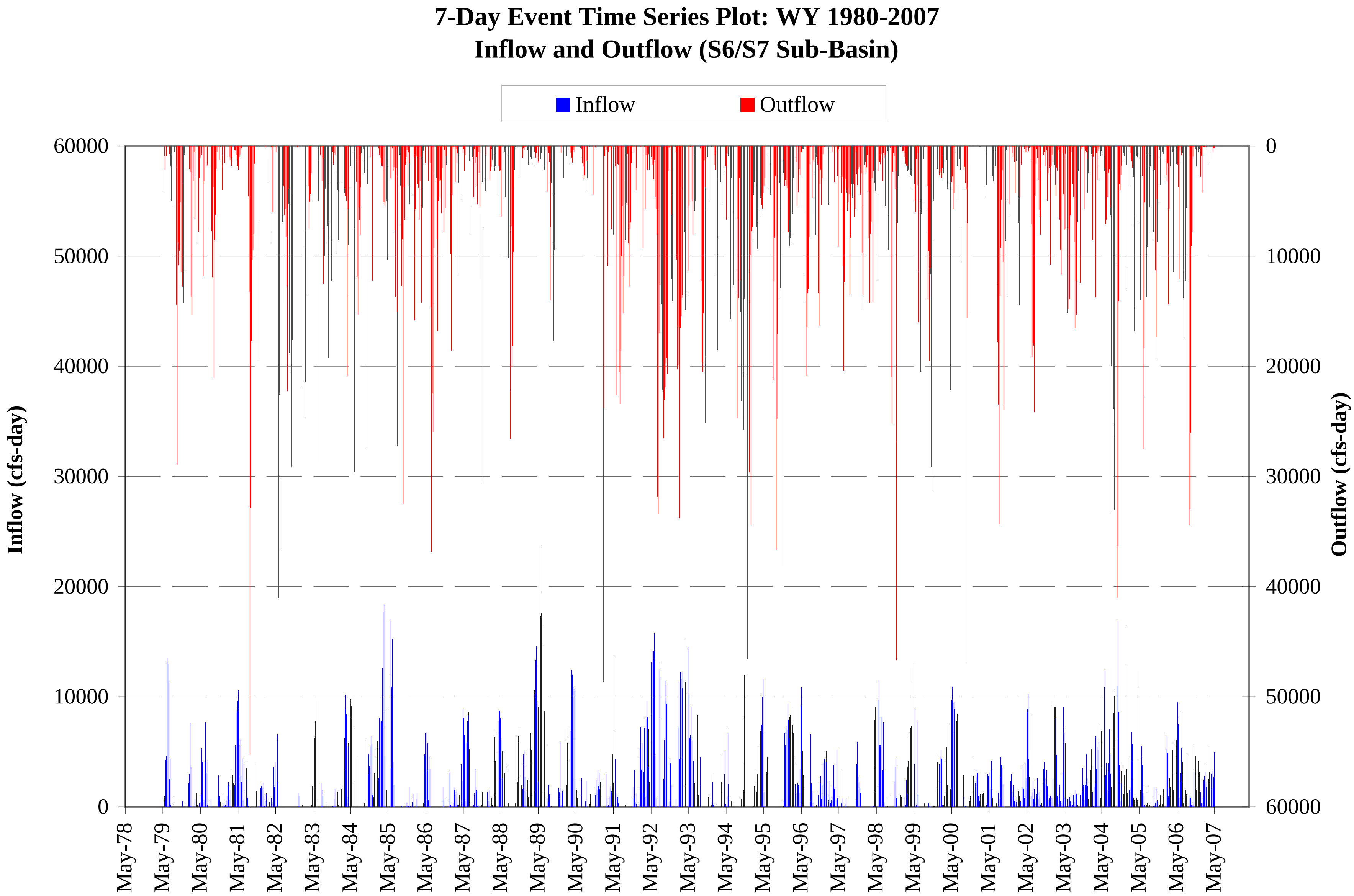
Monthly Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S6/S7 Sub-Basin)




14-Day Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S6/S7 Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
10000
20000
30000
40000
50000
60000
70000
80000
90000
100000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

14-Day Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S6/S7 Sub-Basin)





7-Day Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S6/S7 Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
60000
50000
40000
30000
20000
10000
0
0
10000
20000
30000
40000
50000
60000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
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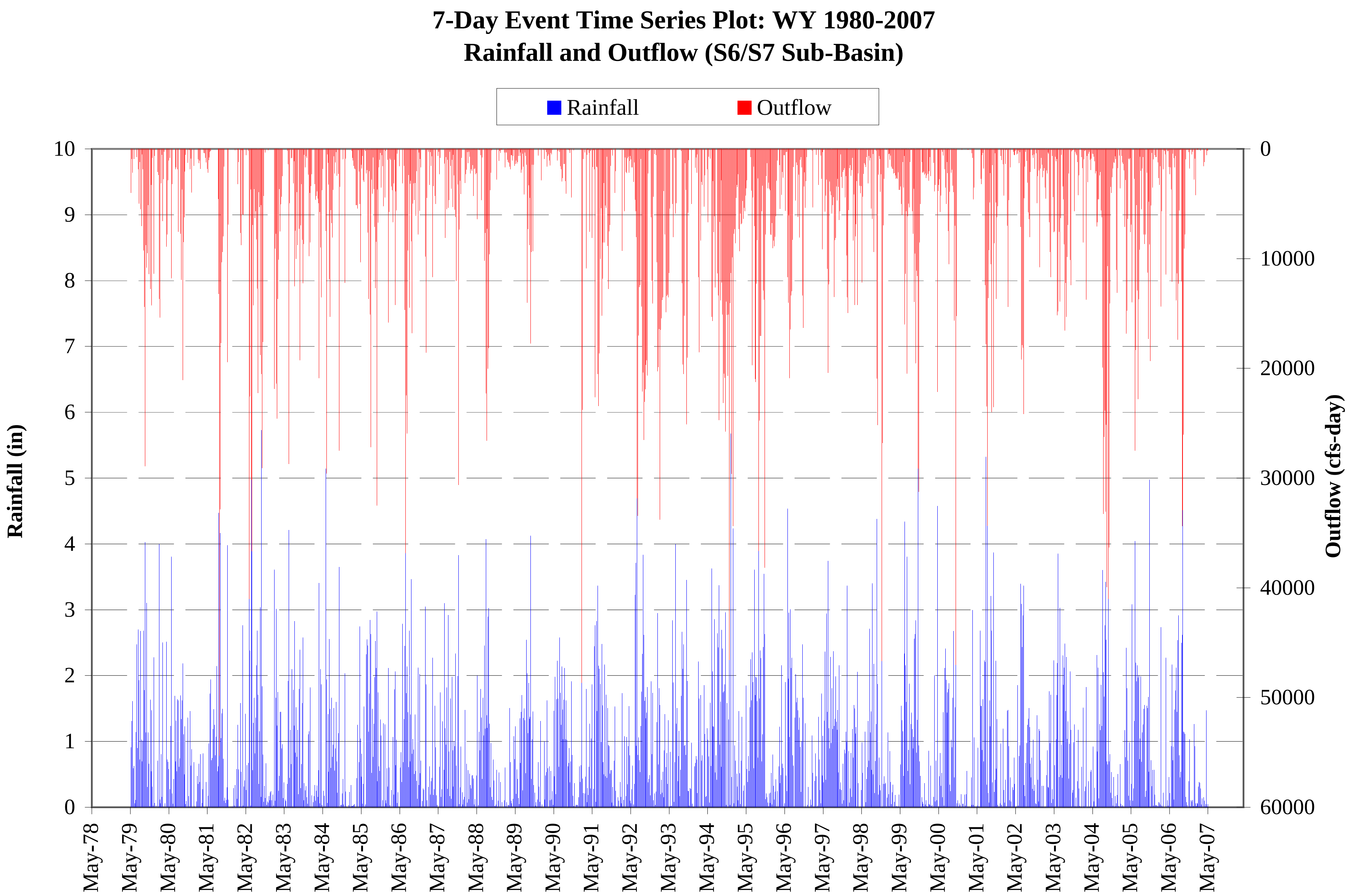
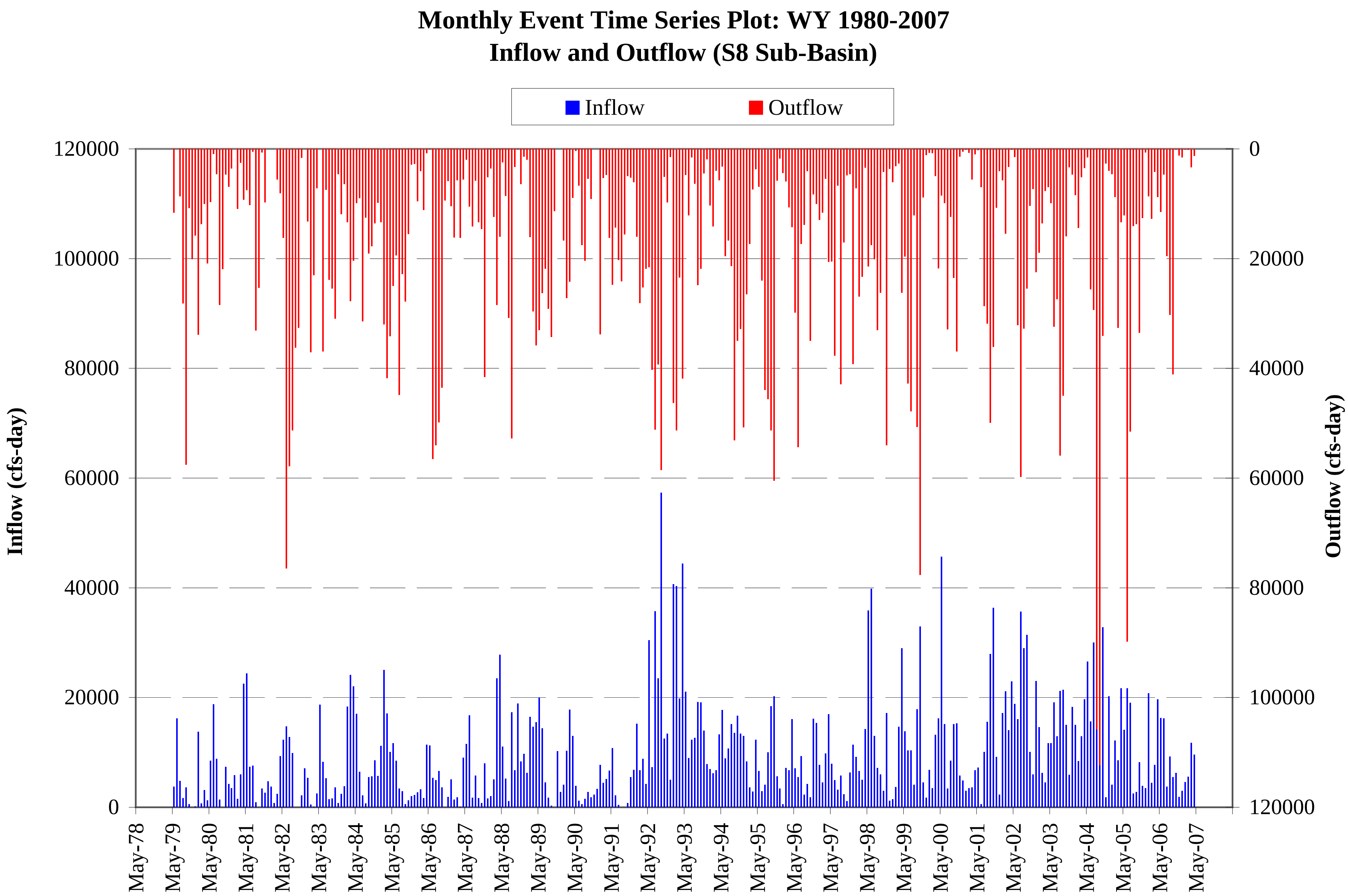
May-03
May-04
May-05
May-06
May-07



7-Day Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S6/S7 Sub-Basin)
Rainfall
Outflow
Rainfall (in)
Outflow (cfs-day)
10
9
8
7
6
5
4
3
2
1
0
0
10000
20000
30000
40000
50000
60000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Appendix A.3
Hyetograph Plots for Hydrologic Sub-Basin S8



Monthly Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S8 Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
120000
100000
80000
60000
40000
20000
0
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
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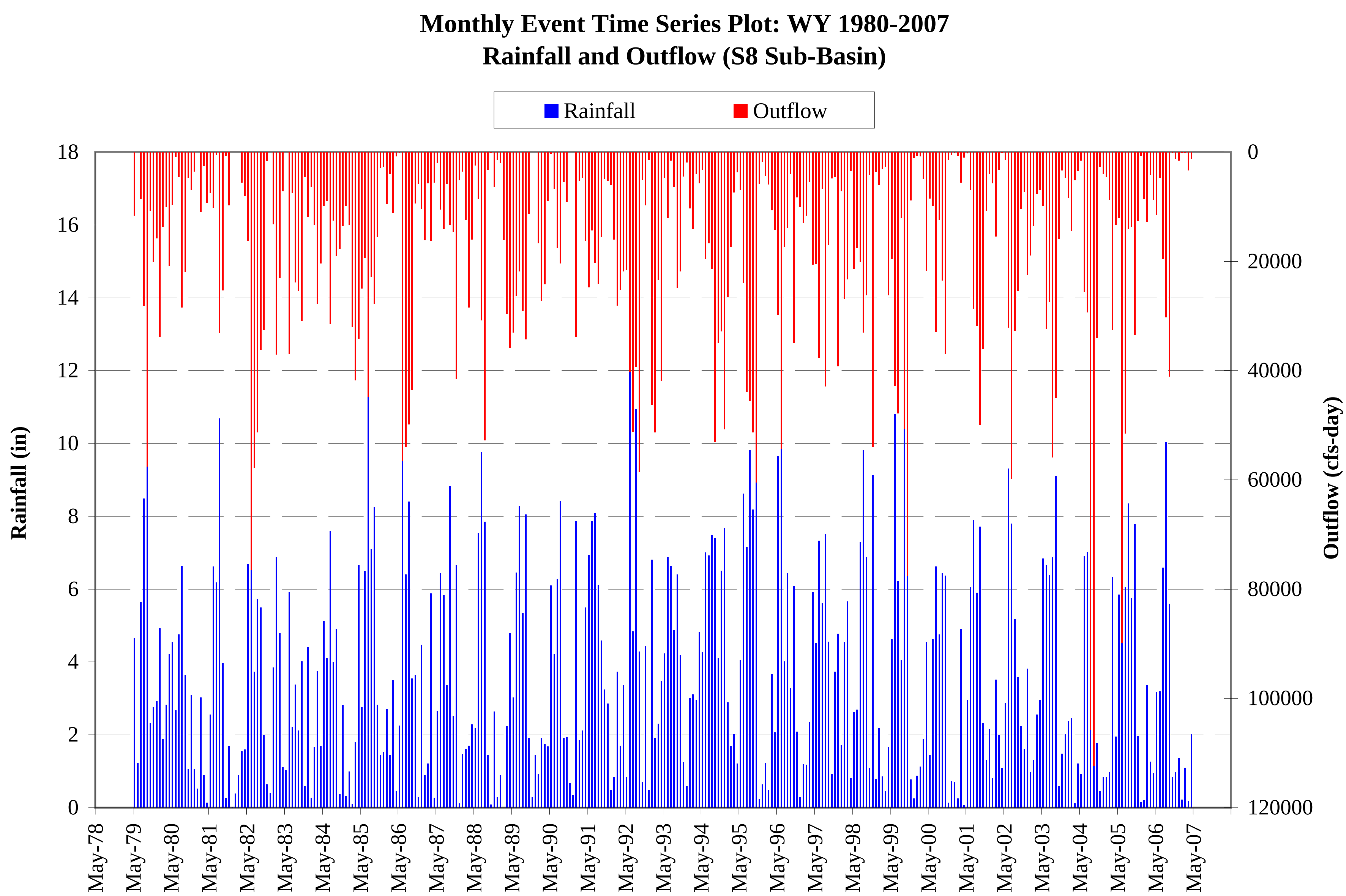
May-05
May-06
May-07



Monthly Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S8 Sub-Basin)
Rainfall
Outflow
Rainfall (in)
Outflow (cfs-day)
0
2
4
6
8
10
12
14
16
18
0
20000
40000
60000
80000
100000
120000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
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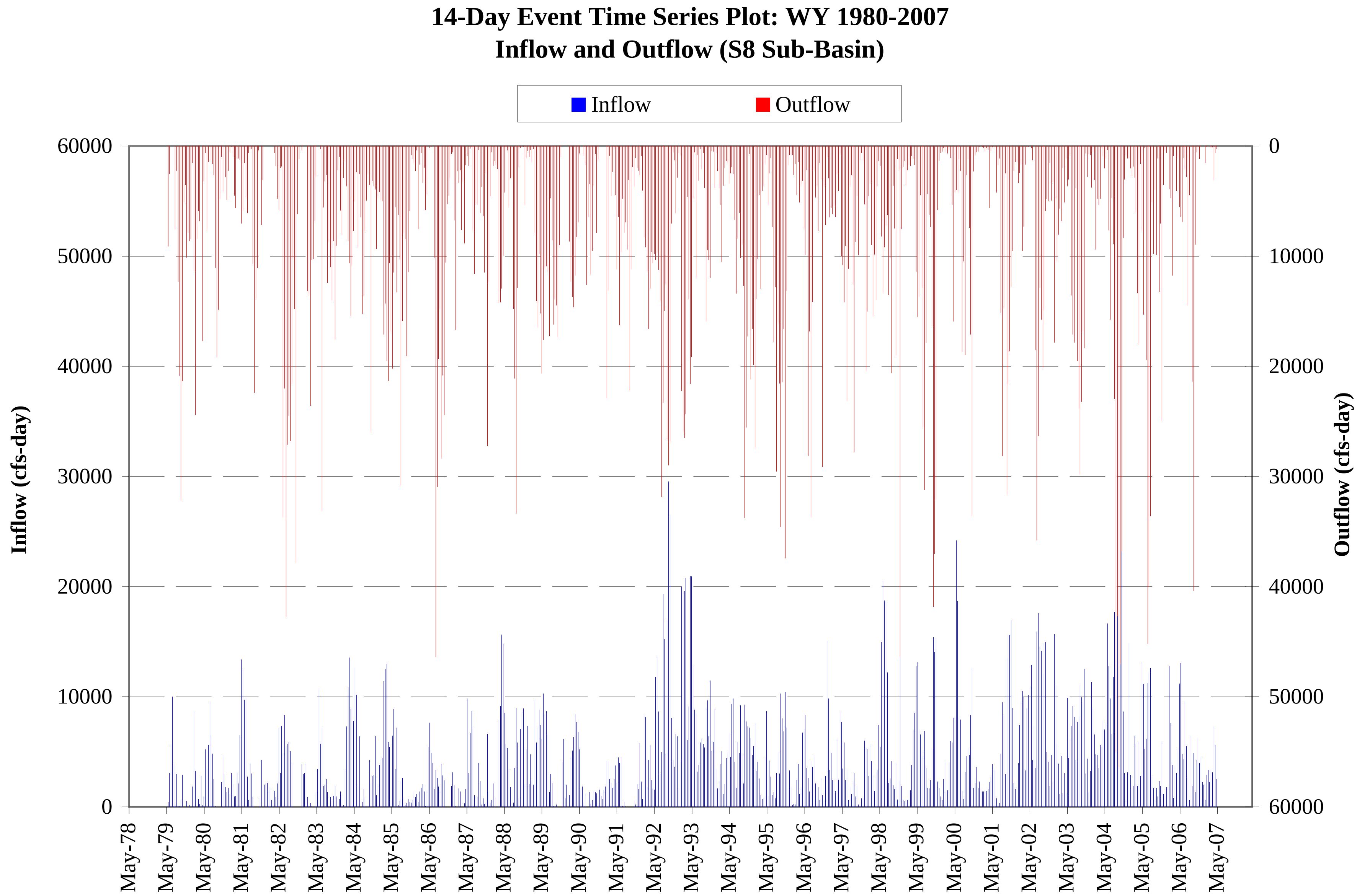
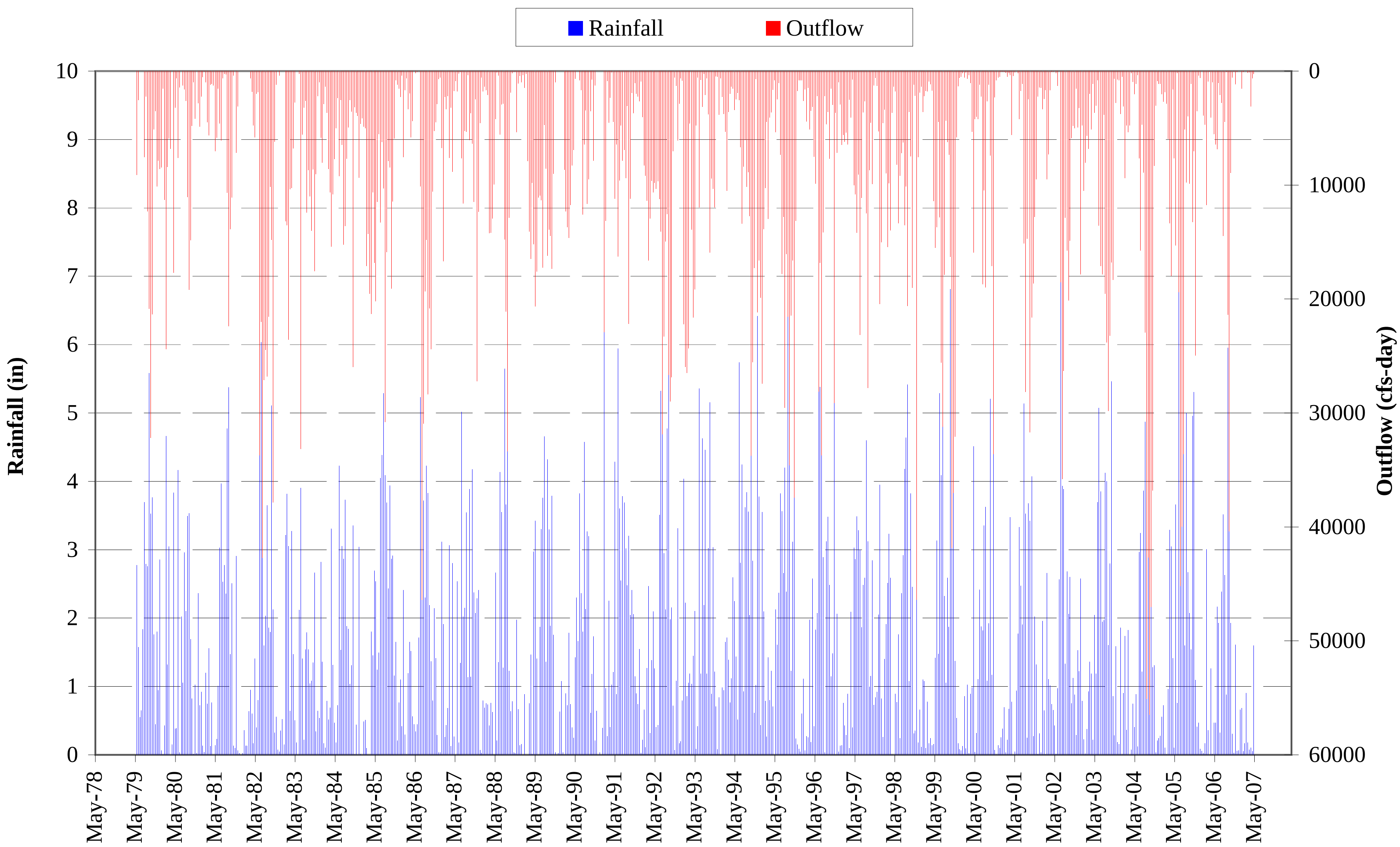
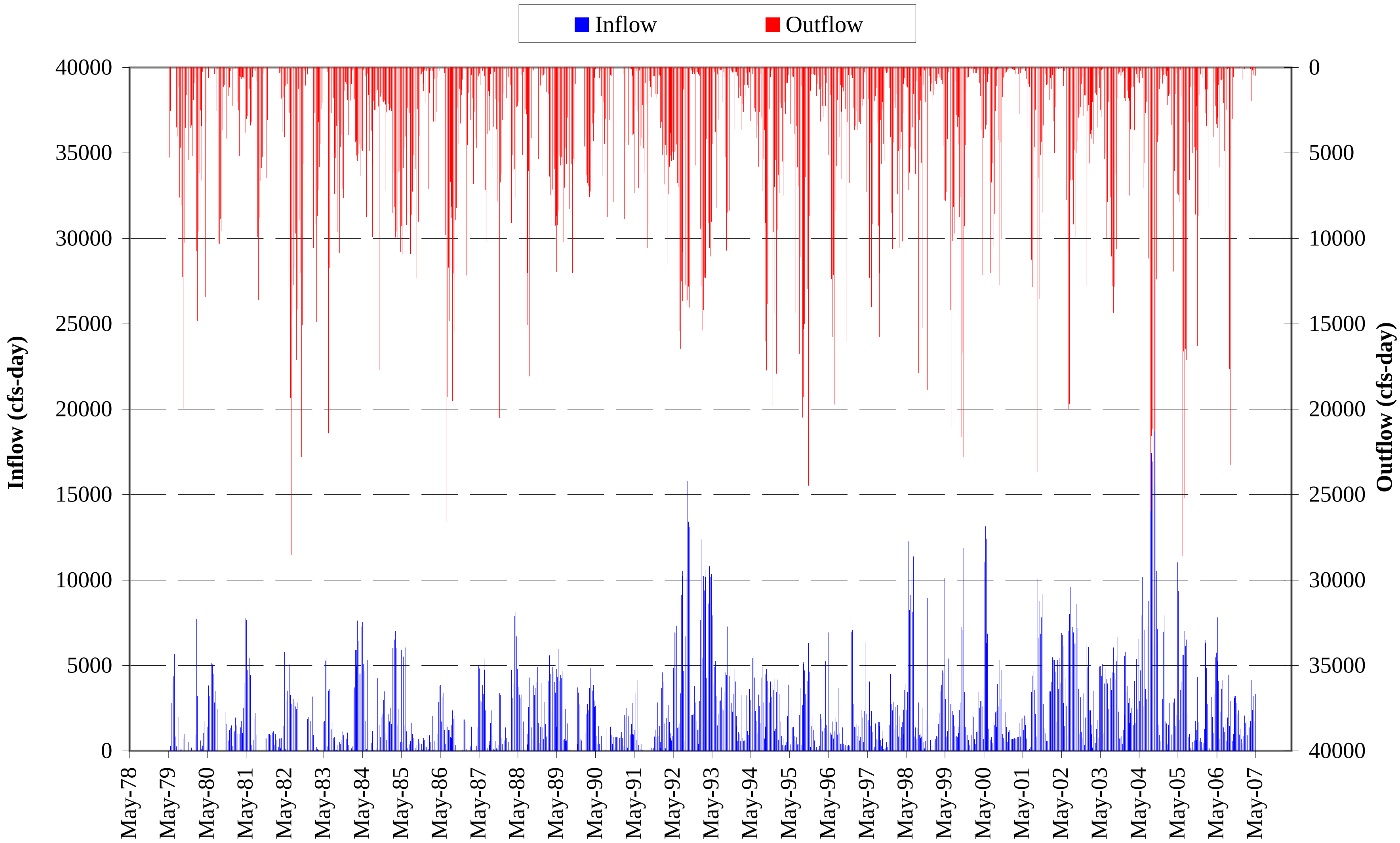
May-02
May-03
May-04
May-05
May-06
May-07

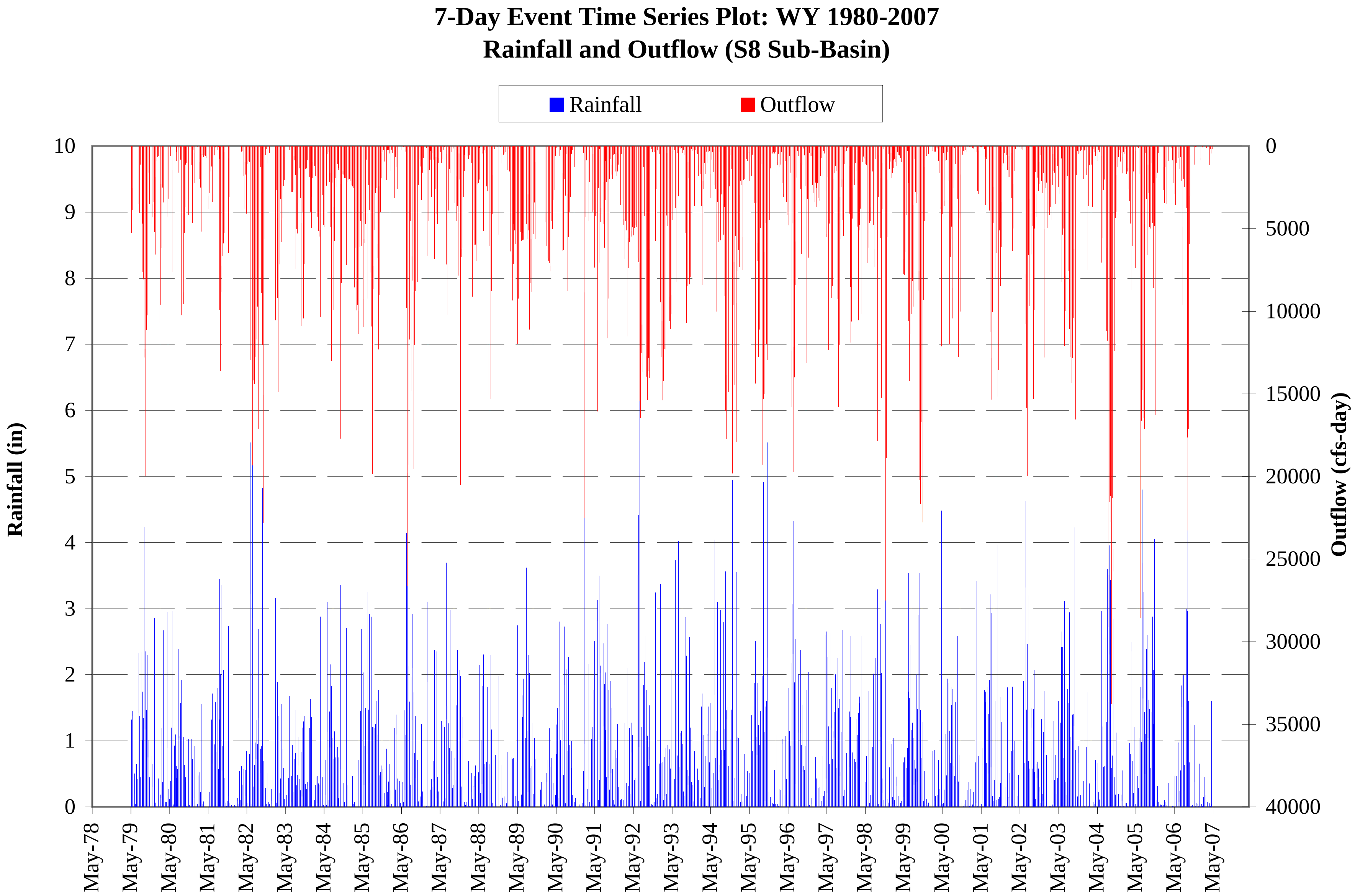

14-Day Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S8 Sub-Basin)
Inflow
Outflow
Inflow (cfs-day)
Outflow (cfs-day)
60000
50000
40000
30000
20000
10000
0
0
10000
20000
30000
40000
50000
60000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

14-Day Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S8 Sub-Basin)



7-Day Event Time Series Plot: WY 1980-2007
Inflow and Outflow (S8 Sub-Basin)

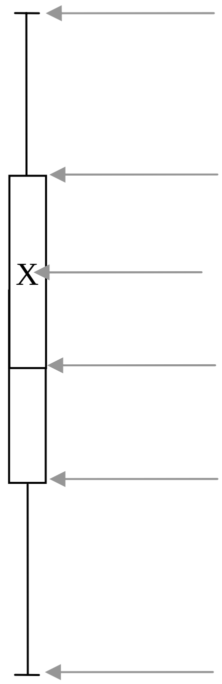



7-Day Event Time Series Plot: WY 1980-2007
Rainfall and Outflow (S8 Sub-Basin)
Rainfall
Outflow
Rainfall (in)
Outflow (cfs-day)
0
1
2
3
4
5
6
7
8
9
10
0
5000
10000
15000
20000
25000
30000
35000
40000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Appendix B

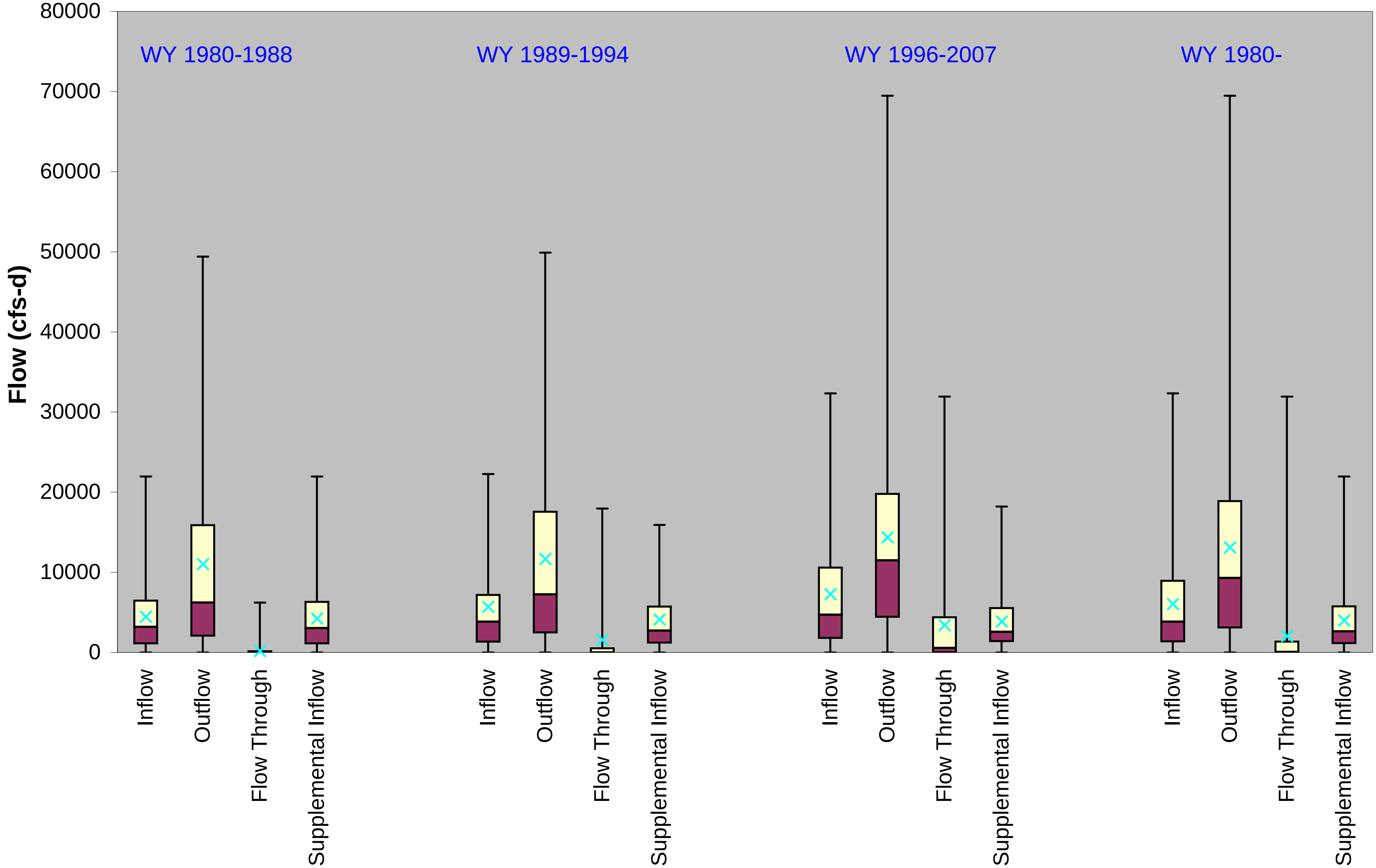
Appendix B.1: Box-and-Whisker and Time Series Plots for Hydrologic Sub-Basin S5A
Appendix B.2: Box-and-Whisker and Time Series Plots for Hydrologic Sub-Basin S6/S7
Appendix B.3: Box-and-Whisker and Time Series Plots for Hydrologic Sub-Basin S8

