INTERNATIONAL
STORMWATER BMP
DATABASE
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Attachment 1

Categorical Summary of BMP Performance Data for Solids (TSS, TDS, and Turbidity) Contained in the International Stormwater BMP Database

May 2011

Contents

1   Description of Statistics Used in this Report

This report provides a concise statistical summary of BMP performance data contained in the International Stormwater BMP Database. The analysis focuses on the distribution of effluent water quality from individual events by BMP category, thereby providing greater weight to those BMPs for which there are a larger number of data points reported. In other words, the performance analysis presented in this technical summary is "storm-weighted", as opposed to "BMP weighted"[1].

The statistical summaries have been organized by BMP and then by constituent. For each data set, influent and effluent summary statistics are presented in a table followed by graphical summaries.

1.1   Tabular Summaries

The summary tables include both parametric and non-parametric statistics. Parametric statistics operate under the assumption that data arise from a single statistical distribution that can be described mathematically using coefficients, or parameters, of that distribution. The mean and standard deviation are example parameters of the normal, or Gaussian, distribution. Non-parametric statistics are fundamentally based on the ranks[2] of the data with no need to assume an underlying distribution. Non-parametric statistics do not depend on the magnitude of the data and are therefore resistant to the occurrence of a few extreme values (i.e., high or low values relative to other data points do not significantly alter the statistic)[3].

Table 1.1 summarizes the parametric and non-parametric statistics commonly used to describe data sets. Definitions for each summary statistic included in the tables are provided in Table 1.2.

Table 1.1: Example Common Parametric and Non-Parametric Descriptive Statistics

Statistic Category	Parametric	Non-Parametric
Measures of Location	Mean	Median
Measures of Spread	Variance, Standard Deviation	Interquartile Range, Median Absolute Deviation
Measures of Skew	Coefficient of Skewness	Quartile Skew Coefficient

1.2   Graphical Summaries

In addition to the summary tables provided for each BMP/constituent combination, influent/effluent box plots and non-exceedance probability plots are provided. Box plots (or box and whisker plots) provide a schematic representation of the central tendency and spread of the influent and effluent data sets. Box plots can also be

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[1]There are several viable approaches to evaluating the BMP Database. Two general approaches that have been presented in the past (Geosyntec and WWE 2008) are the "BMP-weighted" and "storm-weighted" approaches. The BMP-weighted approach represents each BMP with one value representing the central tendency of the BMP study, whereas the storm-weighted approach combines all of the storm events for the BMPs in each category and analyzes the overall storm-based data set. The storm-weighted approach has been selected for this report.

[2]In this context, ranks refer to the positions of the data after being sorted by magnitude.

[3]Helsel D.R., and Hirsch, R.M., 2002, Statistical methods in water resources–Hydrologic analysis and interpretation: Techniques of Water-Resources Investigations of the U.S. Geological Survey, chap. A3, book 4, 510 p. http://pubs.usgs.gov/twri/twri4a3/

used to indicate whether the influent median is statistically different than the effluent median. A key for the box plots is provided in Figure 1.1.

Probability plots illustrate the empirical distribution of the data. A comparison of the influent and effluent probability plots indicates whether there may be differences among all percentiles (not just the median) and whether the influent and effluent data sets are similarly distributed. Probability plots also provide a quick method of identifying the probability that an individual sample would be less than or equal to a particular value. For example, the effluent probability plot may be used to identify the probability that a particular water quality threshold would be met (e.g., 40% chance that effluent concentration would be less than or equal to 1 mg/L). It should be noted, however, that there is not a one-to-one correlation between the percentiles in the influent data and the percentiles in the effluent data. For example, the median influent concentration and the median effluent concentrations may not occur in the EMC samples collected during the same storm. Although the influent and effluent concentrations in a probability plot are not paired values, the relative position and slope of the two populations are a good indication of the effectiveness of the BMP.

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[4] Helsel, D.R. and T. A. Cohn (1988). "Estimation of descriptive statistics for multiply censored water quality data", *Wat. Resour. Res.* 24, 1997-2004.

[5] Efron, B. and R. Tibishirani (1993). *An Introduction to the Bootstrap.* Chapman & Hall, New York.

Table 1.2: Common Parametric and Non-Parametric Descriptive Statistics

| Statistic	Definition/Description
Count	Total number of data points analyzed. Most BMP data sets include only event mean concentrations (EMCs). The exception includes BMPs with permanent pools (retention ponds and wetland basins) where grab samples were also included.
Number of Non-detects	The plotting position, or regression-on-order statistics (ROS), method described in Helsel and Cohn (1988)[4] was used to estimate censored values using the distribution of uncensored values for each study.
Mean (95% conf. interval)	The mean of the data points and the 95% confidence interval about the mean. Provides a parametric measure of the central tendency. The confidence interval was computed using the bias corrected and accelerated (BCa) bootstrap method described by Efron and Tibishirani (1993)[5].
Std. Dev.	The standard deviation of the data points.
Skewness	The coefficient of skewness of the data points.
Median (95% conf. interval)	The median of the data points and the 95% confidence interval about the median. The confidence interval was computed using the bias corrected and accelerated (BCa) bootstrap method described by Efron and Tibishirani (1993)[5].
25th, 75th percentiles	The difference between the 25th and 75th percentiles is the interquartile range, which is a non-parametric measure of the spread of the data.
Number of paired data	The number of storm events where influent and effluent samples were simultaneously collected.
Wilcoxon p-value	The statistical significance value for the signed-rank test, which is based on the alternative hypothesis that the median of the paired influent/effluent differences is not equal to zero. This non-parametric test applies only to paired data sets and is performed on log-transformed data (base 10) to improve the symmetry of the distribution of the differences between the data pairs. A p-value less than 0.05 indicates that the influent and effluent concentrations are statistically significantly different at the 95% confidence level.
Mann-Whitney p-value	The statistical significance value for the rank-sum test, which is based on the alternative hypothesis that the influent and effluent medians differ. This non-parametric test applies to two independent data sets. A p-value less than 0.05 indicates that the influent and effluent median concentrations are statistically significantly different at the 95% confidence level.

Outlier > Q3 + 1.5 × IQR

Q3 + 1.5 × IQR

75$^{\text{th}}$ percentile, Q3

Upper 95% CI

50$^{\text{th}}$ percentile, Median

Lower 95% CI

25$^{\text{th}}$ percentile, Q1

Arithmetic Mean

Q1 − 1.5 × IQR

Inner Quartile Range, IQR = Q3 − Q1

Boxplot Key
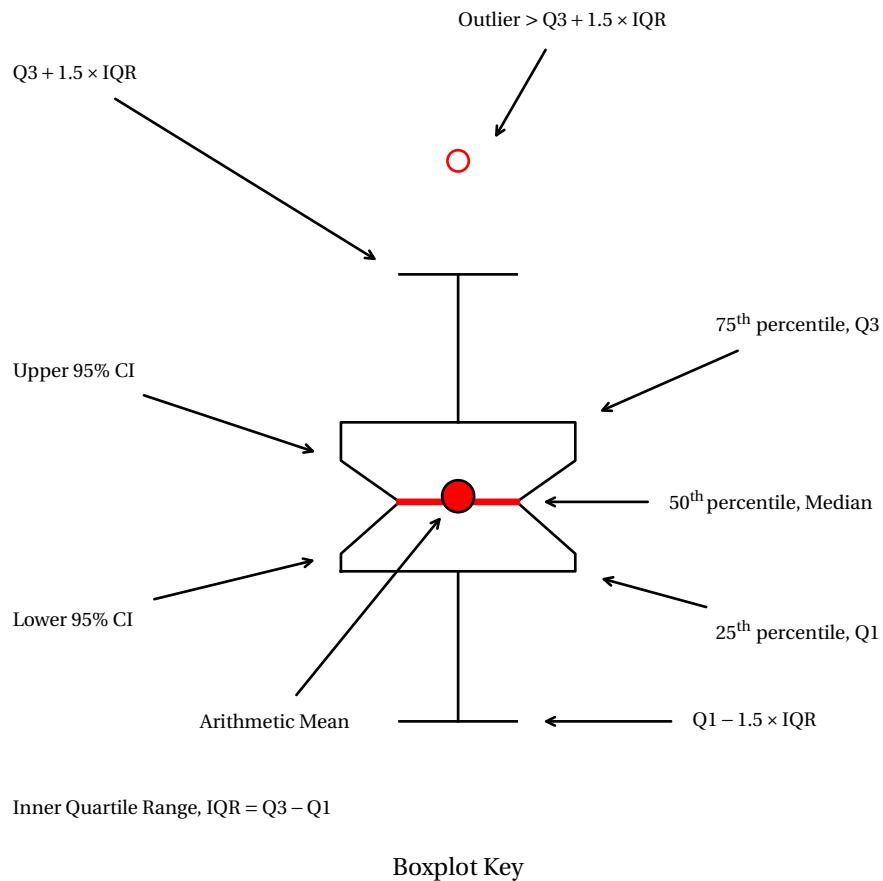
Figure 1.1: Graphical explanation of box and whisker plots

2 Bioretention

2.1 Total Suspended Solids

Table 2.1: Summary of Total Suspended Solids at Bioretention BMPs

| Statistic	Inlet	Outlet
Count	105	96
Number of Non-detects	0	15
Number of Studies	6	6
Min, Max	5.0, 370	0.0, 235
Mean (95% conf. interval)	70.6 (59.4, 83.4)	24.1 (16.8, 33.7)
Std. Dev.	63.3	41.6
Skewness	1.72	3.2
Median (95% conf. interval)	50.0 (39.0, 68.0)	10.0 (6.0, 13.0)
25th, 75th percentiles	21.0, 94.0	2.75, 24.0
Number of data pairs	87	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
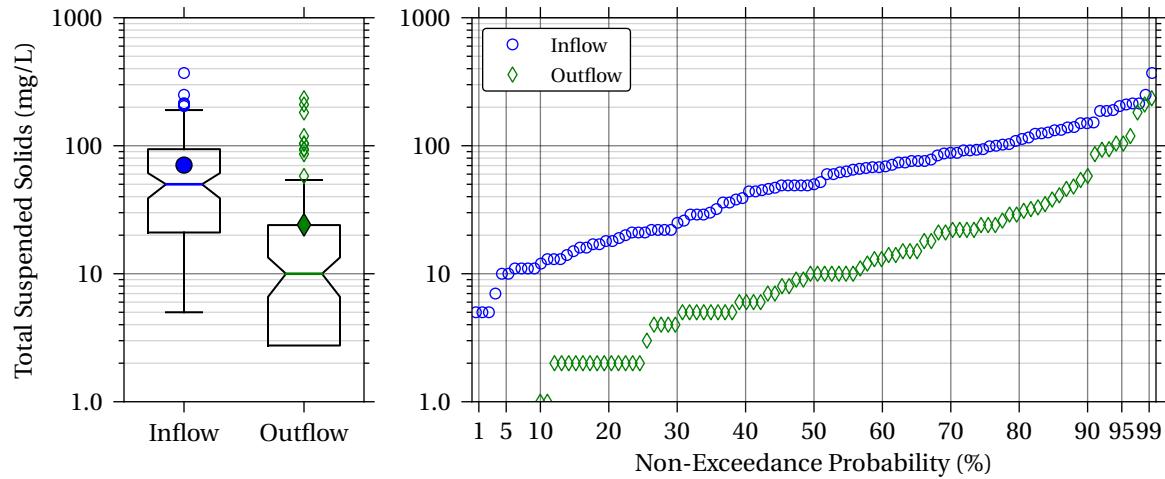
Figure 2.1: Box and Probability Plots of Total Suspended Solids at Bioretention BMPs
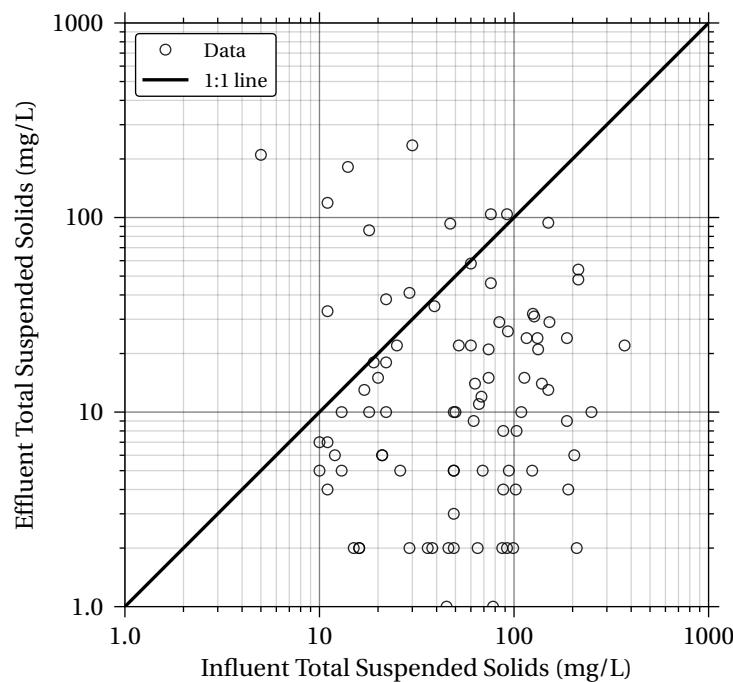
Figure 2.2: Influent vs. Effluent Plots of Total Suspended Solids at Bioretention BMPs

