Wetland
Studies and Solutions, Inc.

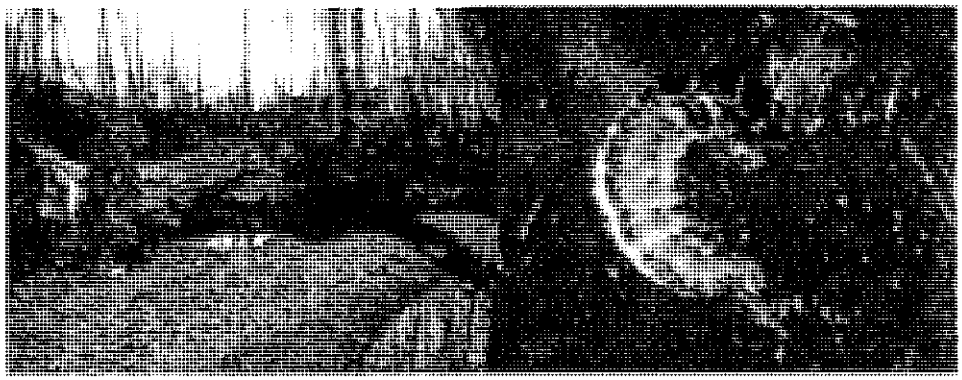
BIOLOGICAL MONITORING REPORT #1

Pre-construction Monitoring

NORTHERN VIRGINIA STREAM RESTORATION BANK

Snakeden Branch Watershed
(±21,000 LINEAR FEET)

FAIRFAX COUNTY, VIRGINIA



Prepared For:

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WSSI Project #20003 – Task D

JANUARY 29, 2008

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January 29, 2008

I. Executive Summary

As set forth in the "Northern Virginia Stream Restoration Bank Banking Instrument" (Banking Instrument), approximately 21,000 linear feet of streams and drainage features within the Snakeden Branch Watershed will be stabilized and restored. This stream restoration project should result in a direct improvement of in-stream habitat and an indirect improvement in water quality.

Wetland Studies and Solutions, Inc. (WSSI) conducted pre-construction biological stream assessments along the Snakeden Branch Watershed portion of the Northern Virginia Stream Restoration Bank (NVSRB) pursuant to the maintenance and monitoring requirements defined in the NVSRB Banking Instrument, Section VI.B.2.(i). The purpose of this pre-construction monitoring is to determine the baseline conditions of the streams within the Snakeden Branch Watershed Portion of the NVSRB, against which future biological monitoring in the study area will be compared.

A total of nine permanent monitoring reaches were established along representative, samplable streams within the Snakeden Branch Watershed portion of the NVSRB. A biological field reconnaissance (U.S. Environmental Protection Agency's BioRecon) combined with observations of stream flow were used to establish the location of these permanent monitoring reaches. Once established, biological stream monitoring was conducted along these reaches using benthic macroinvertebrate and habitat data. Benthic macroinvertebrate data was used to calculate a Stream Condition Index for Virginia Non-coastal Streams (VA-SCI) and habitat data was used to calculate the percentage of best possible habitat for each reach.

Our baseline habitat results indicate that habitat of the streams within the Snakeden Branch Watershed portion of the NVSRB is "Poor" to "Fair", with habitat assessment scores of 130 (out of 200) or less. The low habitat assessment scores are due to the lack of epifaunal substrate/available cover for stream macrofauna, highly embedded epifaunal substrate, overwidened stream channels, bank instability, and lack of vegetation protection along the stream banks.

Baseline benthic macroinvertebrate results indicate that streams within the Snakeden Branch watershed portion of the NVSRB are in "Severe Stress", with VA-SCI scores below 20 (out of 100) for all streams assessed. The low VA-SCI scores are likely due to several confounding abiotic factors, including highly impervious land cover within the watershed, high nutrient, toxicant and sediment input from adjacent land use, channel alteration, high sediment deposition, bank instability, lack of vegetative protection along the stream banks, and lack of epifaunal substrate/available cover.

II. Introduction

As set forth in the "Northern Virginia Stream Restoration Bank Banking Instrument" (Banking Instrument), dated February 17, 2006 and prepared by Wetland Studies and Solutions,

Inc. (WSSI), Northern Virginia Stream Restoration, L.C. will restore approximately 14 miles of streams and upland buffers, within portions of the Snakeden Branch, Colvin Run, and The Glade watersheds in the town of Reston, Virginia. As required in Section VI.B.2.(i) of the Banking Instrument, biological monitoring will be conducted within restored streams within these watersheds. These stream restoration activities should result in a direct improvement of in-stream habitat and an indirect improvement in water quality. Using benthic macroinvertebrate and habitat data, this pre-construction monitoring report characterizes the baseline conditions of the streams within the Snakeden Branch Watershed portion of the NVSRB, against which future biological monitoring in the study area will be compared. With these data, and data from subsequent monitoring reports, we propose to determine the effect of stream restoration on the condition of streams within the Snakeden Branch Watershed portion of the NVSRB[1], as well as aid in the development of numerical success criteria for non-coastal stream restoration projects in Virginia.