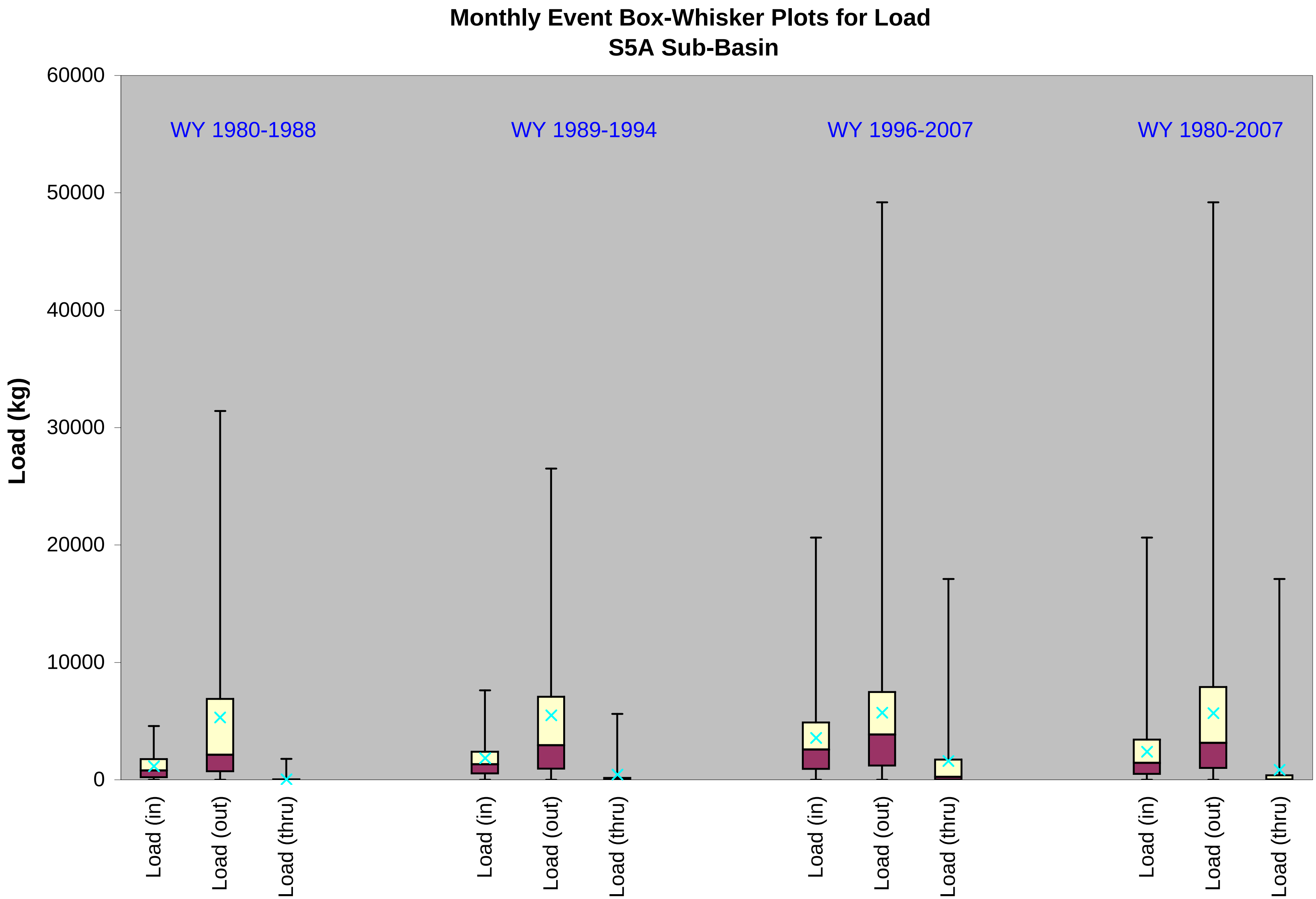
Description of Features in a Box-and-Whisker Plot used in this Report



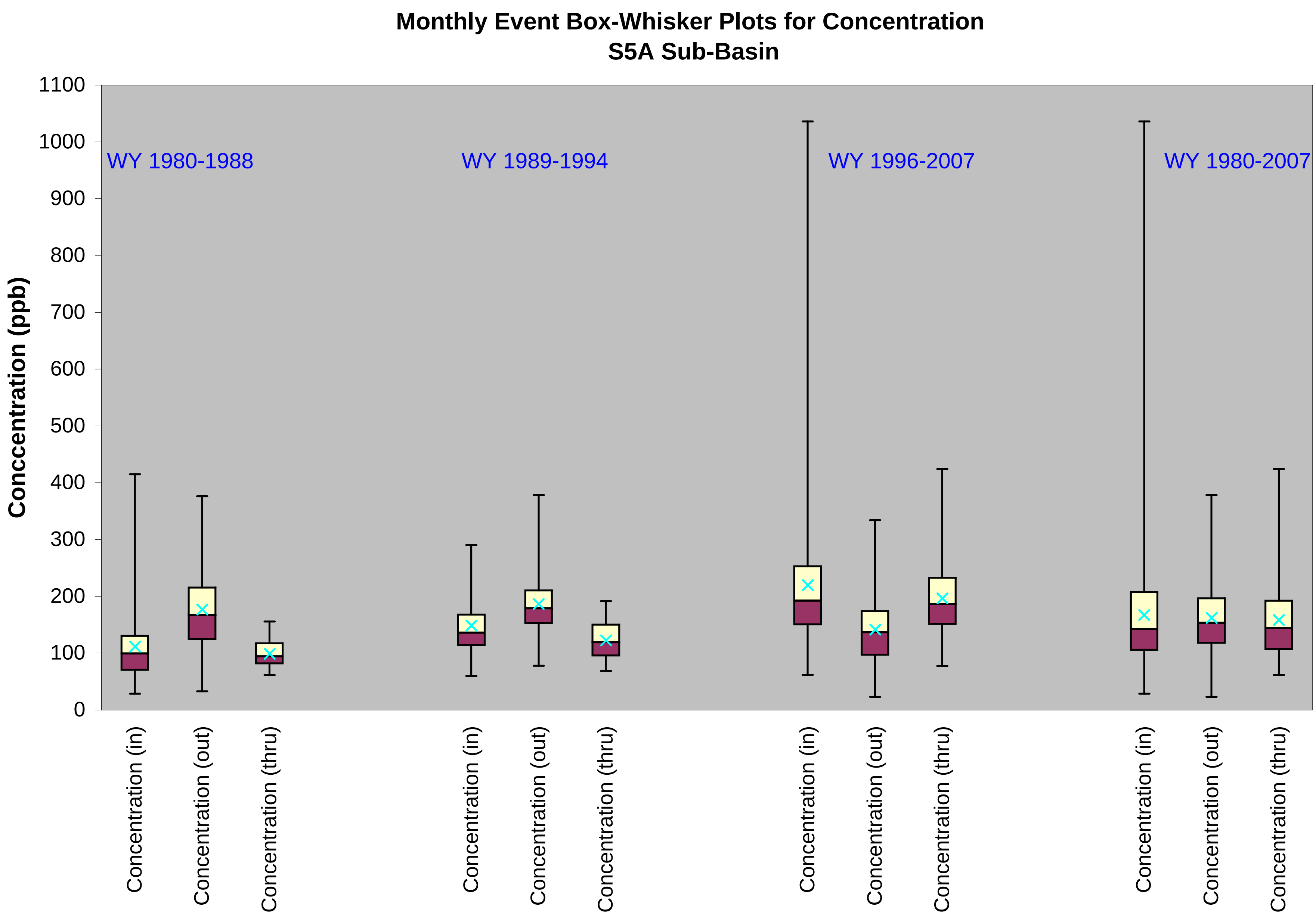
Appendix B.1
Box-and-Whisker and Time Series Plots for Hydrologic Sub-Basin S5A

Monthly Event Box-Whisker Plots for Flow
S5A Sub-Basin

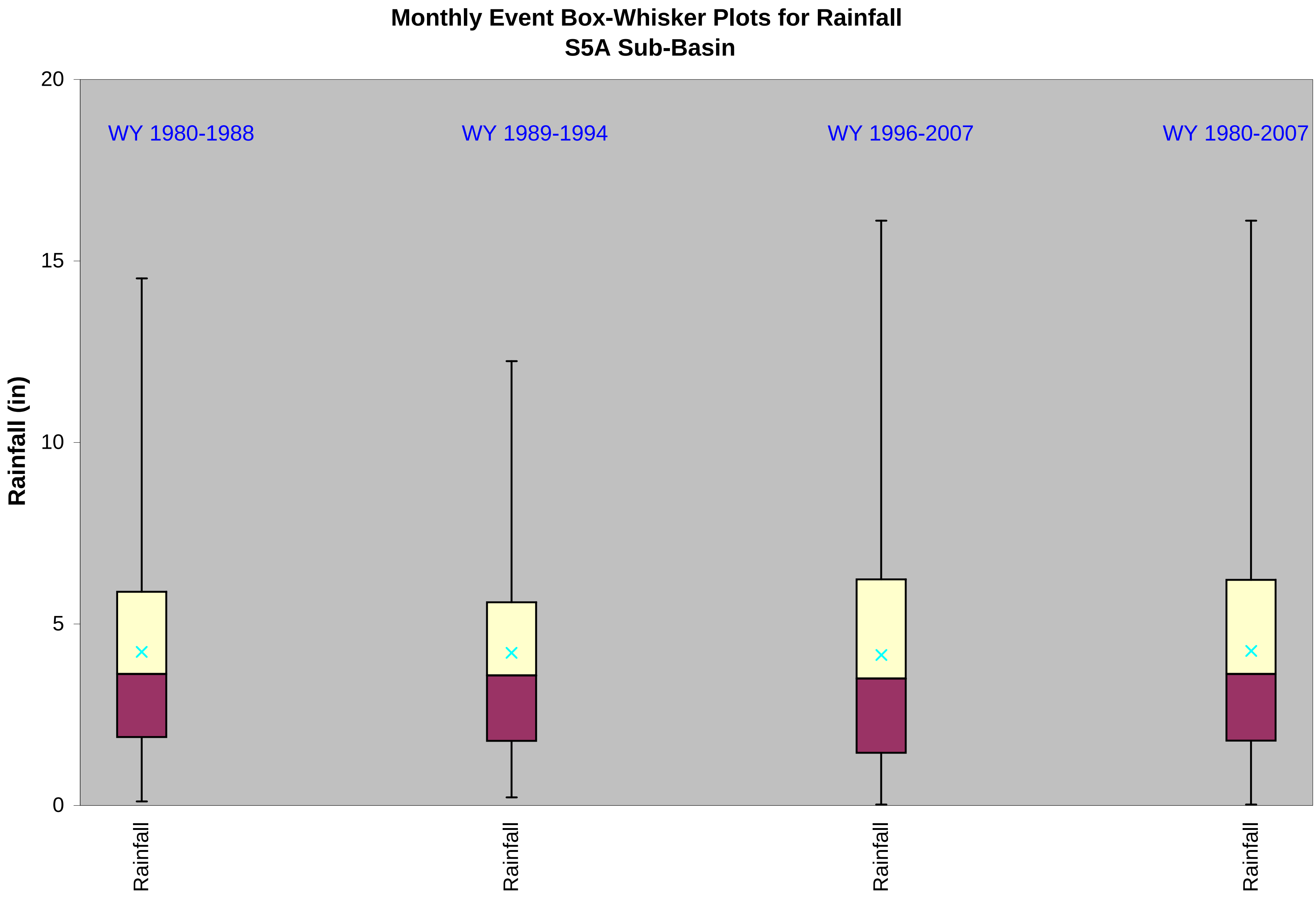


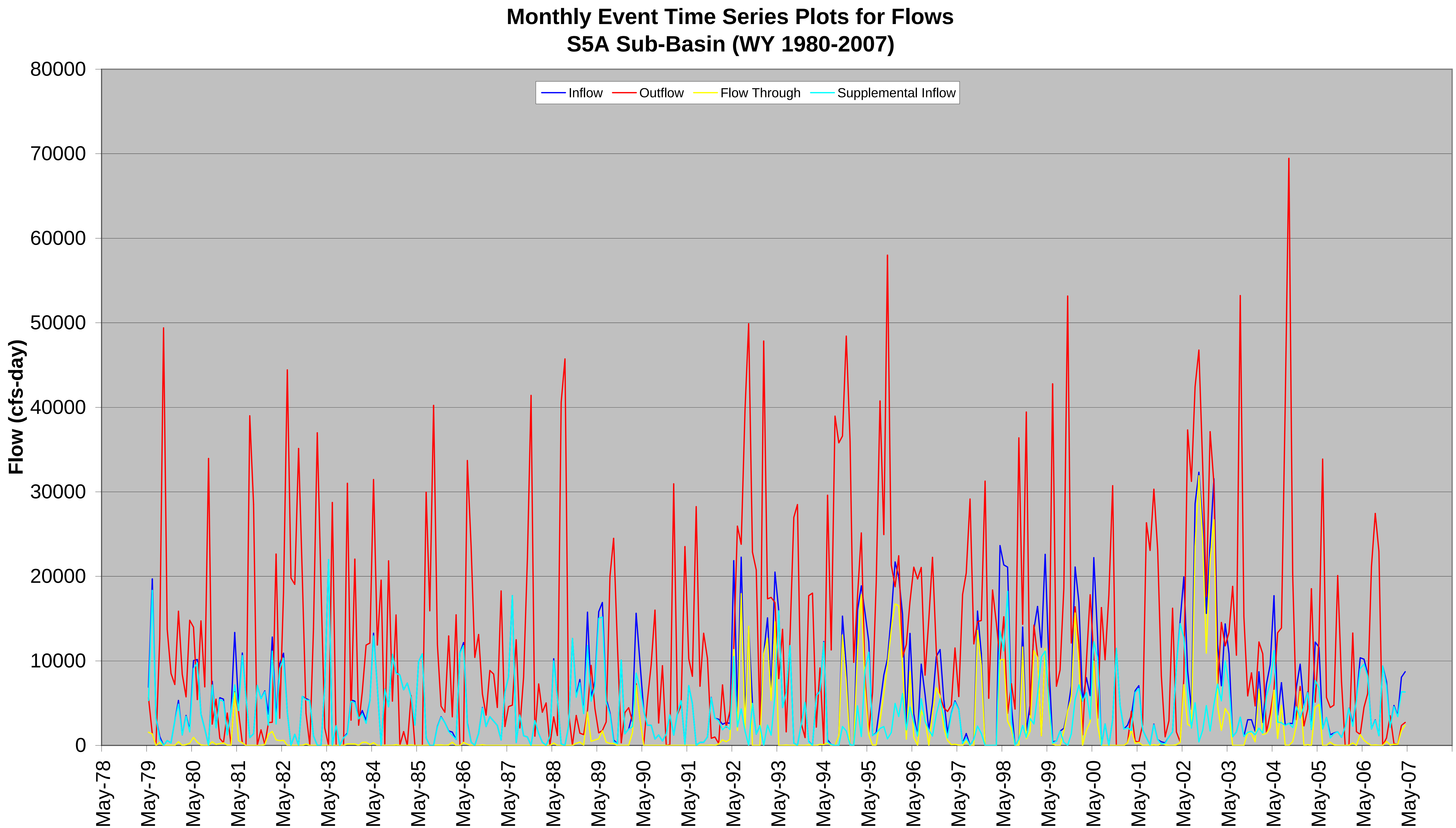


Monthly Event Box-Whisker Plots for Load
S5A Sub-Basin
Load (kg)
60000
50000
40000
30000
20000
10000
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)

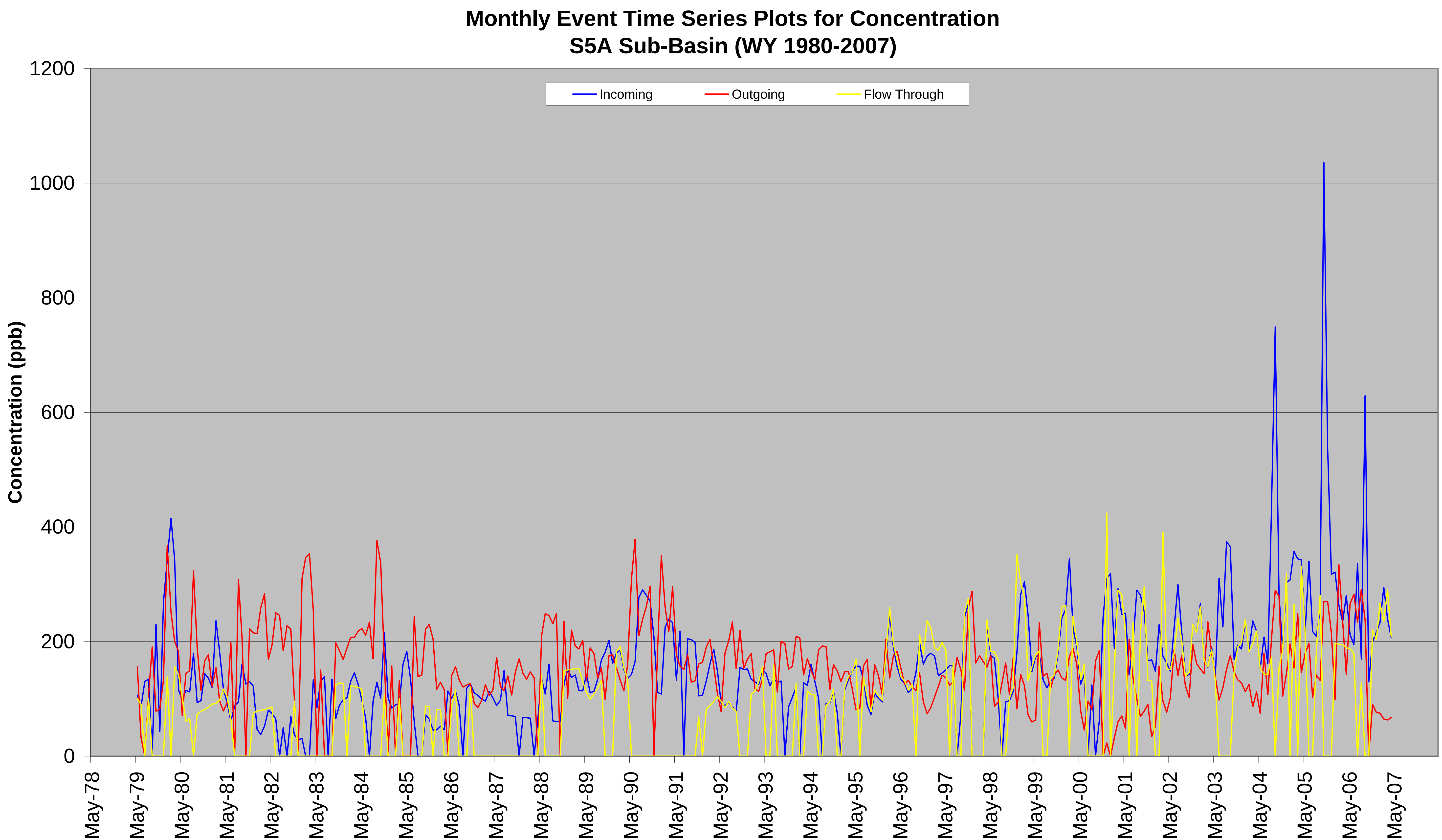


Monthly Event Box-Whisker Plots for Concentration
S5A Sub-Basin
Conccentration (ppb)
1100
1000
900
800
700
600
500
400
300
200
100
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)

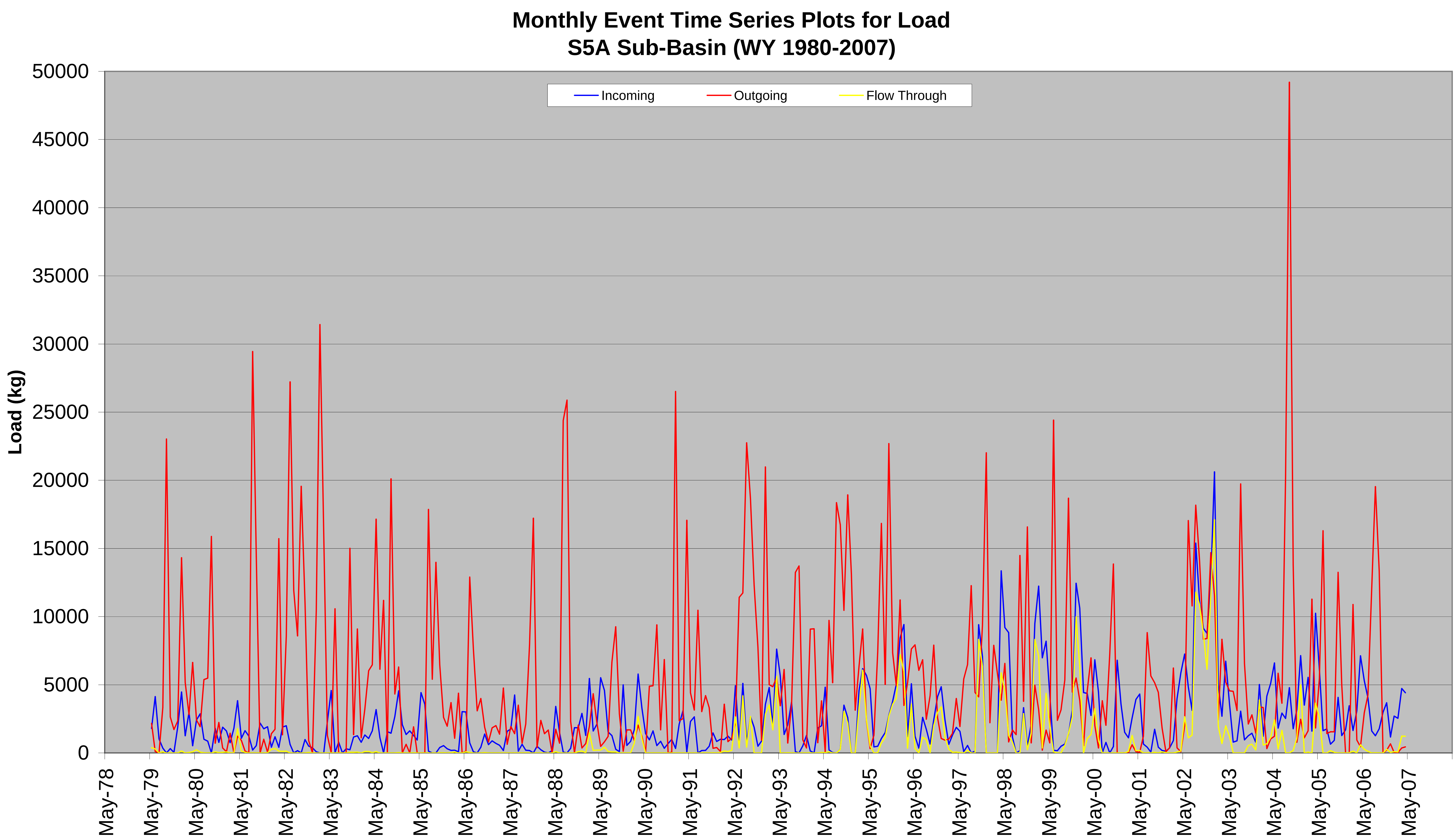

Monthly Event Box-Whisker Plots for Rainfall
S5A Sub-Basin
Rainfall (in)
20
15
10
5
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Rainfall
Rainfall
Rainfall
Rainfall



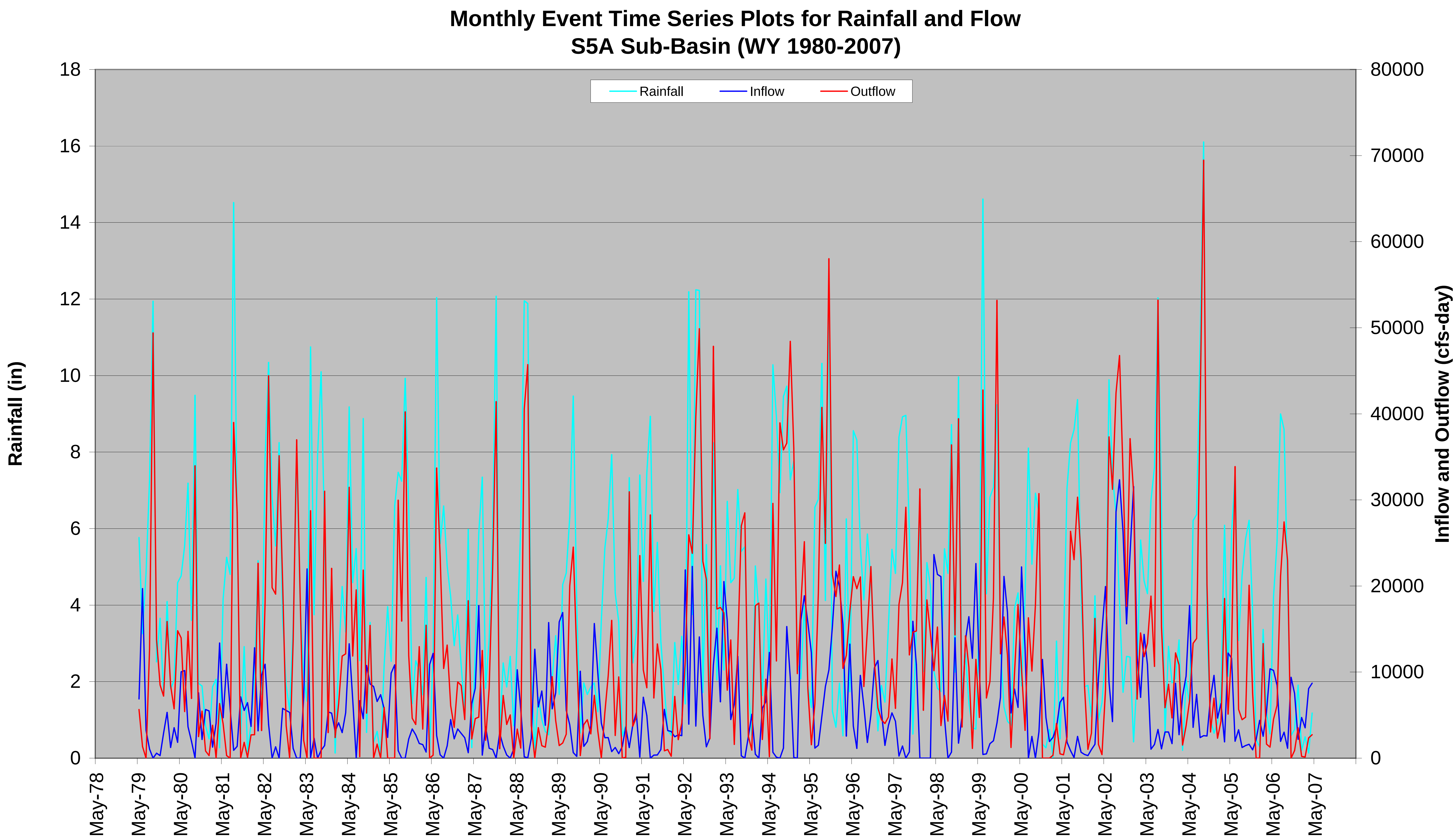
Monthly Event Time Series Plots for Flows
S5A Sub-Basin (WY 1980-2007)
Flow (cfs-day)
80000
70000
60000
50000
40000
30000
20000
10000
0
Inflow
Outflow
Flow Through
Supplemental Inflow
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07



Monthly Event Time Series Plots for Concentration
S5A Sub-Basin (WY 1980-2007)
Incoming
Outgoing
Flow Through
Concentration (ppb)
0
200
400
600
800
1000
1200
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

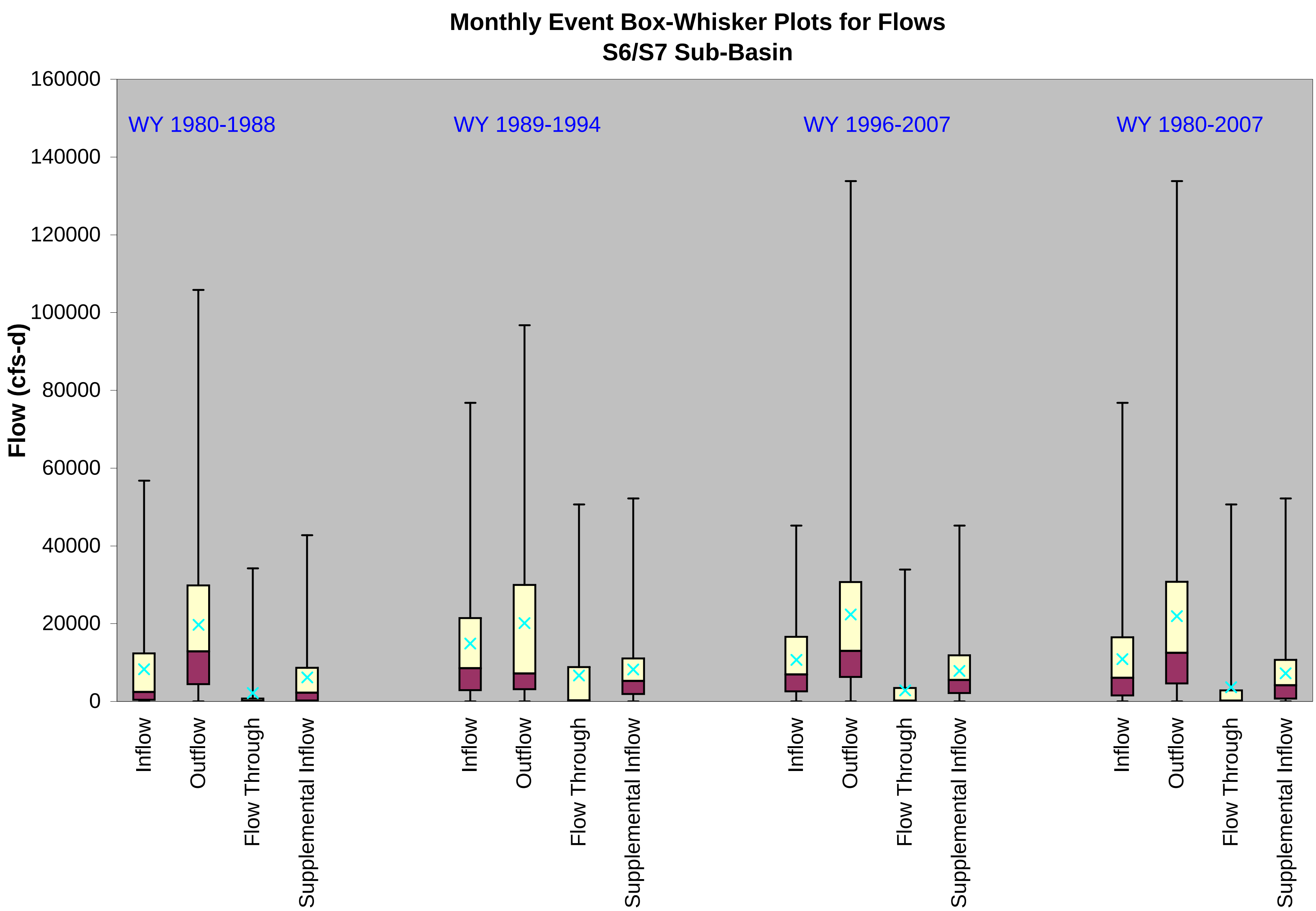


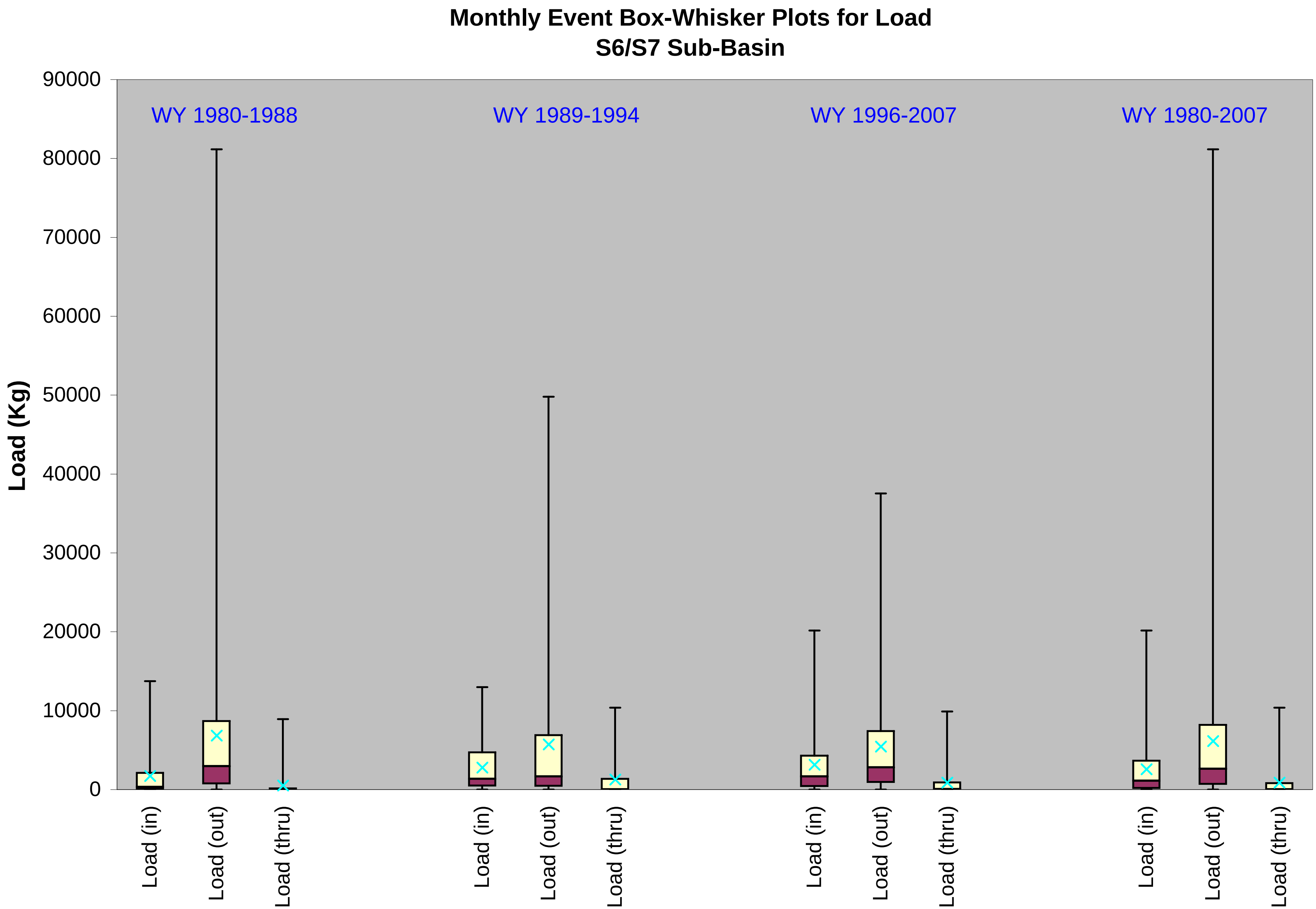
Monthly Event Time Series Plots for Load
S5A Sub-Basin (WY 1980-2007)
Load (kg)
Incoming
Outgoing
Flow Through
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07