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3   Bioswale

3.1   Total Suspended Solids

Table 3.1: Summary of Total Suspended Solids at Bioswale BMPs

| Statistic	Inlet	Outlet
Count	243	265
Number of Non-detects	1	2
Number of Studies	17	19
Min, Max	1.0, 474	0.0, 191
Mean (95% conf. interval)	42.9 (36.1, 51.2)	21.4 (18.3, 25.1)
Std. Dev.	59.7	28.6
Skewness	3.6	2.66
Median (95% conf. interval)	21.0 (15.0, 26.0)	10.0 (7.0, 11.0)
25th, 75th percentiles	7.0, 58.5	3.0, 31.0
Number of data pairs	121	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
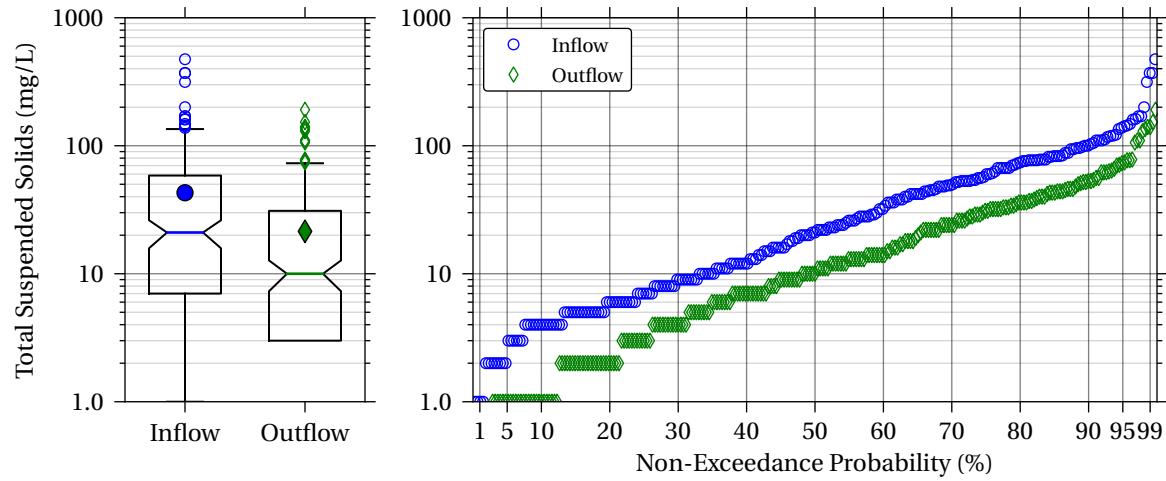
Figure 3.1: Box and Probability Plots of Total Suspended Solids at Bioswale BMPs
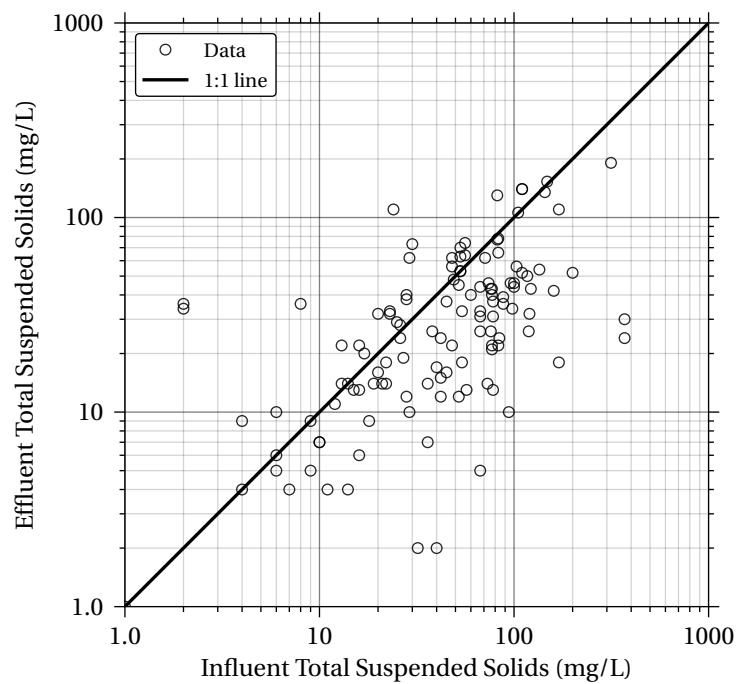
Figure 3.2: Influent vs. Effluent Plots of Total Suspended Solids at Bioswale BMPs

3.2   Total Dissolved Solids

Table 3.2: Summary of Total Dissolved Solids at Bioswale BMPs

Statistic	Inlet	Outlet
Count	95	82
Number of Non-detects	0	0
Number of Studies	12	12
Min, Max	5.0, 370	9.0, 200
Mean (95% conf. interval)	86.9 (75.2, 102)	72.4 (63.6, 81.9)
Std. Dev.	65.1	42.1
Skewness	2.48	0.659
Median (95% conf. interval)	77.0 (66.0, 79.0)	69.5 (56.0, 79.0)
25th, 75th percentiles	53.0, 90.0	36.0, 94.0
Number of data pairs	82	
Wilcoxon p-value	0.839	
Mann-Whitney p-value	0.123	
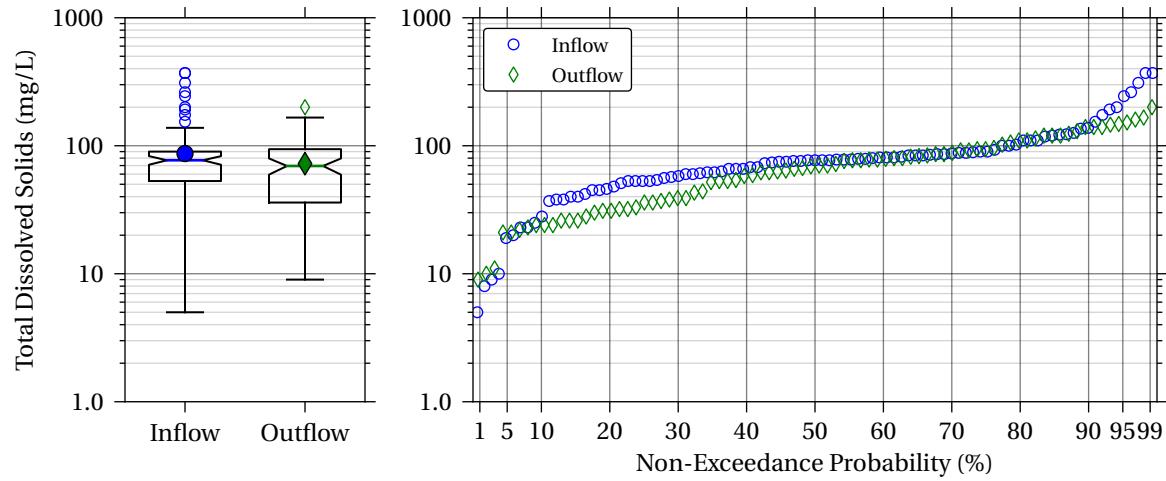
Figure 3.3: Box and Probability Plots of Total Dissolved Solids at Bioswale BMPs
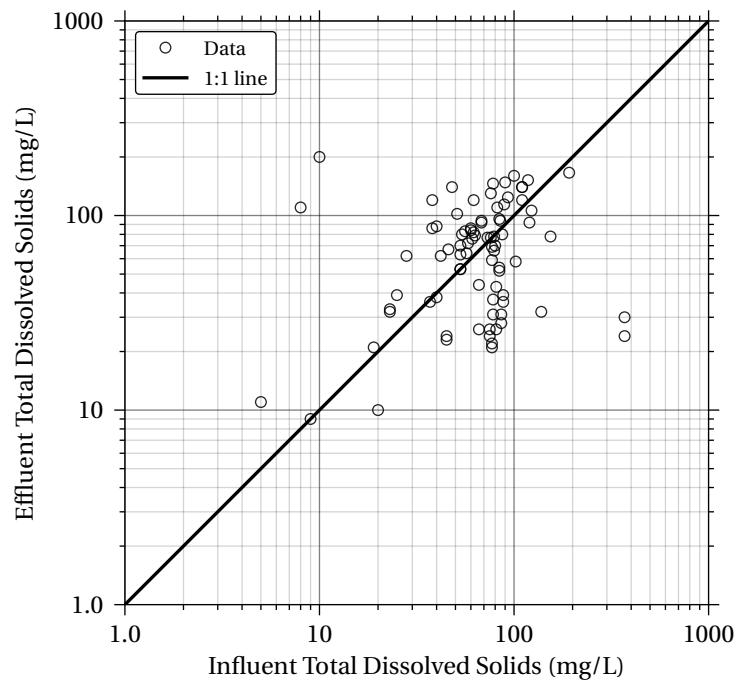
Figure 3.4: Influent vs. Effluent Plots of Total Dissolved Solids at Bioswale BMPs