III. Project Area

The study area includes approximately 21,000 linear feet of stream along Snakeden Branch and several unnamed tributaries of Snakeden Branch, as well as the adjacent riparian corridor. The study area is located southeast of Reston Parkway (Route 602) and immediately northwest of Lake Audubon in Fairfax County, Virginia. Exhibit 1 is a vicinity map that depicts the approximate location of the study area.

The study area is covered mostly by mixed-deciduous forest. Snakeden Branch flows in a southeasterly direction through the central portion of the study area. An asphalt recreational trail, which crosses Snakeden Branch multiple times, is located parallel to the stream and to several of its unnamed tributaries. The study area is gently to moderately sloping. The topography can be seen in the excerpt from the Vienna, Virginia-Maryland 1994 USGS topographical quadrangle map included as Exhibit 2, as well as in the background topography on the Biological Stream Assessment Reconnaissance and Biological Monitoring Maps (Exhibits 3a and 3b, respectively).

The boundaries of jurisdictional wetlands and other waters of the U.S. located within the study area were delineated and survey-located by WSSI as described in the Snakeden Branch Reach 1 and Snakeden Branch Reach 2 delineation reports, dated February 14, 2005 and May 18, 2005, respectively. The U.S. Army Corps of Engineers verified the Snakeden Branch Reach 1 and Snakeden Branch Reach 2 delineation, with jurisdictional determinations (JD) dated May 17, 2006 (JD #05-R0601 and JD #05-R1495, respectively)[2].

IV. Overall Methodology

Per maintenance and monitoring requirements defined in the Banking Instrument, Section VI.B.2.(i), biological stream assessment reaches are to be established for every 2000 linear feet

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1 *Note that monitoring reports for the Colvin Run and The Glade watershed portions of the NVSRB will be provided under separate cover.*

2 *Note that for design purposes, Snakeden Branch Reach 1 and Snakeden Branch Reach 2 have been further divided into 17 manageable restoration reaches, as depicted on the NVSRB – Snakeden Branch plan sets, dated May, August, October, November, and December 2007 (plan sets for Reaches 1-11 have been completed). The biological monitoring reaches for this report are located within a portion of these 17 reaches. The locations of the biological monitoring reaches relative to these 17 reaches are described below.*

of stream restoration along samplable streams at the NVSRB. Once established, these reaches are to be monitored prior to stream restoration, then in years 1, 5, and 10. The following methods are to be employed:

- Biological Reconnaissance (BioRecon), following guidance established in the U.S. Environmental Protection Agency's "Rapid Bioassessment Protocols for Use in Streams and Wadable Rivers" (EPA's RBP; Barbour et al. 1999)[3].

- Biological stream assessment for Calculating the Stream Condition Index for Virginia Non-coastal Streams (VA-SCI), following guidance established in "A Stream Condition Index for Virginia Non-Coastal Streams" (Tetra Tech 2003) and "Using Probabilistic Monitoring Data to Validate the Non-Coastal Virginia Stream Condition Index" (DEQ 2006a)[4].

V. Biological Stream Assessment Reconnaissance

Biological Stream Assessment Reconnaissance Methodology. The biological stream assessment reconnaissance consisted of three components: 1) a pedestrian reconnaissance; 2) Biological Reconnaissance (BioRecon) (a.k.a. Problem Identification Survey); and 3) permanent biological monitoring reach selection. The pedestrian reconnaissance was used to determine which streams within the study area contain enough flowing water to sample for benthic macroinvertebrates. The BioRecon, established in the EPA's RBP for benthic macroinvertebrates (Barbour et al. 1999), is a rapid assessment using benthic macroinvertebrates and was used to determine the general condition of the streams within the study area. Combined, both the pedestrian reconnaissance and BioRecon helped prioritize the placement of permanent biological monitoring reaches along representative stream reaches within the study area.