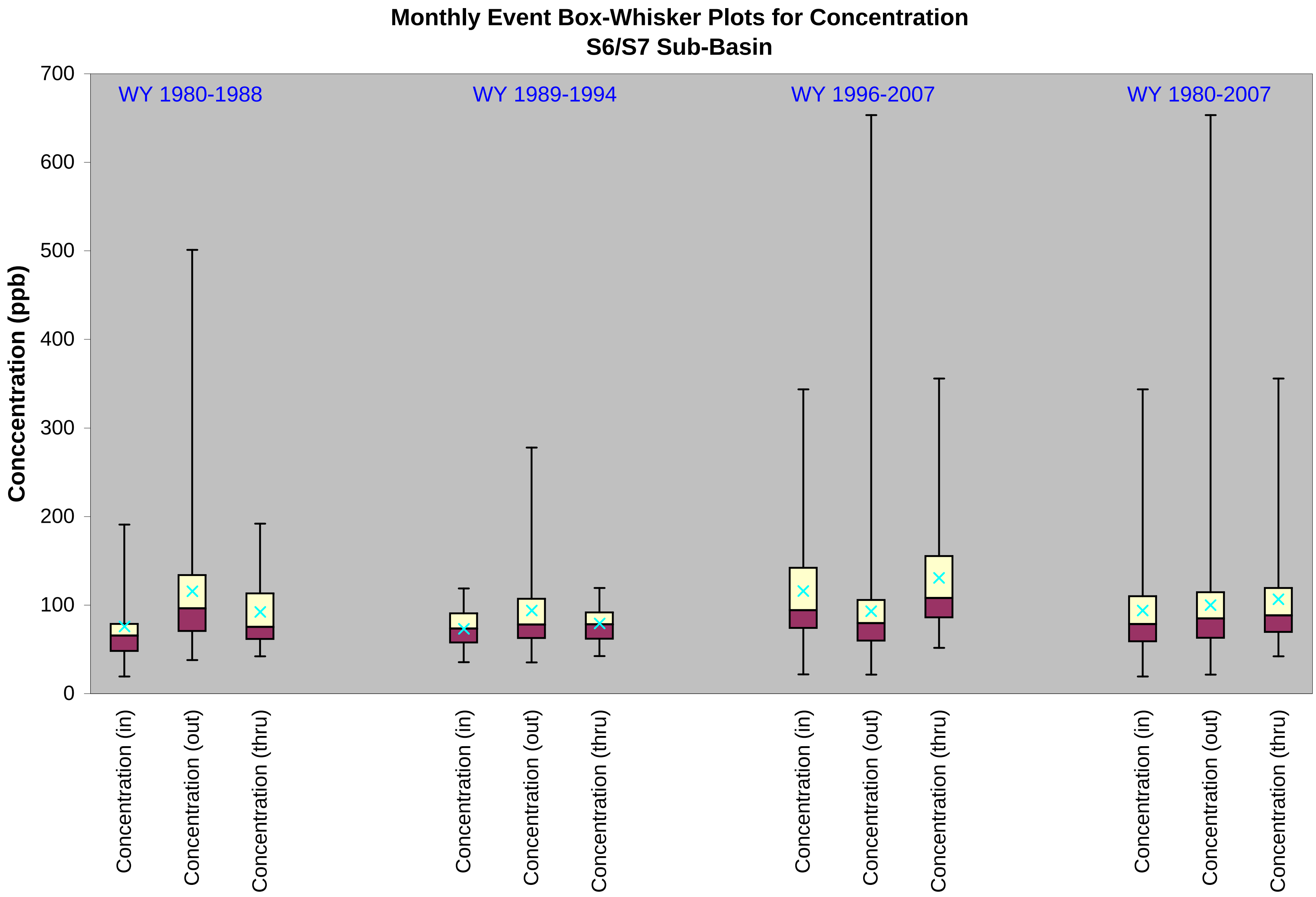
Monthly Event Time Series Plots for Rainfall and Flow
S5A Sub-Basin (WY 1980-2007)
Rainfall
Inflow
Outflow
Rainfall (in)
Inflow and Outflow (cfs-day)
0
2
4
6
8
10
12
14
16
18
0
10000
20000
30000
40000
50000
60000
70000
80000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Appendix B.2
Box-and-Whisker and Time Series Plots for Hydrologic Sub-Basin S6/S7

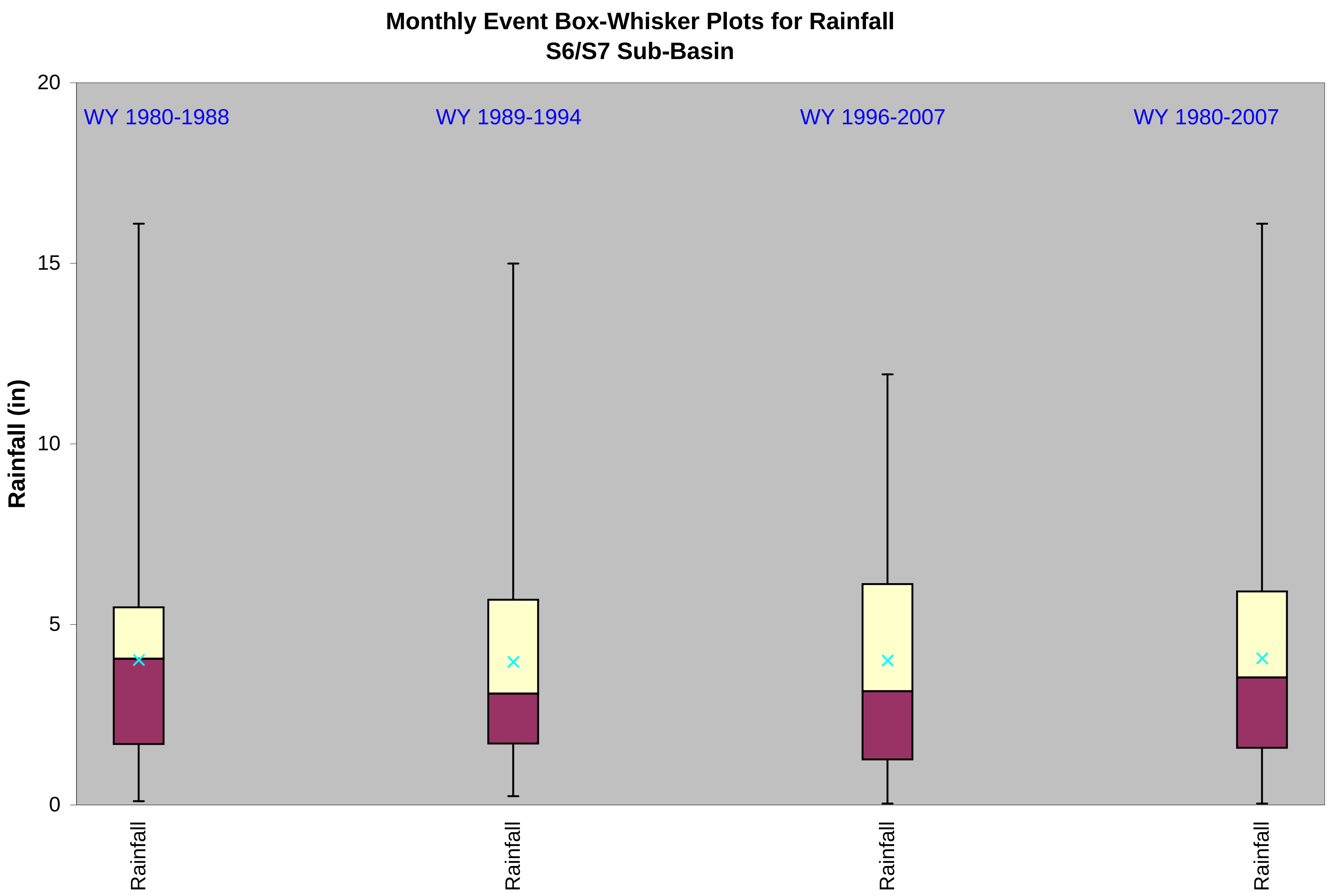

Monthly Event Box-Whisker Plots for Flows
S6/S7 Sub-Basin
Flow (cfs-d)
160000
140000
120000
100000
80000
60000
40000
20000
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Inflow
Outflow
Flow Through
Supplemental Inflow
Inflow
Outflow
Flow Through
Supplemental Inflow
Inflow
Outflow
Flow Through
Supplemental Inflow
Inflow
Outflow
Flow Through
Supplemental Inflow

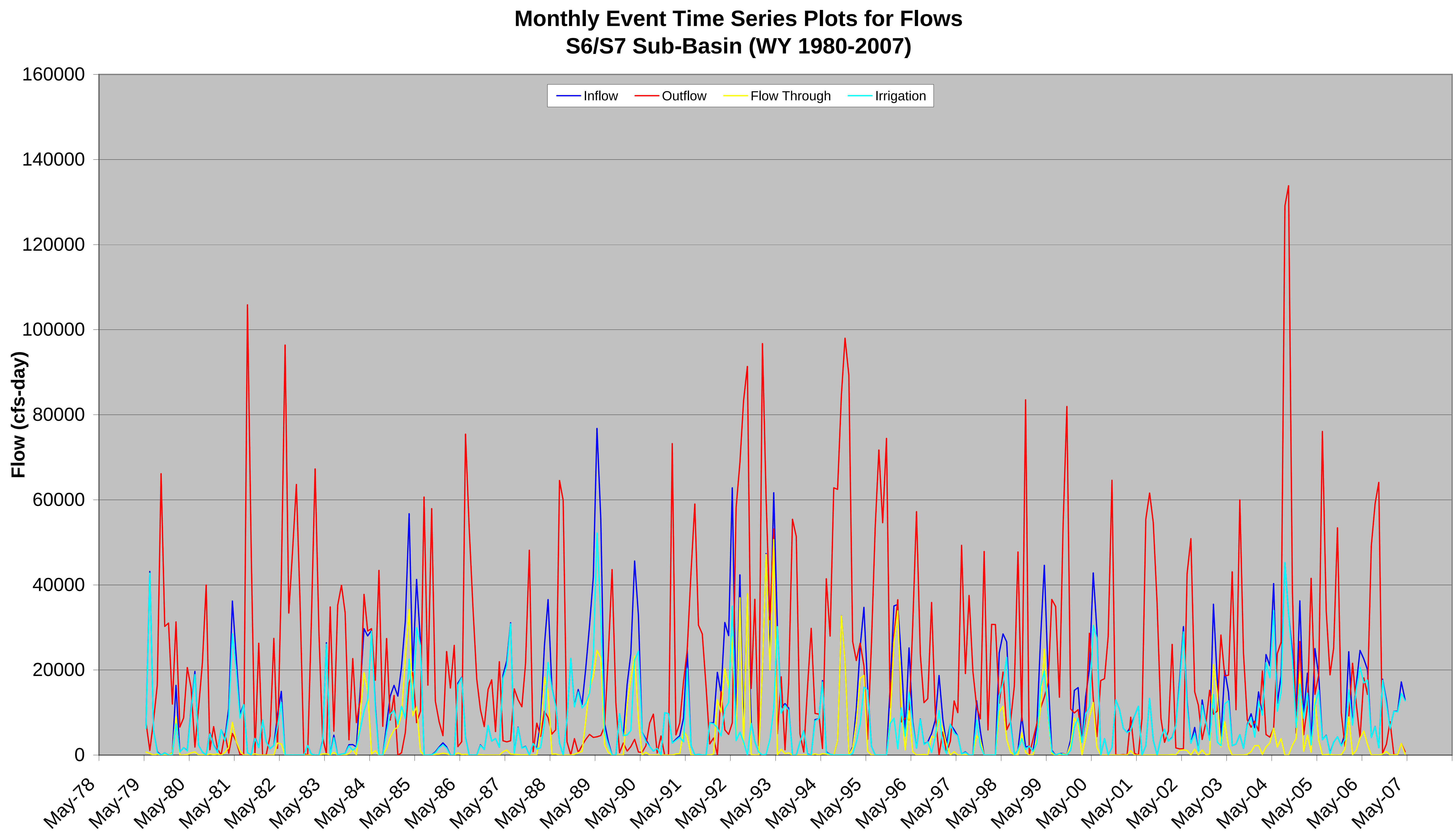


Monthly Event Box-Whisker Plots for Load
S6/S7 Sub-Basin
Load (Kg)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)



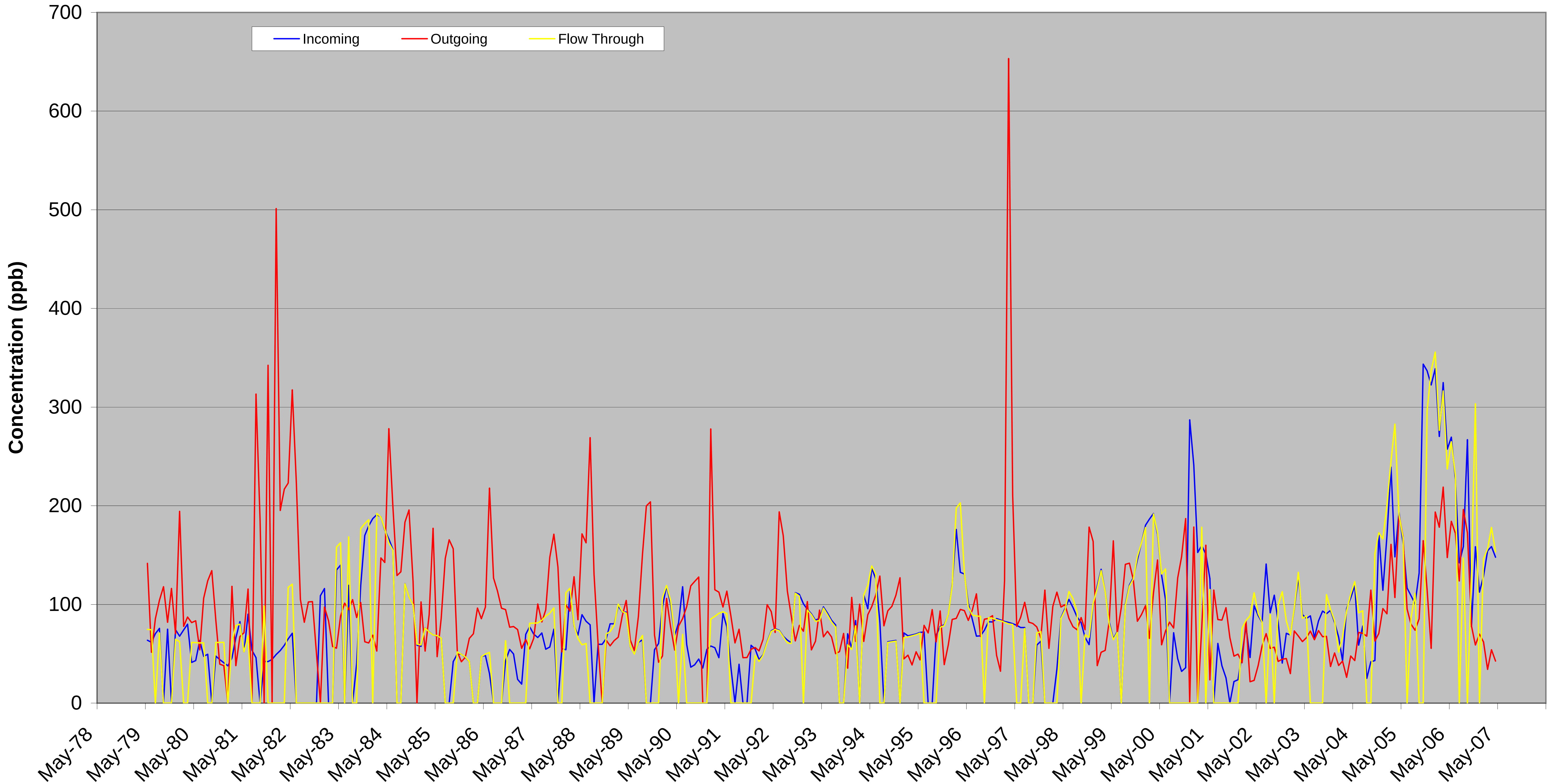
Monthly Event Box-Whisker Plots for Concentration
S6/S7 Sub-Basin
Conccentration (ppb)
700
600
500
400
300
200
100
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)

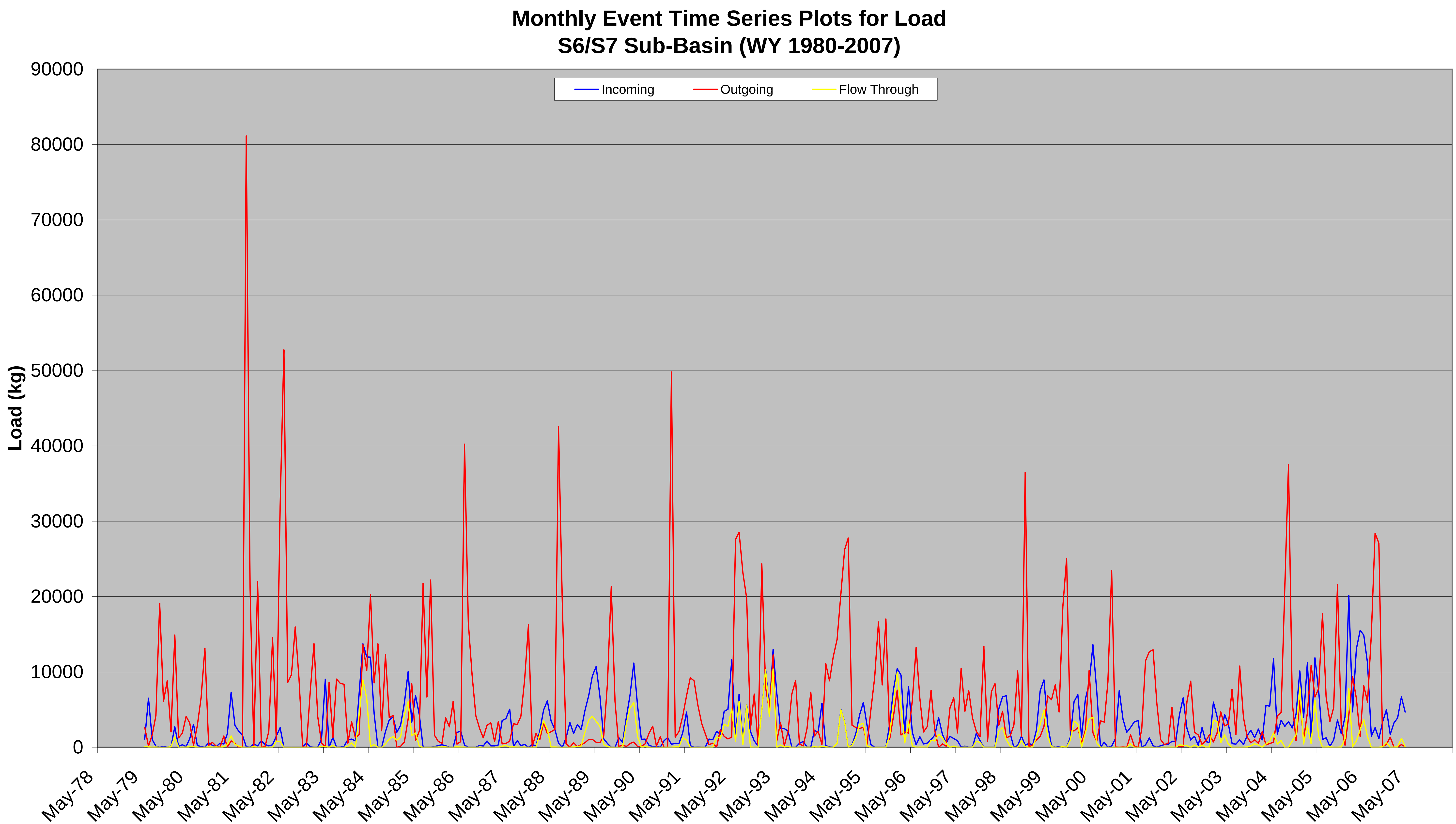

Monthly Event Box-Whisker Plots for Rainfall
S6/S7 Sub-Basin
Rainfall (in)
20
15
10
5
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Rainfall
Rainfall
Rainfall
Rainfall

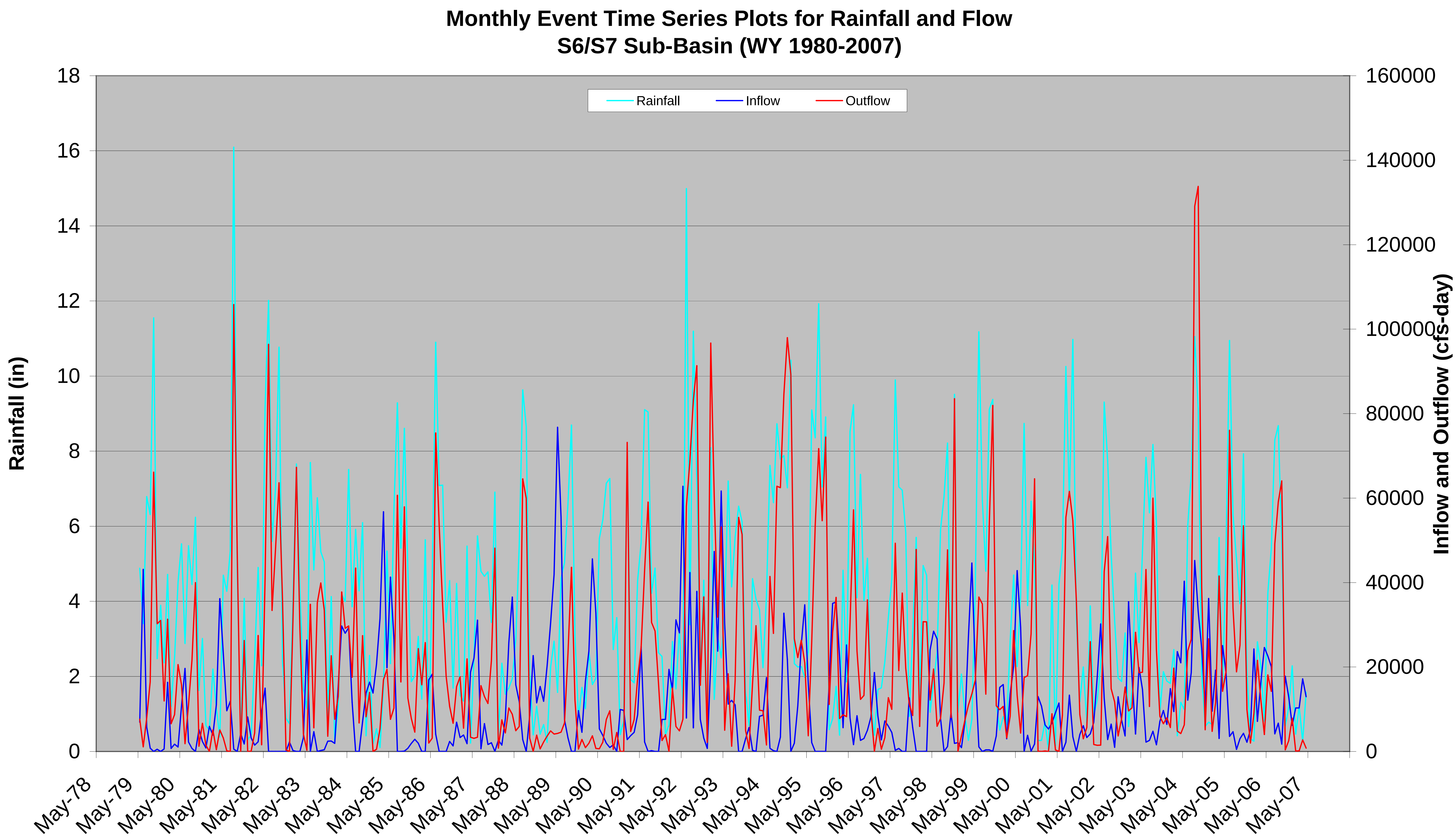


Monthly Event Time Series Plots for Flows
S6/S7 Sub-Basin (WY 1980-2007)
Flow (cfs-day)
0
20000
40000
60000
80000
100000
120000
140000
160000
Inflow
Outflow
Flow Through
Irrigation
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

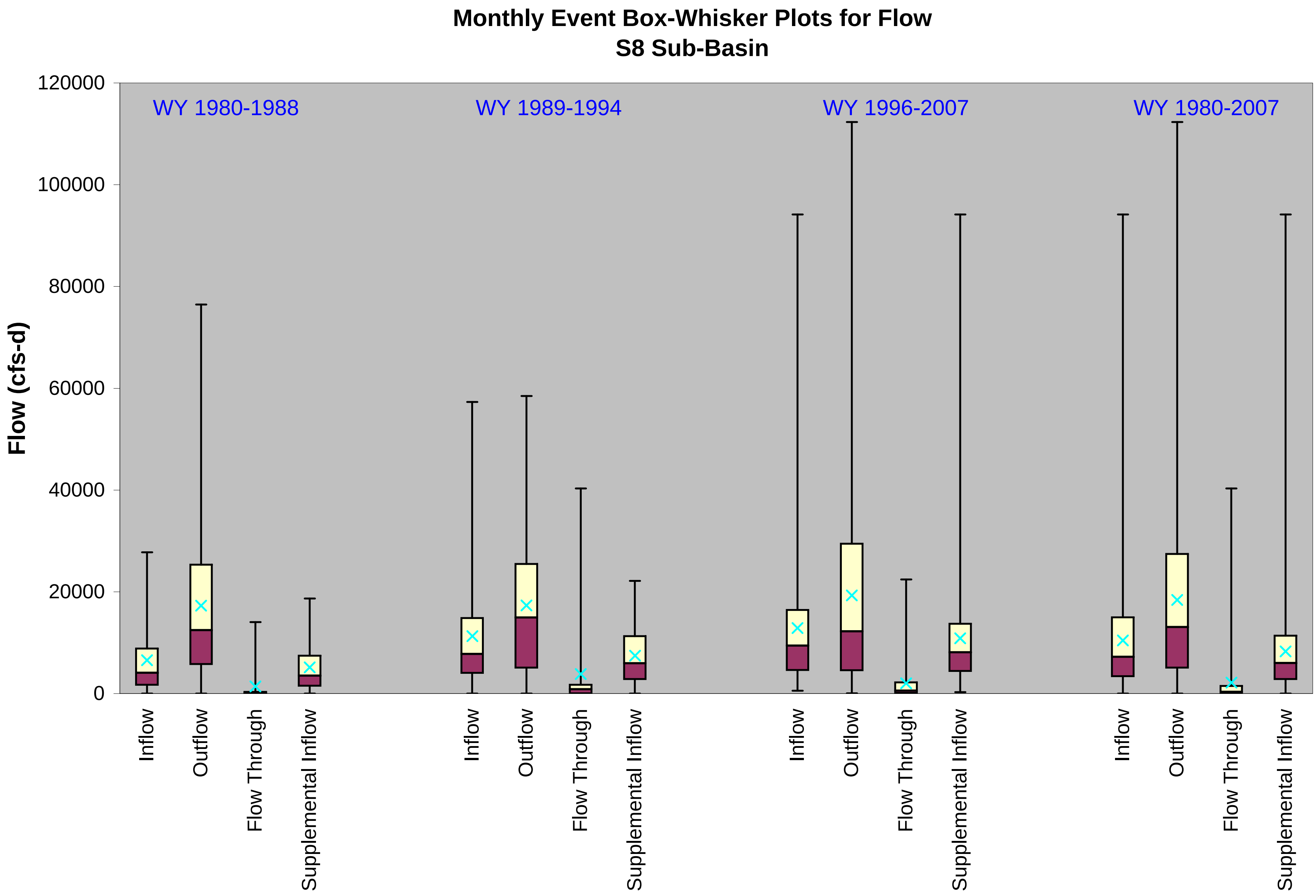
Monthly Event Time Series Plots for Concentration
S6/S7 Sub-Basin (WY 1980-2007)

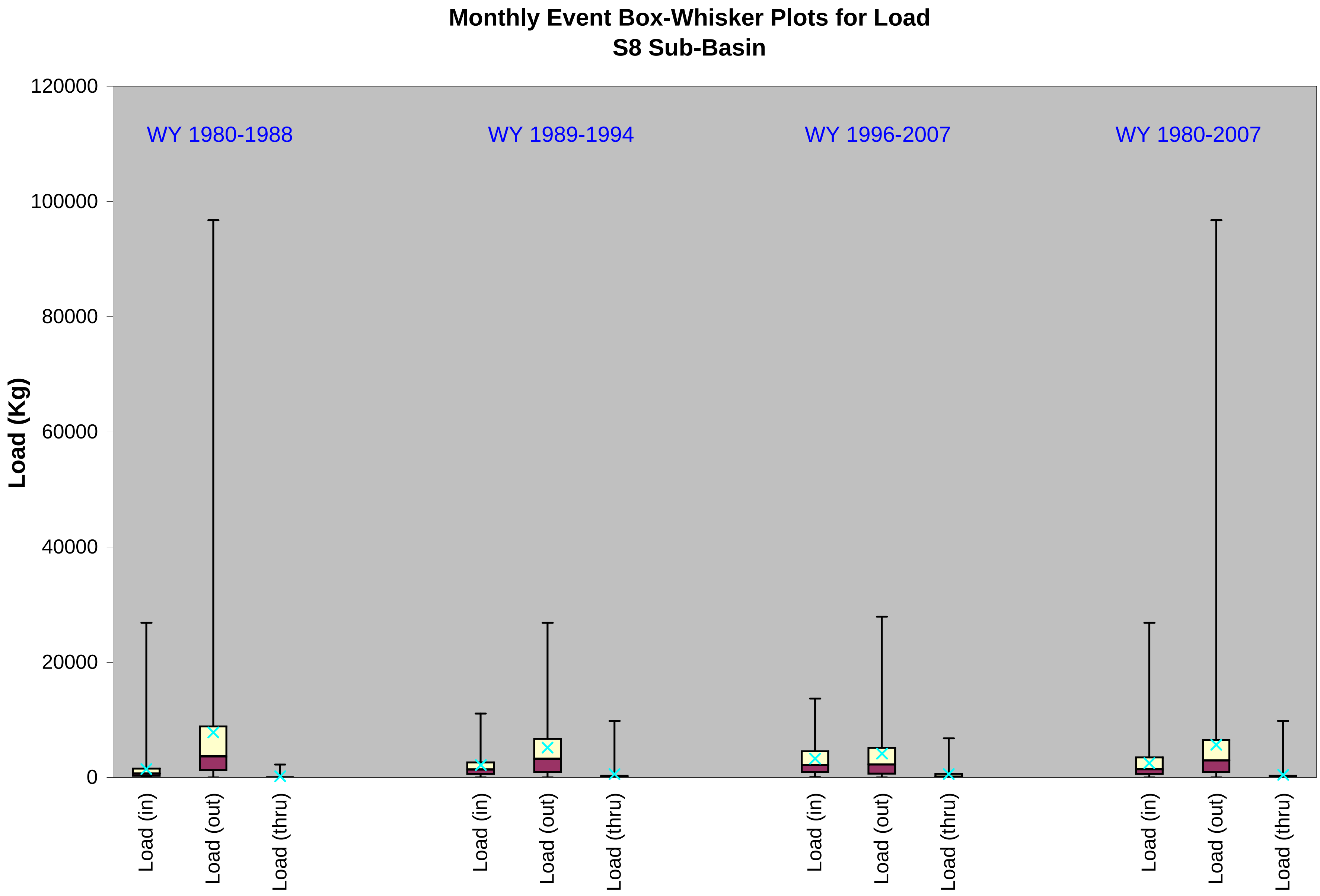


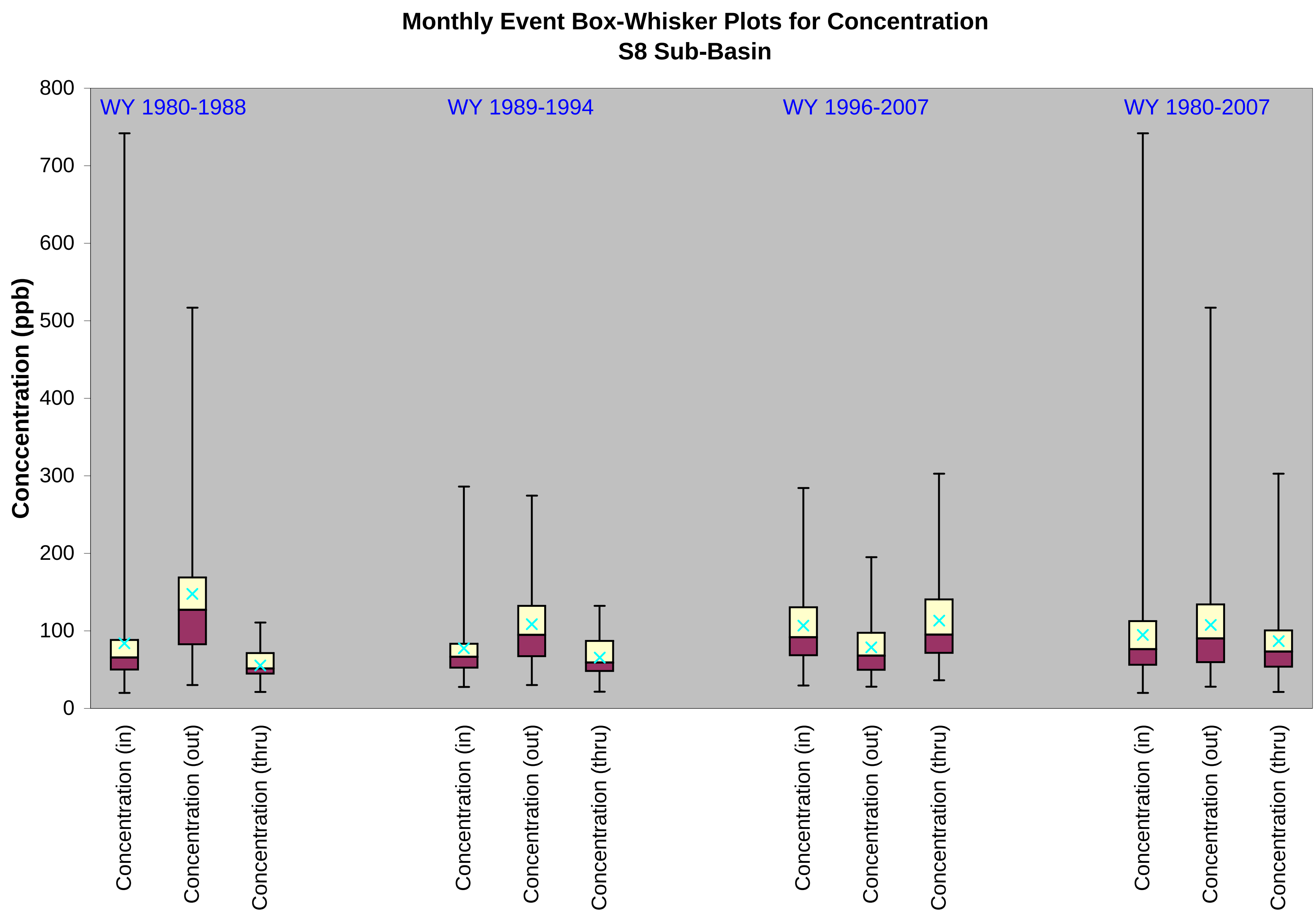

Monthly Event Time Series Plots for Load
S6/S7 Sub-Basin (WY 1980-2007)
Load (kg)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Incoming
Outgoing
Flow Through
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

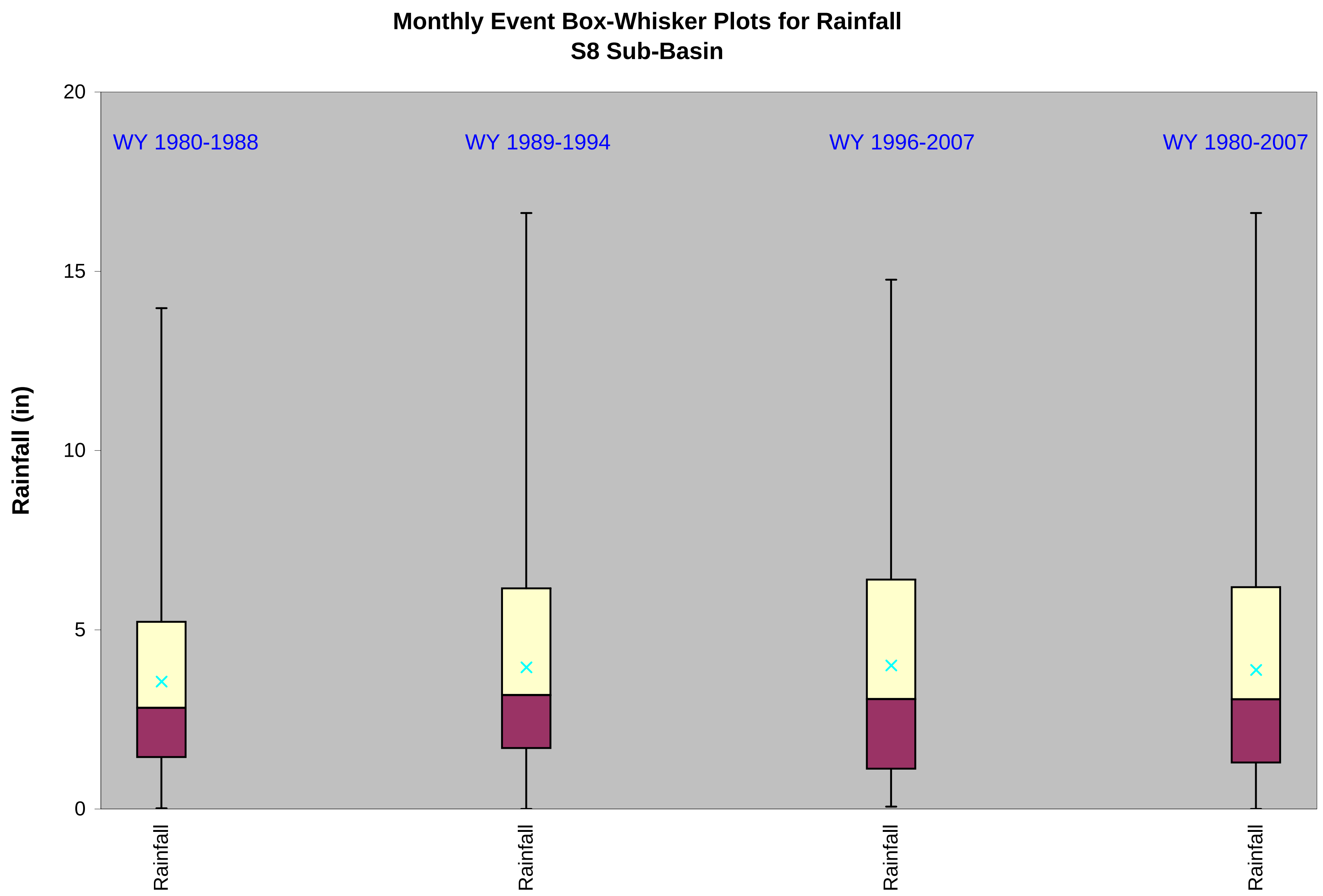

Monthly Event Time Series Plots for Rainfall and Flow
S6/S7 Sub-Basin (WY 1980-2007)
Rainfall (in)
Inflow and Outflow (cfs-day)
Rainfall
Inflow
Outflow
0
2
4
6
8
10
12
14
16
18
0
20000
40000
60000
80000
100000
120000
140000
160000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Appendix B.3
Box-and-Whisker and Time Series Plots for Hydrologic Sub-Basin S8