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4 Detention Basin

4.1 Turbidity

Table 4.1: Summary of Turbidity at Detention Basin BMPs

Statistic	Inlet	Outlet
Count	85	111
Number of Non-detects	0	0
Number of Studies	7	7
Min, Max	2.0, 3680	0.0, 329
Mean (95% conf. interval)	196 (91.8, 348)	39.0 (30.0, 50.1)
Std. Dev.	593	53.7
Skewness	4.43	2.99
Median (95% conf. interval)	39.0 (27.0, 50.0)	19.0 (15.0, 26.0)
25th, 75th percentiles	19.0, 109	12.0, 42.0
Number of data pairs	47	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
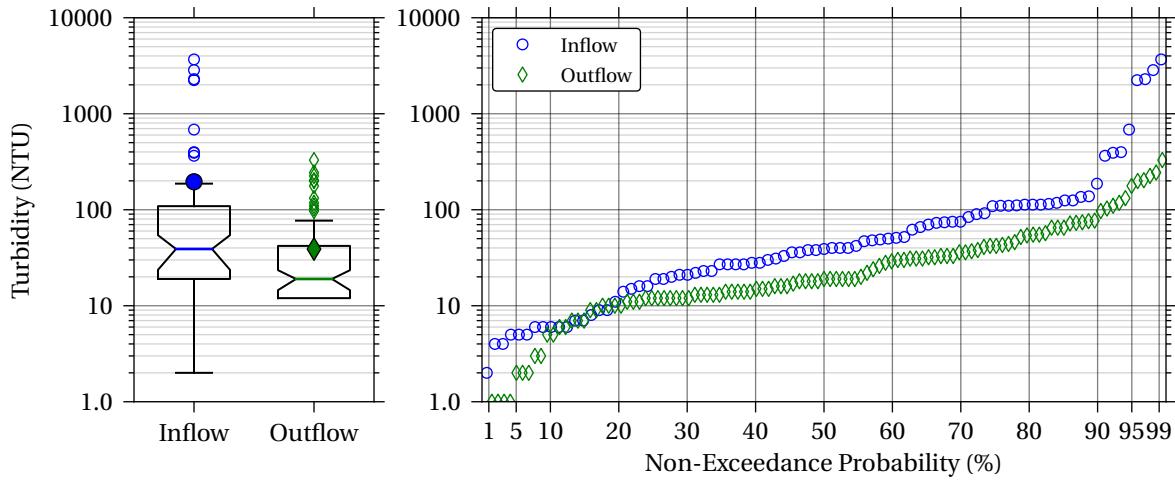
Figure 4.1: Box and Probability Plots of Turbidity at Detention Basin BMPs
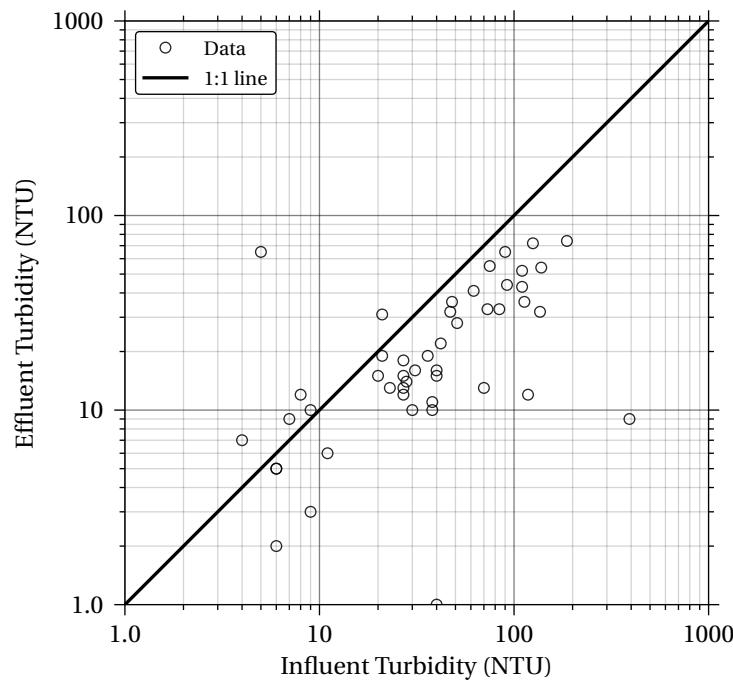
Figure 4.2: Influent vs. Effluent Plots of Turbidity at Detention Basin BMPs

4.2   Total Suspended Solids

Table 4.2: Summary of Total Suspended Solids at Detention Basin BMPs

Statistic	Inlet	Outlet
Count	239	265
Number of Non-detects	1	2
Number of Studies	19	19
Min, Max	1.0, 3410	0.0, 420
Mean (95% conf. interval)	118 (91.8, 161)	37.1 (31.6, 44.0)
Std. Dev.	265	51.2
Skewness	8.91	4.31
Median (95% conf. interval)	64.0 (47.0, 76.0)	24.0 (19.0, 27.0)
25th, 75th percentiles	21.5, 121	10.0, 44.0
Number of data pairs	194	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
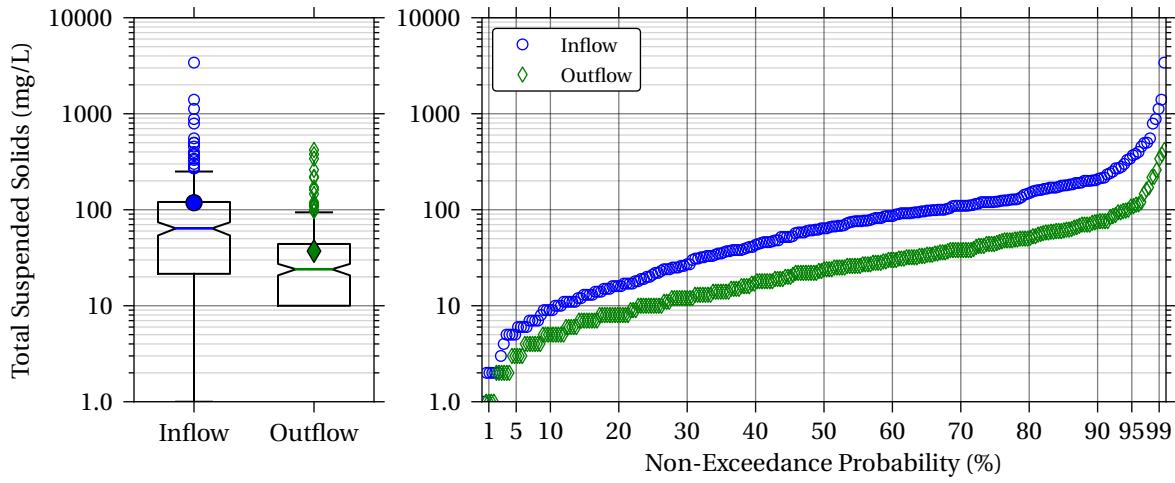
Figure 4.3: Box and Probability Plots of Total Suspended Solids at Detention Basin BMPs
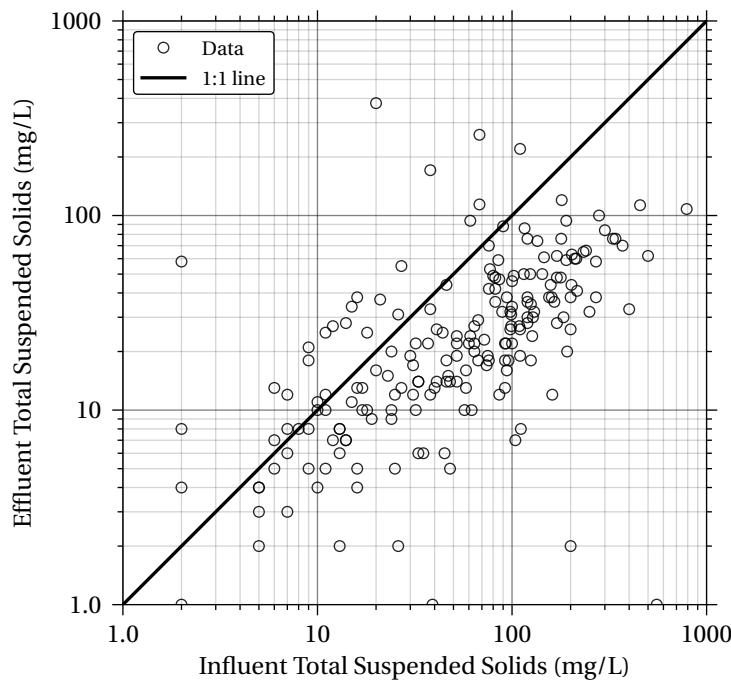

Figure 4.4: Influent vs. Effluent Plots of Total Suspended Solids at Detention Basin BMPs

4.3   Total Dissolved Solids

Table 4.3: Summary of Total Dissolved Solids at Detention Basin BMPs

Statistic	Inlet	Outlet
Count	66	62
Number of Non-detects	0	0
Number of Studies	6	6
Min, Max	28.0, 467	12.0, 396
Mean (95% conf. interval)	127 (107, 151)	130 (111, 152)
Std. Dev.	89.7	83.6
Skewness	1.84	1.17
Median (95% conf. interval)	100 (83.5, 129)	110 (79.0, 121)
25th, 75th percentiles	65.3, 160	69.3, 179
Number of data pairs	62	
Wilcoxon p-value	0.351	
Mann-Whitney p-value	0.336	
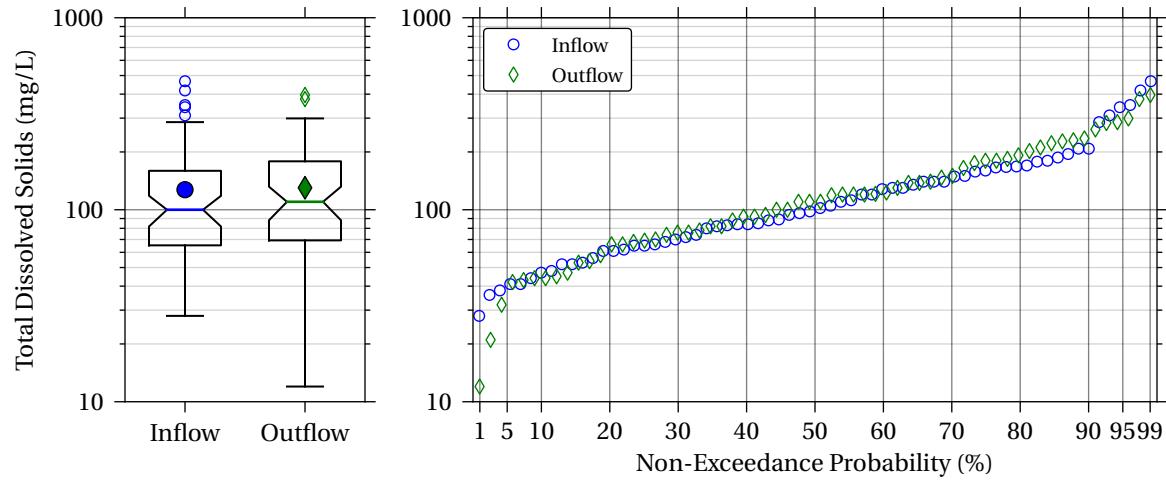
Figure 4.5: Box and Probability Plots of Total Dissolved Solids at Detention Basin BMPs
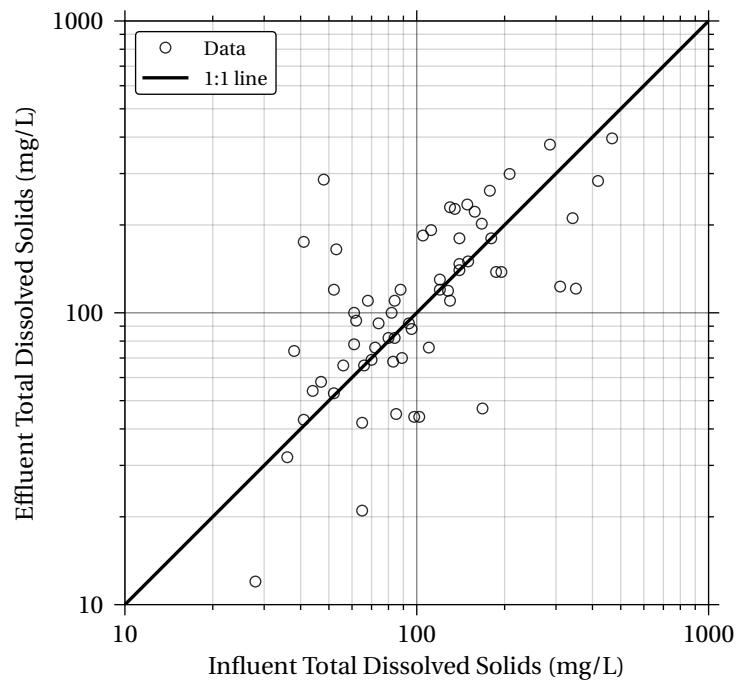

Figure 4.6: Influent vs. Effluent Plots of Total Dissolved Solids at Detention Basin BMPs