The biological stream assessment reconnaissance was conducted by WSSI environmental scientists Craig E. Tumer, PWS[5], PWD[6], Christine A. Geist, PWS, CE[7] and Sean D. Sipple, PWS, CT[8] on December 11 and 12, 2006. During this reconnaissance, WSSI traversed all jurisdictional streams along the entire Snakeden Branch Watershed study area to determine the locations of potential permanent biological monitoring stations. All streams within the study area were characterized as having flowing water, discontinuous flow, or lacking flow altogether. Streams that contained flowing water during the December 2006 field work were noted as potential streams for permanent biological monitoring stations and BioRecon macroinvertebrate samples were taken to determine their general biotic condition. Streams that lacked flowing water during the reconnaissance fieldwork were eliminated as candidate streams for establishing permanent biological monitoring stations. Streams that contained discontinuous flow were to be re-evaluated during the time of the pre-construction monitoring sampling to determine if they

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3 *This method was used to aid in the selection of permanent monitoring reaches and is not required in subsequent monitoring years.*

4 *This method will be used in all subsequent monitoring years and is accompanied by a habitat assessment, following guidance established Virginia Department of Environmental Quality's (DEQ) standard operating procedures for stream habitat assessment (SOPs; DEQ 2006b) and the EPA's RBP for habitat (Barbour et al. 1999).*

5 *VA Certified Professional Wetland Delineator #3402-000025.*

6 *Professional Wetland Scientist #00001290, Society of Wetlands Scientists Certification Program, Inc.*

7 *Professional Wetland Scientist #1728; Certified Ecologist, Ecological Society of America*

8 *Professional Wetland Scientist #1730, Society of Wetlands Scientists Certification Program, Inc.; North American Benthological Society (NABS) Certified Level 2 Taxonomist: EPT Taxa (Ephemeroptera, Plecoptera, Trichoptera).*

contain enough flowing water to sample. Photographs of BioRecon sampling reaches and representative non-samplable streams are provided in Exhibit 4a.

WSSI used the BioRecon method to assess 12 stream reaches[9] along five candidate streams that contained flowing water during the December 2006 field work. Assessments were conducted on Snakeden Branch and four unnamed tributaries to Snakeden Branch. The approximate locations of these twelve reaches are depicted on Exhibit 3a. Sampling reaches were 300 linear feet, as recommended in the EPA's RBP (except for Reach 3A, which is a stream that is a total of only 81 linear feet). In accordance with the BioRecon, an area of 4 square feet of best-available habitat was sampled in each reach using a D-Framed Net. Multiple habitat types were sampled including cobble/gravel, snags/leafpacks, and under-cut banks. Benthic macroinvertebrate field samples were collected, processed, and identified according to guidance established in the EPA's RBP.

Benthic macroinvertebrate samples were sorted and identified to the lowest taxonomic level possible (mostly Genus-level) at WSSI in the Science Laboratory. Due to taxonomic difficulty, members of the dipteran family Chironomidae were identified to tribe, and aquatic annelids (segmented worms) were identified to class. Each individual found in a sample was recorded and enumerated on a WSSI Benthic Macroinvertebrate I.D. and Enumeration Bench Sheet, which is included in Exhibit 5a for each individual reach.

Benthic macroinvertebrate data were used to calculate 3 biotic metrics, including Total Taxa Richness, Ephemeroptera, Plecoptera, and Trichoptera (EPT) Taxa Richness, and Percent Chironomidae + Oligochaeta. The individual metrics used are described as follows:

- *Total Taxa Richness.* Total Taxa Richness represents the total number of taxa in a sample. Total Taxa Richness is expected to be relatively high in undisturbed streams and is expected to decrease in response to environmental disturbance.

- *EPT Taxa Richness.* EPT Taxa Richness represents the number of taxa from the aquatic insect orders Ephemeroptera, Plecoptera, and Trichoptera. EPT taxa are generally very sensitive to pollution. Total EPT Taxa Richness is expected to be relatively high in undisturbed streams, and it is expected to decrease in response to environmental disturbance.

- *Percent Chironomidae + Oligochaeta.* The Percent Chironomidae + Oligochaeta represents the ratio of members of the aquatic insect family Chironomidae (non-biting midges) plus members of the aquatic annelid class Oligochaeta to the total number of individuals in a sample. Because both chironomids and oligochaetes are generally tolerant to pollution, Percent Chironomidae + Oligochaeta is expected to increase in response to environmental disturbance.