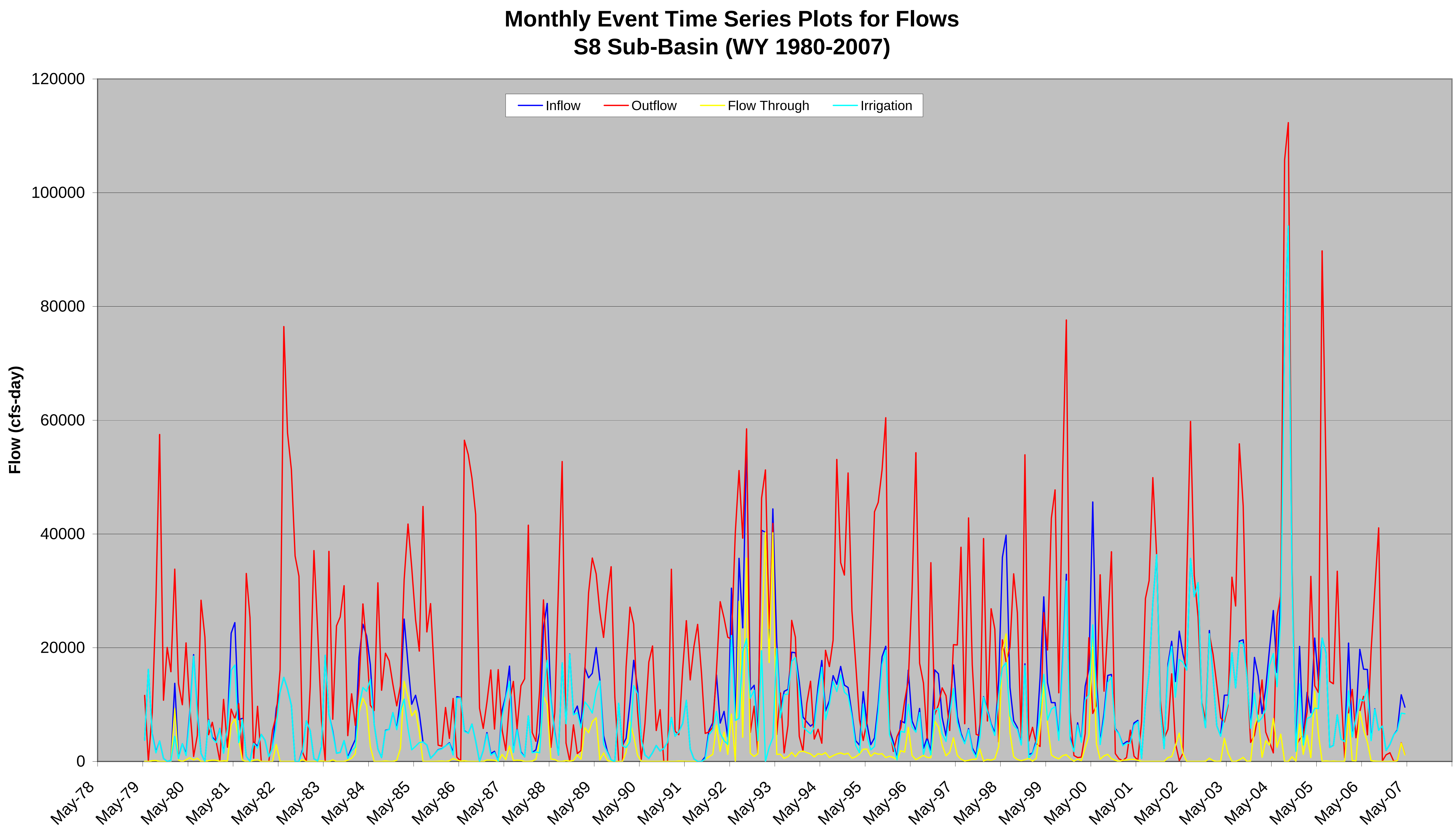

Monthly Event Box-Whisker Plots for Flow
S8 Sub-Basin
Flow (cfs-d)
120000
100000
80000
60000
40000
20000
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Inflow
Outflow
Flow Through
Supplemental Inflow
Inflow
Outflow
Flow Through
Supplemental Inflow
Inflow
Outflow
Flow Through
Supplemental Inflow
Inflow
Outflow
Flow Through
Supplemental Inflow


Monthly Event Box-Whisker Plots for Load
S8 Sub-Basin
Load (Kg)
120000
100000
80000
60000
40000
20000
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)
Load (in)
Load (out)
Load (thru)


Monthly Event Box-Whisker Plots for Concentration
S8 Sub-Basin
Conccentration (ppb)
0
100
200
300
400
500
600
700
800
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)
Concentration (in)
Concentration (out)
Concentration (thru)

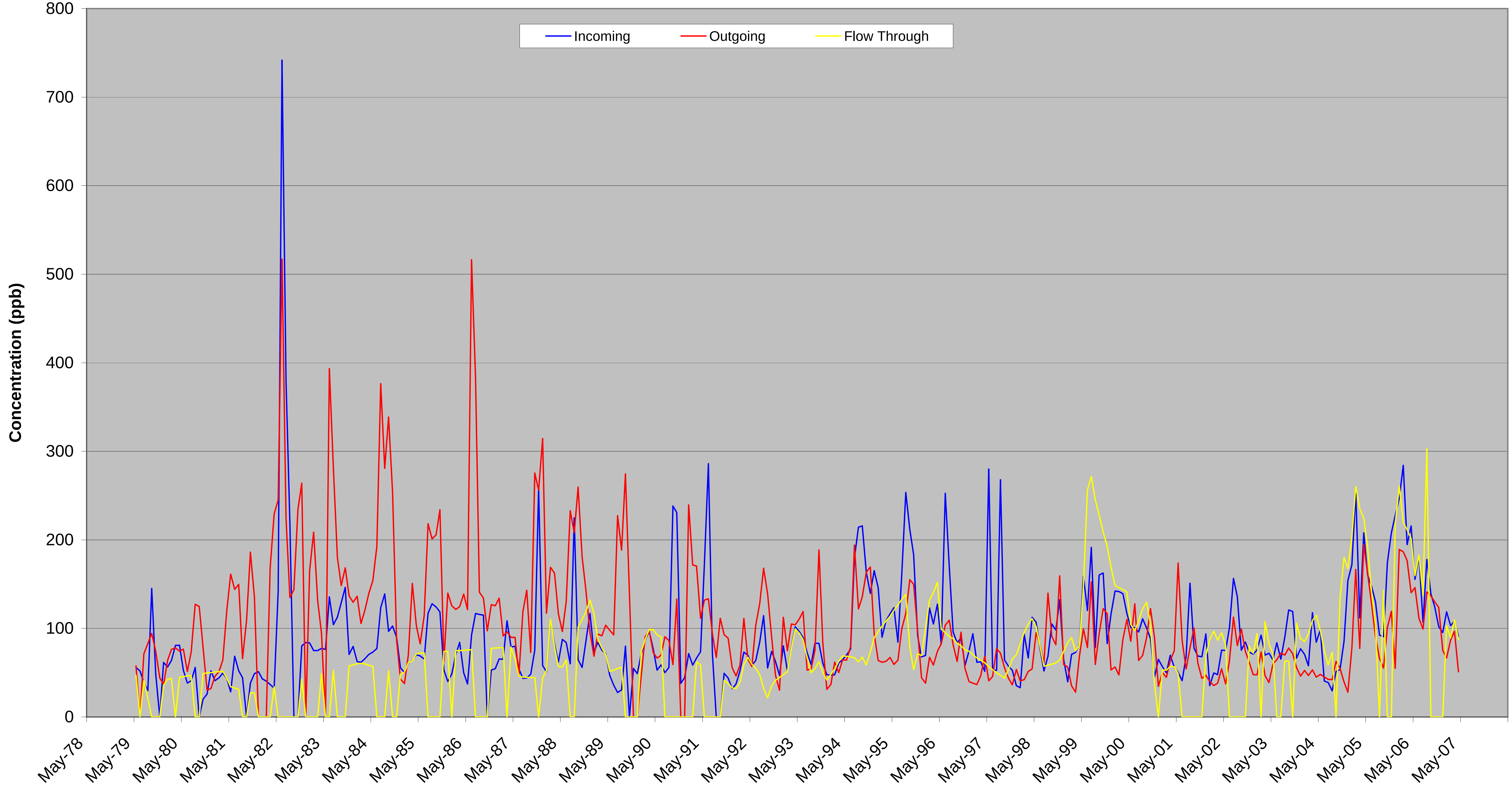


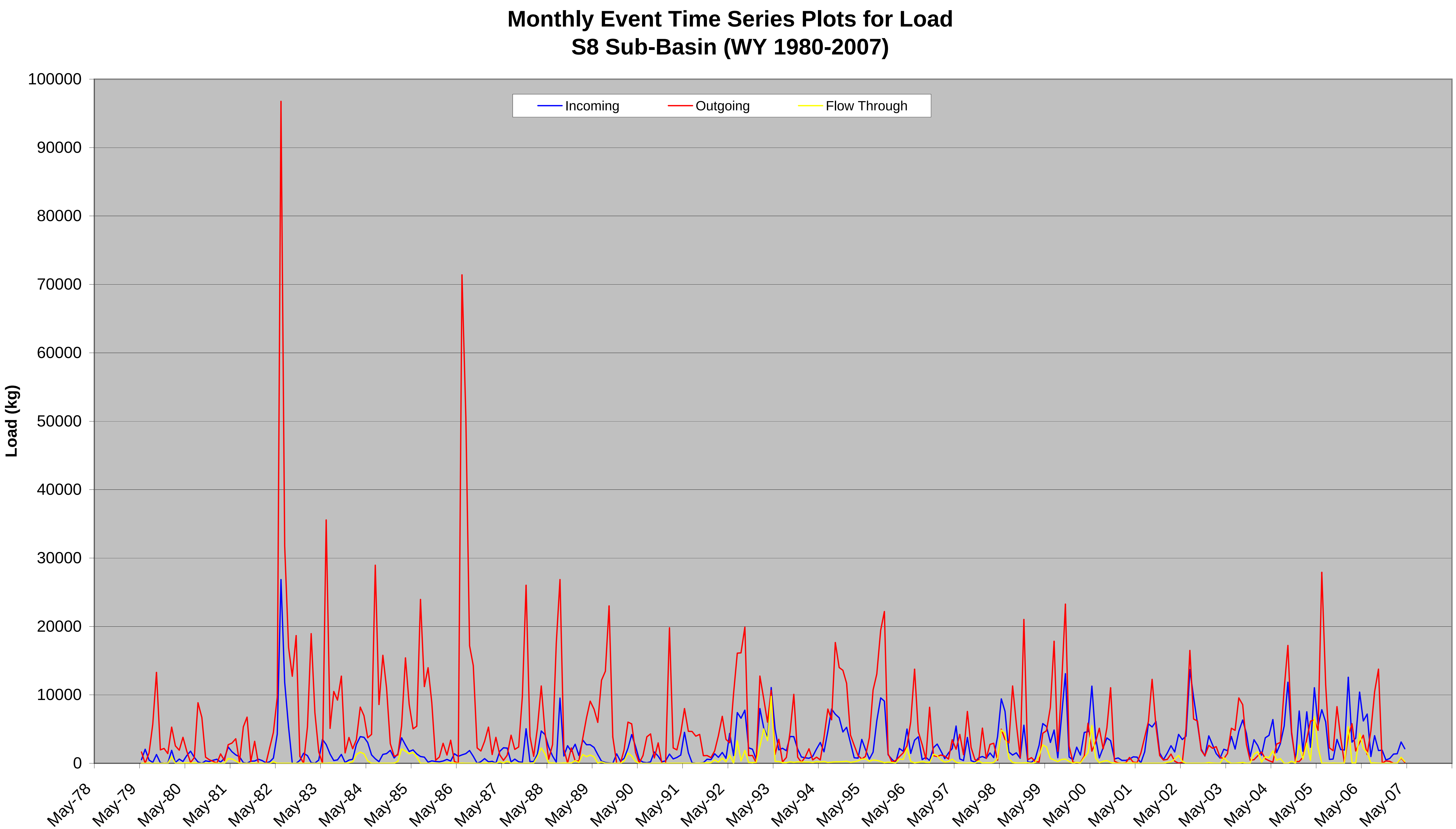
Monthly Event Box-Whisker Plots for Rainfall
S8 Sub-Basin
Rainfall (in)
20
15
10
5
0
WY 1980-1988
WY 1989-1994
WY 1996-2007
WY 1980-2007
Rainfall
Rainfall
Rainfall
Rainfall



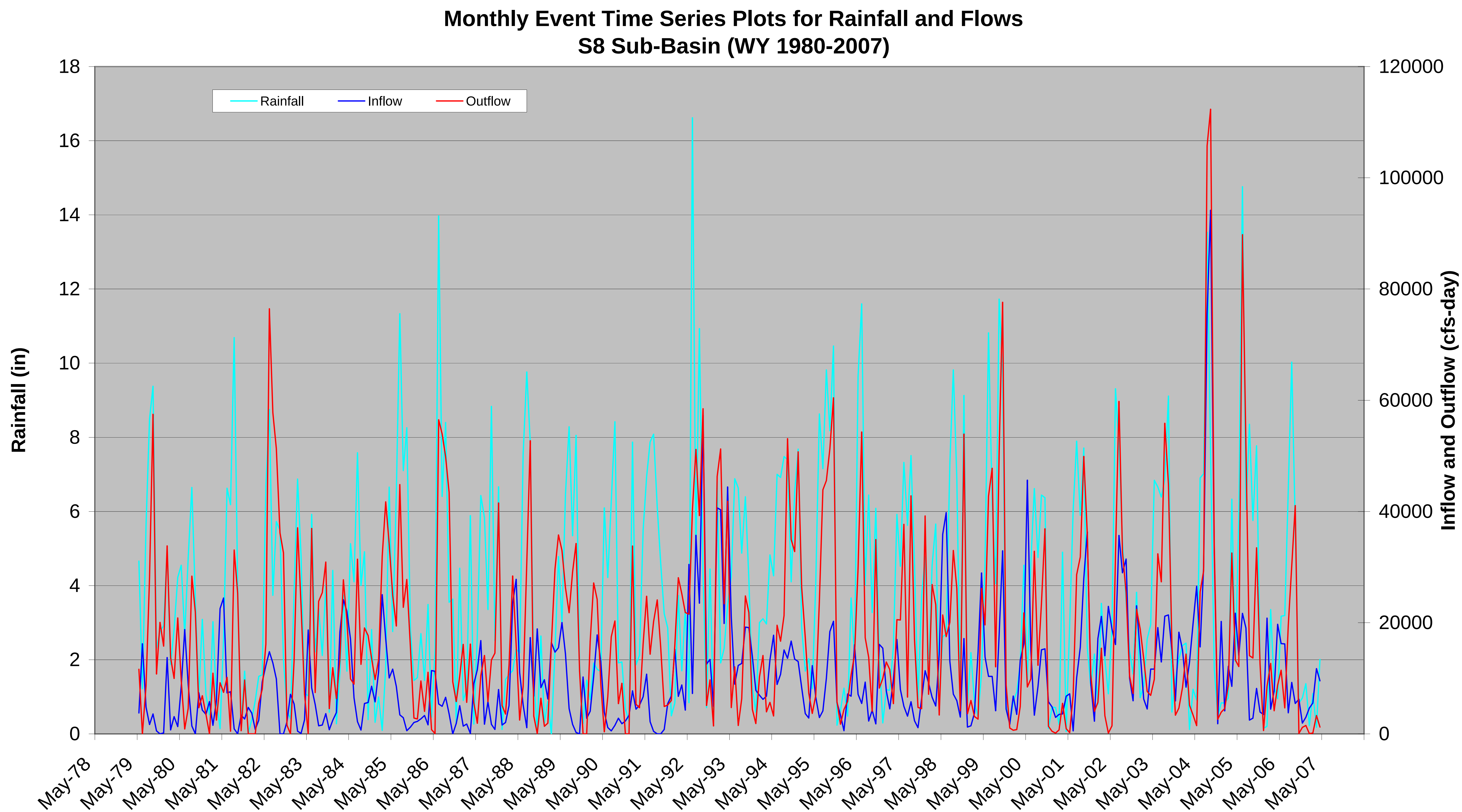
Monthly Event Time Series Plots for Flows
S8 Sub-Basin (WY 1980-2007)
Inflow
Outflow
Flow Through
Irrigation
Flow (cfs-day)
0
20000
40000
60000
80000
100000
120000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Monthly Event Time Series Plots for Concentration
S8 Sub-Basin (WY 1980-2007)





Monthly Event Time Series Plots for Load
S8 Sub-Basin (WY 1980-2007)
Incoming
Outgoing
Flow Through
Load (kg)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07


Monthly Event Time Series Plots for Rainfall and Flows
S8 Sub-Basin (WY 1980-2007)
Rainfall
Inflow
Outflow
Rainfall (in)
Inflow and Outflow (cfs-day)
0
2
4
6
8
10
12
14
16
18
0
20000
40000
60000
80000
100000
120000
May-78
May-79
May-80
May-81
May-82
May-83
May-84
May-85
May-86
May-87
May-88
May-89
May-90
May-91
May-92
May-93
May-94
May-95
May-96
May-97
May-98
May-99
May-00
May-01
May-02
May-03
May-04
May-05
May-06
May-07

Appendix C

Appendix C.1: Monthly Event Datasets for Hydrologic Sub-Basin S5A
Appendix C.2: Monthly Event Datasets for Hydrologic Sub-Basin S6/S7
Appendix C.3: Monthly Event Datasets for Hydrologic Sub-Basin S8

Appendix C.1
Monthly Event Datasets for Hydrologic Sub-Basin S5A

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Rainfall (in)	IN	OUT	Thru
May-79	6873.0	5652.0	1559.0	5314.0	1792.0	2161.6	384.9	5.8	106.5	156.2	100.8
Jun-79	19697.0	1346.0	1346.0	18351.0	4128.6	108.8	296.2	3.3	85.6	33.0	89.9
Jul-79	3230.0	0.0	0.0	3230.0	1030.4	0.0	0.0	4.8	130.3	0.0	0.0
Aug-79	1055.0	12639.0	334.0	721.0	347.3	3328.9	82.4	7.3	134.4	107.6	100.8
Sep-79	0.0	49398.0	0.0	0.0	0.0	23026.9	0.0	11.9	0.0	190.4	0.0
Oct-79	567.0	13750.0	0.0	567.0	319.1	2644.3	0.0	2.5	229.8	78.5	0.0
Nov-79	295.0	8513.0	0.0	295.0	30.9	1709.9	0.0	3.7	42.8	82.0	0.0
Dec-79	2904.0	7202.0	0.0	2904.0	1908.7	2342.1	0.0	1.6	268.4	132.8	0.0
Jan-80	5320.0	15877.0	426.0	4894.0	4475.2	14319.2	145.0	4.1	343.6	368.3	139.0
Feb-80	1241.0	8426.0	0.0	1241.0	1260.7	5164.9	0.0	1.8	414.9	250.4	0.0
Mar-80	3541.0	5735.0	93.0	3448.0	2967.7	2807.8	35.4	2.0	342.3	200.0	155.6
Apr-80	1842.0	14804.0	244.0	1598.0	524.1	6641.8	84.9	4.6	116.2	183.2	142.2
May-80	10025.0	13978.0	953.0	9072.0	2408.1	2417.3	238.5	4.8	98.1	70.6	102.2
Jun-80	10170.0	5419.0	381.0	9789.0	2859.7	1915.7	57.3	5.6	114.8	144.4	61.4
Jul-80	3652.0	14736.0	48.0	3604.0	1001.8	5374.8	7.7	7.2	112.0	149.0	65.1
Aug-80	1947.0	6927.0	0.0	1947.0	856.8	5481.3	0.0	3.6	179.7	323.2	0.0
Sep-80	18.0	33959.0	18.0	0.0	4.1	15883.1	3.2	9.5	93.7	191.0	73.3
Oct-80	7576.0	2506.0	438.0	7138.0	1800.1	705.6	84.1	2.0	97.0	115.0	78.4
Nov-80	2177.0	5467.0	115.0	2062.0	768.0	2234.0	23.0	1.9	144.1	166.9	81.5
Dec-80	5650.0	826.0	209.0	5441.0	1882.3	358.1	43.7	0.8	136.1	177.0	85.3
Jan-81	5482.0	293.0	293.0	5189.0	1608.6	87.0	65.1	0.5	119.8	121.3	90.8
Feb-81	1280.0	3821.0	40.0	1240.0	741.1	1444.4	9.0	1.9	236.4	154.4	92.2
Mar-81	4067.0	14.0	14.0	4053.0	1818.2	3.3	3.3	2.1	182.5	96.4	97.5
Apr-81	13375.0	6329.0	6219.0	7156.0	3833.8	1225.7	1784.7	0.3	117.1	79.1	117.2
May-81	4691.0	4001.0	571.0	4120.0	1065.9	916.9	144.0	4.2	92.8	93.6	103.0
Jun-81	10922.0	294.0	294.0	10628.0	1631.3	142.5	46.7	5.3	61.0	198.0	64.8
Jul-81	5750.0	0.0	0.0	5750.0	1228.9	0.0	0.0	4.8	87.3	0.0	0.0
Aug-81	914.0	38992.0	0.0	914.0	211.7	29446.5	0.0	14.5	94.6	308.5	0.0
Sep-81	1371.0	28524.0	0.0	1371.0	538.5	14378.3	0.0	6.1	160.4	205.9	0.0
Oct-81	7112.0	0.0	0.0	7112.0	2193.2	0.0	0.0	0.6	126.0	0.0	0.0
Nov-81	5540.0	1832.0	0.0	5540.0	1766.5	995.8	0.0	2.9	130.2	222.0	0.0
Dec-81	6446.0	85.0	85.0	6361.0	1925.7	44.8	15.7	0.2	122.0	215.3	75.5
Jan-82	3685.0	2698.0	1305.0	2380.0	420.7	1411.2	251.1	0.9	46.6	213.6	78.6
Feb-82	12815.0	2732.0	1658.0	11157.0	1184.8	1732.8	325.0	2.2	37.8	259.0	80.1
Mar-82	3174.0	22649.0	649.0	2525.0	407.3	15719.3	129.1	5.2	52.5	283.5	81.2
Apr-82	9637.0	3199.0	567.0	9070.0	1893.9	1322.1	116.2	1.7	80.2	168.8	83.7
May-82	10913.0	18066.0	598.0	10315.0	1991.8	8568.2	125.8	7.8	74.6	193.7	85.9
Jun-82	3907.0	44440.0	0.0	3907.0	619.6	27223.6	0.0	10.3	64.8	250.2	0.0
Jul-82	0.0	19806.0	0.0	0.0	0.0	11919.2	0.0	6.8	0.0	245.8	0.0
Aug-82	1318.0	19055.0	0.0	1318.0	159.3	8581.9	0.0	5.5	49.4	183.9	0.0
Sep-82	0.0	35135.0	0.0	0.0	0.0	19562.1	0.0	8.2	0.0	227.4	0.0
Oct-82	5786.0	20352.0	0.0	5786.0	978.4	11024.9	0.0	3.6	69.1	221.2	0.0
Nov-82	5548.0	3793.0	168.0	5380.0	499.3	903.8	39.6	1.9	36.7	97.3	96.2
Dec-82	5311.0	0.0	0.0	5311.0	373.4	0.0	0.0	1.3	28.7	0.0	0.0
Jan-83	1129.0	13775.0	0.0	1129.0	85.0	10455.8	0.0	3.5	30.8	310.0	0.0
Feb-83	0.0	36994.0	0.0	0.0	0.0	31423.4	0.0	7.8	0.0	346.9	0.0
Mar-83	0.0	18564.0	0.0	0.0	0.0	16068.7	0.0	4.1	0.0	353.5	0.0
Apr-83	7089.0	2063.0	0.0	7089.0	2309.4	1285.2	0.0	2.1	133.0	254.4	0.0
May-83	21969.0	0.0	0.0	21969.0	4575.2	0.0	0.0	1.5	85.0	0.0	0.0
Jun-83	51.0	28737.0	0.0	51.0	16.4	10574.8	0.0	10.7	131.3	150.3	0.0
Jul-83	2317.0	0.0	0.0	2317.0	788.8	0.0	0.0	3.7	139.0	0.0	0.0
Aug-83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0	0.0	0.0
Sep-83	913.0	0.0	0.0	913.0	301.0	0.0	0.0	10.1	134.6	0.0	0.0
Oct-83	1467.0	31006.0	162.0	1305.0	235.8	15013.2	49.3	5.8	65.6	197.8	124.3
Nov-83	5373.0	2972.0	164.0	5209.0	1168.9	1340.6	51.4	1.2	88.9	184.2	127.9
Dec-83	5232.0	22045.0	170.0	5062.0	1263.2	9099.5	52.9	4.8	98.7	168.6	127.1
Jan-84	3126.0	2390.0	0.0	3126.0	782.1	1105.6	0.0	0.1	102.2	188.9	0.0
Feb-84	4117.0	6338.0	358.0	3759.0	1317.8	3215.9	108.2	2.6	130.7	207.2	123.5
Mar-84	2969.0	11865.0	369.0	2600.0	1057.7	6031.0	109.8	4.5	145.5	207.6	121.5
Apr-84	5273.0	12111.0	89.0	5184.0	1614.0	6464.4	26.2	3.3	125.0	218.0	120.2
May-84	13281.0	31469.0	319.0	12962.0	3176.0	17155.3	91.6	9.2	97.7	222.7	117.3
Jun-84	6842.0	11865.0	0.0	6842.0	1112.3	6134.6	0.0	4.6	66.4	211.2	0.0
Jul-84	0.0	19554.0	0.0	0.0	0.0	11194.8	0.0	5.5	0.0	233.8	0.0
Aug-84	6674.0	173.0	0.0	6674.0	1561.1	72.1	0.0	2.5	95.5	170.2	0.0
Sep-84	4571.0	21840.0	0.0	4571.0	1443.9	20105.4	0.0	8.9	129.0	376.0	0.0
Oct-84	10774.0	5224.0	0.0	10774.0	2670.1	4324.5	0.0	0.7	101.3	338.1	0.0
Nov-84	8626.0	15424.0	70.0	8556.0	4557.1	6298.2	18.3	3.5	215.8	166.8	106.8
Dec-84	8316.0	0.0	0.0	8316.0	2074.8	0.0	0.0	0.4	101.9	0.0	0.0
Jan-85	6581.0	1623.0	0.0	6581.0	1350.7	625.0	0.0	0.7	83.8	157.3	0.0
Feb-85	7375.0	0.0	0.0	7375.0	1622.4	0.0	0.0	0.1	89.8	0.0	0.0

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Rainfall (in)	IN	OUT	Thru
Mar-85	5743.0	5889.0	53.0	5690.0	1279.7	1908.1	13.0	2.4	91.0	132.3	100.1
Apr-85	2404.0	0.0	0.0	2404.0	942.2	0.0	0.0	4.0	160.1	0.0	0.0
May-85	9879.0	0.0	0.0	9879.0	4425.1	0.0	0.0	2.5	182.9	0.0	0.0
Jun-85	10844.0	0.0	0.0	10844.0	3563.0	0.0	0.0	6.6	134.2	0.0	0.0
Jul-85	877.0	29965.0	0.0	877.0	129.3	17866.5	0.0	7.5	60.2	243.5	0.0
Aug-85	0.0	15924.0	0.0	0.0	0.0	5404.8	0.0	7.2	0.0	138.6	0.0
Sep-85	0.0	40231.0	0.0	0.0	0.0	13981.2	0.0	9.9	0.0	141.9	0.0
Oct-85	2222.0	11928.0	45.0	2177.0	391.1	6463.1	9.6	6.5	71.9	221.3	87.5
Nov-85	3386.0	4627.0	57.0	3329.0	538.8	2605.9	12.0	1.4	65.0	230.0	85.8
Dec-85	2705.0	3912.0	0.0	2705.0	302.6	1959.9	0.0	2.5	45.7	204.6	0.0
Jan-86	1706.0	12948.0	62.0	1644.0	191.0	3689.1	12.4	2.3	45.7	116.4	81.6
Feb-86	1571.0	3380.0	376.0	1195.0	200.7	1068.6	74.7	1.7	52.2	129.1	81.1
Mar-86	699.0	15440.0	0.0	699.0	78.9	4377.1	0.0	4.7	46.1	115.8	0.0
Apr-86	10887.0	0.0	0.0	10887.0	3032.1	0.0	0.0	0.1	113.8	0.0	0.0
May-86	12167.0	358.0	358.0	11809.0	3009.7	123.6	76.4	2.8	101.0	141.1	87.2
Jun-86	2628.0	33706.0	132.0	2496.0	729.9	12897.2	37.4	12.0	113.5	156.3	115.7
Jul-86	383.0	23417.0	0.0	383.0	83.7	7627.4	0.0	5.6	89.2	133.0	0.0
Aug-86	0.0	10413.0	0.0	0.0	0.0	3081.2	0.0	6.6	0.0	120.8	0.0
Sep-86	1424.0	13130.0	0.0	1424.0	413.8	3993.3	0.0	5.0	118.7	124.2	0.0
Oct-86	4486.0	6094.0	69.0	4417.0	1384.1	1888.7	20.4	4.2	126.0	126.6	120.5
Nov-86	2235.0	3580.0	0.0	2235.0	605.4	809.1	0.0	2.9	110.6	92.3	0.0
Dec-86	3400.0	8865.0	0.0	3400.0	881.3	1845.0	0.0	3.7	105.8	85.0	0.0
Jan-87	2876.0	8431.0	0.0	2876.0	701.2	2002.4	0.0	2.4	99.6	97.0	0.0
Feb-87	2368.0	4485.0	0.0	2368.0	557.1	1369.3	0.0	1.3	96.1	124.7	0.0
Mar-87	629.0	18287.0	0.0	629.0	174.0	4757.9	0.0	6.0	113.0	106.3	0.0
Apr-87	6312.0	2228.0	0.0	6312.0	1580.5	630.3	0.0	0.3	102.3	115.5	0.0
May-87	8116.0	4601.0	0.0	8116.0	1756.7	1937.6	0.0	2.7	88.4	172.0	0.0
Jun-87	17724.0	4770.0	0.0	17724.0	4248.5	1413.2	0.0	5.9	97.9	121.0	0.0
Jul-87	345.0	12511.0	0.0	345.0	126.1	3501.8	0.0	7.3	149.3	114.3	0.0
Aug-87	3627.0	2068.0	0.0	3627.0	631.4	708.9	0.0	1.8	71.1	140.0	0.0
Sep-87	1143.0	8078.0	0.0	1143.0	197.2	2114.8	0.0	3.1	70.5	106.9	0.0
Oct-87	997.0	22187.0	0.0	997.0	169.3	7962.7	0.0	5.9	69.3	146.6	0.0
Nov-87	0.0	41420.0	0.0	0.0	0.0	17225.2	0.0	12.1	0.0	169.8	0.0
Dec-87	2937.0	1094.0	0.0	2937.0	487.0	388.5	0.0	0.7	67.7	145.0	0.0
Jan-88	1408.0	7275.0	0.0	1408.0	230.9	2390.7	0.0	2.5	67.0	134.2	0.0
Feb-88	379.0	3915.0	0.0	379.0	61.5	1410.1	0.0	1.9	66.2	147.1	0.0
Mar-88	0.0	5022.0	0.0	0.0	0.0	1681.8	0.0	2.7	0.0	136.8	0.0
Apr-88	1064.0	0.0	0.0	1064.0	168.4	0.0	0.0	0.8	64.6	0.0	0.0
May-88	10262.0	3369.0	274.0	9988.0	3413.1	1732.9	95.0	3.2	135.9	210.1	141.7
Jun-88	5678.0	1163.0	0.0	5678.0	1507.1	708.5	0.0	6.1	108.4	248.8	0.0
Jul-88	150.0	40585.0	0.0	150.0	59.0	24382.2	0.0	12.0	160.8	245.4	0.0
Aug-88	28.0	45726.0	0.0	28.0	4.2	25879.4	0.0	11.9	61.7	231.2	0.0
Sep-88	2294.0	3806.0	0.0	2294.0	339.1	2320.7	0.0	2.3	60.4	249.0	0.0
Oct-88	12660.0	0.0	0.0	12660.0	1854.3	0.0	0.0	0.2	59.8	0.0	0.0
Nov-88	5955.0	3541.0	249.0	5706.0	1841.1	2039.1	90.8	1.6	126.3	235.2	149.0
Dec-88	7803.0	1441.0	392.0	7411.0	2898.5	356.4	144.4	1.0	151.7	101.0	150.4
Jan-89	3819.0	1280.0	44.0	3775.0	1286.1	689.6	16.3	0.7	137.5	220.0	151.6
Feb-89	15760.0	4144.0	3928.0	11832.0	5464.0	1950.1	1468.4	0.6	141.6	192.2	152.7
Mar-89	5725.0	9467.0	493.0	5232.0	1607.0	4341.0	184.1	2.1	114.6	187.3	152.5
Apr-89	7585.0	4351.0	638.0	6947.0	2115.5	2153.5	204.8	3.2	113.9	202.1	131.1
May-89	15818.0	1472.0	783.0	15035.0	5514.1	474.9	211.7	1.7	142.4	131.8	110.4
Jun-89	16911.0	1754.0	1726.0	15185.0	4581.2	812.0	419.8	4.5	110.7	189.1	99.3
Jul-89	5553.0	2776.0	403.0	5150.0	1540.9	1216.2	106.9	4.8	113.3	178.9	108.4
Aug-89	3865.0	20017.0	226.0	3639.0	1274.3	6668.7	65.9	6.3	134.6	136.1	119.1
Sep-89	646.0	24513.0	212.0	434.0	265.8	9261.7	68.6	9.5	168.1	154.3	132.2
Oct-89	198.0	11827.0	0.0	198.0	88.2	2867.7	0.0	4.0	181.8	99.0	0.0
Nov-89	10094.0	304.0	0.0	10094.0	4995.5	130.5	0.0	0.7	202.2	175.4	0.0
Dec-89	1370.0	3888.0	0.0	1370.0	543.8	1685.7	0.0	2.0	162.2	177.1	0.0
Jan-90	1932.0	4459.0	24.0	1908.0	850.3	1684.5	10.7	1.7	179.8	154.3	182.9
Feb-90	3758.0	2813.0	1526.0	2232.0	1706.3	911.6	714.7	1.9	185.4	132.4	191.3
Mar-90	15635.0	7302.0	7090.0	8545.0	5791.3	2043.1	2681.9	2.0	151.3	114.3	154.5
Apr-90	9881.0	3128.0	3128.0	6753.0	3286.6	1228.2	1032.8	1.2	135.8	160.4	134.8
May-90	4080.0	33.0	0.0	4080.0	1423.0	25.0	0.0	3.6	142.4	309.1	0.0
Jun-90	2375.0	5285.0	0.0	2375.0	959.6	4895.7	0.0	5.5	165.0	378.3	0.0
Jul-90	2390.0	9556.0	0.0	2390.0	1623.4	4929.6	0.0	6.3	277.4	210.7	0.0
Aug-90	753.0	16018.0	0.0	753.0	535.0	9394.9	0.0	7.9	290.2	239.5	0.0
Sep-90	1240.0	2639.0	0.0	1240.0	852.5	1686.0	0.0	4.3	280.8	260.9	0.0
Oct-90	516.0	9425.0	0.0	516.0	341.8	6848.4	0.0	3.6	270.5	296.8	0.0
Nov-90	1342.0	0.0	0.0	1342.0	684.7	0.0	0.0	0.6	208.4	0.0	0.0
Dec-90	3617.0	98.0	0.0	3617.0	986.4	44.3	0.0	0.9	111.4	184.5	0.0