5   Filter Strip

5.1   Total Suspended Solids

Table 5.1: Summary of Total Suspended Solids at Filter Strip BMPs

Statistic	Inlet	Outlet
Count	232	175
Number of Non-detects	2	9
Number of Studies	14	14
Min, Max	0.0, 400	0.0, 330
Mean (95% conf. interval)	75.7 (67.0, 85.5)	29.0 (23.6, 36.2)
Std. Dev.	71.1	41.9
Skewness	1.94	4.31
Median (95% conf. interval)	50.5 (44.5, 58.5)	18.0 (14.0, 20.0)
25th, 75th percentiles	27.8, 96.0	10.0, 32.5
Number of data pairs	160	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
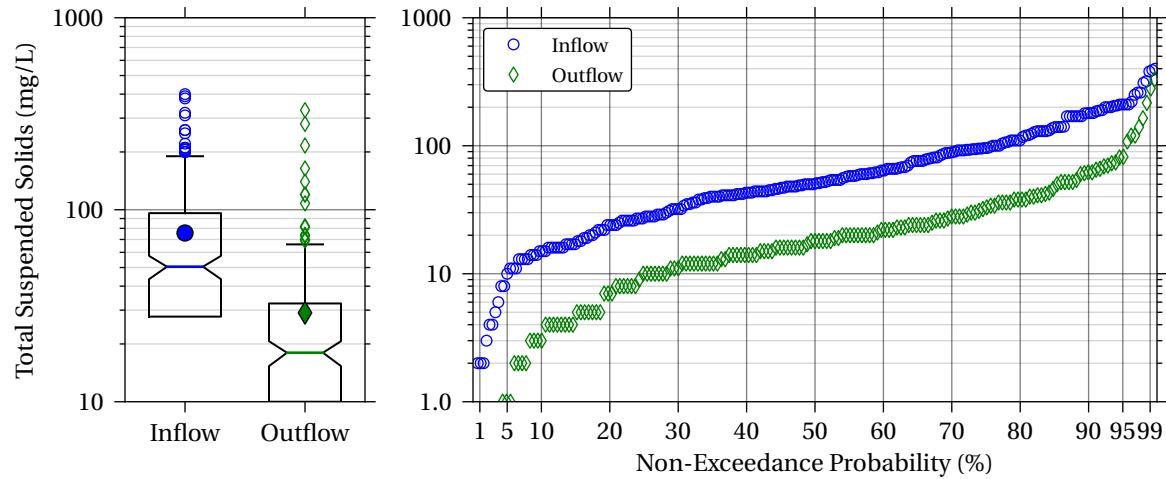
Figure 5.1: Box and Probability Plots of Total Suspended Solids at Filter Strip BMPs
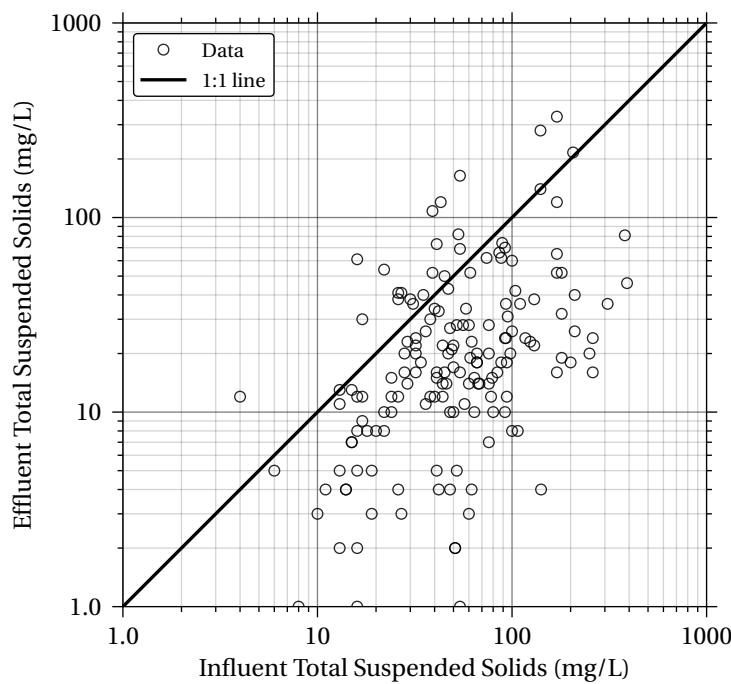
Figure 5.2: Influent vs. Effluent Plots of Total Suspended Solids at Filter Strip BMPs

5.2   Total Dissolved Solids

Table 5.2: Summary of Total Dissolved Solids at Filter Strip BMPs

Statistic	Inlet	Outlet
Count	188	151
Number of Non-detects	17	4
Number of Studies	12	12
Min, Max	0.0, 820	1.0, 306
Mean (95% conf. interval)	66.1 (56.1, 79.3)	104 (93.7, 114)
Std. Dev.	80.7	63.8
Skewness	5.03	0.988
Median (95% conf. interval)	46.0 (33.5, 52.0)	90.0 (76.0, 98.0)
25th, 75th percentiles	22.8, 82.0	58.0, 134
Number of data pairs	140	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
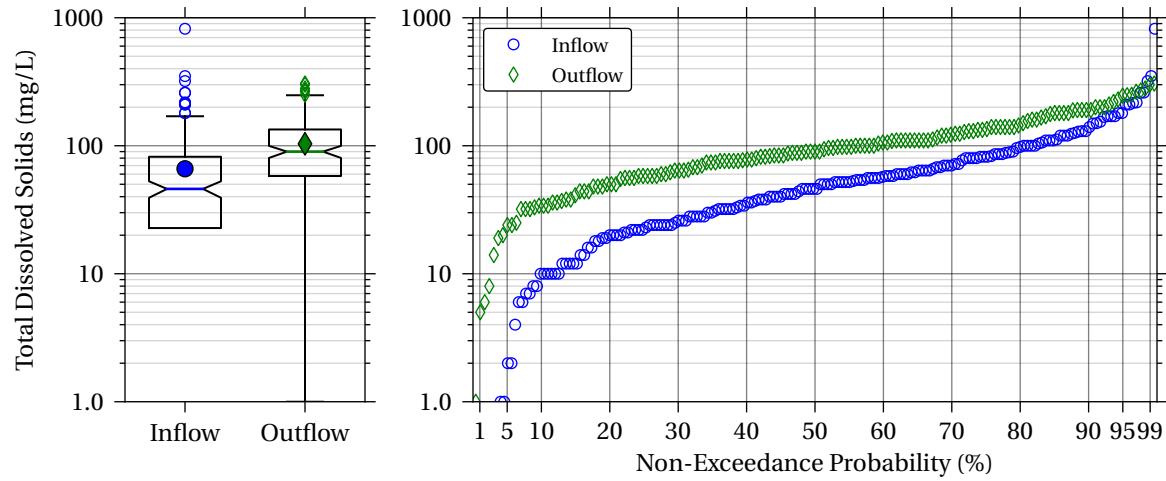
Figure 5.3: Box and Probability Plots of Total Dissolved Solids at Filter Strip BMPs
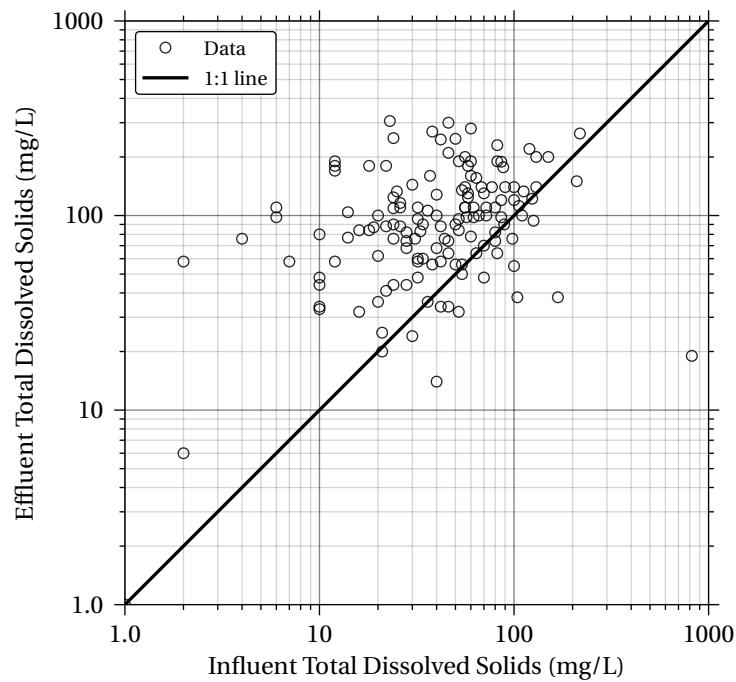

Figure 5.4: Influent vs. Effluent Plots of Total Dissolved Solids at Filter Strip BMPs

6 Manufactured Device

6.1 Turbidity

Table 6.1: Summary of Turbidity at Manufactured Device BMPs

Statistic	Inlet	Outlet
Count	140	122
Number of Non-detects	11	7
Number of Studies	9	9
Min, Max	0.0, 1030	0.0, 639
Mean (95% conf. interval)	27.3 (15.6, 48.9)	20.5 (11.2, 36.0)
Std. Dev.	97.3	68.5
Skewness	8.51	7.04
Median (95% conf. interval)	6.0 (5.0, 6.0)	4.0 (4.0, 5.0)
25th, 75th percentiles	4.0, 9.5	3.0, 8.0
Number of data pairs	111	
Wilcoxon p-value	0.00222	
Mann-Whitney p-value	0.0231	
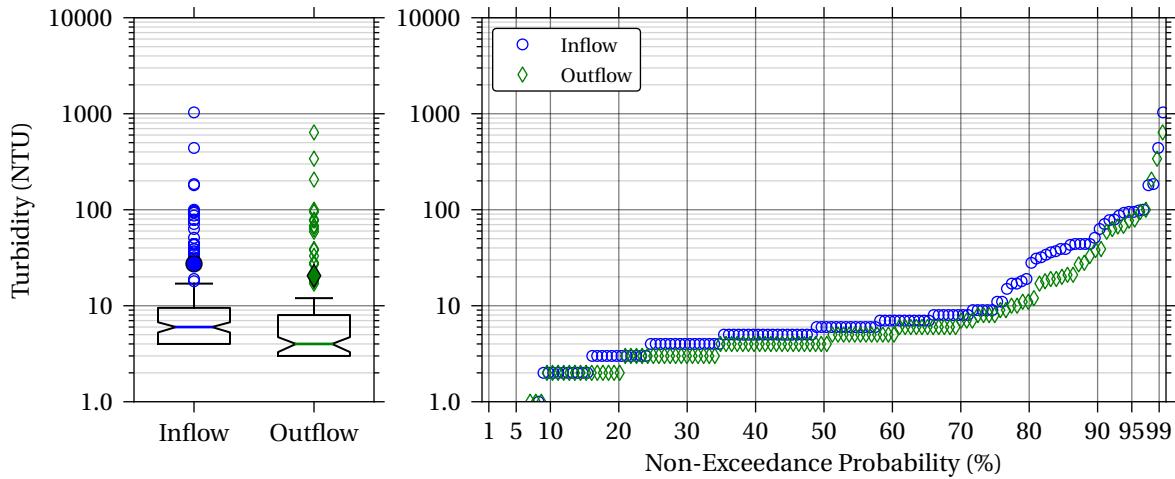
Figure 6.1: Box and Probability Plots of Turbidity at Manufactured Device BMPs
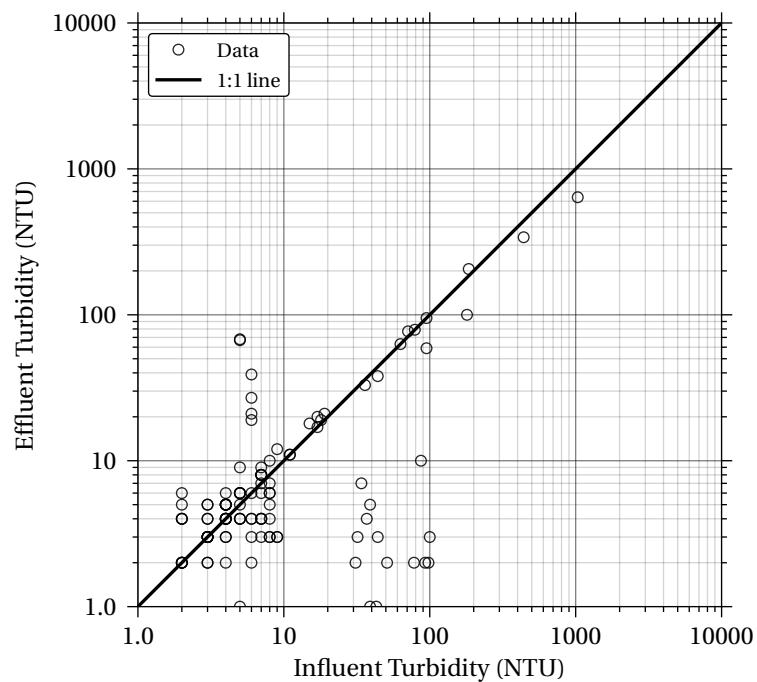
Figure 6.2: Influent vs. Effluent Plots of Turbidity at Manufactured Device BMPs