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Rainfall (in)	IN	OUT	Thru
Jan-91	1222.0	30945.0	0.0	1222.0	324.4	26508.5	0.0	7.3	108.4	349.9	0.0
Feb-91	3837.0	3711.0	0.0	3837.0	2116.6	2358.7	0.0	2.5	225.3	259.6	0.0
Mar-91	5290.0	4731.0	0.0	5290.0	3099.7	2516.9	0.0	3.3	239.3	217.3	0.0
Apr-91	134.0	23538.0	0.0	134.0	76.4	17065.3	0.0	7.4	233.0	296.1	0.0
May-91	7071.0	10257.0	0.0	7071.0	2302.1	4416.4	0.0	4.6	132.9	175.9	0.0
Jun-91	4954.0	8172.0	0.0	4954.0	2648.1	3144.8	0.0	7.5	218.3	157.2	0.0
Jul-91	0.0	28257.0	0.0	0.0	0.0	10470.1	0.0	8.9	0.0	151.3	0.0
Aug-91	348.0	6993.0	0.0	348.0	174.7	3028.4	0.0	3.8	205.0	176.9	0.0
Sep-91	366.0	13276.0	0.0	366.0	182.5	4198.7	0.0	5.6	203.6	129.2	0.0
Oct-91	1000.0	10296.0	0.0	1000.0	486.0	3314.4	0.0	3.0	198.5	131.5	0.0
Nov-91	5679.0	850.2	35.2	5643.8	1461.4	334.9	5.9	1.8	105.1	160.9	68.4
Dec-91	3206.0	995.0	0.0	3206.0	836.4	398.8	0.0	0.7	106.6	163.7	0.0
Jan-92	3102.0	230.0	172.0	2930.0	997.4	107.3	34.8	0.6	131.3	190.5	82.7
Feb-92	2487.0	7165.0	656.0	1831.0	978.3	3574.2	140.9	3.0	160.7	203.7	87.7
Mar-92	2704.0	2150.0	423.0	2281.0	1234.5	827.4	99.0	1.9	186.5	157.2	95.6
Apr-92	2614.0	4058.0	720.0	1894.0	945.8	1072.8	183.8	3.2	147.8	108.0	104.3
May-92	21860.0	11335.0	11335.0	10525.0	4923.6	2161.7	2647.2	1.4	92.0	77.9	95.4
Jun-92	3949.0	25940.0	1756.0	2193.0	855.0	11413.7	364.7	12.2	88.5	179.7	84.8
Jul-92	22281.0	23797.0	17965.0	4316.0	5100.4	11739.0	4195.5	3.8	93.5	201.5	95.4
Aug-92	3716.0	39651.0	2006.0	1710.0	786.3	22756.2	416.5	12.2	86.4	234.4	84.8
Sep-92	14090.0	49888.0	14090.0	0.0	2657.1	18650.0	2665.0	12.2	77.0	152.7	77.3
Oct-92	4961.0	22881.0	0.0	4961.0	1881.3	12326.5	0.0	1.7	154.8	220.0	0.0
Nov-92	1322.0	20750.0	0.0	1322.0	490.1	7770.9	0.0	5.6	151.4	153.0	0.0
Dec-92	2349.0	2243.0	0.0	2349.0	874.5	927.6	0.0	1.4	152.0	168.9	0.0
Jan-93	10800.0	47852.0	10800.0	0.0	3548.9	20986.5	2852.6	8.2	134.2	179.1	107.9
Feb-93	15100.0	17336.0	12700.0	2400.0	4801.5	5009.3	3517.9	2.0	129.8	118.0	113.1
Mar-93	6533.0	17518.0	5323.0	1210.0	2000.5	4853.8	1690.6	5.0	125.1	113.2	129.7
Apr-93	20514.0	16888.0	14633.0	5881.0	7617.6	5527.5	5608.9	2.3	151.7	133.7	156.5
May-93	15911.0	7900.0	0.0	15911.0	5639.1	3459.3	0.0	6.7	144.7	178.8	0.0
Jun-93	4484.0	13738.0	0.0	4484.0	1348.0	6124.8	0.0	4.6	122.8	182.1	0.0
Jul-93	6241.0	1600.0	34.0	6207.0	2064.9	727.7	13.2	4.7	135.1	185.8	159.1
Aug-93	11816.0	12773.0	0.0	11816.0	3722.5	3502.7	0.0	7.0	128.7	112.0	0.0
Sep-93	275.0	26978.0	0.0	275.0	88.3	13235.5	0.0	5.4	131.1	200.4	0.0
Oct-93	0.0	28498.0	0.0	0.0	0.0	13714.8	0.0	5.5	0.0	196.6	0.0
Nov-93	2491.0	2566.0	0.0	2491.0	524.7	955.0	0.0	1.9	86.0	152.0	0.0
Dec-93	5099.0	925.0	0.0	5099.0	1284.2	355.3	0.0	0.6	102.9	156.9	0.0
Jan-94	467.0	17722.0	52.0	415.0	137.5	9085.5	16.1	5.0	120.2	209.4	126.5
Feb-94	0.0	18018.0	0.0	0.0	0.0	9108.0	0.0	3.8	0.0	206.5	0.0
Mar-94	5825.0	2161.0	0.0	5825.0	1828.3	750.8	0.0	1.6	128.2	141.9	0.0
Apr-94	6574.0	9167.0	138.0	6436.0	1991.1	3820.1	38.4	4.7	123.7	170.2	113.7
May-94	12280.0	158.3	102.0	12178.0	4818.6	58.1	27.0	2.2	160.2	149.9	107.9
Jun-94	678.0	29600.0	292.0	386.0	217.3	9720.0	76.5	10.3	130.8	134.1	107.1
Jul-94	111.0	11286.0	0.0	111.0	27.4	5143.6	0.0	8.9	100.9	186.1	0.0
Aug-94	0.0	38953.0	0.0	0.0	0.0	18366.3	0.0	6.9	0.0	192.6	0.0
Sep-94	1170.0	35797.9	1170.0	0.0	262.3	16733.6	253.8	9.5	91.6	190.9	88.6
Oct-94	15296.0	36593.5	13067.0	2229.0	3501.9	10453.4	3046.2	9.7	93.5	116.6	95.2
Nov-94	9300.0	48430.6	7587.7	1712.3	2590.4	18930.5	2186.6	7.3	113.8	159.7	117.7
Dec-94	67.0	35980.1	0.0	67.0	12.3	13111.0	0.0	7.8	75.2	148.8	0.0
Jan-95	0.0	9830.2	0.0	0.0	0.0	3133.6	0.0	2.5	0.0	130.2	0.0
Feb-95	16010.0	17636.3	11350.9	4659.1	4560.6	6350.6	3346.1	2.1	116.3	147.0	120.4
Mar-95	18872.0	25141.4	17829.8	1042.2	6179.2	9092.5	6074.5	4.0	133.7	147.7	139.1
Apr-95	15748.0	8076.4	6815.0	8933.0	5683.3	2343.8	2426.8	1.9	147.4	118.5	145.4
May-95	12256.0	1551.8	1235.8	11020.2	4721.0	309.4	511.2	1.3	157.3	81.4	169.0
Jun-95	1167.0	6300.0	0.0	1167.0	448.1	1287.8	0.0	6.6	156.8	83.5	0.0
Jul-95	1502.0	19287.2	69.0	1433.0	494.0	7426.3	23.3	6.8	134.3	157.3	137.8
Aug-95	4893.0	40759.3	2885.2	2007.8	1062.9	16838.5	732.0	10.3	88.7	168.7	103.6
Sep-95	8318.0	24940.4	6080.2	2237.8	1484.8	5019.6	1154.6	4.1	72.9	82.2	77.6
Oct-95	10253.0	58013.4	9490.5	762.5	2765.1	22689.1	2689.0	12.2	110.1	159.7	115.7
Nov-95	15317.0	21336.0	13791.5	1525.5	3781.6	7352.8	3569.3	1.2	100.8	140.7	105.7
Dec-95	21710.0	18772.7	16739.6	4970.4	5032.2	4925.5	3993.6	0.8	94.7	107.2	97.4
Jan-96	19930.0	22442.7	16522.7	3407.3	8430.8	11222.9	7206.5	2.0	172.8	204.2	178.1
Feb-96	15521.0	10438.9	9385.8	6135.2	9420.4	3483.9	5969.1	0.6	247.9	136.3	259.7
Mar-96	2564.0	11945.2	729.3	1834.7	1186.5	5141.8	349.1	6.3	189.0	175.8	195.5
Apr-96	13255.0	17008.2	8711.5	4543.5	5076.2	7625.6	3586.9	1.7	156.4	183.1	168.2
May-96	3734.0	21097.4	965.2	2768.8	1226.7	7925.0	329.0	8.6	134.2	153.4	139.2
Jun-96	1122.0	19680.0	10.4	1111.6	347.6	6058.4	3.3	8.3	126.5	125.7	131.1
Jul-96	9610.0	21051.8	4085.1	5524.9	2608.6	6836.3	1148.9	5.5	110.9	132.6	114.9
Aug-96	6028.0	8311.9	3163.8	2864.2	1738.3	2463.1	969.1	4.1	117.8	121.0	125.1
Sep-96	1818.0	14942.4	0.0	1818.0	647.8	4190.4	0.0	5.9	145.5	114.5	0.0
Oct-96	5002.0	22253.4	3889.1	1112.9	2424.0	7904.5	2018.7	4.6	197.9	145.1	212.0

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Rainfall (in)	IN	OUT	Thru
Nov-96	10493.0	11181.9	6825.5	3667.5	4126.3	2586.9	2982.9	2.6	160.6	94.5	178.5
Dec-96	11337.0	5830.3	5830.3	5506.7	4850.6	1061.5	3374.9	0.7	174.7	74.4	236.4
Jan-97	5455.0	4464.4	2090.1	3364.9	2399.7	930.9	1146.5	1.9	179.7	85.2	224.0
Feb-97	1477.0	4014.4	586.6	890.4	630.9	1015.1	271.8	1.5	174.4	103.3	189.3
Mar-97	3811.0	4779.8	100.0	3711.0	1307.6	1427.3	45.2	3.5	140.2	122.0	184.7
Apr-97	5262.0	11527.9	124.3	5137.7	1872.3	3988.5	60.4	5.5	145.3	141.3	198.5
May-97	4283.0	5780.9	44.4	4238.6	1578.3	1938.7	20.1	4.8	150.5	137.0	184.9
Jun-97	232.0	17857.7	0.0	232.0	90.0	5423.3	0.0	8.4	158.4	124.0	0.0
Jul-97	1406.0	20407.6	504.2	901.8	541.5	6486.1	200.8	8.9	157.3	129.8	162.7
Aug-97	0.0	29144.6	0.0	0.0	0.0	12276.2	0.0	9.0	0.0	172.1	0.0
Sep-97	720.0	11995.5	0.0	720.0	128.2	4437.2	0.0	5.9	72.7	151.1	0.0
Oct-97	15894.0	14641.8	13601.9	2292.1	9409.1	4109.8	8326.6	0.6	241.8	114.6	250.0
Nov-97	10862.0	14773.9	9441.7	1420.3	7059.3	9365.7	6357.3	3.5	265.4	258.9	275.0
Dec-97	0.0	31275.4	0.0	0.0	0.0	22023.9	0.0	6.2	0.0	287.6	0.0
Jan-98	0.0	5559.3	0.0	0.0	0.0	2214.4	0.0	2.3	0.0	162.7	0.0
Feb-98	0.0	18388.3	0.0	0.0	0.0	7900.4	0.0	5.1	0.0	175.4	0.0
Mar-98	0.0	14464.6	0.0	0.0	0.0	5839.7	0.0	4.5	0.0	164.9	0.0
Apr-98	23637.8	10149.5	10093.9	13543.9	13359.9	3864.5	5866.6	2.3	230.8	155.5	237.4
May-98	21351.0	15229.4	10176.6	11174.4	9203.2	6562.5	4563.8	1.8	176.0	176.0	183.2
Jun-98	21088.0	3780.6	2861.7	18226.3	8828.1	804.8	1272.9	1.7	171.0	86.9	181.7
Jul-98	4696.0	7287.8	1912.9	2783.1	1162.8	1676.1	788.4	5.5	101.1	93.9	168.3
Aug-98	0.0	4301.5	0.0	0.0	0.0	1339.4	0.0	4.8	0.0	127.2	0.0
Sep-98	713.0	36388.0	0.0	713.0	165.1	14480.1	0.0	8.7	94.6	162.6	0.0
Oct-98	13997.0	14314.8	11640.3	2356.7	3319.0	3778.9	2887.8	2.3	96.8	107.8	101.3
Nov-98	1740.0	39437.8	790.9	949.1	482.2	16586.4	231.7	10.0	113.2	171.8	119.7
Dec-98	4806.0	3618.7	1643.1	3162.9	2111.4	732.6	1415.7	1.7	179.4	82.7	351.9
Jan-99	13746.0	14222.2	11218.3	2527.7	9492.1	4969.2	8324.2	2.7	282.0	142.7	303.1
Feb-99	16435.5	10564.0	10412.5	6023.0	12240.2	3178.5	7107.1	1.4	304.2	122.8	278.8
Mar-99	11596.2	1129.4	1129.4	10466.8	6980.3	198.8	365.6	0.8	245.8	71.9	132.2
Apr-99	22615.6	11468.5	11468.5	11147.1	8194.5	1673.0	4363.3	0.8	148.0	59.6	155.4
May-99	10060.6	4733.9	4453.5	5607.1	4277.3	732.6	1932.1	3.8	173.6	63.2	177.2
Jun-99	433.6	42777.6	173.3	260.3	188.0	24413.4	77.8	14.6	177.1	233.1	183.3
Jul-99	497.7	6995.5	0.0	497.7	162.3	2387.7	0.0	4.3	133.1	139.4	0.0
Aug-99	1685.0	8911.1	0.0	1685.0	492.4	3158.7	0.0	6.8	119.3	144.8	0.0
Sep-99	2016.0	18617.0	1651.0	365.0	647.6	5353.2	552.9	7.1	131.2	117.4	136.8
Oct-99	4084.0	53179.0	4066.0	18.0	1362.8	18685.4	1407.8	9.2	136.3	143.5	141.4
Nov-99	7056.0	12119.0	5696.0	1360.0	3133.4	4459.7	2618.7	2.9	181.4	150.3	187.8
Dec-99	21104.0	16403.0	15665.0	5439.0	12453.4	5490.3	9984.4	1.3	241.0	136.7	260.3
Jan-00	16925.0	11936.0	9768.0	7157.0	10622.0	3862.3	6302.2	1.0	256.3	132.2	263.5
Feb-00	5236.0	1233.0	0.0	5236.0	4427.4	525.3	0.0	0.9	345.3	174.0	0.0
Mar-00	8015.0	9841.5	1758.0	6257.0	4367.0	4539.3	1049.4	3.9	222.5	188.4	243.8
Apr-00	5887.0	17838.1	2780.0	3107.0	2753.1	6978.2	1350.0	4.3	191.0	159.8	198.3
May-00	22224.0	10344.0	9949.0	12275.0	6836.7	2010.1	3261.5	1.9	125.6	79.4	133.9
Jun-00	12804.0	3230.2	2423.2	10380.8	4460.0	361.5	953.2	4.2	142.3	45.7	160.7
Jul-00	0.0	16308.9	0.0	0.0	0.0	3826.8	0.0	8.1	0.0	95.8	0.0
Aug-00	2529.0	10120.0	0.0	2529.0	769.5	2025.3	0.0	5.1	124.3	81.7	0.0
Sep-00	0.0	17791.0	0.0	0.0	0.0	7234.4	0.0	6.9	0.0	166.1	0.0
Oct-00	3050.0	30726.0	0.0	3050.0	461.1	13854.7	0.0	6.4	61.7	184.2	0.0
Nov-00	11465.0	0.0	0.0	11465.0	6799.9	0.0	0.0	0.4	242.3	0.0	0.0
Dec-00	4712.0	6.7	6.7	4705.3	3577.5	0.4	7.0	0.3	310.1	23.0	424.0
Jan-01	1935.0	0.0	0.0	1935.0	1510.5	0.0	0.0	0.8	318.8	0.0	0.0
Feb-01	2401.0	335.0	315.0	2086.0	1104.1	26.2	116.5	0.0	187.8	32.0	151.0
Mar-01	3577.4	4025.0	1817.0	1760.4	2559.3	589.8	1286.5	3.1	292.2	59.8	289.2
Apr-01	6495.0	508.0	238.0	6257.0	3928.3	87.4	164.3	0.5	247.0	70.2	282.0
May-01	7072.0	393.7	362.2	6709.8	4323.6	46.1	190.8	3.0	249.7	47.8	215.2
Jun-01	1860.2	2445.2	0.0	1860.2	651.0	1219.8	0.0	7.1	142.9	203.7	0.0
Jul-01	879.1	26346.6	25.0	854.1	421.3	8822.8	14.2	8.2	195.7	136.8	232.7
Aug-01	75.2	23058.7	0.0	75.2	53.3	5647.7	0.0	8.6	289.7	100.0	0.0
Sep-01	2517.0	30313.0	82.0	2435.0	1731.8	5151.4	43.4	9.4	281.0	69.4	216.2
Oct-01	681.7	23119.3	2.1	679.6	420.7	4447.8	1.5	4.3	252.0	78.6	296.4
Nov-01	435.0	8249.4	238.6	196.4	177.2	1821.5	77.1	1.9	166.4	90.2	132.0
Dec-01	301.0	1013.2	80.3	220.7	123.8	84.6	26.0	1.9	168.1	34.1	132.0
Jan-02	1008.6	2911.9	0.0	1008.6	366.3	375.3	0.0	1.1	148.4	52.6	0.0
Feb-02	1617.7	16240.0	0.0	1617.7	908.5	6228.6	0.0	4.2	229.4	156.6	0.0
Mar-02	9314.1	1590.5	69.5	9244.6	3985.1	376.4	66.5	1.0	174.7	96.7	390.6
Apr-02	14767.8	411.5	360.5	14407.3	5867.1	77.3	134.6	1.4	162.2	76.8	152.5
May-02	19932.6	7925.0	7175.0	12757.6	7251.1	1974.7	2656.3	2.7	148.6	101.8	151.2
Jun-02	8837.2	37322.0	2496.0	6341.2	4849.3	17048.4	1102.5	9.9	224.1	186.6	180.4
Jul-02	4251.8	31228.0	2204.5	2047.3	3116.4	10781.3	1298.8	7.4	299.4	141.0	240.6
Aug-02	28588.3	42421.0	23543.2	5045.1	15397.5	18171.4	11795.2	6.4	220.0	175.0	204.6

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	Thru	Rainfall (in)	IN	OUT	Thru
Sep-02	32329.1	46770.0	31916.9	412.2	11142.2	14090.6	10881.7	4.1	140.8	123.0	139.2
Oct-02	26265.6	33139.0	24490.8	1774.8	9139.8	8343.0	8756.8	1.7	142.2	102.8	146.0
Nov-02	15609.6	17616.0	10903.9	4705.7	8762.8	8397.8	6137.7	2.7	229.3	194.7	229.9
Dec-02	23775.9	37124.0	22077.2	1698.7	12600.0	14689.3	11675.8	2.6	216.5	161.6	216.0
Jan-03	31557.0	30930.0	26705.3	4851.7	20626.4	11523.9	17101.0	0.4	266.9	152.2	261.5
Feb-03	11966.8	6863.0	4708.2	7258.6	4984.4	2415.7	1939.7	2.1	170.1	143.8	168.3
Mar-03	7057.6	14543.0	1789.3	5268.3	2688.8	8342.2	684.5	5.7	155.6	234.3	156.2
Apr-03	14386.2	11781.0	4372.2	10014.0	6724.9	5195.2	1993.9	4.6	190.9	180.1	186.3
May-03	10862.7	13364.0	3653.0	7209.7	3547.3	4549.6	1179.8	4.3	133.4	139.0	131.9
Jun-03	1039.9	18826.0	0.0	1039.9	790.7	4512.5	0.0	6.7	310.5	97.9	0.0
Jul-03	1594.9	10663.0	0.0	1594.9	881.2	3114.4	0.0	7.6	225.7	119.3	0.0
Aug-03	3342.6	53231.0	0.0	3342.6	3059.8	19733.6	0.0	12.0	373.9	151.4	0.0
Sep-03	1070.9	15258.0	0.0	1070.9	959.3	6572.1	0.0	6.6	365.9	175.9	0.0
Oct-03	3044.5	5857.6	1503.7	1540.8	1259.8	2114.7	532.3	0.6	169.0	147.4	144.6
Nov-03	3042.8	8579.3	1376.6	1666.2	1444.2	2800.0	642.2	2.9	193.8	133.3	190.5
Dec-03	1690.7	4666.9	435.1	1255.6	774.6	1457.8	211.6	2.0	187.1	127.6	198.6
Jan-04	8709.1	12234.7	6656.3	2052.8	5018.9	3374.2	3884.5	2.1	235.4	112.6	238.3
Feb-04	2716.6	10839.6	1276.2	1440.4	1219.1	3328.3	569.3	3.1	183.3	125.4	182.2
Mar-04	7210.8	1512.4	1419.9	5790.9	4168.6	320.2	679.8	0.2	236.1	86.5	195.5
Apr-04	9534.1	3741.0	2105.0	7429.1	5097.0	1027.4	1125.1	2.0	218.4	112.2	218.3
May-04	17722.0	6655.2	6517.2	11204.8	6603.7	1220.4	2430.3	1.4	152.1	74.9	152.3
Jun-04	3576.5	13337.1	825.5	2751.0	1820.3	5846.7	290.5	6.2	207.9	179.0	143.7
Jul-04	7417.6	13898.6	4730.9	2686.7	2927.9	3644.5	1648.3	6.4	161.2	107.1	142.3
Aug-04	2399.1	40598.0	36.5	2362.6	2523.7	20229.9	15.5	10.8	429.6	203.5	172.9
Sep-04	2609.3	69469.6	0.0	2609.3	4786.5	49205.2	0.0	16.1	749.2	289.3	0.0
Oct-04	2578.0	20159.2	455.6	2122.4	1774.7	13801.9	171.8	3.3	281.1	279.6	154.0
Nov-04	6978.3	3041.5	2395.9	4582.4	3176.3	777.2	1080.4	1.0	185.9	104.4	184.2
Dec-04	9608.8	6967.3	6389.5	3219.3	7136.5	2463.6	4993.5	0.7	303.4	144.4	319.2
Jan-05	4652.4	2309.1	0.0	4652.4	3504.4	1108.1	0.0	0.9	307.6	196.0	0.0
Feb-05	6332.3	4307.1	92.6	6239.7	5544.0	1623.0	60.1	1.7	357.6	153.9	265.0
Mar-05	1891.7	18546.9	0.0	1891.7	1595.7	11279.9	0.0	6.1	344.5	248.4	0.0
Apr-05	12215.4	5109.8	4502.9	7712.5	10243.1	1822.8	3652.4	2.1	342.5	145.7	331.3
May-05	11624.7	12393.4	4863.1	6761.6	6138.9	5445.6	2568.8	5.9	215.6	179.5	215.7
Jun-05	1962.0	33883.3	0.0	1962.0	1633.9	16305.3	0.0	7.4	340.2	196.5	0.0
Jul-05	3294.8	5679.1	0.0	3294.8	1757.2	1426.3	0.0	3.1	217.8	102.6	0.0
Aug-05	1246.8	4472.1	374.1	872.7	638.3	1550.9	168.5	4.8	209.1	141.6	184.0
Sep-05	1466.9	4765.3	72.2	1394.7	920.4	1544.1	49.5	5.7	256.3	132.3	280.0
Oct-05	1607.3	20090.1	0.0	1607.3	4077.0	13254.1	0.0	6.2	1036.0	269.4	0.0
Nov-05	962.9	7551.8	0.0	962.9	1273.9	4996.8	0.0	3.8	540.4	270.2	0.0
Dec-05	2174.6	3.6	0.0	2174.6	1690.2	1.9	0.0	0.5	317.4	214.6	0.0
Jan-06	4400.8	20.0	20.0	4380.8	3460.8	4.8	9.6	0.3	321.2	99.0	196.8
Feb-06	2545.8	13300.4	274.8	2271.0	1643.8	10882.4	131.5	3.4	263.7	334.2	195.4
Mar-06	5384.2	1632.3	15.3	5368.9	3090.6	944.5	7.3	1.2	234.4	236.3	194.6
Apr-06	10375.0	1286.0	1276.7	9098.3	7121.5	450.6	592.5	0.6	280.4	143.1	189.5
May-06	10201.2	4517.6	591.2	9610.0	5294.1	2942.0	271.3	4.2	211.9	266.0	187.4
Jun-06	8465.0	6130.7	268.4	8196.6	4041.2	4241.6	118.0	5.7	195.0	282.6	179.5
Jul-06	1949.2	21139.7	0.0	1949.2	1606.2	12109.1	0.0	9.0	336.6	233.9	0.0
Aug-06	3022.6	27440.9	51.0	2971.6	1255.6	19543.3	16.0	8.6	169.7	290.9	128.0
Sep-06	1151.6	22960.5	0.0	1151.6	1773.7	13362.5	0.0	4.5	629.0	237.7	0.0
Oct-06	9388.6	0.0	0.0	9388.6	2983.6	0.0	0.0	0.6	129.8	0.0	0.0
Nov-06	7514.2	886.5	496.7	7017.5	3675.3	196.7	268.2	0.8	199.7	90.6	220.6
Dec-06	2187.7	3512.2	62.6	2125.1	1159.3	658.2	31.2	1.9	216.4	76.5	203.3
Jan-07	4726.6	208.3	133.9	4592.7	2697.1	38.3	87.4	0.2	233.1	75.0	266.6
Feb-07	3520.8	128.3	128.3	3392.5	2538.9	20.4	73.9	0.6	294.5	65.0	235.2
Mar-07	8071.0	2355.6	1735.5	6335.5	4726.4	365.0	1235.2	0.1	239.2	63.3	290.7
Apr-07	8713.0	2716.7	2396.8	6316.2	4413.7	448.2	1222.7	1.2	206.9	67.4	208.3

Appendix C.2
Monthly Event Datasets for Hydrologic Sub-Basin S6/S7

Month	Flow (cfsd) IN	Flow (cfsd) OUT	Flow (cfsd) Flow Thru	Flow (cfsd) Supplemental Inflow	Load (kg) IN	Load (kg) OUT	Load (kg) THRU	Rainfall (in)	Conc (ppb) IN	Conc (ppb) OUT	Conc (ppb) THRU
May-79	6950.0	7647.0	727.0	6223.0	1083.6	2650.4	133.0	4.9	63.7	141.6	74.7
Jun-79	43136.0	1092.0	362.0	42774.0	6514.8	137.8	65.9	3.4	61.7	51.6	74.4
Jul-79	5765.0	7960.0	0.0	5765.0	993.7	1667.7	0.0	6.8	70.4	85.6	0.0
Aug-79	773.0	16477.0	217.0	556.0	143.4	4206.1	37.7	6.3	75.7	104.3	71.0
Sep-79	0.0	66150.0	0.0	0.0	0.0	19103.2	0.0	11.6	0.0	118.0	0.0
Oct-79	520.0	30231.0	0.0	520.0	95.2	6062.0	0.0	2.5	74.8	81.9	0.0
Nov-79	0.0	31036.0	0.0	0.0	0.0	8828.8	0.0	3.9	0.0	116.2	0.0
Dec-79	583.0	11969.0	532.0	51.0	106.2	2058.3	84.2	2.4	74.4	70.2	64.7
Jan-80	16374.0	31315.0	9016.0	7358.0	2718.3	14903.6	1372.9	4.7	67.8	194.4	62.2
Feb-80	697.0	6570.0	0.0	697.0	126.7	1250.5	0.0	1.2	74.2	77.7	0.0
Mar-80	1723.0	8738.0	0.0	1723.0	337.5	1867.5	0.0	2.5	80.0	87.3	0.0
Apr-80	1032.0	20562.0	106.0	926.0	104.2	4104.0	15.9	4.5	41.2	81.5	61.4
May-80	10822.0	15735.0	530.0	10292.0	1141.2	3216.4	79.5	5.5	43.1	83.5	61.3
Jun-80	19664.0	1848.0	751.0	18913.0	3056.2	243.7	112.2	2.9	63.5	53.9	61.0
Jul-80	2240.0	10994.0	52.0	2188.0	260.4	2860.4	7.8	5.5	47.5	106.3	61.1
Aug-80	707.0	21606.0	0.0	707.0	85.5	6558.7	0.0	4.4	49.4	124.0	0.0
Sep-80	0.0	39979.0	0.0	0.0	0.0	13137.3	0.0	6.2	0.0	134.2	0.0
Oct-80	5208.0	1246.0	250.0	4958.0	605.7	255.3	37.6	1.6	47.5	83.7	61.5
Nov-80	2379.0	6685.0	101.0	2278.0	257.6	647.4	15.2	3.0	44.2	39.5	61.5
Dec-80	836.0	1509.0	238.0	598.0	83.8	140.3	36.0	0.7	40.9	38.0	61.7
Jan-81	5943.0	0.0	0.0	5943.0	550.8	0.0	0.0	0.6	37.8	0.0	0.0
Feb-81	3905.0	5095.0	586.0	3319.0	436.2	1477.0	88.8	2.2	45.7	118.4	61.9
Mar-81	11066.0	408.0	1833.0	9233.0	1790.4	37.9	353.1	1.1	66.1	37.9	78.7
Apr-81	36209.0	5086.0	7691.0	28518.0	7319.8	840.2	1506.1	0.4	82.6	67.5	80.0
May-81	23130.0	3194.0	3194.0	19936.0	2936.4	557.4	405.1	4.7	51.9	71.3	51.8
Jun-81	9613.0	163.0	967.0	8646.0	2122.0	46.1	161.3	4.3	90.2	115.6	68.1
Jul-81	11878.0	0.0	0.0	11878.0	1559.1	0.0	0.0	5.3	53.6	0.0	0.0
Aug-81	578.0	105832.0	0.0	578.0	65.3	81145.5	0.0	16.1	46.1	313.1	0.0
Sep-81	0.0	46949.0	0.0	0.0	0.0	21247.0	0.0	4.8	0.0	184.9	0.0
Oct-81	4230.0	0.0	317.0	3913.0	437.9	0.0	76.3	0.4	42.3	0.0	98.3
Nov-81	1771.0	26271.0	0.0	1771.0	182.4	22018.6	0.0	4.1	42.1	342.3	0.0
Dec-81	8173.0	0.0	0.0	8173.0	887.4	0.0	0.0	0.3	44.3	0.0	0.0
Jan-82	3183.0	83.0	0.0	3183.0	384.2	101.8	0.0	0.4	49.3	501.1	0.0
Feb-82	1484.0	4400.0	0.0	1484.0	193.4	2104.4	0.0	2.5	53.2	195.3	0.0
Mar-82	2275.0	27453.0	0.0	2275.0	326.5	14574.3	0.0	4.9	58.6	216.8	0.0
Apr-82	9458.0	1560.0	2846.0	6612.0	1507.8	852.2	816.9	2.3	65.1	223.1	117.2
May-82	14987.0	41136.0	2600.0	12387.0	2597.2	31973.4	766.8	9.2	70.8	317.4	120.5
Jun-82	0.0	96394.0	0.0	0.0	0.0	52760.8	0.0	12.0	0.0	223.6	0.0
Jul-82	0.0	33376.0	0.0	0.0	0.0	8590.2	0.0	5.6	0.0	105.2	0.0
Aug-82	0.0	48015.0	0.0	0.0	0.0	9632.1	0.0	7.0	0.0	81.9	0.0
Sep-82	0.0	63623.0	0.0	0.0	0.0	15963.6	0.0	10.8	0.0	102.5	0.0
Oct-82	0.0	35932.0	0.0	0.0	0.0	9046.5	0.0	2.4	0.0	102.9	0.0
Nov-82	0.0	381.0	0.0	0.0	0.0	46.7	0.0	0.9	0.0	50.0	0.0
Dec-82	2234.0	0.0	0.0	2234.0	595.7	0.0	0.0	0.7	108.9	0.0	0.0
Jan-83	216.0	30906.0	0.0	216.0	61.4	7365.9	0.0	4.0	116.1	97.3	0.0
Feb-83	0.0	67284.0	0.0	0.0	0.0	13754.8	0.0	7.7	0.0	83.5	0.0
Mar-83	0.0	28849.0	0.0	0.0	0.0	4047.6	0.0	4.3	0.0	57.3	0.0
Apr-83	3277.0	4162.0	262.0	3015.0	1082.5	567.1	101.4	1.7	134.9	55.6	158.1
May-83	26388.0	315.0	315.0	26073.0	9028.5	67.9	125.4	1.1	139.7	88.0	162.6
Jun-83	0.0	34834.0	0.0	0.0	0.0	8638.7	0.0	7.7	0.0	101.3	0.0
Jul-83	4676.0	5596.0	620.0	4056.0	1366.7	1295.9	255.6	4.8	119.3	94.6	168.4
Aug-83	0.0	35211.0	0.0	0.0	0.0	9043.3	0.0	6.8	0.0	104.9	0.0
Sep-83	207.0	39915.0	0.0	207.0	20.3	8484.4	0.0	5.3	40.1	86.8	0.0
Oct-83	421.0	33465.0	11.0	410.0	123.0	8361.1	4.8	5.1	119.3	102.0	176.9
Nov-83	2445.0	3598.0	326.0	2119.0	1017.3	547.1	145.3	1.0	169.9	62.1	182.0
Dec-83	2476.0	22680.0	1352.0	1124.0	1088.7	3379.7	614.6	4.1	179.6	60.9	185.7
Jan-84	1893.0	7602.0	0.0	1893.0	866.6	1282.0	0.0	0.3	187.0	68.9	0.0
Feb-84	15426.0	12997.0	9408.0	6018.0	7214.9	1678.6	4424.5	1.2	191.0	52.8	192.1
Mar-84	29723.0	37761.0	19361.0	10362.0	13729.4	13603.0	8937.9	4.2	188.7	147.1	188.5
Apr-84	27980.0	29162.0	15036.0	12944.0	12007.0	10175.8	6481.8	4.0	175.3	142.5	176.1
May-84	29320.0	29730.0	257.0	29063.0	11947.3	20243.6	102.2	7.5	166.4	278.1	162.5
Jun-84	11655.0	17578.0	1008.0	10647.0	4442.1	8558.1	382.7	3.9	155.7	198.9	155.0
Jul-84	0.0	43414.0	0.0	0.0	0.0	13738.7	0.0	5.9	0.0	129.2	0.0
Aug-84	0.0	6744.0	0.0	0.0	0.0	2196.3	0.0	4.3	0.0	133.0	0.0
Sep-84	7040.0	27412.0	1561.0	5479.0	2085.7	12309.6	461.7	6.1	121.0	183.4	120.8
Oct-84	13844.0	8203.0	4226.0	9618.0	3639.9	3931.3	1112.5	0.4	107.4	195.7	107.5
Nov-84	16406.0	13992.0	5899.0	10507.0	4011.8	4217.0	1441.1	2.6	99.9	123.1	99.8
Dec-84	13841.0	0.0	6613.0	7228.0	1989.6	0.0	966.0	0.2	58.7	0.0	59.7
Jan-85	20671.0	506.0	9254.0	11417.0	2917.2	126.9	1335.2	0.6	57.6	102.4	58.9
Feb-85	31462.0	5316.0	22838.0	8624.0	5877.8	685.5	4253.8	0.1	76.3	52.7	76.1

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Mar-85	56752.0	16989.0	34198.0	22554.0	10029.5	3731.4	6036.5	1.7	72.2	89.7	72.1
Apr-85	19816.0	19460.0	9235.0	10581.0	3347.8	8444.2	1560.2	5.3	69.0	177.2	69.0
May-85	41291.0	7613.0	11349.0	29942.0	6872.4	876.7	1898.1	2.3	68.0	47.0	68.3
Jun-85	26720.0	10260.0	914.0	25806.0	4299.1	2155.6	147.1	6.4	65.7	85.8	65.8
Jul-85	0.0	60667.0	0.0	0.0	0.0	21768.3	0.0	9.3	0.0	146.6	0.0
Aug-85	0.0	16442.0	0.0	0.0	0.0	6660.7	0.0	5.4	0.0	165.5	0.0
Sep-85	65.0	57939.0	0.0	65.0	6.7	22196.3	0.0	8.6	42.0	156.4	0.0
Oct-85	733.0	12674.0	168.0	565.0	89.0	1619.6	21.3	4.9	49.6	52.2	51.9
Nov-85	1921.0	7802.0	209.0	1712.0	233.2	801.8	25.3	1.9	49.6	42.0	49.5
Dec-85	2870.0	4573.0	451.0	2419.0	325.2	518.6	51.7	2.0	46.3	46.3	46.9
Jan-86	1957.0	24341.0	315.0	1642.0	201.5	3906.4	32.4	3.1	42.0	65.6	42.1
Feb-86	0.0	15761.0	0.0	0.0	0.0	2709.2	0.0	1.4	0.0	70.2	0.0
Mar-86	0.0	25782.0	0.0	0.0	0.0	6077.2	0.0	5.6	0.0	96.2	0.0
Apr-86	16929.0	1972.0	512.0	16417.0	1957.3	413.0	58.9	0.3	47.2	85.5	47.0
May-86	18302.0	3129.0	128.0	18174.0	2159.9	745.7	15.6	4.6	48.2	97.3	49.7
Jun-86	4079.0	75438.0	177.0	3902.0	298.6	40245.0	22.3	10.9	29.9	217.9	51.4
Jul-86	0.0	53548.0	0.0	0.0	0.0	16601.8	0.0	7.1	0.0	126.6	0.0
Aug-86	0.0	34590.0	0.0	0.0	0.0	9629.4	0.0	7.1	0.0	113.7	0.0
Sep-86	0.0	17787.0	0.0	0.0	0.0	4187.6	0.0	3.4	0.0	96.2	0.0
Oct-86	2371.0	10691.0	89.0	2282.0	249.7	2480.4	13.8	4.6	43.0	94.7	63.1
Nov-86	1295.0	6688.0	0.0	1295.0	172.8	1259.1	0.0	1.7	54.5	76.9	0.0
Dec-86	6938.0	15373.0	0.0	6938.0	845.2	2919.0	0.0	4.5	49.8	77.5	0.0
Jan-87	3286.0	17701.0	0.0	3286.0	193.5	3231.5	0.0	1.5	24.0	74.5	0.0
Feb-87	3895.0	5508.0	0.0	3895.0	183.6	747.6	0.0	1.3	19.3	55.5	0.0
Mar-87	1826.0	21934.0	0.0	1826.0	311.6	3458.7	0.0	5.5	69.7	64.4	0.0
Apr-87	18764.0	3363.0	746.0	18018.0	3554.6	451.9	147.8	0.2	77.4	54.9	80.9
May-87	22159.0	3109.0	1200.0	20959.0	3793.8	498.9	238.0	2.5	69.9	65.5	81.0
Jun-87	31095.0	3371.0	240.0	30855.0	5062.9	828.4	47.7	5.7	66.5	100.4	81.2
Jul-87	625.0	15572.0	190.0	435.0	108.8	3134.5	39.0	4.8	71.1	82.2	83.9
Aug-87	6583.0	13007.0	113.0	6470.0	881.3	3008.0	24.4	4.7	54.7	94.5	88.1
Sep-87	1657.0	11362.0	34.0	1623.0	230.9	4113.1	7.6	4.8	56.9	147.8	91.2
Oct-87	2055.0	21512.0	83.0	1972.0	376.4	9011.6	19.6	3.4	74.8	171.1	96.5
Nov-87	0.0	48160.0	0.0	0.0	0.0	16264.7	0.0	6.9	0.0	137.9	0.0
Dec-87	2707.0	793.0	0.0	2707.0	365.2	100.8	0.0	0.4	55.1	51.9	0.0
Jan-88	1494.0	7489.0	68.0	1426.0	197.7	1825.0	18.6	2.4	54.0	99.5	112.0
Feb-88	7752.0	4392.0	6028.0	1724.0	2151.8	1002.4	1718.6	1.5	113.3	93.2	116.4
Mar-88	25734.0	10287.0	18299.0	7435.0	4931.0	3229.2	3540.3	1.7	78.2	128.2	79.0
Apr-88	36560.0	8819.0	14795.0	21765.0	6170.2	1822.2	2374.3	1.9	68.9	84.4	65.5
May-88	15761.0	4920.0	196.0	15565.0	3461.6	2067.0	28.3	3.0	89.7	171.6	59.0
Jun-88	11754.0	5933.0	264.0	11490.0	2387.5	2360.1	39.1	5.5	83.0	162.5	60.5
Jul-88	2806.0	64561.0	0.0	2806.0	544.9	42523.7	0.0	9.6	79.3	269.0	0.0
Aug-88	0.0	59932.0	0.0	0.0	0.0	19204.8	0.0	8.7	0.0	130.9	0.0
Sep-88	8501.0	3137.0	0.0	8501.0	1241.0	462.1	0.0	2.1	59.6	60.1	0.0
Oct-88	22701.0	0.0	0.0	22701.0	3305.7	0.0	0.0	0.4	59.5	0.0	0.0
Nov-88	11491.0	3850.0	183.0	11308.0	1840.1	599.8	31.4	1.2	65.4	63.6	70.1
Dec-88	15408.0	601.0	565.0	14843.0	3031.5	85.4	100.2	0.5	80.4	58.0	72.4
Jan-89	11877.0	2258.0	819.0	11058.0	2334.7	350.3	158.1	0.7	80.3	63.3	78.8
Feb-89	20289.0	3646.0	8144.0	12145.0	4886.0	596.7	2000.9	0.2	98.4	66.8	100.3
Mar-89	30395.0	4855.0	15839.0	14556.0	6872.6	1053.8	3598.5	2.2	92.3	88.7	92.8
Apr-89	41904.0	4137.0	18415.0	23489.0	9463.2	1054.1	4107.7	2.9	92.3	104.1	91.1
May-89	76774.0	4290.0	24599.0	52175.0	10722.6	673.0	3438.7	1.6	57.1	64.1	57.1
Jun-89	55463.0	4582.0	22849.0	32614.0	6776.3	597.6	2774.1	4.6	49.9	53.3	49.6
Jul-89	7479.0	6765.0	2378.0	5101.0	1127.1	1459.7	360.9	5.0	61.6	88.1	62.0
Aug-89	3197.0	23362.0	653.0	2544.0	501.3	8617.1	109.6	6.6	64.0	150.7	68.5
Sep-89	0.0	43612.0	0.0	0.0	0.0	21345.3	0.0	8.7	0.0	199.9	0.0
Oct-89	0.0	12147.0	0.0	0.0	0.0	6064.3	0.0	3.1	0.0	203.9	0.0
Nov-89	9667.0	570.0	0.0	9667.0	1279.4	96.2	0.0	0.9	54.0	69.0	0.0
Dec-89	4546.0	2849.0	0.0	4546.0	673.0	288.1	0.0	1.7	60.5	41.3	0.0
Jan-90	16655.0	915.0	11930.0	4725.0	3982.3	106.9	3118.4	1.1	97.7	47.7	106.8
Feb-90	23738.0	1960.0	17979.0	5759.0	6903.0	509.2	5241.2	2.7	118.8	106.1	119.1
Mar-90	45613.0	3697.0	23289.0	22324.0	11187.3	699.4	5938.3	1.8	100.2	77.3	104.1
Apr-90	32789.0	721.0	8389.0	24400.0	5493.4	95.0	1428.1	1.9	68.4	53.8	69.5
May-90	5376.0	644.0	0.0	5376.0	1072.0	122.9	0.0	5.7	81.4	77.9	0.0
Jun-90	3778.0	2197.0	643.0	3135.0	1091.4	461.1	109.5	6.2	117.9	85.7	69.6
Jul-90	1962.0	7571.0	0.0	1962.0	285.3	1809.8	0.0	7.1	59.4	97.6	0.0
Aug-90	921.0	9637.0	0.0	921.0	82.2	2805.6	0.0	7.3	36.4	118.9	0.0
Sep-90	1565.0	480.0	0.0	1565.0	148.8	144.9	0.0	2.7	38.9	123.2	0.0
Oct-90	4.0	4491.0	0.0	4.0	0.4	1405.1	0.0	3.6	44.7	127.8	0.0
Nov-90	9932.0	0.0	0.0	9932.0	863.9	0.0	0.0	0.4	35.5	0.0	0.0
Dec-90	9748.0	0.0	0.0	9748.0	1297.2	0.0	0.0	0.8	54.4	0.0	0.0

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Jan-91	2829.0	73199.0	13.6	2815.4	400.7	49797.1	2.8	8.1	57.9	277.8	85.1
Feb-91	3744.4	4727.5	257.2	3487.2	514.5	1329.9	55.4	1.9	56.1	114.9	87.9
Mar-91	4525.1	7558.1	327.2	4197.9	510.0	2080.9	72.9	1.8	46.0	112.5	91.0
Apr-91	8685.0	17332.2	5575.1	3109.9	1933.7	4128.3	1263.4	4.6	90.9	97.3	92.6
May-91	24800.7	24586.8	4404.8	20395.9	4689.9	6828.6	979.7	5.6	77.2	113.4	90.8
Jun-91	2249.9	42907.5	0.0	2249.9	199.6	9244.4	0.0	9.1	36.2	88.0	0.0
Jul-91	0.0	59035.8	0.0	0.0	0.0	8813.5	0.0	9.0	0.0	61.0	0.0
Aug-91	188.6	30543.7	0.0	188.6	18.2	5597.3	0.0	4.2	39.3	74.9	0.0
Sep-91	0.0	28500.2	0.0	0.0	0.0	3203.7	0.0	4.9	0.0	45.9	0.0
Oct-91	0.0	16009.1	0.0	0.0	0.0	1807.3	0.0	2.6	0.0	46.1	0.0
Nov-91	7583.1	2598.0	0.0	7583.1	1085.7	347.1	0.0	2.5	58.5	54.6	0.0
Dec-91	7597.0	3988.4	258.0	7339.0	1018.4	550.5	30.5	0.5	54.7	56.4	48.3
Jan-92	19461.0	41.7	13028.3	6432.7	2106.3	5.4	1349.2	0.7	44.2	52.9	42.3
Feb-92	14562.0	14972.8	10087.5	4474.5	1742.2	2371.6	1194.9	2.9	48.9	64.7	48.4
Mar-92	31174.4	5927.0	20323.0	10851.4	4763.3	1448.4	3074.6	1.7	62.5	99.8	61.8
Apr-92	28061.8	4858.7	15714.6	12347.2	5040.0	1103.3	2792.3	3.3	73.3	92.8	72.6
May-92	62810.1	7593.8	27804.1	35006.0	11594.3	1332.0	5082.1	1.3	75.4	71.6	74.7
Jun-92	7901.0	58071.0	4508.9	3392.1	1426.6	27566.6	809.0	15.0	73.7	193.9	73.3
Jul-92	42372.0	68715.7	36985.5	5386.5	7015.9	28524.3	6076.7	3.4	67.6	169.5	67.1
Aug-92	5600.0	83273.8	2500.0	3100.0	875.7	23164.3	373.8	11.2	63.9	113.6	61.1
Sep-92	37918.0	91354.5	37918.0	0.0	5670.3	19777.0	5609.0	7.3	61.1	88.4	60.4
Oct-92	7602.5	15645.1	163.4	7439.1	2084.7	2414.3	44.6	2.1	112.0	63.0	111.5
Nov-92	3141.0	36627.6	13.0	3128.0	848.1	7065.6	3.4	4.6	110.3	78.8	108.3
Dec-92	708.0	2178.0	0.0	708.0	174.4	388.5	0.0	0.6	100.6	72.8	0.0
Jan-93	20981.0	96726.9	20981.0	0.0	4891.6	24359.6	4838.7	8.1	95.2	102.9	94.2
Feb-93	47362.0	60249.1	47167.4	194.6	10499.0	7962.7	10344.0	1.4	90.5	54.0	89.6
Mar-93	23768.0	31817.3	20051.1	3716.9	4889.8	4883.6	4070.2	3.1	84.0	62.7	82.9
Apr-93	61680.0	53171.6	50645.7	11034.3	12983.8	12271.1	10382.4	2.5	86.0	94.3	83.7
May-93	30219.0	5016.3	31.1	30187.9	7219.3	824.1	7.3	3.7	97.6	67.1	96.3
Jun-93	11215.0	18395.1	1352.9	9862.1	2502.3	3275.6	296.3	7.2	91.1	72.8	89.4
Jul-93	12099.0	1248.7	325.3	11773.7	2485.7	204.7	65.5	4.4	83.9	67.0	82.2
Aug-93	11032.0	16786.6	510.7	10521.3	2135.3	2060.4	96.4	5.7	79.1	50.1	77.1
Sep-93	0.0	55424.9	0.0	0.0	0.0	7078.5	0.0	6.5	0.0	52.2	0.0
Oct-93	0.0	51361.3	0.0	0.0	0.0	8882.4	0.0	6.1	0.0	70.6	0.0
Nov-93	3008.8	4993.3	0.2	3008.6	517.5	431.8	0.0	1.6	70.3	35.3	59.0
Dec-93	5692.9	699.7	52.9	5640.0	772.9	183.5	7.0	0.7	55.4	107.1	54.2
Jan-94	252.6	16081.6	87.7	164.9	51.8	2464.1	16.8	4.6	83.7	62.6	78.3
Feb-94	0.0	29801.4	0.0	0.0	0.0	7321.9	0.0	4.1	0.0	100.3	0.0
Mar-94	8308.1	9765.9	280.9	8027.2	2227.9	1495.5	75.3	3.8	109.5	62.6	109.5
Apr-94	8563.0	9642.6	1.2	8561.8	2005.6	2114.0	0.4	2.2	95.7	89.6	119.4
May-94	17496.0	1544.9	338.4	17157.6	5855.6	369.4	115.1	4.1	136.7	97.7	139.0
Jun-94	735.0	41438.7	224.7	510.3	226.8	11109.7	71.9	7.6	126.0	109.5	130.7
Jul-94	202.5	27966.0	0.0	202.5	41.0	8818.4	0.0	6.6	82.7	128.8	0.0
Aug-94	0.0	62809.6	0.0	0.0	0.0	12048.2	0.0	8.7	0.0	78.3	0.0
Sep-94	3421.2	62449.6	3421.2	0.0	520.3	14293.4	514.6	7.8	62.1	93.5	61.4
Oct-94	32758.0	84548.5	32732.0	26.0	5039.3	20300.4	4980.9	7.9	62.8	98.1	62.1
Nov-94	21772.0	97984.0	21772.0	0.0	3391.2	26221.7	3354.6	7.0	63.6	109.3	62.9
Dec-94	0.0	89300.3	0.0	0.0	0.0	27785.5	0.0	10.4	0.0	127.1	0.0
Jan-95	1935.0	26701.5	1596.0	339.0	336.7	2934.1	259.0	2.3	71.1	44.9	66.3
Feb-95	10830.4	22227.1	7755.7	3074.7	1806.8	2642.9	1274.9	2.3	68.2	48.5	67.1
Mar-95	25316.4	26332.2	18024.0	7292.4	4278.4	2487.2	3009.7	2.3	69.0	38.6	68.2
Apr-95	34724.0	20993.7	18735.2	15988.8	5962.3	2675.9	3179.1	2.0	70.1	52.0	69.3
May-95	16174.4	3691.6	927.2	15247.2	2837.0	395.7	160.9	2.6	71.6	43.8	70.9
Jun-95	2109.0	25911.4	0.0	2109.0	372.5	4999.6	0.0	9.1	72.1	78.8	0.0
Jul-95	0.0	53527.8	0.0	0.0	0.0	9304.5	0.0	8.4	0.0	71.0	0.0
Aug-95	0.0	71708.1	0.0	0.0	0.0	16629.6	0.0	11.9	0.0	94.7	0.0
Sep-95	8.9	54615.3	0.0	8.9	1.5	8286.5	0.0	7.0	68.7	62.0	0.0
Oct-95	0.5	74446.0	0.5	0.0	0.1	17030.7	0.1	8.9	77.6	93.4	76.8
Nov-95	15789.1	11140.0	8392.0	7397.1	3062.6	1063.1	1611.3	0.6	79.2	39.0	78.4
Dec-95	35066.0	28198.0	26420.6	8645.4	7655.5	4079.6	5799.3	0.9	89.2	59.1	89.6
Jan-96	35377.5	36509.0	33908.4	1469.1	10431.6	7592.6	9900.2	1.7	120.4	84.9	119.2
Feb-96	22287.0	7783.9	11209.1	11077.9	9601.5	1636.1	5424.4	0.4	176.0	85.8	197.6
Mar-96	5637.0	8704.5	1196.4	4440.6	1828.5	2022.6	594.6	4.8	132.5	94.9	203.0
Apr-96	25204.0	8239.8	10432.3	14771.7	8071.8	1890.6	3365.5	1.8	130.8	93.7	131.8
May-96	7986.0	30257.7	821.4	7164.6	1979.0	6205.3	196.0	8.5	101.2	83.8	97.4
Jun-96	1613.0	57217.0	1.0	1612.0	333.9	13231.3	0.2	9.2	84.6	94.4	89.2
Jul-96	8478.0	23777.3	60.5	8417.5	1408.7	6445.9	13.1	4.1	67.9	110.7	88.2
Aug-96	2606.0	12330.6	145.1	2460.9	434.8	2033.9	31.2	7.4	68.1	67.4	87.9
Sep-96	3079.8	13256.9	0.0	3079.8	557.3	2756.1	0.0	4.0	73.8	84.9	0.0
Oct-96	5033.1	35885.8	4392.5	640.6	1016.0	7536.3	930.2	5.1	82.4	85.8	86.5

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Nov-96	8148.7	9925.6	3967.2	4181.5	1639.4	2153.5	836.3	1.3	82.2	88.6	86.1
Dec-96	18711.0	55.1	8243.2	10467.8	3921.2	6.5	1704.7	0.4	85.6	48.4	84.5
Jan-97	8380.4	5439.0	6235.6	2144.8	1728.3	429.3	1272.8	1.7	84.3	32.2	83.4
Feb-97	2743.7	514.5	2418.3	325.4	555.6	156.2	484.8	1.7	82.7	124.0	81.9
Mar-97	7233.2	3265.0	0.2	7233.0	1448.8	5222.4	0.0	2.4	81.8	653.3	80.4
Apr-97	5981.0	12728.6	796.2	5184.8	1180.0	6560.0	155.3	3.6	80.6	210.5	79.7
May-97	4482.0	9958.4	0.0	4482.0	864.8	1894.6	0.0	4.6	78.8	77.7	0.0
Jun-97	268.0	49329.3	0.0	268.0	50.3	10501.2	0.0	9.9	76.6	86.9	0.0
Jul-97	730.0	19138.7	93.0	637.0	136.8	4789.3	17.2	7.0	76.5	102.2	75.6
Aug-97	0.0	37522.5	0.0	0.0	0.0	7544.1	0.0	7.0	0.0	82.1	0.0
Sep-97	0.0	19759.6	0.0	0.0	0.0	3899.9	0.0	5.8	0.0	80.6	0.0
Oct-97	12714.8	11270.8	4506.3	8208.5	1828.3	2131.2	784.0	0.9	58.7	77.2	71.1
Nov-97	5644.4	8499.5	3525.0	2119.4	867.6	1376.1	625.1	3.1	62.7	66.1	72.4
Dec-97	0.0	47868.7	0.0	0.0	0.0	13424.8	0.0	5.7	0.0	114.5	0.0
Jan-98	0.0	5915.4	0.0	0.0	0.0	802.6	0.0	1.4	0.0	55.4	0.0
Feb-98	0.0	30710.1	0.0	0.0	0.0	7371.1	0.0	5.0	0.0	98.0	0.0
Mar-98	54.6	30693.4	0.0	54.6	4.6	8453.0	0.0	4.7	34.5	112.5	0.0
Apr-98	24056.4	12165.4	10071.9	13984.5	5100.7	2901.1	2114.8	1.0	86.6	97.4	85.8
May-98	28470.3	19537.1	11460.4	17009.9	6693.2	4776.6	2650.2	1.8	96.0	99.8	94.4
Jun-98	26626.0	5949.1	3671.1	22954.9	6845.6	1249.4	1017.8	2.6	105.0	85.8	113.2
Jul-98	7798.0	7845.2	668.5	7129.5	1849.3	1487.1	173.4	5.9	96.9	77.4	106.0
Aug-98	43.1	16201.4	40.6	2.5	9.2	2949.4	9.2	6.8	87.4	74.3	92.6
Sep-98	1166.0	47727.7	0.0	1166.0	233.1	10131.4	0.0	8.2	81.6	86.7	0.0
Oct-98	9135.2	8004.8	5241.1	3894.1	1491.3	1456.0	887.5	1.5	66.7	74.3	69.2
Nov-98	1920.5	83518.5	602.6	1317.9	278.8	36476.8	98.3	9.5	59.3	178.4	66.6
Dec-98	2106.9	75.2	0.3	2106.6	513.6	30.2	0.1	1.0	99.6	163.9	101.0
Jan-99	912.3	3690.4	38.8	873.5	265.2	342.3	11.0	2.1	118.7	37.9	116.2
Feb-99	6890.0	7434.2	4080.6	2809.4	2288.0	937.9	1340.4	1.0	135.6	51.5	134.2
Mar-99	27044.0	10965.4	10971.1	16072.9	7497.8	1436.0	3036.4	0.3	113.2	53.5	113.0
Apr-99	44624.0	13625.9	24897.7	19726.3	8954.1	2779.9	4892.0	0.9	82.0	83.3	80.2
May-99	18458.0	16948.9	8909.5	9548.5	2946.9	6827.3	1400.3	4.5	65.2	164.5	64.2
Jun-99	1105.0	36574.2	337.0	768.0	196.0	6313.7	59.0	11.2	72.5	70.5	71.6
Jul-99	0.0	34932.3	0.0	0.0	0.0	8287.3	0.0	6.7	0.0	96.9	0.0
Aug-99	379.8	13574.9	22.4	357.4	93.2	4672.3	5.4	4.8	100.2	140.5	99.1
Sep-99	359.0	53803.3	284.1	74.9	105.2	18694.3	82.3	9.1	119.6	141.9	118.4
Oct-99	30.0	81953.0	30.0	0.0	9.3	25088.5	9.2	9.4	127.1	125.0	125.7
Nov-99	3655.0	10834.0	2540.0	1115.0	1298.0	2199.8	923.3	1.3	145.1	83.0	148.5
Dec-99	15193.0	9905.2	8732.0	6461.0	6038.8	2176.1	3468.7	0.6	162.4	89.7	162.2
Jan-00	15848.0	10691.4	7168.2	8679.8	6994.3	2584.0	3122.8	0.9	180.3	98.7	177.9
Feb-00	2994.0	3177.6	0.0	2994.0	1366.7	510.3	0.0	0.7	186.4	65.6	0.0
Mar-00	13610.0	8357.1	3951.3	9658.7	6401.4	2288.4	1853.8	3.0	192.1	111.8	191.6
Apr-00	20227.0	28626.9	8888.4	11338.6	8464.5	10168.9	3759.7	4.7	170.9	145.1	172.8
May-00	42832.0	13322.4	12373.0	30459.0	13598.0	1923.8	3961.8	2.3	129.6	59.0	130.8
Jun-00	29364.0	4332.0	1849.0	27515.0	7542.1	773.5	615.3	4.2	104.9	72.9	135.9
Jul-00	0.0	17491.1	0.0	0.0	0.0	3511.8	0.0	8.7	0.0	82.0	0.0
Aug-00	3833.0	17958.9	0.0	3833.0	668.1	3345.4	0.0	3.9	71.2	76.1	0.0
Sep-00	70.0	27843.9	0.0	70.0	7.7	8654.1	0.0	6.7	45.0	126.9	0.0
Oct-00	1762.0	64577.7	0.0	1762.0	138.6	23445.6	0.0	5.0	32.1	148.3	0.0
Nov-00	13000.0	73.0	0.0	13000.0	1143.5	33.4	0.0	0.3	36.0	186.9	0.0
Dec-00	10712.9	0.0	0.0	10712.9	7531.6	0.0	0.0	0.3	287.1	0.0	0.0
Jan-01	6295.0	98.6	0.0	6295.0	3719.0	43.1	0.0	0.8	241.3	178.4	0.0
Feb-01	5306.0	0.0	0.0	5306.0	1984.2	0.0	0.0	0.0	152.7	0.0	0.0
Mar-01	6751.4	8903.0	1026.0	5725.4	2638.9	1677.3	447.7	4.4	159.6	76.9	178.2
Apr-01	9170.0	368.5	0.0	9170.0	3389.1	144.4	0.0	0.2	150.9	160.0	0.0
May-01	11460.0	3.4	3.4	11456.6	3540.7	0.2	1.0	4.4	126.2	23.5	115.0
Jun-01	0.0	8602.0	0.0	0.0	0.0	2413.0	0.0	5.4	0.0	114.6	0.0
Jul-01	2167.0	55432.1	0.0	2167.0	320.3	11481.7	0.0	10.3	60.4	84.6	0.0
Aug-01	13339.0	61587.4	0.0	13339.0	1231.6	12694.1	0.0	6.7	37.7	84.2	0.0
Sep-01	3476.0	54634.4	0.0	3476.0	216.7	12938.1	0.0	11.0	25.5	96.7	0.0
Oct-01	0.0	35765.8	0.0	0.0	0.0	5809.4	0.0	3.5	0.0	66.3	0.0
Nov-01	4022.9	8724.0	0.0	4022.9	213.7	1017.5	0.0	1.3	21.7	47.6	0.0
Dec-01	6092.7	2993.6	0.0	6092.7	352.8	363.0	0.0	2.3	23.6	49.6	0.0
Jan-02	3298.7	5641.8	1.1	3297.6	400.1	563.6	0.2	0.8	49.5	40.8	75.9
Feb-02	4146.8	26013.3	131.8	4015.0	786.3	5324.4	27.1	3.9	77.5	83.6	83.8
Mar-02	6895.5	1666.5	0.5	6895.0	780.6	88.1	0.1	1.0	46.2	21.6	88.4
Apr-02	17612.0	1451.8	1132.9	16479.1	4259.3	81.4	310.0	1.4	98.7	23.0	111.7
May-02	30202.4	1491.1	1223.1	28979.3	6556.0	139.1	271.8	2.3	88.6	38.1	90.8
Jun-02	12595.3	42614.2	1068.3	11527.0	2519.1	6036.8	214.5	9.3	81.7	57.8	82.0
Jul-02	2812.4	50895.0	0.0	2812.4	971.1	8770.0	0.0	7.7	141.0	70.4	0.0
Aug-02	6482.3	14857.9	1378.9	5103.4	1453.8	2014.0	302.9	5.3	91.6	55.4	89.7

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Sep-02	967.5	11738.4	0.0	967.5	258.8	1627.0	0.0	3.5	109.3	56.6	0.0
Oct-02	12963.4	3655.9	1188.8	11774.6	2610.1	379.0	289.0	2.0	82.3	42.3	99.3
Nov-02	7472.5	7800.2	63.0	7409.5	742.4	849.3	17.4	1.9	40.6	44.5	113.0
Dec-02	3677.5	15245.9	207.7	3469.8	636.6	1684.0	42.4	3.2	70.7	45.1	83.4
Jan-03	35466.7	9584.2	21243.2	14223.5	5991.3	701.6	3575.9	0.7	69.0	29.9	68.8
Feb-03	17634.2	10358.2	14560.1	3074.1	4111.1	1855.1	3421.3	1.6	95.2	73.1	96.0
Mar-03	4105.8	28221.9	1894.0	2211.8	1277.8	4698.4	615.0	4.8	127.1	68.0	132.6
Apr-03	19913.2	18610.2	7854.2	12059.0	4367.8	2838.9	1654.4	2.9	89.6	62.3	86.0
May-03	14658.5	18783.8	1891.4	12767.1	3082.9	3048.2	408.3	5.3	85.9	66.3	88.2
Jun-03	2214.4	43076.4	0.0	2214.4	479.6	7693.4	0.0	7.8	88.5	72.9	0.0
Jul-03	2614.8	10642.3	0.0	2614.8	424.8	1672.0	0.0	6.4	66.3	64.2	0.0
Aug-03	4785.1	59974.8	0.0	4785.1	975.2	10793.8	0.0	8.2	83.2	73.5	0.0
Sep-03	1571.0	24027.6	0.0	1571.0	358.4	3954.0	0.0	6.1	93.2	67.2	0.0
Oct-03	7157.0	8296.5	137.5	7019.5	1588.1	1374.2	37.0	1.0	90.7	67.6	109.8
Nov-03	9694.2	6547.6	802.5	8891.7	2232.0	594.4	186.9	2.1	94.0	37.1	95.1
Dec-03	6419.4	7989.2	2210.7	4208.7	1281.5	993.3	450.5	1.9	81.5	50.8	83.2
Jan-04	14873.0	5656.0	2245.3	12627.7	2431.5	527.5	283.4	1.8	66.8	38.1	51.6
Feb-04	9458.6	19748.8	136.4	9322.2	989.4	2058.9	22.4	2.7	42.7	42.6	67.1
Mar-04	23634.6	4824.5	1904.7	21729.9	5550.7	307.9	435.8	0.4	95.9	26.0	93.5
Apr-04	20977.6	4232.2	2833.2	18144.4	5462.3	494.3	764.4	1.3	106.4	47.7	110.2
May-04	40305.4	6302.2	6301.3	34004.1	11759.4	664.5	1899.9	1.1	119.2	43.1	123.1
Jun-04	12139.9	23844.0	1862.9	10277.0	1746.7	4180.6	417.3	6.0	58.7	71.6	91.5
Jul-04	18678.8	26552.6	3847.8	14831.0	3572.3	4600.7	880.7	7.4	78.1	70.8	93.5
Aug-04	45232.9	129099.2	0.0	45232.9	2777.8	21448.2	0.0	11.1	25.0	67.9	0.0
Sep-04	33110.7	133821.3	0.0	33110.7	3402.3	37523.7	0.0	9.1	42.0	114.5	0.0
Oct-04	24425.9	38869.1	2308.8	22117.1	2574.5	5976.2	857.8	2.0	43.0	62.8	151.7
Nov-04	10368.5	5115.3	3904.5	6464.0	4386.0	884.4	1651.6	0.7	172.8	70.6	172.8
Dec-04	36238.1	26695.0	19606.7	16631.4	10143.8	6255.5	7983.8	0.8	114.3	95.7	166.3
Jan-05	9524.4	4766.3	900.1	8624.3	3952.3	1055.3	441.6	0.7	169.5	90.5	200.4
Feb-05	19246.6	11604.6	4704.7	14541.9	11268.5	4573.2	2823.4	1.2	239.2	160.9	245.1
Mar-05	3088.9	41560.5	681.7	2407.2	1121.0	10895.1	471.9	5.7	148.2	107.0	282.7
Apr-05	25057.9	14247.4	13279.2	11778.7	11862.3	6657.8	6197.2	1.6	193.3	190.8	190.6
May-05	18613.7	18891.1	3433.3	15180.4	7384.8	7813.7	1409.9	5.4	162.1	169.0	167.7
Jun-05	3565.9	76072.6	0.0	3565.9	1016.7	17737.8	0.0	10.9	116.5	95.2	0.0
Jul-05	4673.7	33961.7	96.5	4577.2	1245.5	6659.0	20.3	6.3	108.9	80.1	86.0
Aug-05	484.6	18848.3	200.1	284.5	119.7	3409.9	54.5	5.1	100.8	73.9	111.2
Sep-05	3019.7	25154.6	0.0	3019.7	975.0	5266.5	0.0	3.9	131.9	85.5	0.0
Oct-05	4309.0	53422.3	0.0	4309.0	3624.8	21545.3	0.0	7.9	343.6	164.7	0.0
Nov-05	2181.8	9897.3	58.8	2123.0	1799.2	2789.7	42.6	2.1	336.8	115.1	296.2
Dec-05	5115.2	2002.9	1388.3	3726.9	4038.5	272.3	1145.2	0.3	322.5	55.5	336.9
Jan-06	24289.1	8970.7	8970.7	15318.4	20158.3	4252.2	7814.9	0.3	339.0	193.6	355.8
Feb-06	7109.6	21566.5	79.7	7029.9	4702.6	9414.2	53.9	2.9	270.2	178.3	276.4
Mar-06	16412.0	12128.3	1082.8	15329.2	13051.8	6500.3	839.1	2.3	324.8	218.9	316.5
Apr-06	24602.2	4004.0	4004.0	20598.2	15505.9	1446.3	2325.3	0.8	257.4	147.5	237.2
May-06	22584.2	18138.8	5638.2	16946.0	14902.2	8181.5	3658.3	4.2	269.5	184.2	265.0
Jun-06	20098.3	14256.3	2485.2	17613.1	11137.6	6008.5	1402.3	5.4	226.3	172.1	230.5
Jul-06	4161.0	49170.4	0.0	4161.0	1447.5	14893.7	0.0	8.3	142.1	123.7	0.0
Aug-06	6724.3	59099.9	25.9	6698.4	2610.4	28405.5	9.3	8.7	158.6	196.3	147.0
Sep-06	1727.5	64086.4	0.0	1727.5	1128.8	27081.7	0.0	5.5	266.9	172.6	0.0
Oct-06	17825.7	392.0	235.9	17589.8	3379.8	75.0	76.8	0.7	77.4	78.2	133.0
Nov-06	12900.1	2555.9	873.7	12026.4	5005.6	368.1	648.7	1.2	158.5	58.8	303.3
Dec-06	6196.0	7850.9	0.0	6196.0	1706.2	1344.0	0.0	2.3	112.5	69.9	0.0
Jan-07	10291.5	95.0	32.2	10259.3	3245.2	14.4	11.5	0.5	128.8	62.0	146.3
Feb-07	10299.6	167.7	154.2	10145.4	3892.4	14.0	59.0	1.2	154.4	34.1	156.2
Mar-07	17213.6	2720.0	2718.5	14495.1	6690.9	359.9	1184.6	0.3	158.7	54.1	178.0
Apr-07	12959.1	783.4	202.1	12757.0	4691.6	81.7	75.8	1.6	147.9	42.6	153.3