6.2   Total Suspended Solids

Table 6.2: Summary of Total Suspended Solids at Manufactured Device BMPs

| Statistic	Inlet	Outlet
Count	555	608
Number of Non-detects	2	37
Number of Studies	40	47
Min, Max	1.0, 3520	0.0, 991
Mean (95% conf. interval)	128 (107, 153)	49.8 (43.4, 57.3)
Std. Dev.	277	87.5
Skewness	6.05	5.08
Median (95% conf. interval)	41.0 (36.0, 46.0)	23.0 (19.0, 25.0)
25th, 75th percentiles	16.0, 109	7.0, 51.3
Number of data pairs	508	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
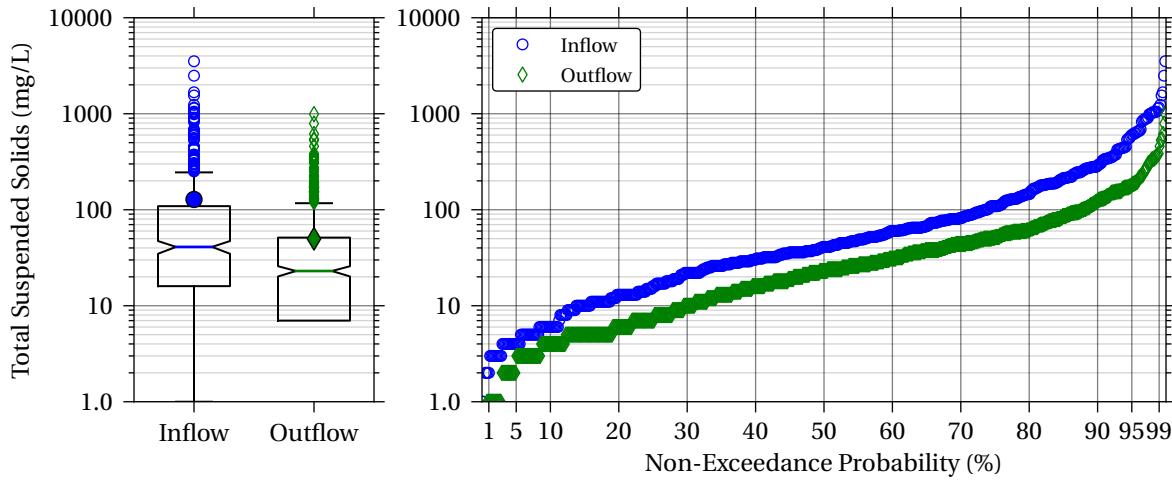
Figure 6.3: Box and Probability Plots of Total Suspended Solids at Manufactured Device BMPs
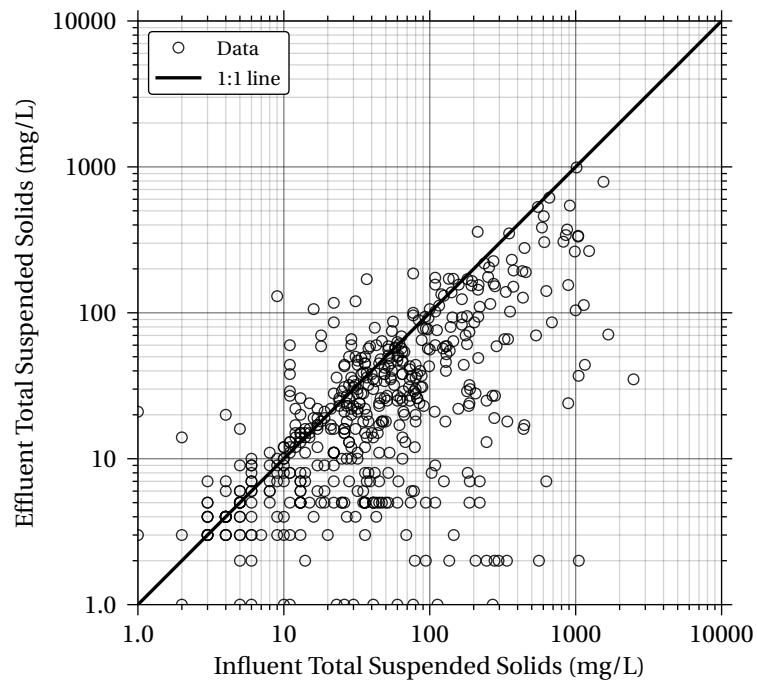

Figure 6.4: Influent vs. Effluent Plots of Total Suspended Solids at Manufactured Device BMPs

6.3 Total Dissolved Solids

Table 6.3: Summary of Total Dissolved Solids at Manufactured Device BMPs

| Statistic	Inlet	Outlet
Count	175	207
Number of Non-detects	4	3
Number of Studies	12	19
Min, Max	1.0, 114000	1.0, 95500
Mean (95% conf. interval)	3460 (1940, 5650)	3530 (2060, 5510)
Std. Dev.	12400	12500
Skewness	6.06	5.38
Median (95% conf. interval)	126 (96.0, 165)	87.0 (72.0, 122)
25th, 75th percentiles	51.0, 717	48.0, 386
Number of data pairs	173	
Wilcoxon p-value	0.0112	
Mann-Whitney p-value	0.166	
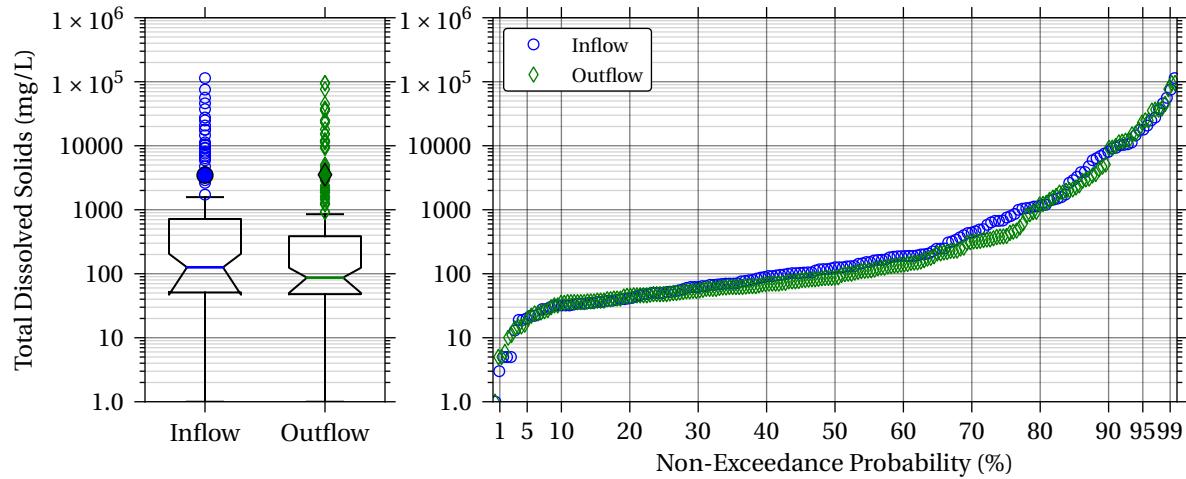
Figure 6.5: Box and Probability Plots of Total Dissolved Solids at Manufactured Device BMPs
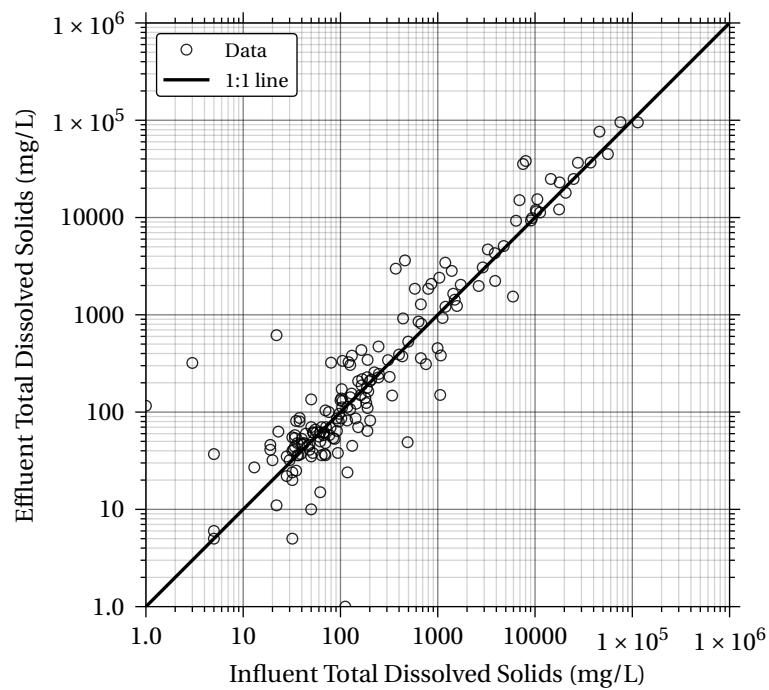
Figure 6.6: Influent vs. Effluent Plots of Total Dissolved Solids at Manufactured Device BMPs

7 Media Filter

7.1 Turbidity

Table 7.1: Summary of Turbidity at Media Filter BMPs

| Statistic	Inlet	Outlet
Count	43	48
Number of Non-detects	0	2
Number of Studies	4	5
Min, Max	1.0, 64.0	0.0, 274
Mean (95% conf. interval)	25.8 (20.8, 31.1)	18.1 (8.4, 34.8)
Std. Dev.	17.1	45.0
Skewness	0.526	4.47
Median (95% conf. interval)	25.0 (14.0, 27.0)	5.0 (3.5, 6.5)
25th, 75th percentiles	13.0, 38.0	3.0, 8.25
Number of data pairs	40	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
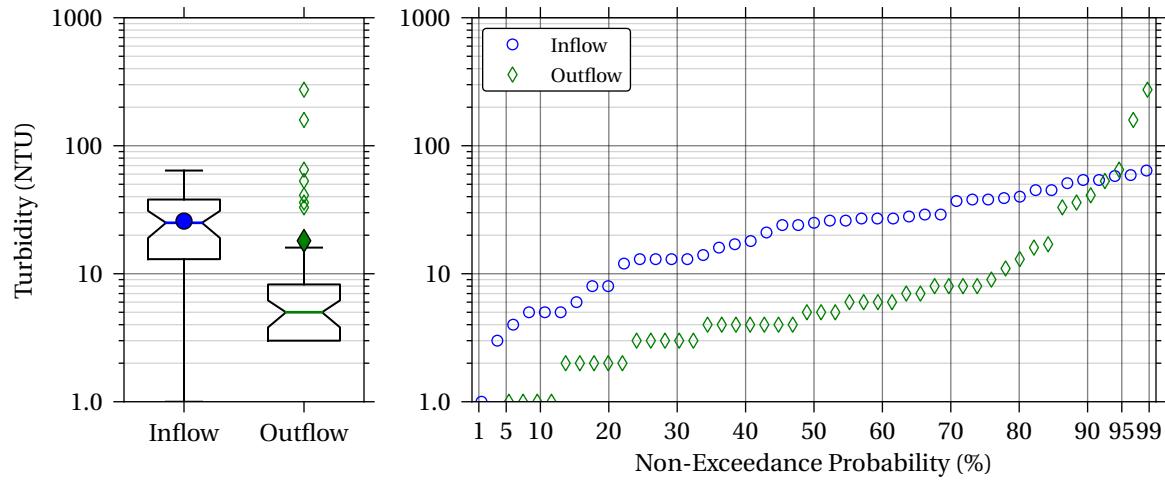
Figure 7.1: Box and Probability Plots of Turbidity at Media Filter BMPs
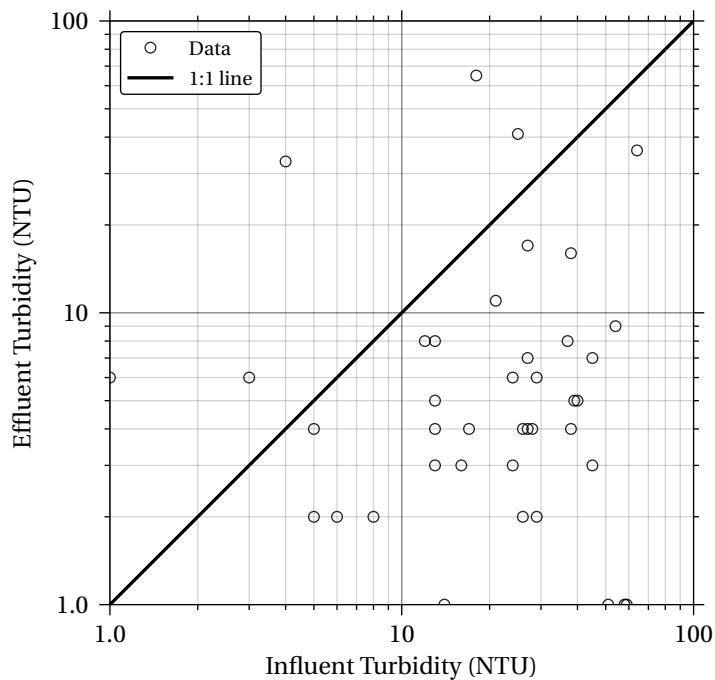

Figure 7.2: Influent vs. Effluent Plots of Turbidity at Media Filter BMPs

7.2   Total Suspended Solids

Table 7.2: Summary of Total Suspended Solids at Media Filter BMPs

| Statistic	Inlet	Outlet
Count	294	286
Number of Non-detects	3	27
Number of Studies	19	20
Min, Max	0.0, 420	0.0, 280
Mean (95% conf. interval)	69.7 (62.2, 77.7)	19.9 (16.0, 24.5)
Std. Dev.	67.4	36.9
Skewness	2.19	4.0
Median (95% conf. interval)	46.0 (38.0, 51.5)	7.0 (6.0, 7.0)
25th, 75th percentiles	26.0, 90.8	3.25, 18.8
Number of data pairs	273	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
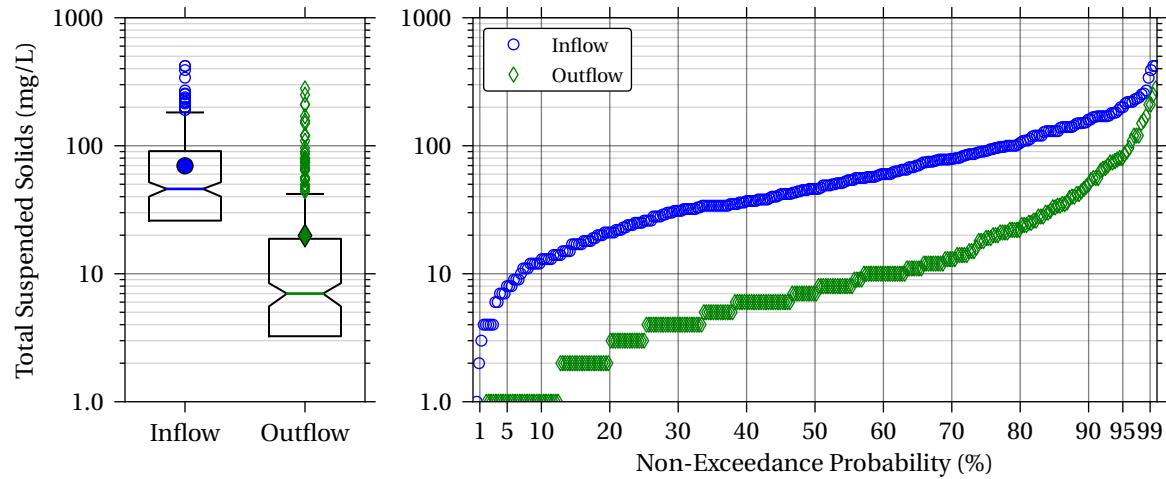
Figure 7.3: Box and Probability Plots of Total Suspended Solids at Media Filter BMPs
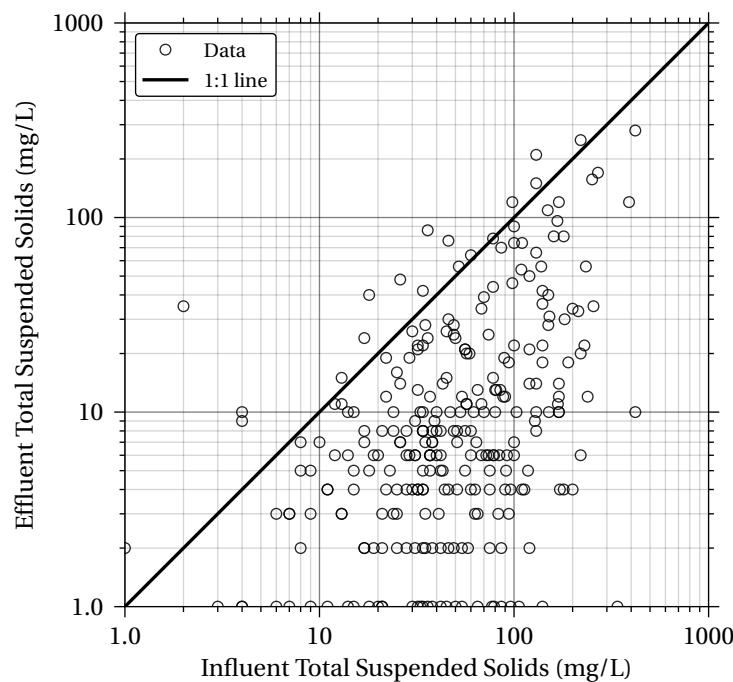

Figure 7.4: Influent vs. Effluent Plots of Total Suspended Solids at Media Filter BMPs

7.3 Total Dissolved Solids

Table 7.3: Summary of Total Dissolved Solids at Media Filter BMPs

| Statistic	Inlet	Outlet
Count	126	130
Number of Non-detects	8	4
Number of Studies	12	13
Min, Max	0.0, 3620	2.0, 7160
Mean (95% conf. interval)	89.5 (48.1, 174)	152 (82.4, 315)
Std. Dev.	345	639
Skewness	9.08	10.2
Median (95% conf. interval)	37.0 (29.0, 43.0)	54.0 (47.0, 58.0)
25th, 75th percentiles	19.0, 60.0	38.0, 97.0
Number of data pairs	120	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
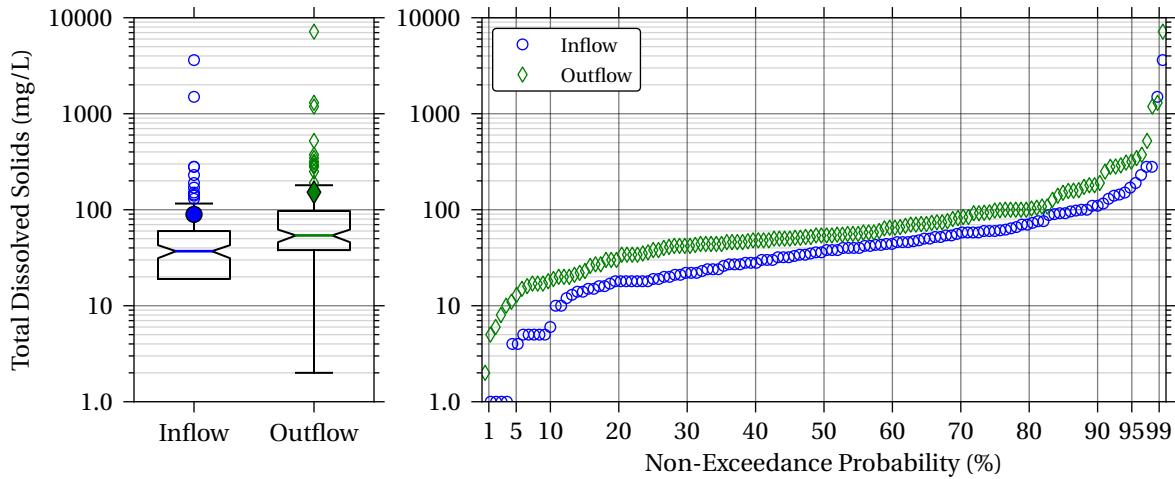
Figure 7.5: Box and Probability Plots of Total Dissolved Solids at Media Filter BMPs
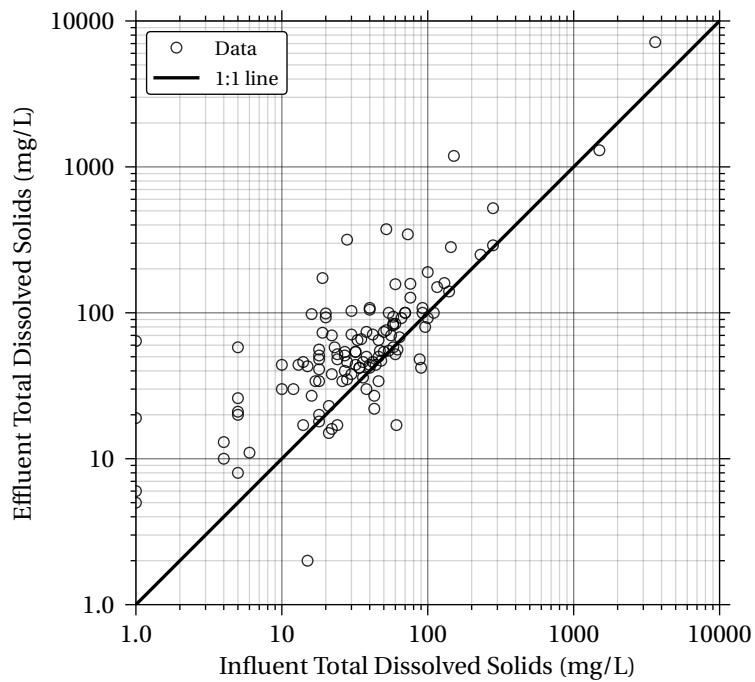

Figure 7.6: Influent vs. Effluent Plots of Total Dissolved Solids at Media Filter BMPs