Appendix C.3
Monthly Event Datasets for Hydrologic Sub-Basin S8

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
May-79	3750.0	11620.0	31.0	3719.0	512.9	1641.4	3.6	4.7	55.9	57.7	47.1
Jun-79	16212.0	0.0	0.0	16212.0	2059.1	0.0	0.0	1.2	51.9	0.0	0.0
Jul-79	4816.0	8605.0	152.0	4664.0	460.8	1499.3	15.4	5.6	39.1	71.2	41.4
Aug-79	1681.0	28096.0	168.0	1513.0	122.9	5715.4	8.7	8.5	29.9	83.1	21.2
Sep-79	3598.0	57488.0	0.0	3598.0	1279.6	13293.5	0.0	9.4	145.2	94.4	0.0
Oct-79	540.0	10754.0	0.0	540.0	64.0	1954.6	0.0	2.3	48.4	74.3	0.0
Nov-79	0.0	20054.0	0.0	0.0	0.0	2170.0	0.0	2.7	0.0	44.2	0.0
Dec-79	180.0	15785.0	39.0	141.0	27.1	1418.1	3.4	2.9	61.6	36.7	35.8
Jan-80	13729.0	33808.0	9304.0	4425.0	1896.4	5297.6	966.2	4.9	56.4	64.0	42.4
Feb-80	703.0	13702.0	234.0	469.0	109.8	2556.6	25.0	1.9	63.8	76.2	43.6
Mar-80	3107.0	9960.0	0.0	3107.0	614.4	1902.7	0.0	2.8	80.8	78.0	0.0
Apr-80	1305.0	20854.0	282.0	1023.0	258.8	3799.1	31.0	4.2	81.0	74.4	44.9
May-80	8512.0	9638.0	650.0	7862.0	1103.1	1809.8	72.3	4.5	52.9	76.7	45.4
Jun-80	18778.0	880.0	267.0	18511.0	1763.8	110.7	30.4	2.7	38.4	51.4	46.5
Jul-80	8816.0	4576.0	576.0	8240.0	878.0	821.9	65.8	4.8	40.7	73.4	46.7
Aug-80	1414.0	28358.0	0.0	1414.0	193.4	8839.2	0.0	6.6	55.9	127.3	0.0
Sep-80	0.0	21904.0	0.0	0.0	0.0	6696.4	0.0	3.6	0.0	124.9	0.0
Oct-80	7390.0	4691.0	151.0	7239.0	362.1	901.7	18.1	1.1	20.0	78.5	49.1
Nov-80	4270.0	6872.0	240.0	4030.0	270.0	509.2	29.1	3.1	25.8	30.3	49.6
Dec-80	3510.0	3510.0	192.0	3318.0	449.0	275.6	23.5	1.1	52.2	32.1	50.0
Jan-81	5806.0	17.0	17.0	5789.0	581.7	1.9	2.1	0.5	40.9	45.9	50.8
Feb-81	1551.0	10918.0	100.0	1451.0	167.5	1366.7	12.5	3.0	44.1	51.1	51.2
Mar-81	5958.0	2485.0	93.0	5865.0	722.7	390.6	11.8	0.9	49.5	64.2	51.7
Apr-81	22537.0	9194.0	6519.0	16018.0	2381.3	2712.2	693.3	0.1	43.2	120.5	43.4
May-81	24426.0	7469.0	7469.0	16957.0	1689.9	2950.3	625.6	2.6	28.3	161.3	34.2
Jun-81	7371.0	10175.0	4047.0	3324.0	1235.9	3590.3	323.3	6.6	68.5	144.1	32.6
Jul-81	7566.0	477.0	214.0	7352.0	967.4	174.8	16.3	6.2	52.2	149.7	31.1
Aug-81	916.0	33060.0	0.0	916.0	99.4	5338.9	0.0	10.7	44.3	66.0	0.0
Sep-81	0.0	25289.0	0.0	0.0	0.0	6760.6	0.0	4.0	0.0	109.2	0.0
Oct-81	3361.0	579.0	189.0	3172.0	316.0	264.1	12.6	0.3	38.4	186.2	27.2
Nov-81	2668.0	9679.0	322.0	2346.0	319.3	3206.4	21.3	1.7	48.9	135.3	27.0
Dec-81	4748.0	0.0	0.0	4748.0	595.1	0.0	0.0	0.0	51.2	0.0	0.0
Jan-82	3743.0	0.0	0.0	3743.0	394.4	0.0	0.0	0.4	43.0	0.0	0.0
Feb-82	808.0	0.0	0.0	808.0	79.9	0.0	0.0	0.9	40.4	0.0	0.0
Mar-82	2451.0	5497.0	0.0	2451.0	219.8	2263.3	0.0	1.6	36.6	168.1	0.0
Apr-82	9354.0	8046.0	2987.0	6367.0	748.5	4514.6	247.8	1.6	32.7	229.2	33.9
May-82	12299.0	16136.0	0.0	12299.0	4268.3	9682.6	0.0	6.7	141.8	245.1	0.0
Jun-82	14781.0	76457.0	0.0	14781.0	26847.8	96769.1	0.0	8.7	741.8	516.9	0.0
Jul-82	12749.0	57777.0	0.0	12749.0	11831.9	31769.3	0.0	3.7	379.0	224.5	0.0
Aug-82	9870.0	51287.0	0.0	9870.0	5287.1	16937.0	0.0	5.7	218.8	134.9	0.0
Sep-82	0.0	36142.0	0.0	0.0	0.0	12710.6	0.0	5.5	0.0	143.6	0.0
Oct-82	0.0	32560.0	0.0	0.0	0.0	18665.6	0.0	2.0	0.0	234.1	0.0
Nov-82	2164.0	1567.0	315.0	1849.0	425.2	1013.0	33.0	0.6	80.3	264.0	42.7
Dec-82	7132.0	0.0	0.0	7132.0	1468.2	0.0	0.0	0.4	84.1	0.0	0.0
Jan-83	5382.0	13156.0	0.0	5382.0	1101.3	5324.9	0.0	3.8	83.6	165.3	0.0
Feb-83	470.0	37070.0	0.0	470.0	86.3	18941.3	0.0	6.9	75.0	208.7	0.0
Mar-83	98.0	23011.0	0.0	98.0	18.0	7399.3	0.0	4.8	75.0	131.3	0.0
Apr-83	2532.0	7102.0	85.0	2447.0	480.7	1644.3	10.1	1.1	77.5	94.5	48.8
May-83	18676.0	0.0	0.0	18676.0	3486.1	0.0	0.0	1.0	76.2	0.0	0.0
Jun-83	8261.0	36930.0	0.0	8261.0	2742.6	35562.0	0.0	5.9	135.6	393.3	0.0
Jul-83	5293.0	7424.0	276.0	5017.0	1349.2	5108.9	35.6	2.2	104.2	281.1	52.7
Aug-83	1453.0	23845.0	0.0	1453.0	401.1	10512.2	0.0	3.4	112.8	180.1	0.0
Sep-83	1585.0	25393.0	0.0	1585.0	500.9	9228.7	0.0	2.1	129.1	148.4	0.0
Oct-83	3651.0	30898.0	0.0	3651.0	1308.1	12748.4	0.0	4.0	146.3	168.5	0.0
Nov-83	734.0	4538.0	227.0	507.0	127.1	1518.5	32.0	0.6	70.7	136.7	57.6
Dec-83	2445.0	11892.0	579.0	1866.0	477.5	3772.3	83.2	4.4	79.8	129.6	58.7
Jan-84	3842.0	6344.0	1361.0	2481.0	588.5	2118.3	201.1	0.3	62.5	136.4	60.3
Feb-84	18316.0	13336.0	8586.0	9730.0	2770.6	3447.8	1276.1	1.7	61.8	105.6	60.7
Mar-84	24126.0	27701.0	11135.0	12991.0	3897.0	8206.0	1631.5	3.7	65.9	121.0	59.8
Apr-84	22061.0	20392.0	9745.0	12316.0	3807.5	6961.9	1392.9	1.7	70.5	139.5	58.4
May-84	17018.0	9884.0	2605.0	14413.0	3053.6	3726.1	364.0	5.1	73.3	154.0	57.1
Jun-84	6505.0	8947.0	0.0	6505.0	1228.3	4221.4	0.0	4.1	77.2	192.7	0.0
Jul-84	2194.0	31416.0	0.0	2194.0	663.8	28957.1	0.0	7.6	123.5	376.5	0.0
Aug-84	693.0	12511.0	0.0	693.0	235.9	8602.1	0.0	4.0	139.0	280.8	0.0
Sep-84	5476.0	19044.0	92.0	5384.0	1296.6	15797.2	11.8	4.9	96.7	338.8	52.3
Oct-84	5644.0	17691.0	0.0	5644.0	1418.8	10965.9	0.0	0.4	102.7	253.1	0.0
Nov-84	8584.0	13578.0	0.0	8584.0	1885.4	2886.9	0.0	2.8	89.7	86.9	0.0
Dec-84	5758.0	9764.0	186.0	5572.0	782.5	1022.8	21.9	0.3	55.5	42.8	48.1
Jan-85	11161.0	13317.0	2287.0	8874.0	1372.2	1232.1	283.5	1.0	50.2	37.8	50.6
Feb-85	25024.0	31956.0	14064.0	10960.0	3738.4	5462.8	2110.7	0.1	61.0	69.8	61.3

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Mar-85	17123.0	41736.0	11342.0	5781.0	2670.4	15405.5	1759.1	1.8	63.7	150.8	63.3
Apr-85	10068.0	34133.0	8016.0	2052.0	1729.8	8608.9	1397.0	6.7	70.2	103.0	71.2
May-85	11644.0	24933.0	8973.0	2671.0	1962.4	5035.7	1586.6	2.8	68.9	82.5	72.2
Jun-85	8517.0	19392.0	5196.0	3321.0	1364.0	5430.5	921.6	6.5	65.4	114.4	72.4
Jul-85	3432.0	44829.0	0.0	3432.0	983.4	23964.6	0.0	11.3	117.0	218.3	0.0
Aug-85	2895.0	22763.0	0.0	2895.0	905.9	11207.5	0.0	7.1	127.8	201.1	0.0
Sep-85	576.0	27769.0	0.0	576.0	175.2	13981.3	0.0	8.3	124.2	205.6	0.0
Oct-85	1237.0	15489.0	0.0	1237.0	359.0	8877.0	0.0	2.8	118.6	234.0	0.0
Nov-85	2056.0	2854.0	41.0	2015.0	266.2	438.7	7.4	1.4	52.9	62.8	74.0
Dec-85	2240.0	2686.0	63.0	2177.0	219.6	919.5	11.4	1.5	40.1	139.8	74.2
Jan-86	2713.0	9500.0	0.0	2713.0	324.0	2920.8	0.0	2.7	48.8	125.6	0.0
Feb-86	3290.0	4046.0	119.0	3171.0	569.2	1202.6	21.8	1.4	70.6	121.4	74.9
Mar-86	1626.0	11070.0	503.0	1123.0	335.1	3376.9	92.4	3.5	84.2	124.6	75.0
Apr-86	11399.0	777.0	255.0	11144.0	1392.0	263.8	47.1	0.5	49.9	138.7	75.4
May-86	11238.0	45.0	45.0	11193.0	1023.0	13.4	8.3	2.2	37.2	121.2	75.7
Jun-86	5373.0	56469.0	106.0	5267.0	1216.6	71396.8	19.7	14.0	92.4	516.3	75.9
Jul-86	4953.0	53960.0	0.0	4953.0	1416.9	50537.8	0.0	6.4	116.8	382.5	0.0
Aug-86	6577.0	49811.0	0.0	6577.0	1863.1	17189.5	0.0	8.4	115.7	140.9	0.0
Sep-86	3585.0	43448.0	0.0	3585.0	1009.6	14275.2	0.0	3.6	115.0	134.2	0.0
Oct-86	0.0	9376.0	0.0	0.0	0.0	2234.2	0.0	3.6	0.0	97.3	0.0
Nov-86	1888.0	5809.0	2.0	1886.0	244.1	1803.5	0.4	0.3	52.8	126.8	77.5
Dec-86	5077.0	10409.0	244.0	4833.0	678.1	3199.4	46.4	4.5	54.5	125.5	77.7
Jan-87	1383.0	16083.0	267.0	1116.0	221.7	5286.7	51.1	0.9	65.5	134.3	78.2
Feb-87	1774.0	5680.0	212.0	1562.0	282.9	1269.6	40.6	1.2	65.1	91.3	78.3
Mar-87	92.0	16152.0	0.0	92.0	24.4	3809.6	0.0	5.9	108.5	96.3	0.0
Apr-87	9017.0	5579.0	1208.0	7809.0	1744.0	1228.0	233.5	0.3	79.0	89.9	79.0
May-87	11526.0	1916.0	316.0	11210.0	2255.0	421.7	50.9	2.7	79.9	89.9	65.8
Jun-87	16775.0	10508.0	2705.0	14070.0	2221.9	1191.5	304.5	6.4	54.1	46.3	46.0
Jul-87	1730.0	14089.0	158.0	1572.0	185.1	4106.6	17.4	5.8	43.7	119.0	44.9
Aug-87	5789.0	5803.0	231.0	5558.0	623.3	2032.6	25.3	3.4	43.9	143.1	44.7
Sep-87	1698.0	13299.0	201.0	1497.0	200.9	2372.5	21.9	8.8	48.3	72.9	44.6
Oct-87	797.0	14527.0	2.0	795.0	147.1	9799.6	0.2	2.5	75.3	275.5	44.3
Nov-87	7984.0	41542.0	0.0	7984.0	5040.9	26033.5	0.0	6.7	257.9	256.0	0.0
Dec-87	1581.0	5112.0	61.0	1520.0	224.5	3934.1	6.6	0.1	58.1	314.3	44.1
Jan-88	2040.0	3547.0	381.0	1659.0	256.0	1019.0	48.8	1.5	51.2	117.3	52.3
Feb-88	5064.0	12371.0	3537.0	1527.0	1353.9	5120.4	958.9	1.6	109.2	169.1	110.7
Mar-88	23522.0	28408.0	11486.0	12036.0	4726.8	11294.6	2236.5	1.7	82.1	162.4	79.5
Apr-88	27786.0	15970.0	9994.0	17792.0	4201.1	4564.2	1396.4	2.3	61.8	116.8	57.1
May-88	11021.0	2464.0	414.0	10607.0	2363.6	582.2	57.1	2.2	87.6	96.5	56.4
Jun-88	5209.0	8553.0	352.0	4857.0	1071.8	2727.3	55.6	7.5	84.0	130.2	64.5
Jul-88	1106.0	30760.0	0.0	1106.0	162.6	17550.0	0.0	9.8	60.0	233.0	0.0
Aug-88	17320.0	52726.0	0.0	17320.0	9533.9	26847.1	0.0	7.8	224.9	208.0	0.0
Sep-88	6772.0	3229.0	153.0	6619.0	1072.0	2052.6	38.2	1.5	64.7	259.6	102.0
Oct-88	18889.0	51.0	51.0	18838.0	2582.3	22.6	13.7	0.1	55.8	180.8	110.0
Nov-88	8331.0	6416.0	156.0	8175.0	1752.7	2238.2	45.4	2.6	85.9	142.5	118.9
Dec-88	9747.0	1376.0	1167.0	8580.0	2786.4	321.7	377.8	0.3	116.8	95.5	132.2
Jan-89	6278.0	1939.0	402.0	5876.0	1123.7	325.5	114.5	0.9	73.1	68.6	116.4
Feb-89	16443.0	16016.0	5959.0	10484.0	3395.6	3669.1	1281.6	0.0	84.3	93.6	87.8
Mar-89	14693.0	29643.0	5042.0	9651.0	2714.8	6642.8	964.2	2.2	75.5	91.5	78.1
Apr-89	15499.0	35780.0	7002.0	8497.0	2713.8	9083.3	1207.7	4.8	71.5	103.7	70.4
May-89	20025.0	32983.0	7688.0	12337.0	2309.8	7898.6	972.1	3.0	47.1	97.8	51.6
Jun-89	14376.0	26286.0	256.0	14120.0	1264.3	5967.0	33.2	6.5	35.9	92.7	52.9
Jul-89	4556.0	21800.0	1514.0	3042.0	308.0	12137.4	202.8	8.3	27.6	227.4	54.7
Aug-89	1715.0	29130.0	130.0	1585.0	128.8	13442.8	17.9	5.3	30.6	188.5	56.3
Sep-89	249.0	34240.0	0.0	249.0	48.7	23006.5	0.0	8.1	79.9	274.5	0.0
Oct-89	0.0	11305.0	0.0	0.0	0.0	3840.6	0.0	1.9	0.0	138.7	0.0
Nov-89	10218.0	0.0	0.0	10218.0	1369.3	0.0	0.0	0.3	54.7	0.0	0.0
Dec-89	2780.0	0.0	0.0	2780.0	332.9	0.0	0.0	1.4	48.9	0.0	0.0
Jan-90	4076.0	16661.0	1643.0	2433.0	715.2	1948.6	298.5	0.9	71.7	47.8	74.2
Feb-90	10337.0	27134.0	6887.0	3450.0	2201.9	6021.1	1475.3	1.9	87.0	90.6	87.5
Mar-90	17794.0	24171.0	4460.0	13334.0	4209.8	5749.3	1081.0	1.7	96.6	97.1	99.0
Apr-90	13006.0	8873.0	1105.0	11901.0	2452.0	1583.1	266.9	1.7	77.0	72.9	98.6
May-90	3928.0	359.0	12.0	3916.0	509.2	58.4	2.7	6.1	52.9	66.4	92.7
Jun-90	1141.0	6671.0	15.0	1126.0	164.1	1137.1	3.3	4.2	58.7	69.6	90.4
Jul-90	549.0	17463.0	0.0	549.0	67.1	3873.7	0.0	6.3	49.9	90.6	0.0
Aug-90	1540.0	20305.0	0.0	1540.0	210.6	4289.6	0.0	8.4	55.9	86.3	0.0
Sep-90	2813.0	5443.0	0.0	2813.0	1641.0	787.8	0.0	1.9	238.3	59.1	0.0
Oct-90	1835.0	9095.0	0.0	1835.0	1036.3	2966.9	0.0	1.9	230.7	133.2	0.0
Nov-90	2301.0	0.0	0.0	2301.0	214.2	0.0	0.0	0.7	38.0	0.0	0.0
Dec-90	3331.0	0.0	0.0	3331.0	363.9	0.0	0.0	0.3	44.6	0.0	0.0

Month	Flow (cfsd) IN	Flow (cfsd) OUT	Flow (cfsd) Flow Thru	Flow (cfsd) Supplemental Inflow	Load (kg) IN	Load (kg) OUT	Load (kg) THRU	Rainfall (in)	Conc (ppb) IN	Conc (ppb) OUT	Conc (ppb) THRU
Jan-91	7737.3	33775.4	0.0	7737.3	1356.9	19792.1	0.0	7.9	71.6	239.4	0.0
Feb-91	4433.5	5312.2	0.0	4433.5	635.2	2231.9	0.0	1.9	58.5	171.6	0.0
Mar-91	5169.4	4703.7	46.6	5122.8	841.3	1963.8	7.1	2.1	66.5	170.5	62.3
Apr-91	6657.2	16166.1	40.0	6617.2	1199.2	4407.1	5.7	5.5	73.6	111.4	58.6
May-91	10742.6	24740.4	0.0	10742.6	4537.7	7995.1	0.0	6.9	172.5	132.0	0.0
Jun-91	2188.2	14325.9	0.0	2188.2	1532.6	4677.4	0.0	7.9	286.1	133.4	0.0
Jul-91	465.0	20185.1	0.0	465.0	81.0	4645.2	0.0	8.1	71.1	94.0	0.0
Aug-91	0.0	24108.4	0.0	0.0	0.0	3970.2	0.0	6.1	0.0	67.3	0.0
Sep-91	0.0	15520.6	0.0	0.0	0.0	4234.6	0.0	4.6	0.0	111.4	0.0
Oct-91	811.3	4919.0	387.5	423.8	98.0	1119.3	39.2	3.2	49.3	92.9	41.4
Nov-91	5448.8	5193.0	812.7	4636.1	587.6	1131.1	75.7	2.9	44.1	89.0	38.0
Dec-91	6807.8	5996.7	1238.3	5569.5	533.3	817.6	99.5	0.5	32.0	55.7	32.8
Jan-92	15214.0	15953.1	6398.0	8816.0	1388.4	1807.0	500.9	0.8	37.3	46.2	32.0
Feb-92	6742.5	28086.3	1786.0	4956.5	862.4	4038.8	171.6	3.7	52.3	58.8	39.2
Mar-92	8813.6	25201.7	5163.0	3650.6	1579.1	6865.1	748.0	1.7	73.2	111.3	59.2
Apr-92	4269.6	21831.6	1260.0	3009.6	728.9	3489.1	207.9	3.4	69.7	65.3	67.4
May-92	30463.0	21532.4	8329.0	22134.0	4373.4	3004.4	1215.6	0.8	58.6	57.0	59.6
Jun-92	7273.6	40263.0	42.6	7231.0	1134.3	10202.5	5.7	16.6	63.7	103.5	55.0
Jul-92	35724.0	51155.0	28165.0	7559.0	7414.6	16087.4	3276.7	4.8	84.7	128.4	47.5
Aug-92	23491.8	39256.0	4248.4	19243.4	6583.8	16143.6	336.8	10.9	114.5	168.0	32.4
Sep-92	57310.6	58490.0	35738.0	21572.6	7769.7	19900.4	1887.0	4.3	55.4	139.0	21.6
Oct-92	12564.8	5089.0	1448.0	11116.8	2275.0	1124.7	125.1	0.7	73.9	90.3	35.3
Nov-92	13382.2	9718.8	877.7	12504.5	2055.0	1123.8	88.8	4.4	62.7	47.2	41.3
Dec-92	4969.4	1422.0	1352.0	3617.4	573.4	105.4	147.4	0.5	47.1	30.3	44.5
Jan-93	40654.8	46296.0	21199.0	19455.8	7992.9	12754.7	2476.6	6.8	80.3	112.5	47.7
Feb-93	40290.0	51250.0	40290.0	0.0	5154.7	9387.3	5038.3	1.9	52.3	74.8	51.1
Mar-93	19843.0	23385.0	17380.0	2463.0	3830.4	6008.1	3307.1	2.3	78.8	104.9	77.7
Apr-93	44413.7	41849.0	40232.8	4180.9	11069.9	10659.6	9803.7	3.5	101.8	104.0	99.5
May-93	21065.8	4719.0	1251.0	19814.8	4974.5	1278.6	289.8	4.2	96.4	110.7	94.6
Jun-93	8946.3	12042.0	1260.9	7685.4	1966.1	3511.0	269.3	6.9	89.8	119.1	87.2
Jul-93	12309.5	1504.5	545.3	11764.2	2193.6	194.9	89.5	6.6	72.8	52.9	67.0
Aug-93	12684.6	6334.3	844.0	11840.6	1836.0	843.1	103.0	4.9	59.1	54.4	49.8
Sep-93	19192.1	24814.5	1593.3	17598.8	3911.4	4572.7	212.8	6.4	83.2	75.2	54.5
Oct-93	19122.1	21822.2	854.0	18268.1	3892.0	10080.7	130.6	4.2	83.1	188.7	62.5
Nov-93	13963.2	4420.7	1704.0	12259.2	2078.5	907.9	209.6	1.2	60.8	83.9	50.2
Dec-93	7823.9	1847.7	1803.2	6020.7	915.0	140.9	184.0	0.6	47.8	31.2	41.7
Jan-94	6951.1	10254.8	1546.5	5404.6	803.5	918.9	181.9	3.0	47.2	36.6	48.1
Feb-94	6201.3	14093.3	1339.6	4861.7	722.5	2134.6	177.3	3.1	47.6	61.9	54.1
Mar-94	6777.7	3948.4	790.8	5986.9	1012.4	484.3	121.9	3.0	61.0	50.1	62.9
Apr-94	13285.5	5655.6	1366.1	11919.4	2098.3	890.9	230.1	4.8	64.6	64.3	68.8
May-94	17751.6	3207.3	1175.6	16576.0	3041.0	503.6	197.2	4.3	70.0	64.2	68.5
Jun-94	8878.1	19534.5	1553.7	7324.4	1665.4	3789.9	258.0	7.0	76.6	79.3	67.8
Jul-94	10709.8	16675.3	679.9	10029.9	4708.5	7929.7	111.5	6.9	179.5	194.2	67.0
Aug-94	15103.3	21284.4	1014.0	14089.3	7926.9	6355.9	154.1	7.5	214.4	122.0	62.1
Sep-94	13578.2	53101.2	1291.0	12287.2	7177.4	17654.9	213.7	7.4	215.9	135.8	67.6
Oct-94	16696.6	34941.0	1500.0	15196.6	6667.2	13998.9	216.0	4.1	163.1	163.6	58.8
Nov-94	13433.5	32780.0	1255.1	12178.4	4588.1	13597.9	224.9	6.5	139.5	169.4	73.2
Dec-94	13010.7	50738.0	1439.0	11571.7	5262.5	11687.6	315.5	7.7	165.2	94.1	89.5
Jan-95	8369.2	26444.0	552.5	7816.7	2993.3	4138.6	130.3	2.9	146.0	63.9	96.3
Feb-95	3641.8	17315.0	810.1	2831.7	802.5	2619.2	203.4	1.7	90.0	61.8	102.6
Mar-95	2854.5	7324.0	1321.0	1533.5	761.9	1127.0	350.8	2.0	109.0	62.8	108.4
Apr-95	12273.0	3684.6	2166.1	10106.9	3500.9	605.9	602.5	1.2	116.5	67.2	113.6
May-95	6616.2	6902.4	2173.0	4443.2	2000.4	1003.8	641.3	4.1	123.5	59.4	120.5
Jun-95	2933.6	23950.6	897.3	2036.3	606.0	3769.4	277.8	8.6	84.3	64.3	126.5
Jul-95	4122.9	43906.6	1500.0	2622.9	1626.0	10712.5	487.4	7.2	161.1	99.7	132.7
Aug-95	9986.4	45549.0	1286.7	8699.7	6200.2	13041.1	435.9	9.8	253.6	116.9	138.4
Sep-95	18410.7	51255.0	1350.0	17060.7	9554.9	19443.8	259.8	8.2	211.9	155.0	78.6
Oct-95	20249.7	60439.0	688.9	19560.8	9083.5	22182.6	90.0	10.5	183.2	149.9	53.4
Nov-95	5642.6	5801.0	907.9	4734.7	1261.5	1375.8	158.8	0.2	91.3	96.9	71.4
Dec-95	3398.9	1745.0	698.8	2700.1	564.0	189.5	118.4	0.6	67.8	44.3	69.2
Jan-96	556.8	4378.0	269.3	287.5	94.6	409.9	66.4	1.2	69.4	38.2	100.6
Feb-96	7170.0	5849.6	1886.0	5284.0	2160.5	964.0	609.7	0.5	123.1	67.3	132.0
Mar-96	6776.2	10627.8	1647.2	5129.0	1742.5	1522.8	566.7	3.7	105.0	58.5	140.5
Apr-96	16046.2	14253.2	5985.3	10060.9	5006.0	2583.3	2225.7	2.1	127.4	74.0	151.9
May-96	7128.8	29796.9	1035.5	6093.3	1432.7	6032.3	252.1	9.6	82.1	82.7	99.4
Jun-96	5472.6	54292.4	322.6	5150.0	3385.3	13767.7	75.1	11.6	252.6	103.6	95.1
Jul-96	9305.6	17289.0	688.6	8617.0	3872.4	4628.7	153.1	4.0	169.9	109.3	90.8
Aug-96	2306.4	13767.2	1066.4	1240.0	541.5	2748.5	230.6	6.4	95.9	81.6	88.3
Sep-96	4229.9	4056.5	711.2	3518.7	869.2	622.0	144.9	3.3	83.9	62.6	83.2
Oct-96	1796.4	34950.7	641.9	1154.5	392.0	8189.7	126.3	6.1	89.1	95.7	80.4

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Nov-96	16088.5	8229.3	7082.5	9006.0	2288.3	1104.5	1316.2	2.1	58.1	54.8	75.9
Dec-96	15399.0	9979.1	6052.7	9346.3	2814.0	980.3	1099.7	0.3	74.6	40.1	74.2
Jan-97	7757.6	12941.0	2868.8	4888.8	1786.1	1210.8	493.7	1.2	94.1	38.2	70.3
Feb-97	4501.3	11550.2	999.2	3502.1	679.3	1034.7	162.8	1.2	61.7	36.6	66.6
Mar-97	9836.0	5428.7	1604.7	8231.3	1498.8	621.1	252.4	2.4	62.3	46.7	64.2
Apr-97	16973.1	20536.9	4153.4	12819.7	2145.0	3447.8	620.9	5.9	51.6	68.6	61.1
May-97	7961.2	20487.0	1063.3	6897.9	5458.4	2048.5	147.5	4.5	280.0	40.8	56.7
Jun-97	4951.1	37679.1	383.0	4568.1	642.1	4215.0	50.2	7.3	52.9	45.7	53.5
Jul-97	3198.6	6619.4	88.2	3110.4	412.3	1247.9	10.8	5.6	52.6	77.0	49.8
Aug-97	5773.2	42820.7	202.7	5570.5	3788.0	7569.0	23.3	7.5	268.0	72.2	47.0
Sep-97	2372.0	16988.0	373.9	1998.1	373.5	2318.9	40.1	4.6	64.3	55.7	43.8
Oct-97	1103.2	4767.7	360.7	742.5	154.9	510.8	47.3	0.9	57.3	43.8	53.6
Nov-97	6306.5	4526.8	2191.7	4114.8	813.0	402.5	351.5	3.7	52.7	36.3	65.5
Dec-97	11375.0	39192.2	75.4	11299.6	985.9	5142.3	13.0	4.8	35.4	53.6	70.3
Jan-98	9143.7	7113.3	333.9	8809.8	741.6	711.2	67.2	1.7	33.1	40.8	82.2
Feb-98	6597.0	26858.7	212.9	6384.1	1509.1	2770.8	49.8	4.5	93.4	42.1	95.6
Mar-98	5026.6	23246.9	461.9	4564.7	819.2	2922.5	118.5	5.7	66.6	51.3	104.8
Apr-98	14247.3	3390.0	2593.5	11653.8	3926.5	450.6	705.1	0.8	112.6	54.3	111.0
May-98	35895.3	21389.4	19384.9	16510.4	9411.5	4985.9	4852.1	2.6	107.1	95.2	102.2
Jun-98	39797.2	17492.3	22433.7	17363.5	7588.7	3495.3	4407.4	2.7	77.9	81.6	80.2
Jul-98	13037.7	20064.1	5033.6	8004.1	1660.3	2978.7	706.3	7.3	52.0	60.6	57.3
Aug-98	7155.1	32982.6	810.4	6344.7	1200.8	11302.4	116.1	9.8	68.5	140.0	58.5
Sep-98	5980.3	26142.4	340.6	5639.7	1536.1	5823.5	49.8	6.9	104.9	91.0	59.7
Oct-98	3010.4	4154.2	129.6	2880.8	723.7	829.9	19.4	1.1	98.2	81.6	61.0
Nov-98	17151.1	53932.7	299.3	16851.8	5559.4	21038.3	47.1	9.1	132.4	159.3	64.3
Dec-98	1215.0	3610.4	556.5	658.5	192.0	523.5	100.9	0.8	64.5	59.3	74.0
Jan-99	1461.0	6005.3	64.0	1397.0	141.9	828.5	13.2	2.2	39.7	56.3	84.2
Feb-99	3706.6	3131.1	515.5	3191.1	641.2	268.8	113.0	0.9	70.6	35.0	89.5
Mar-99	14689.8	2639.7	5693.3	8996.5	2622.9	180.7	1039.4	0.5	72.9	28.0	74.6
Apr-99	28938.5	26172.0	13619.1	15319.4	5794.6	4387.7	2695.1	1.7	81.8	68.4	80.8
May-99	13848.0	19592.4	6580.2	7267.8	5392.8	4772.0	2385.4	4.6	159.1	99.5	148.1
Jun-99	10343.3	42762.0	1127.5	9215.8	3047.9	8201.0	707.2	10.8	120.3	78.3	256.2
Jul-99	10351.3	47762.9	710.1	9641.2	4851.9	17840.1	472.1	6.2	191.5	152.6	271.5
Aug-99	4156.2	12059.0	445.3	3710.9	799.5	1752.8	267.2	4.0	78.6	59.3	245.1
Sep-99	17841.5	50667.7	1022.3	16819.2	6999.6	11670.7	570.9	11.7	160.2	94.0	228.1
Oct-99	32913.8	77623.4	1188.0	31725.8	13103.9	23276.7	607.3	9.7	162.6	122.4	208.8
Nov-99	4475.8	8794.3	557.8	3918.0	909.1	2507.9	263.1	0.8	83.0	116.5	192.6
Dec-99	1751.0	1047.8	33.1	1717.9	498.5	136.3	13.7	0.3	116.3	53.1	169.1
Jan-00	6799.5	667.7	412.5	6387.0	2366.7	92.3	150.0	0.9	142.1	56.5	148.5
Feb-00	3505.5	777.7	127.8	3377.7	1214.8	90.3	45.7	1.1	141.6	47.4	145.9
Mar-00	13218.2	4895.3	2397.0	10821.2	4503.9	1053.1	844.0	1.9	139.1	87.9	143.8
Apr-00	16207.9	21749.8	4433.0	11774.9	4628.6	5857.4	1529.9	4.6	116.6	110.0	141.0
May-00	45630.9	8437.7	21615.6	24015.3	11291.5	1765.9	5531.7	1.4	101.1	85.5	104.5
Jun-00	15104.8	9888.3	3109.5	11995.3	3738.2	3093.4	741.8	4.6	101.1	127.8	97.4
Jul-00	3359.2	32833.0	398.9	2960.3	788.7	5124.5	106.0	6.6	95.9	63.8	108.6
Aug-00	8476.2	12337.9	983.0	7493.2	2300.3	2100.7	293.8	4.8	110.9	69.5	122.1
Sep-00	15128.7	23505.3	1239.6	13889.1	3716.8	5167.7	393.0	6.4	100.3	89.8	129.5
Oct-00	15290.2	36888.8	470.9	14819.3	3304.6	11055.7	120.0	6.4	88.3	122.4	104.1
Nov-00	5782.3	1376.5	190.2	5592.1	639.2	301.7	16.9	0.1	45.1	89.5	36.4
Dec-00	4838.9	451.0	0.0	4838.9	772.9	38.2	0.0	0.7	65.2	34.6	0.0
Jan-01	2972.9	140.6	215.2	2757.7	413.9	17.2	28.0	0.7	56.9	50.1	53.1
Feb-01	3495.5	711.8	253.4	3242.1	426.6	78.2	32.8	0.3	49.8	44.8	52.8
Mar-01	3586.5	5499.5	375.8	3210.7	612.1	857.9	52.5	4.9	69.7	63.7	57.1
Apr-01	6772.4	937.5	370.4	6402.0	933.5	171.4	51.5	0.1	56.3	74.7	56.8
May-01	7211.0	221.1	206.3	7004.7	889.9	94.1	24.7	3.0	50.4	173.9	48.9
Jun-01	540.2	6956.5	0.0	540.2	54.1	1468.5	0.0	6.0	40.9	86.2	0.0
Jul-01	10074.7	28622.4	0.0	10074.7	1687.2	3803.2	0.0	7.9	68.4	54.3	0.0
Aug-01	15566.3	31817.6	0.0	15566.3	5754.0	6080.7	0.0	5.9	151.0	78.1	0.0
Sep-01	27915.9	49914.9	0.0	27915.9	5311.5	12282.5	0.0	7.7	77.7	100.5	0.0
Oct-01	36356.2	36005.4	0.0	36356.2	6116.3	5362.3	0.0	2.3	68.7	60.8	0.0
Nov-01	9144.2	10698.4	0.0	9144.2	1522.1	1141.8	0.0	1.3	68.0	43.6	0.0
Dec-01	2267.3	4055.7	8.7	2258.6	520.8	467.4	1.5	2.2	93.8	47.1	69.2
Jan-02	17157.7	5658.6	680.3	16477.4	1486.2	555.3	145.6	0.8	35.4	40.1	87.4
Feb-02	21120.5	15416.2	858.5	20262.0	2570.0	1336.6	204.0	3.5	49.7	35.4	97.0
Mar-02	14051.6	3268.8	2737.6	11314.0	1644.0	303.2	581.0	2.0	47.8	37.9	86.7
Apr-02	22920.2	129.3	4998.1	17922.1	4236.2	17.2	1161.4	1.1	75.5	54.3	94.9
May-02	18861.0	1439.3	1416.6	17444.4	3461.2	131.9	282.3	2.9	75.0	37.5	81.4
Jun-02	16063.8	32063.0	0.0	16063.8	3969.6	4997.4	0.0	9.3	100.9	63.6	0.0
Jul-02	35686.4	59782.1	0.0	35686.4	13680.1	16493.9	0.0	7.8	156.6	112.7	0.0
Aug-02	28970.9	32727.3	0.0	28970.9	9624.7	6459.7	0.0	5.2	135.7	80.6	0.0