8 Porous Pavement

8.1 Total Suspended Solids

Table 8.1: Summary of Total Suspended Solids at Porous Pavement BMPs

| Statistic	Inlet	Outlet
Count	64	73
Number of Non-detects	0	7
Number of Studies	5	8
Min, Max	1.0, 1360	0.0, 764
Mean (95% conf. interval)	93.7 (47.6, 168)	38.5 (21.3, 68.6)
Std. Dev.	239	100
Skewness	4.69	5.86
Median (95% conf. interval)	22.0 (16.0, 27.5)	14.0 (10.0, 17.0)
25th, 75th percentiles	12.8, 75.0	7.0, 31.0
Number of data pairs	61	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	0.002	
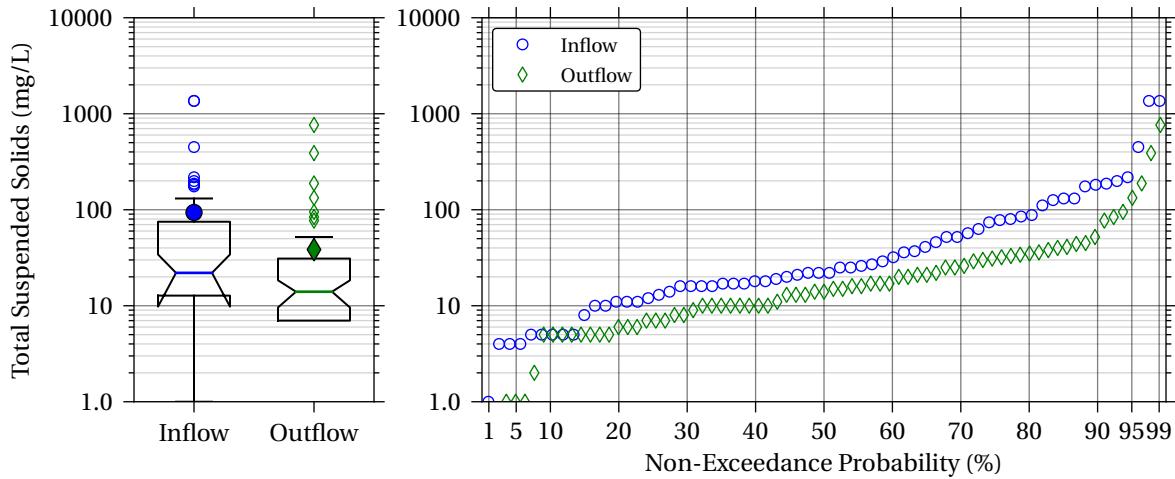
Figure 8.1: Box and Probability Plots of Total Suspended Solids at Porous Pavement BMPs
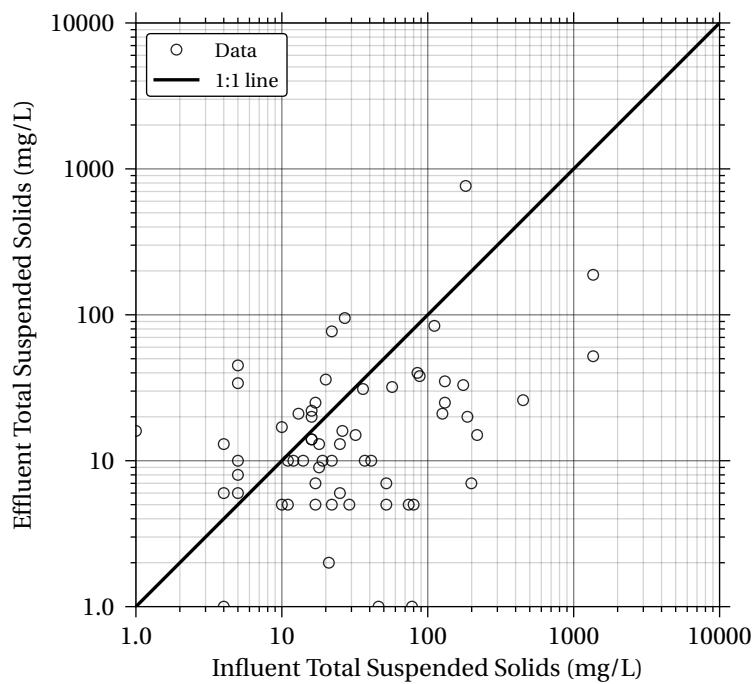
Figure 8.2: Influent vs. Effluent Plots of Total Suspended Solids at Porous Pavement BMPs

9 Retention Pond

9.1 Turbidity

Table 9.1: Summary of Turbidity at Retention Pond BMPs

| Statistic	Inlet	Outlet
Count	89	102
Number of Non-detects	0	0
Number of Studies	5	6
Min, Max	2.0, 351	0.0, 27.0
Mean (95% conf. interval)	37.2 (26.7, 50.9)	3.34 (2.49, 4.38)
Std. Dev.	57.4	4.85
Skewness	3.06	2.66
Median (95% conf. interval)	17.0 (10.0, 20.0)	1.0 (1.0, 1.0)
25th, 75th percentiles	8.0, 34.0	1.0, 4.0
Number of data pairs	52	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
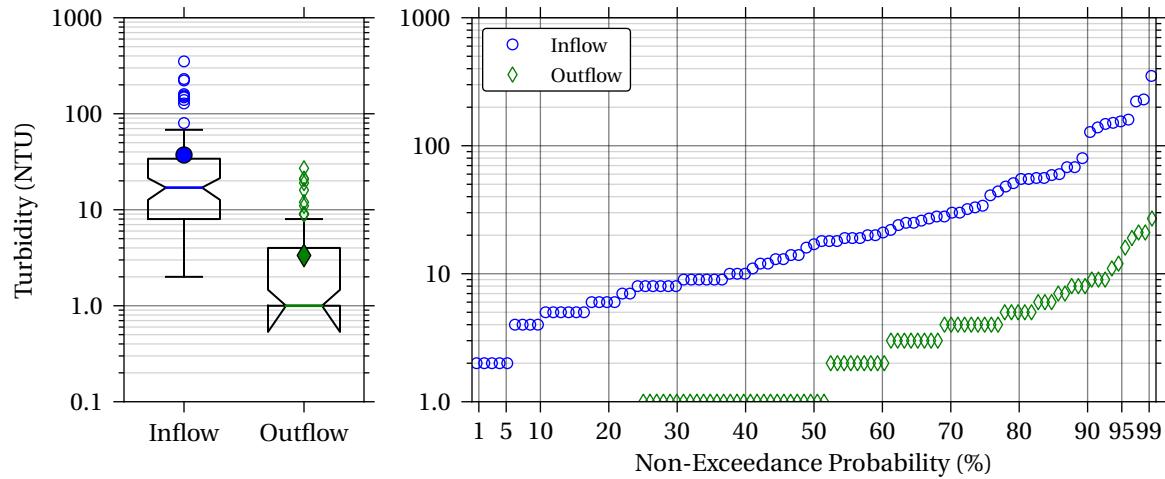
Figure 9.1: Box and Probability Plots of Turbidity at Retention Pond BMPs
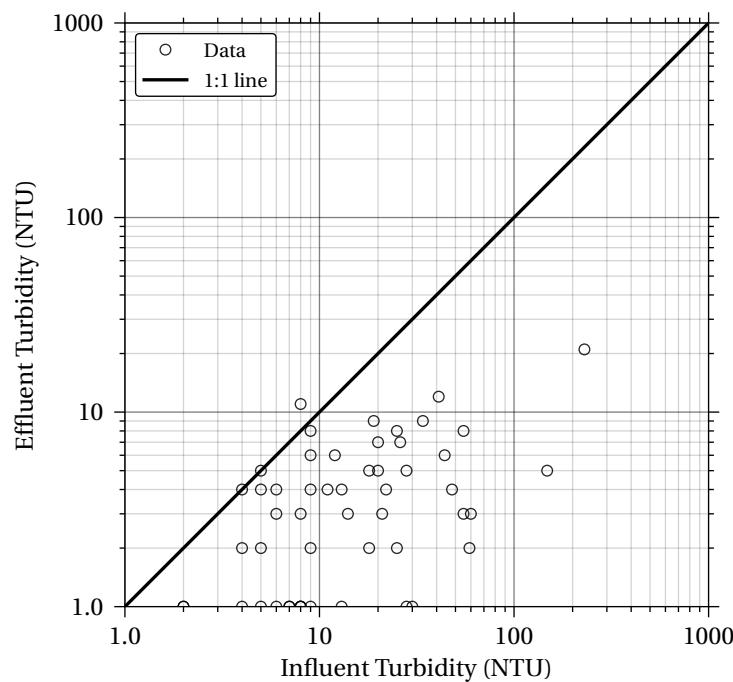
Figure 9.2: Influent vs. Effluent Plots of Turbidity at Retention Pond BMPs

9.2   Total Suspended Solids

Table 9.2: Summary of Total Suspended Solids at Retention Pond BMPs

| Statistic	Inlet	Outlet
Count	605	605
Number of Non-detects	5	25
Number of Studies	41	40
Min, Max	0.0, 1760	0.0, 306
Mean (95% conf. interval)	133 (116, 151)	24.6 (21.9, 27.7)
Std. Dev.	216	36.1
Skewness	3.92	3.23
Median (95% conf. interval)	60.0 (49.0, 70.0)	12.0 (10.0, 12.0)
25th, 75th percentiles	18.0, 148	5.0, 28.0
Number of data pairs	487	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
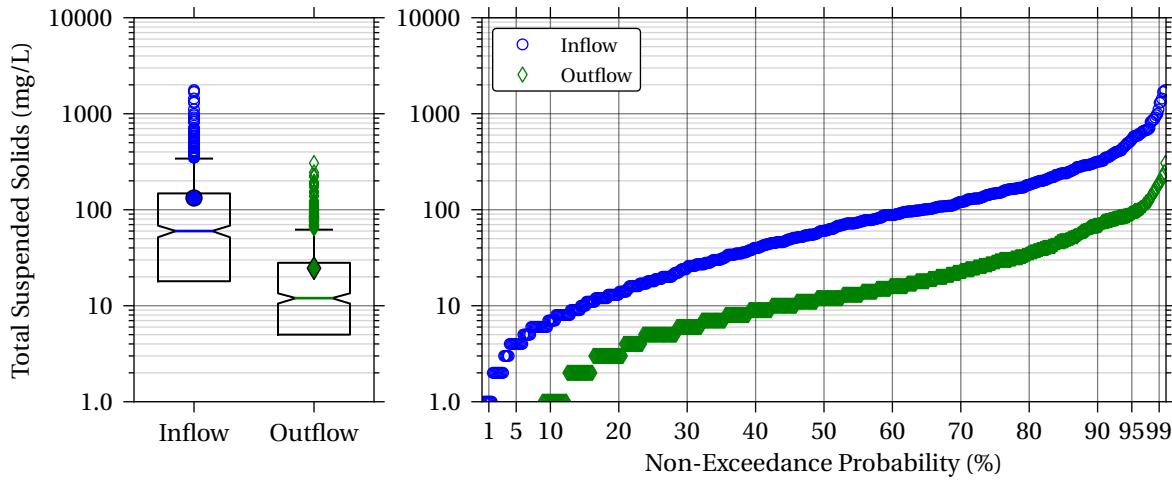
Figure 9.3: Box and Probability Plots of Total Suspended Solids at Retention Pond BMPs
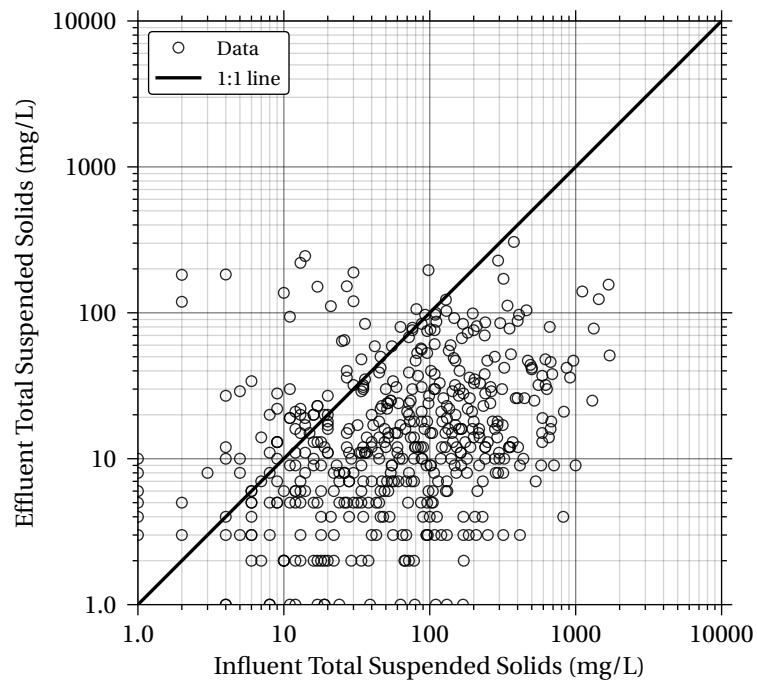

Figure 9.4: Influent vs. Effluent Plots of Total Suspended Solids at Retention Pond BMPs

9.3   Total Dissolved Solids

Table 9.3: Summary of Total Dissolved Solids at Retention Pond BMPs

| Statistic	Inlet	Outlet
Count	101	93
Number of Non-detects	0	0
Number of Studies	9	9
Min, Max	6.0, 1100	2.0, 1900
Mean (95% conf. interval)	138 (115, 169)	313 (233, 409)
Std. Dev.	136	434
Skewness	4.02	2.38
Median (95% conf. interval)	104 (79.0, 124)	167 (130, 181)
25th, 75th percentiles	61.0, 170	65.0, 365
Number of data pairs	91	
Wilcoxon p-value	0.00283	
Mann-Whitney p-value	0.00979	
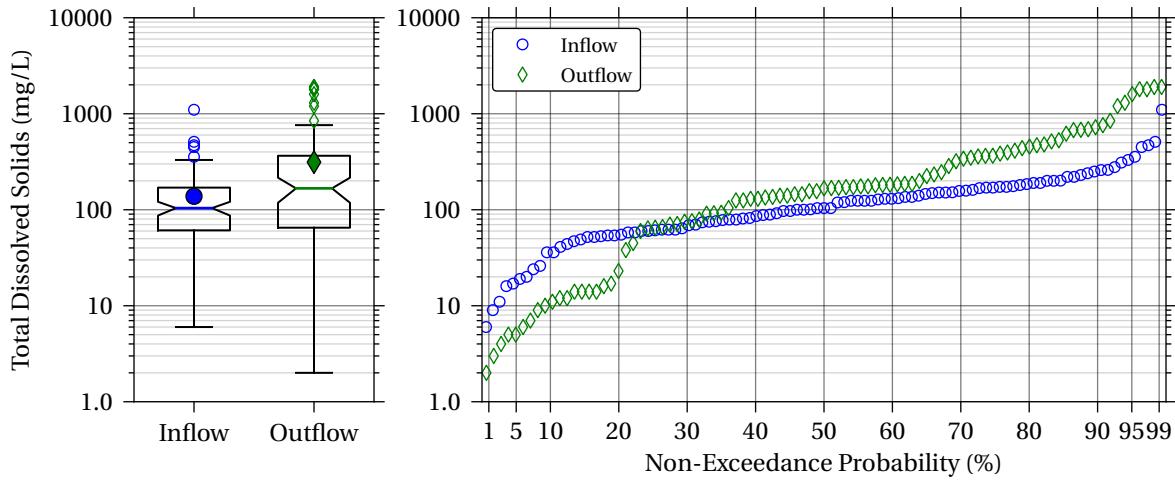
Figure 9.5: Box and Probability Plots of Total Dissolved Solids at Retention Pond BMPs
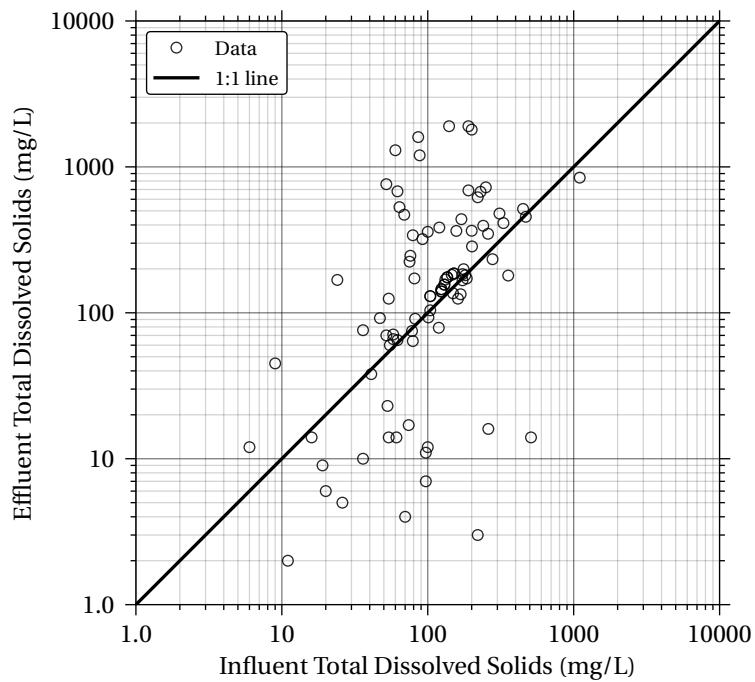
Figure 9.6: Influent vs. Effluent Plots of Total Dissolved Solids at Retention Pond BMPs

10 Wetland Basin

10.1 Total Suspended Solids

Table 10.1: Summary of Total Suspended Solids at Wetland Basin BMPs

| Statistic	Inlet	Outlet
Count	303	295
Number of Non-detects	1	11
Number of Studies	15	16
Min, Max	0.0, 1260	0.0, 731
Mean (95% conf. interval)	49.3 (41.1, 61.8)	19.4 (14.5, 27.1)
Std. Dev.	90.0	53.7
Skewness	8.45	9.42
Median (95% conf. interval)	20.0 (16.0, 26.0)	8.0 (6.0, 9.0)
25th, 75th percentiles	9.0, 59.0	2.0, 18.0
Number of data pairs	228	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
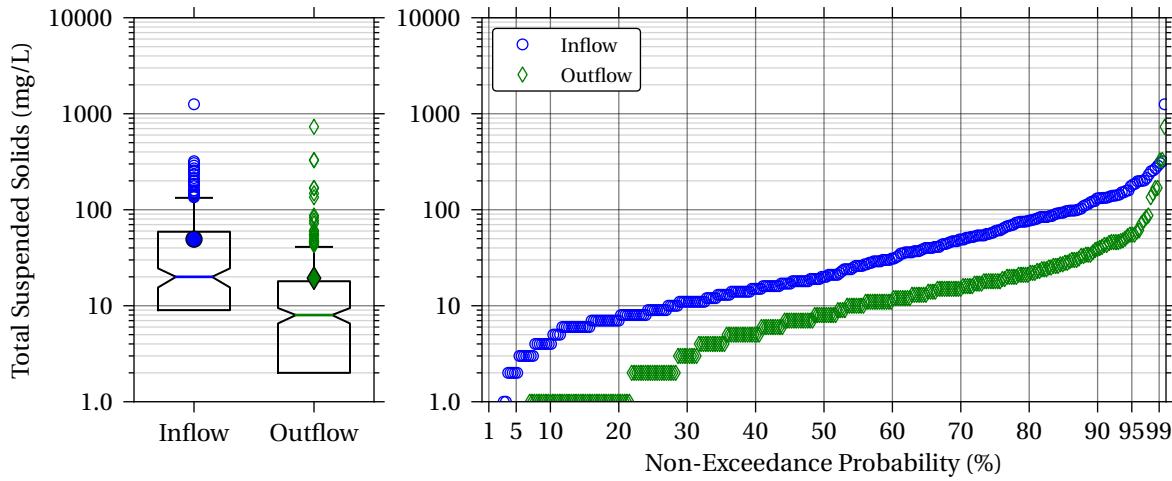
Figure 10.1: Box and Probability Plots of Total Suspended Solids at Wetland Basin BMPs
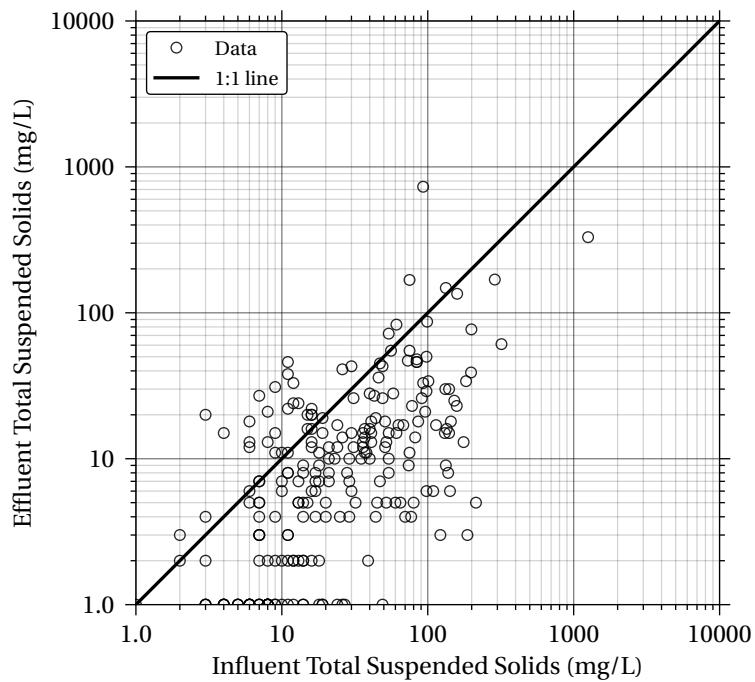

Figure 10.2: Influent vs. Effluent Plots of Total Suspended Solids at Wetland Basin BMPs

11 Wetland Channel

11.1 Total Suspended Solids

Table 11.1: Summary of Total Suspended Solids at Wetland Channel BMPs

| Statistic	Inlet	Outlet
Count	91	88
Number of Non-detects	0	0
Number of Studies	5	5
Min, Max	2.0, 437	1.0, 2450
Mean (95% conf. interval)	71.7 (55.9, 91.0)	88.3 (30.7, 189)
Std. Dev.	85.1	360
Skewness	2.03	6.09
Median (95% conf. interval)	31.0 (22.0, 42.0)	14.0 (8.0, 16.0)
25th, 75th percentiles	17.0, 98.0	6.0, 34.0
Number of data pairs	81	
Wilcoxon p-value	<0.001	
Mann-Whitney p-value	<0.001	
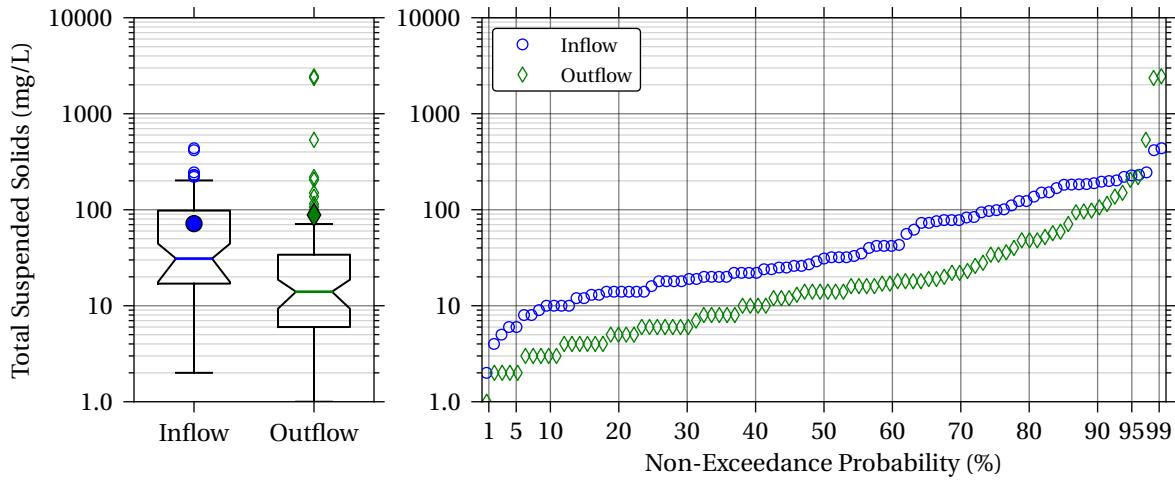
Figure 11.1: Box and Probability Plots of Total Suspended Solids at Wetland Channel BMPs
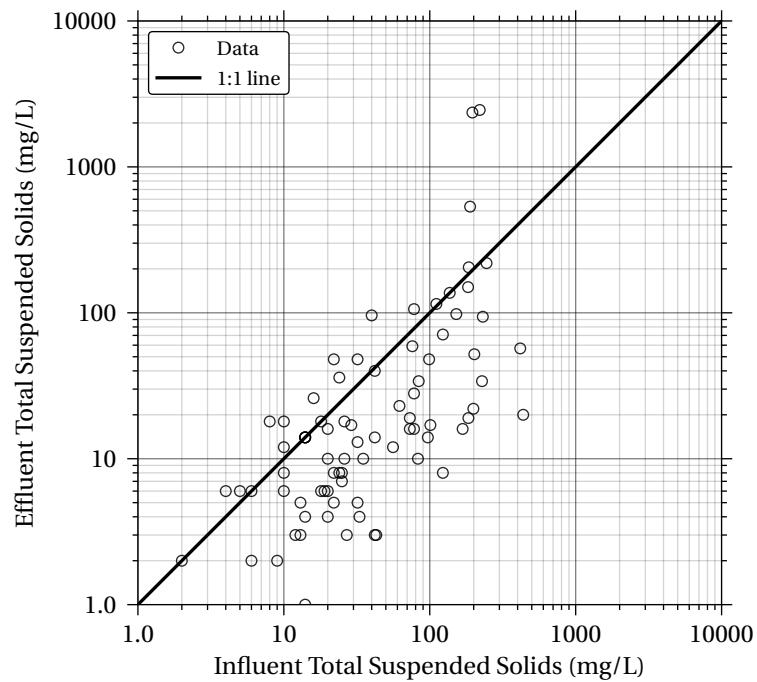
Figure 11.2: Influent vs. Effluent Plots of Total Suspended Solids at Wetland Channel BMPs