	Flow (cfsd)				Load (kg)				Conc (ppb)		
Month	IN	OUT	Flow Thru	Supplemental Inflow	IN	OUT	THRU	Rainfall (in)	IN	OUT	THRU
Sep-02	31448.4	25402.5	0.0	31448.4	5796.7	6181.3	0.0	3.6	75.3	99.4	0.0
Oct-02	10036.6	10371.7	0.0	10036.6	2078.4	1879.3	0.0	2.2	84.6	74.0	0.0
Nov-02	5943.4	7258.4	24.9	5918.5	1063.9	1099.3	4.9	1.6	73.1	61.9	80.0
Dec-02	23037.0	22415.6	572.5	22464.5	4002.7	2618.9	100.9	3.8	70.9	47.7	72.0
Jan-03	14615.2	18837.7	134.0	14481.2	2708.9	2197.1	30.8	1.0	75.7	47.6	94.0
Feb-03	6254.0	13518.1	0.0	6254.0	1414.1	2423.1	0.0	1.3	92.4	73.2	0.0
Mar-03	4472.1	7643.9	43.5	4428.6	765.4	871.7	11.5	2.6	69.9	46.6	107.9
Apr-03	11637.3	6928.5	4068.2	7569.1	2045.9	658.9	820.4	2.9	71.8	38.9	82.4
May-03	11659.5	9833.1	1452.6	10206.9	1843.5	1442.0	254.2	6.8	64.6	59.9	71.5
Jun-03	19105.7	32388.8	0.0	19105.7	3919.7	5119.7	0.0	6.7	83.8	64.5	0.0
Jul-03	12943.2	27335.4	0.0	12943.2	2070.3	4822.1	0.0	6.4	65.3	72.1	0.0
Aug-03	21154.7	55850.0	272.7	20882.0	4669.7	9556.6	42.1	6.9	90.2	69.9	63.0
Sep-03	21384.4	44927.4	714.5	20669.9	6325.2	8560.6	110.2	9.1	120.8	77.8	63.0
Oct-03	14972.1	15940.0	0.0	14972.1	4367.7	2788.5	0.0	0.6	119.2	71.4	0.0
Nov-03	5936.8	3347.2	89.0	5847.8	967.0	456.3	23.1	1.5	66.5	55.7	106.0
Dec-03	18285.7	4628.8	6239.9	12045.8	3452.2	522.1	1349.1	2.0	77.1	46.1	88.3
Jan-04	15040.2	8385.2	8088.7	6951.5	2597.2	1078.9	1683.6	2.4	70.5	52.6	85.0
Feb-04	8410.6	14344.7	732.9	7677.7	1189.9	1644.6	168.7	2.4	57.8	46.8	94.0
Mar-04	12917.0	5147.4	3646.8	9270.2	3727.3	669.9	973.2	0.1	117.9	53.2	109.0
Apr-04	19720.5	3409.0	2850.9	16869.6	4075.1	375.2	801.5	1.2	84.4	45.0	114.8
May-04	26545.6	1490.3	7568.1	18977.5	6391.1	175.5	1814.9	0.9	98.3	48.1	97.9
Jun-04	15634.9	25518.9	2496.5	13138.4	1550.6	2816.9	458.4	6.9	40.5	45.1	75.0
Jul-04	30030.4	29319.0	4791.4	25239.0	2865.1	3044.9	690.0	7.0	38.9	42.4	58.8
Aug-04	75488.9	105761.4	0.3	75488.6	5451.7	10890.9	0.1	13.5	29.5	42.0	73.1
Sep-04	94171.3	112327.1	0.0	94171.3	11850.9	17234.3	0.0	7.6	51.4	62.7	0.0
Oct-04	32795.6	34077.0	834.0	31961.6	4284.5	4578.5	273.6	1.8	53.3	54.9	134.0
Nov-04	1821.6	2633.7	44.4	1777.2	381.5	254.7	19.6	0.5	85.6	39.5	180.3
Dec-04	20231.2	3899.8	6571.5	13659.7	7635.4	266.9	2690.2	0.8	154.1	28.0	167.2
Jan-05	4126.1	4570.5	1235.7	2890.4	1738.2	876.3	614.7	0.8	172.1	78.3	203.2
Feb-05	12149.8	8768.9	4618.5	7531.3	7540.1	3573.6	2944.6	1.0	253.5	166.4	260.4
Mar-05	8555.2	32538.1	683.6	7871.6	2343.0	6169.9	393.3	6.3	111.9	77.4	235.0
Apr-05	21699.5	13312.7	12355.0	9344.5	11041.7	6358.8	6795.3	1.9	207.8	195.0	224.6
May-05	14124.5	12117.8	4834.9	9289.6	5543.3	4808.8	2266.3	5.8	160.3	162.1	191.4
Jun-05	21688.0	89775.2	1.7	21686.3	7824.8	27913.6	0.6	14.8	147.3	127.0	140.6
Jul-05	19036.0	51439.1	95.0	18941.0	6049.1	11457.2	24.2	6.1	129.8	90.9	104.0
Aug-05	2469.1	14070.5	0.0	2469.1	558.2	2276.2	0.0	8.4	92.3	66.1	0.0
Sep-05	2815.4	13640.4	46.4	2769.0	624.7	1840.3	16.2	5.8	90.6	55.1	143.0
Oct-05	8173.3	33458.0	0.0	8173.3	3484.7	8273.9	0.0	7.8	174.1	101.0	0.0
Nov-05	3928.7	12573.1	0.0	3928.7	2001.1	3676.8	0.0	2.0	208.0	119.4	0.0
Dec-05	3486.3	588.1	33.3	3453.0	1941.8	79.2	17.8	0.1	227.5	55.0	217.8
Jan-06	20810.9	8582.1	8368.1	12442.8	12587.6	3976.5	5343.5	0.2	247.0	189.2	260.8
Feb-06	4432.0	12672.7	140.3	4291.7	3083.6	5791.1	75.5	3.4	284.2	186.6	219.7
Mar-06	7728.8	4157.9	119.1	7609.7	3683.0	1800.1	61.7	1.3	194.6	176.8	211.4
Apr-06	19718.9	8782.2	8779.0	10939.9	10409.5	3015.2	4331.8	0.9	215.6	140.3	201.5
May-06	16226.3	11449.7	5618.3	10608.0	6173.6	4097.9	2194.1	3.2	155.4	146.2	159.5
Jun-06	16182.8	4660.4	3402.9	12779.9	7190.3	1268.3	1522.4	3.2	181.5	111.2	182.7
Jul-06	3788.1	19487.5	133.0	3655.1	990.6	4743.8	44.7	6.6	106.8	99.4	137.3
Aug-06	9250.2	30224.8	70.5	9179.7	4031.0	10447.3	52.3	10.0	178.0	141.2	302.8
Sep-06	5482.5	41057.7	0.0	5482.5	1868.5	13751.7	0.0	5.6	139.2	136.8	0.0
Oct-06	6242.2	76.3	0.0	6242.2	1901.8	24.3	0.0	0.8	124.4	130.0	0.0
Nov-06	1931.0	1171.3	0.0	1931.0	482.4	354.8	0.0	1.0	102.0	123.7	0.0
Dec-06	2996.9	1517.1	0.0	2996.9	700.0	279.5	0.0	1.4	95.4	75.2	0.0
Jan-07	4642.9	70.2	11.8	4631.1	1350.5	11.5	3.0	0.2	118.8	66.7	103.0
Feb-07	5542.3	130.3	130.3	5412.0	1397.7	27.7	28.5	1.1	103.0	86.8	89.4
Mar-07	11727.6	3293.7	3239.1	8488.5	3108.4	780.3	870.1	0.2	108.2	96.8	109.7
Apr-07	9550.8	1215.2	1171.3	8379.5	2125.7	151.7	250.2	2.0	90.9	51.0	87.2

Appendix E
Response to Comments

Comment	Date received	Author of comment	Response to comment	Author of response
I don't quite understand the term "supplemental inflow". Definition is on page 4. It appears to be a subtraction of a measured value, and a calculated value…..this is confusing…..	5/13/2008	Tracey Piccone -SFWMD	Supplemental inflow is not well defined in this report and the District will ask the contractor to tighten up the language. The term supplemental inflow is a catch-all for inflows into a sub-basin for irrigation, evaporation replacement, and seepage replacement. It is water entering the sub-basin without a corresponding discharge from the sub-basin. Since the District does not have irrigation records at the farm level the District can only calculate what came in to the sub-basin that was intended to maintain canal levels.	Douglas Pescatore - SFWMD
Do you know if the consultants adjusted the S-5A basin data after the G-341 structure was completed? The reason I ask is that after that structure was completed, a portion of the S-5A basin started draining predominantly to the west and away from S-5A pump station (i.e., the S-5A basin diversion component of the ECP). The thing to note is that when the structure was first completed, we were in the process of taking cells offline in STA-1W, and we had limited treatment capacity in that STA, so Operations was opening the G-341 structure and allowing some water from S-5A basin to flow west then south to STA-2….as a result, the structure was not used as originally intended, for that period of time approximately a year or so, so the data during that period would be skewed in the opposite direction then the long-term intended use of the structure. Bottom line is that I believe there is a period included in the overall period of record used by the consultants that contains abnormal operations and changes in the movement of water in and around basins…..and this would tend to impact the results for both the S-5A Basin and the S-6 Basin for that abnormal period. The way to determine this abnormal period is to go into Dbhydro, and look for the G-341 flows that were both consistently negative and positive during a one year (or possibly longer) period.	5/13/2008	Tracey Piccone -SFWMD	The introduction of G341 was discussed in some of the early meetings with the contractor. Reviewing the data generated from the structure from 9/9/05 I found that this structure flowed in both directions throughout the period of record and generally moved in concert with the flows observed at S5A-S5AW. One of the assumptions of any sub-basin analysis in the EAA Basin is that the flow between sub-basins via the Bolles and Ocean canals are offsetting and can not be accurately calculated and are therefore assumed to be zero. The District is aware that this will not always be the case with the reservoir project coming on line and projects like ECART under development. Jon Madden has a contract underway to look into how to handle these changes in operation. As part of the District response to your comments, the flow records of G341 vs. both S5A-S5AW and S-352 (HGS5X) were looked at, and found that the same general patterns where observed throughout the period of record with the exception of November of 2005 through January 2005 where the flows at G341 went negative for the entire period while S5A-S5AW remained closed and small inflows from S-352 were observed.	Douglas Pescatore - SFWMD
Regression equations: need to check the reality of each term. Page 13: why Qin is negative term of Qout ? Page 18: why Qin is a negative term of Qout ? The patterns are counter- intuitive.	5/23/2008	Shi Xue - SFWMD	Qout is expressed as a function various inflows (Qin, Qsi, and Qthru) along with rainfall. It stands to reason that when Qin is high during the dry season that the total Qout will then be low meaning that the more inflow would indicate a need for irrigation which would have a negative impact on outflows (Qout). When there are inflows to maintain canal levels there is less of a likelihood of outflows as a result of rainfall.	Douglas Pescatore - SFWMD
Figures: What do the lines stand for? Are they trend lines?	5/23/2008	Shi Xue - SFWMD	The text makes reference to the 45 degree line when discussing the figures.	Douglas Pescatore - SFWMD
Why the data were presented by month?	5/23/2008	Shi Xue - SFWMD	The initial analysis and report looked into the smallest time step that could be applied to this data and develop a statistically valid result. 7 day and 14 day were determined to be too short because of a large number of zero values when pairing data. 14 day was however thought to provide reasonably good data but monthly provided the best shot at drawing correlations.	Douglas Pescatore - SFWMD
It is hard to generalize the trend. It is better to include all the monthly data and conduct a time series analysis of trend to include a periodic function (T=12 months) and a trend function and test the significances of the trend and seasonality.	5/23/2008	Shi Xue - SFWMD	Time series plots were included in Task 6 Report, a copy of which is included in Appendix D. For convenience of the reader, the Contractor has replotted and included in Appendices A, B, and C for Sub-basins S5A, S6/S7, and S8, respectively.	B. Panigrahi - BPC Group
For the monthly event database: All flows are positive and loads are both positive and negative for the supplement inflow. How these data are used in the regression analysis? Are the negative loads put in the regression analysis?	5/23/2008	Shi Xue - SFWMD	All flows and loads irrespective of their directions are used for analyses, including regression analyses.	B. Panigrahi - BPC Group

What are the numbers of P conc observations used to calculate a monthly concentration/P load for a structure? From our knowledge, it seemed that in the early years, there were little or no data for P conc at many Lake O structures. It would be good to know the number of observations behind the monthly numbers.	5/23/2008	T. Lange & S. Daroub - IFAS	The contractor relied on the data the District provided them for the Lake structures which is the data that the District uses in the EAA model. Doug has looked through the data available on DBHydro and also through the data archived for the baseline period for the EAA compliance model. There are a few different data sets that combine to give a fair descent set of data from the 3 lake structures that looks at (S3/S354, S2/S351, S352). There is certainly more data available for those structures than the rest of the Lake structures but admittedly the data has progressively become better suited for analysis.	Douglas Pescatore - SFWMD
We liked your idea of dividing the period of study into three time periods for trend and regression analyses (baseline, pre-BMP, and BMP). If there is a question about reduced numbers of monthly observations with the shorter time periods, then try to use the two-week interval data set. You may have more zero data lines but you will also have more total lines of data.	5/29/2008	T. Lange & S. Daroub - IFAS	The analyses have been extended to base period, pre-BMP, BMP, and entire periods.	B. Panigrahi - BPC Group
Plot the regression residuals vs. predicted to observe variance along the whole range of y values.	5/29/2008	T. Lange & S. Daroub - IFAS	Have been added to Appendices A, B and for sub-basins S5A, S6/S&, and S8, respectively.	B. Panigrahi - BPC Group
See if concentration can be included in the analyses for these time periods.	5/29/2008	T. Lange & S. Daroub - IFAS	Included in the updated analyses and revised report.	B. Panigrahi - BPC Group
If two or more significant independent variables are found for a regression equation, it may be useful to standardize the independent variable data and rerun the regressions. That way you obtain standardized coefficients and can directly compare the variable coefficients for effect/influence on the dependent variable.	5/29/2008	T. Lange & S. Daroub - IFAS	This was not required for this project.	B. Panigrahi - BPC Group
Somewhere in the report explain how and if lag effects were investigated.	5/29/2008	T. Lange & S. Daroub - IFAS	Lag effects are not considered in the regression analyses except for 1st lag of rainfall. This is not included in the report since the results showed little improvement/effect.	B. Panigrahi - BPC Group
State which trend analyses test was conducted to determine if a trend was present or not.	5/29/2008	T. Lange & S. Daroub - IFAS	Mann-Kendall test with slope estimation.	B. Panigrahi - BPC Group
It would seem SI is part of IN. Also the two are correlated. So to include them in the regression equation together would appear to be incorrect. Steve or Nenad might have some ideas for this.	5/29/2008	T. Lange & S. Daroub - IFAS	The collinear terms have been removed from the revised regression analyses.	B. Panigrahi - BPC Group
Were any variables transformed prior to running regression? Many variables appeared to not be normally distributed. How many observations were used when developing the regression equations?	5/23/2008	T. Lange & S. Daroub - IFAS	Variables were not transformed. Monthly data records used, which ranged from 6 to 12 years of monhtly values for each time period.	B. Panigrahi - BPC Group
Was there any collinearity between the variables used in the regression equations?	5/23/2008	T. Lange & S. Daroub - IFAS	Highly correlated variables (parameters) were removed from the regression analyses. New regression analyses are presented in the revised report.	B. Panigrahi - BPC Group
What trend analyses were run? Was serial correlation addressed? Was seasonality addressed?	5/23/2008	T. Lange & S. Daroub - IFAS	See response above.	B. Panigrahi - BPC Group
Supplemental inflow is derived directly from inflow. So it would appear that you have two variables that are most likely highly correlated in the reg eqns.	5/23/2008	T. Lange & S. Daroub - IFAS	See response above. The data analyses have been updated and the report is revised.	B. Panigrahi - BPC Group
The final report does not divide the data into the 4 time periods that were defined in the earlier tasks and the graphs do not show error bars.	5/27/2008	Kathy Pietro - SFWMD	It is included in the revised report, where appropriate.	B. Panigrahi - BPC Group
The contractor divides the data into dry season/wet season, but I did not see a definition for these periods.	5/27/2008	Kathy Pietro - SFWMD	The wet season dry season breakdown that the contractor used was based on the District's Water Year May through April with the first 6 months (May-October) being the wet season and the last 6 months (November - April) as the dry season.	Douglas Pescatore - SFWMD
I think that all of the information presented in Task 6 should be again presented and evaluated in this final report and that statistical evaluation of the data that is divided into the 4 periods be applied to evaluate the sub-basin as well as between the sub-basins.	5/27/2008	Kathy Pietro - SFWMD	Task 6 Report in its entirety is added as Appendix D.	B. Panigrahi - BPC Group

when will there be an analysis of the "significant events"? Is that going to be covered in another task?	5/27/2008	Kathy Pietro - SFWMD	..."Significant Events", those events are part of the events dataset but are not separated out as that was not the intent of this analysis because "Significant Events" are limited in number and analyzed by themselves do not provide enough data points to perform the types of statistics that were expected to be performed in this analysis. In addition the criteria of what is a significant event is somewhat subjective and could leave the District open to criticism about cherry picking data.	Douglas Pescatore - SFWMD
Even though the contractor states that "there are no meaningful regression relationship for the concentration datasets", I would still like to see the plots and resulting equations for the concentration. I would also like to see the timeseries plots of the monthly data that was used. These plots must have already been created by the contractor in his data evaluation so it should be minimal effort to include them in the final report appendix. Specific plots to include (for each basin): - Time series plots of the monthly data (for flow, load and TP concentration data) - Plots showing the daily concentration data - Scatter plots of monthly concentration data with regression analysis applied (divided into the 4 time periods		Kathy Pietro - SFWMD	All of the requested items are in the report.	B. Panigrahi - BPC Group
Include rainfall in the regression evaluation. If necessary, assign a constant TP value to rainfall to estimate loads.		Kathy Pietro - SFWMD	See the updated text in Section 2 and 3. All appropriate parameters have been incorporated into the regression analyses.	B. Panigrahi - BPC Group
The report done prior to this final report (Task 6) has references stating that certain analysis will be addressed in Task 8. But not off of these analyses were done in the final report. Somewhere in the final report, please address all of these references, whether the evaluation is included or not.		Kathy Pietro - SFWMD	Please elaborate the specifics. This task report addresses all aspects of the SOW.	B. Panigrahi - BPC Group
Include the tables and descriptions from the Task 6 document that describe which stations were used and their POR (Task 6, Table 2.1c) as well as the description of Inflow, Flow through, supplemental inflow, and outflow (p. 9, Task 6).		Kathy Pietro - SFWMD	Task 6 report is added as Appendix D. See Section 2 for updated definitions and assumptions.	B. Panigrahi - BPC Group
Determine if the calculations for flow-through and supplemental inflow are interdependent.		Kathy Pietro - SFWMD	See Section 3 and 4 - the correlation analyses, which addresses these issues.	B. Panigrahi - BPC Group
Table 2.1c of Task 6 still indicates that there is no data available for G204, G205, and G206, but DBHYDRO indicates there is flow data available. Pls let me know why those data are not included in the analysis and annotate Table 2.1c to explain.		Kathy Pietro - SFWMD	Please refer to Task 6.	B. Panigrahi - BPC Group
This analysis was triggered when the basin runoff, farm runoff, and WCA/STA inflow concentrations increased dramatically after the Sept/Oct 2004 hurricanes. That background information and a clear statement of the problem should be presented.	5/28/2008	Dr. Walker	This analysis was not triggered in response to hurricane events, it was the result of many public inquires that originated long before we experienced the hurricanes of 2004 and 2005. In fact the EAA's BMP performance during those two water years was in line with the 3 year average. While Figure 3 of Dr. Walker's attachment shows a dramatic increase in internal Lake concentrations the last figure shows little to no increase in Lake inflow concentrations into the S5A basin as a result of the hurricanes. However, it can be seen from the last figure (unnamed) presented by Dr. Walker that the Lake inflow concentrations have been increasing from WY80 to present and it is that increasing trend that has resulted in questions about the interaction between the Lake and the EAA outflow concentrations.	Douglas Pescatore - SFWMD
The extensive farm runoff database is not analyzed but must contain information relevant to the topic. While the farm data have limitations, they are an important resource. A better understanding of the relationship between the farm pump outflow and basin outflows is needed. If there is an interaction between the lake and farm runoff, is should be seen at the farm pumps.	5/28/2008	Dr. Walker	A decision was made early on to exclude farm level data for reasons of quality and completeness. The farm data could be best used coupled with the District data in a physical model. One of the recommendations presented in the Draft Report was to model concentrations in a physical model.	Douglas Pescatore - SFWMD

The "events" are defined at fixed time intervals (monthly). The noise introduced by rainfall events occurring near the end of a given interval (thereby impacting runoff in the next interval) may obscure important relationships. The weekly composite-sample collection frequency also smears the "events" across calendar months. Change in storage within the canals and random measurement errors in flow or concentration have a larger impact at shorter time steps. Yearly and seasonal (wet vs. dry) event intervals would reduce these artifacts. In general, runoff volume and runoff load tend to be highly correlated with rainfall in each basin when analyzed on a water-year basis. I don't think you need to look at shorter time intervals in order to test hypotheses regarding lake vs. runoff interactions.	5/28/2008	Dr. Walker	Observing time series data on an annual basis seems to indicate some relationships or developing relationships. However those relationships and especially the developing relationships are limited by the number of data points. The use shorter timesteps was to better develop these relationships.	Douglas Pescatore - SFWMD
If shorter "events" are of interest (vs. annual or wet/dry season), I'd suggest defining them based upon antecedent rainfall instead of fixed monthly or weekly time intervals. This would eliminate most of the noise introduced when the rainfall and runoff time series are out of sync. Each event would consist of a wet period followed by a dry period. Events would be separated based upon a reasonable dry period criterion (e.g. at least 7 days with rainfall < a small number). This is a standard procedure in urban runoff modeling. This approach would reduce the impacts of the changes in storage within the canals on the net runoff or net inflow values (less likely to compute negative runoff loads or concentrations).	5/28/2008	Dr. Walker	Comments noted. Thanks for the explanation.	B. Panigrahi - BPC Group
Task 8, p 4. The list of variables analyzed includes Total Inflow, Total Outflow, and Lake Flow Through, and Supplemental Inflow (Total Inflow - Lake Flow Through). The list does not include the estimated Runoff (Outflow - Inflow from Non-Lake Source - Lake Flow Thru), which is of primary interest. I would also suggest analyzing the Net Outflow (Total Outflow - Total Inflow) for trends and correlations with Lake P concentration, since this term is independent of assumptions associated with the estimated Flow-Through term. Conceptually, this would equal the net contribution from the farms, considering runoff, irrigation, and seepage cycling, as well as change in storage within the canals.	5/28/2008	Dr. Walker	The scope of work is limited to those terms (parameters) defined in Task 6. A copy of the Task 6 Report is added as Appendix D. Definitions of these terms are further clarified in the revised report.	B. Panigrahi - BPC Group
Limitations of the flow-through calculation may impact the trend and regression analyses. These limitations include differences between concentration measured at lake vs. inflow to WCA's, changes in phosphorus storage in the canal, impact of random errors in flow data, timing of 7-day composites, etc. The Net Outflow term (above) gets around this.	5/28/2008	Dr. Walker	Lake flow-through is considered an inflow into the EAA basin in this analysis as it is in the model. Flow-through represents loads and flows that are entering the EAA as the result of operations and not farming practices. The concentrations of water entering the EAA can only be measured at the locations to which they enter. Since it was not attempted to differentiate the source of the outflows (runoff or flow through) the concerns about mass balancing do not come into play.	Douglas Pescatore - SFWMD
The load regressions (Task 8 p. 13 & 14) predict Total Outflow Load as a function of Total Inflow and Supplemental Inflow. The high R2 values may reflect the fact that Total Inflow and Total Outflow are both correlated with rainfall. The correlations may also be partially spurious, since Total Outflow implicitly appears on both sides of the equation since flow-through is used to compute supplemental inflow and total outflow is used to compute flow-through. It is not clear how these regressions are useful for testing whether there is an interaction between the lake and runoff, which is the purpose of the report. There is no clear statement of the hypotheses. It seems appropriate to start with a fundamental mass balance equation for each sub-basin canal and use that as a basis to structure the hypotheses tests, as opposed to just casting a net for strong correlations that in the end don't provide useful information for developing remedies.	5/28/2008	Dr. Walker	Comment noted. Thanks for the elaboration. After discussion with the District, the rainfall concentration has been assumed as zero for the purpose of this project, and therefore, no load is assumed in the current analyses.	B. Panigrahi - BPC Group
I would approach this by first correlating the sub-basin loads (Runoff and Net Outflow) with sub-basin rainfall on a water-year (or seasonal) basis. This would remove the rainfall signal which is clearly dominant in all basins. Then test residuals (observed - predicted) for correlation with lake release P concentrations and Flow-Thru loads. Repeat the analysis using concentrations (vs loads) and for the entire EAA (in addition to individual basins). FOcus post-BMP period because it has highest quality flow and load data and because including the earlier period would add another factor (BMP implementation) that would make it more difficult to evaluate lake/runoff interactions. Its' not clear whether something like that was attempted.	5/28/2008	Dr. Walker	Comment noted. This is beyond the scope of this task. The contents of this comment was embeded in to the recommendations made during Phase I of this project.	B. Panigrahi - BPC Group

When I tried the above for S5A in WY 1993-2007, the load/rainfall correlations were strong and the residuals were uncorrelated with Lake P. So this suggests that variations in Lake P concentration apparently did not have a significant impact on runoff concentrations in that basin. The lake upset in Oct 2004 had very little impact on lake release concentrations in the S5A basin, however, as compared with the S6/7 and S8 basins (see attached). So the signal could be stronger in those other basins and provide a more powerful test for Lake/Runoff interactions.	5/28/2008	Dr. Walker	As discussed with the District during initial project meeting, rainfall concentration for the present study is assumed negligible (assumed zero). The quantification of rainfall concentration is debatable. Under such conditions, the load/rainfall correlations have little justification.	B. Panigrahi - BPC Group
Task 6 Report, Table 2.1A. The formula for Basin Inflow is incorrect (should be H5S5IN instead of HGS5OUT?). Likewise in Table 2.1B, the formula for Basin Inflow is incorrect (should be S150IN instead of S150?). I assume these are typographic errors?	5/28/2008	Dr. Walker	The formulas in the Task 6 report are correct. This analysis does not use the EAA model's output with the exception of S5AThru and S8Thru. The terms that end with "IN" indicate that those terms were calculating flow "into" the EAA. This was done to shape the analysis around Net flows instead of runoff.	Douglas Pescatore - SFWMD
The S5A and S6 basin analyses do not consider the potential impacts of the new Ocean Canal divide structure that was closed in ~2004?. This would have reduced exchanges between the HIL and WPB canals. Were changes in canal stages (S5A vs. S6 headwater), basin flows, and/or basin loads evident around this period? As I recall, P concentrations at S6 increased around that time.	5/28/2008	Dr. Walker	The introduction of G341 was discussed in some of the early meetings with the contractor. Reviewing the data generated from the structure from 9/9/05 I found that this structure flowed in both directions throughout the period of record and general moved in concert with the flows observed at S5A-S5AW. One of the assumptions of any sub-basin analysis in the EAA Basin is that the flow between sub-basins via the Bolles and Ocean canals are offsetting and can not be accurately calculated and are therefore assumed to be zero. The District is aware that this will not always be the case with the reservoir project coming on line and projects like ECART under development. Jon Madden has a contract underway to look into how to handle these changes in operation. As part of this response to your comments, Doug looked into flow records of G341 vs. both S5A-S5AW and S-352 (HGS5X) and found that the same general patterns where observed throughout the period of record with the exception of November of 2005 through January 2005 where the flows at G341 went negative for the entire period while S5A-S5AW remained closed and small inflows from S-352 were observed.	Douglas Pescatore - SFWMD
It is not clear which concentration data should be used in computing the S5A_In term. From the S5A complex back into the EAA could have been released from S5AS, L8, S5AE, or S5A?	5/28/2008	Dr. Walker	Correct, it is accepted as a limitation in the data. For the most part when negative flows were observed at the S5A complex more water was entering the S5A Basin than was leaving it through the S5A structure. Using the S5A conentration is concidered and estimation of concentration for the small amount of flow moving in this direction.	Douglas Pescatore - SFWMD
It is not clear how double mass curves of concentration are constructed (e.g. Fig 4.6). What do the points represent? Concentration is not mass. Double mass curves relating cumulative load to cumulative flow or rainfall would make more sense.	5/28/2008	Dr. Walker	Double-mass is a methodology used in hydrology to evaluate datasets. This method has been used for rainfall and runoff analyses for several decades. A descritpion of this method can be found in most engineering hydrology books, or can be reviewd in the following reference: *Panigrahi, B.K. and Das Gupta, A. 1979. Computer Application to Double-Mass Analysis. Water Resources Bulletin, 15(4), 1168-1172.*	B. Panigrahi - BPC Group
It would be useful to estimate the relative magnitude of the change in storage term for the canal P balance, since this may be a source of error/variability in estimating farm runoff loads from SFWMD canal monitoring sites, particularly on a daily basis. A key assumption in the daily Flow-Through computation is that change-in-storage = 0. Estimates could be developed based upon typical ranges in canal water volumes and concentrations and compared with the measured canal inflows and outflows.	5/28/2008	Dr. Walker	Since the Flow-through term is based on the minimum flow bewteen the inflow (lake) and the total outflow, there is no assumption that the change in storage for flow is zero. If 100 cfs-d enters the EAA from the Lake and 20 cfs-d leaves the EAA it is assumed that 20 cfs-d enters the EAA as the result of flow through operations. The change in storage is 80 cfs-d. A one month time step should help smooth out the effects of lag in teh system with respect to load.	Douglas Pescatore - SFWMD
Task 8 Conclusion "Inflow and outflow concentration could not be well correlated". This is no surprise since the outflow concentrations (and loads) are strongly influenced by basin runoff and rainfall. These dominant sources of variability could obscure lake vs. runoff interactions. That variance can be filtered out, as outlined above. The conclusion itself is unrealistic because it implies that the canals do not have a P balance.	5/28/2008	Dr. Walker	The text has been revised.	B. Panigrahi - BPC Group

Task 8 Figures 4.1 and 4.5 indicates approximately constant supplemental inflow volumes in the S5A and S8 basins over the entire period, yet there were essentially no phosphorus load in the supplemental inflows after ~1996 (flat cumulative curves). There must have been phosphorus in the irrigation water! This may reflect problems with the flow-through computation or other artifact in the way supplemental inflow loads are calculated.	5/28/2008	Dr. Walker	The supplemental inflow values have been recalculated. Definition and load calculation process for the supplemental inflow is given in Section 2 of this report.	B. Panigrahi - BPC Group
Task 8 Conclusion: "Supplemental Inflow loads consistently increased over the period of analyses, which indicates that the BMP implementation has positive impact on the performance for all three hydrologic sub-basins". I don't follow logic or significance. As noted above Figures 4.1 and 4.5 contradict this - supplemental loads in S5A and S8 decreased to near zero after 1996. Supplemental inflow loads reflect irrigation withdrawals and lake P concentration. What does "performance" refer to? BMP's that conserve water on the farms could cause lower irrigation demand and thus lower supplemental inflow volumes, but this does not seem to have occurred based upon the relatively constant supplemental flow volumes.	5/28/2008	Dr. Walker	The report has been revised to reflect the results from the updated analyses.	B. Panigrahi - BPC Group
I don't see specific conclusions regarding the fundamental question whether lake P water quality impacts runoff water quality.	5/28/2008	Dr. Walker	"Runoff" is not a parameter included in this SOW.	B. Panigrahi - BPC Group
The reports provide a foundation for developing a better understanding of the basins. More insights can be extracted from available information. I agree that SIMPLE mass-balance modeling would be a useful way to proceed with further analysis, particularly when farm, structure, rainfall, and land use data are all factored in.	5/28/2008	Dr. Walker	No action needed.	B. Panigrahi - BPC Group
Uncertainty in lake/runoff interactions may be relevant to measuring and interpreting BMP performance, but should not preclude the development and implementation of measures to reduce P concentrations in STA inflows, particularly in the case of STA-1W/1E. The Longterm Plan is predicated on certain assumed long-term average flows, loads, and concentration in the combined flow from all of the basins (lake, EAA, 298, L8, etc) reaching the STAs. The Plan assumes that those long-term averages will not increase. The data indicate otherwise. Even without the recent hurricane upset, there has been a long-term increasing trend in Lake Okee TP concentration since the 1970's (see attached). East Beach runoff concentrations have more than doubled since the diversion began in 2002.	5/28/2008	Dr. Walker	It is understood that EAA inflow concnetrations from the Lake have been increasing and it is that trend that has spurred the many questions as to how this inflow concentration affects the EAA farm BMP performance.	Douglas Pescatore - SFWMD
Both on basin and farm scales, S5A runoff concentrations are much higher than those measured in other EAA basins. Based upon reductions in runoff concentration, BMP performance in the S5A basin has been inferior to the other basins and the trends are not promising (see attached). Even if the source concentrations were stable, the Longterm Plan solution for STA1W (flow diversion) is adequate, primarily because it jeopardizes the Refuge water supply and does little to control peak flows and loads that have the largest impact on STA performance. It is hard to see how results of this report feed into defining and solving the significant problems in the S5A basin. Improved BMP's may be needed in all basins to offset impacts of increasing P trends in the Lake, as well as to achieve lower STA outflow concentrations ultimately required to restore the Everglades, especially given the apparent policy and economic constraints associated with constructing additional STAs beyond those already planned.	5/28/2008	Dr. Walker	The scope was not intended to address perceived issues with the S5A basin directly. It was intended to develop an understanding of how the Lake's inflow concentration/flows/loads affect the EAA's outflow concentration/flows/loads. The statement that S5A basin's BMP performance is inferior to the other EAA basins is not supported by the data. Prior to hurricanes Frances and Jeanne (which primarily impacted the S5A basin) the farm data indicated the S5A's unit area loads (lbs/acre) were on average lower than that of the farms in the S6 Basin. S5A's unit area loads peaked during water year 2005 (the water year containing the 2 hurricane events) and have decreased each successive year.	Douglas Pescatore - SFWMD
Recommend a one-page executive summary	5/29/2008	Carmela Begregal - SFWMD	The conclusion and recommendation section has been changed which serves almost like an executive summary.	B. Panigrahi - BPC Group
Explain upfront how BMP performance is defined and how it will be evaluated	5/29/2008	Carmela Begregal - SFWMD	Text revised to reflect the explanation.	B. Panigrahi - BPC Group
Clearly explain the data sets and roles (do not understand how supplemental inflow and load are calculated, and why different methods for load and flow.)	5/29/2008	Carmela Begregal - SFWMD	Text revised to reflect the clarification.	B. Panigrahi - BPC Group

Not sure on the load deduction (that load is related to BMP or land use because outflow is not related to Lin.) There can be indirect effects. To me the conclusion is that on a monthly basis what comes out of the basin cannot be statistically correlated to what comes in "only".	5/29/2008	Carmela Begregal - SFWMD	The current scope looks only in and out at end points. It is necessary to look at factors beyond just in and out at the end points of the sub-basins. A number of additional tasks were recommended during Phase I, and have added into recommendations in the revised report.	B. Panigrahi - BPC Group
Not sure on the flow deduction (that when all physical parameters are tried, it is only the method of looking at them that would be necessary to improve the relationship.) Practices could affect monthly flows during dry months, couldn't they? State assumptions. On the P content of rainfall: Rainfall could affect load indirectly based on reaction by growers, or by flushing out historically deposited P (for example)… I would have let the regression tell us that instead of making the assumption and not considering the factor in it.	5/29/2008	Carmela Begregal - SFWMD	Rainfall load can definitely affect the outflow load. Since there is a debate as to what value should be used for rainfall concentration, it was discussed with the District before considering a zero concentration for rainfall for this project. This is listed in the assumptions in Section 2 of the report.	B. Panigrahi - BPC Group
The first bullet of the Conclusions needs to answer the main reason for the scope: Were the trends of flows loads and concentrations entering the EAA from the Lake related to the EAA performance on a basin wide and sub-basin level? (note: there is no comment on this draft at the basin wide level)	5/29/2008	Carmela Begregal - SFWMD	This section has been revised.	B. Panigrahi - BPC Group
Supplemental Inflows needs to be defined with better language. It is my understanding that supplemental inflows are inflows into the EAA that are not meant to be replacement water for water that has left the EAA as a result of flow through operations. These waters (supplemental) would be entering the system to maintain canal levels or are from sources external to the EAA such as the 298 Districts or C-139.	5/29/2008	Douglas Pescatore - SFWMD	Text modified to match the definition presented in Task 6 Report (added to Appendix D of this report).	B. Panigrahi - BPC Group
Why is it that the Flow function uses the inflow, flow through, supplemental inflow, and rainfall where the Load function only uses the inflow load and the supplemental inflow load?	5/29/2008	Douglas Pescatore - SFWMD	They have been revised to remove the collinear terms; have included rainfall term into the load function but it has no impact on the regression model due to zero rainfall concentration.	B. Panigrahi - BPC Group
When compiling a statistical report, it is very important that the author pays strict attention to using terms such as significantly. The use of "significantly" has been peppered through out this report. The term suggests that a statistical test has been performed. In reality, the consultant is using the term descriptively. More appropriate terms are: markedly, substantially, etc.	6/6/2008	Steve Hill - SFWMD	noted.	B. Panigrahi - BPC Group
Section 4.1.2: It is essential that criteria used in determining the "best" regression models are provided. Possible candidates for the selection of "best" regression models include but are not limited to: R2, Root Mean Square Error, Mallow's Cp, and Minimum R2 Improvement. Justification for the chosen criteria should also be provided	6/6/2008	Steve Hill - SFWMD	noted. The text revised.	B. Panigrahi - BPC Group
Cumulative plots: This analysis shows how fast various parameters sum up over time. These sums (or "trends") will always be positive (or increasing) for the data used in the EAA Basin Data Evaluation Report. While this type of trend estimation may be useful in some data analyses, it is not an appropriate method for the purposes stated in the SOW	6/6/2008	Steve Hill - SFWMD	It's the contractor's opinion that the method chosen is appropriate for the subject matter as used in Hydrological practice. Kendal trend analysis has been added into the report.	B. Panigrahi - BPC Group
Double Mass Plots: These plots show the linear relationship (trend) of the concentrations at the Flow-Thru and Outflow relative to the Inflow concentrations. The contractor states that "these plots are helpful in the potential temporal and spatial distribution of the monthly concentration values." Based on the plots in the report, it is unclear how any temporal information can be derived since time is not a variable in the plots. The plots have spatial components (Inflow, Flow-Thru, and Outflow) but as presented, it is hard to see how any spatial distribution of concentrations can be obtained	6/6/2008	Steve Hill - SFWMD	See the revised report. The discussion has been expanded and clarified. Time series and box plots have already been prepared in Task 6 Report. A copy of the Task 6 Report is added into Appendix D.	B. Panigrahi - BPC Group
Moving Average Trend: The purpose of this analysis is unclear. The contractor calculated a "three-observation" moving average for each discrete calendar month over the period of record. This may have been an attempt at detecting trends for each month and consequently determining seasonality. No rationale for choosing three observations as the size of the moving average window was provided	6/6/2008	Steve Hill - SFWMD	See the revised report. The discussion has been expanded and clarified. Time series and box plots have already been prepared in Task 6 Report. A copy of the Task 6 Report is added into Appendix D. Moving average has been changed to 5-year.	B. Panigrahi - BPC Group

The report does not provide any evidence that the assumptions of the linear regression models have been met. It is my understanding that some of the predictor variables (e.g., Qthru and Qsi) are calculated from other predictor variable(s) (e.g., Qin) used in the "best" regression models. Using these calculated variables in conjunction with the variables from which they were calculated may result in the predictor variables being correlated (or collinear). Although there are methods to deal with collinearity, the simplest approach would be to exclude any correlated variable. Significant collinearity compromises the reliability of the regression coefficients with their standard errors of the coefficients becoming larger. In summation, significant collinearity inhibits the determination of the true influence of the dependent variable on response variable.	6/6/2008	Steve Hill - SFWMD	See the revised report. The correlation analyses results are included in the report, and the collinear effect has been removed from the regression analyses.	B. Panigrahi - BPC Group