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[9] *Note that the 12 BioRecon reaches correspond with reaches of the NVSRB-Snakeden Branch plan sets, as follows: BioRecon Reach 1-F corresponds with Reach 1 of the May 2007 plan set; BioRecon Reach 1-E corresponds with Reach 2 of the August 2007 plan set; BioRecon Reach 5-A corresponds with Tributary 1 of Reach 3 of the October 2007 plan set; BioRecon Reaches 4-A and 4-B correspond with Reach 4 of the October 2007 plan set; BioRecon Reaches 1-D and 1-C correspond with Reaches 5 and 7, respectively of the November 2007 plan set; BioRecon Reach 3-A corresponds with Tributary 7 of Reach 11 of the December 2007 plan set; and BioRecon Reaches 1-B, 2-B, 2-A, and 1-A correspond with Reaches 12, 13, 16, and 17, respectively of pending plan sets.*

Biological Stream Assessment Reconnaissance Results and Discussion. The results of the pedestrian reconnaissance field work indicated that only five streams (Reach 1-A through 1-F, 2-A, 2-B, 3-A, 4-A, 4-B and 5-A; Exhibit 4a, Photos #1 through #12, respectively) have enough flowing water to establish permanent biological monitoring stations. The remainder of the streams within the study area do not contain enough flowing water to sample (e.g., Exhibit 4a, Photos #13 through #18). The streams that contained discontinuous flow during the December 2006 field work were re-evaluated during the biological monitoring field work and determined to lack enough flowing water to establish permanent monitoring reaches.

Of the 12 stream reaches characterized, Reach 1-B, 1-E and 3-A had the highest Taxa Richness, with 12, 10, and 12 total taxa respectively (Table 1). The lowest Taxa Richness was observed at Reach 4-A, 4-B, 1-A, 1-C, 1-F and 2-A, all containing only 3 or 4 taxa (Figure 1). EPT Taxa Richness was low at all 12 reaches, with only 2 total EPT taxa collected (*Hydropsyche* sp. and *Cheumatopsyche* sp.). Furthermore, the only EPT taxa observed in any reaches are members of the caddisfly Family Hydropsychidae, a caddisfly family indicative of degraded streams (Voshell 2002). Percent Chironomidae + Oligochaeta was lowest at Reach 3-A, 2-B and 1-A (30, 41, and 43, respectively), and highest at Reach 1-C, 2-A and 1-F, (100, 92, and 83, respectively; Table 1, Figure 2). Therefore, the BioRecon results showed that most stream reaches within the study area are likely in poor condition.

Table 1. Snakeden Branch BioRecon Biotic Metrics

Reach	Total Individuals	Biotic Metrics		
		Total Taxa Richness	EPT Taxa Richness	% Chironomidae + Oligochaeta
1-A	7	4	1	43
1-B	41	12	1	73
1-C	13	4	0	100
1-D	15	7	1	67
1-E	41	10	2	78
1-F	6	4	0	83
2-A	24	4	1	92
2-B	17	8	0	41
3-A	44	12	0	30
4-A	4	3	0	75
4-B	16	4	0	69
5-A	107	6	0	73

FIGURE 1. TOTAL NUMBER OF TAXA AND TOTAL NUMBER OF EPT TAXA FOR INDIVIDUAL STREAM REACHES

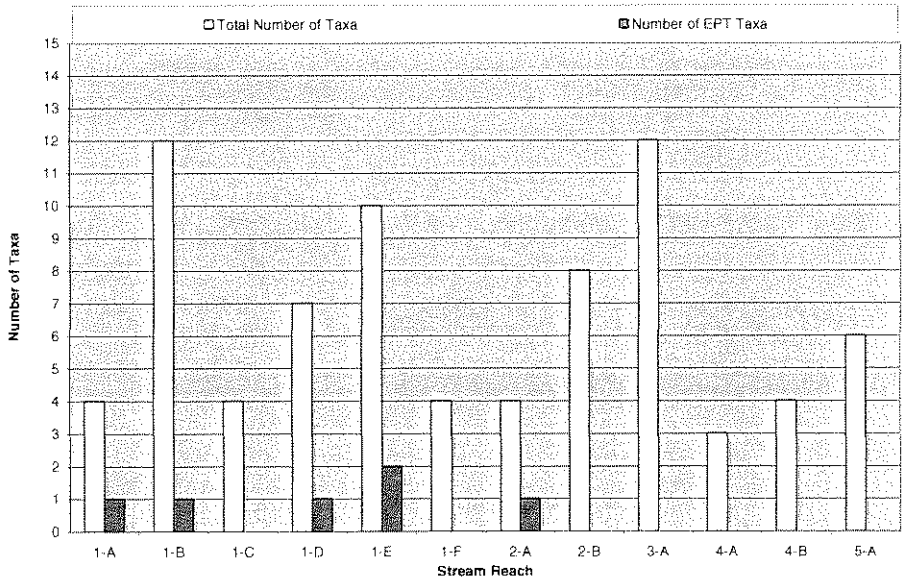
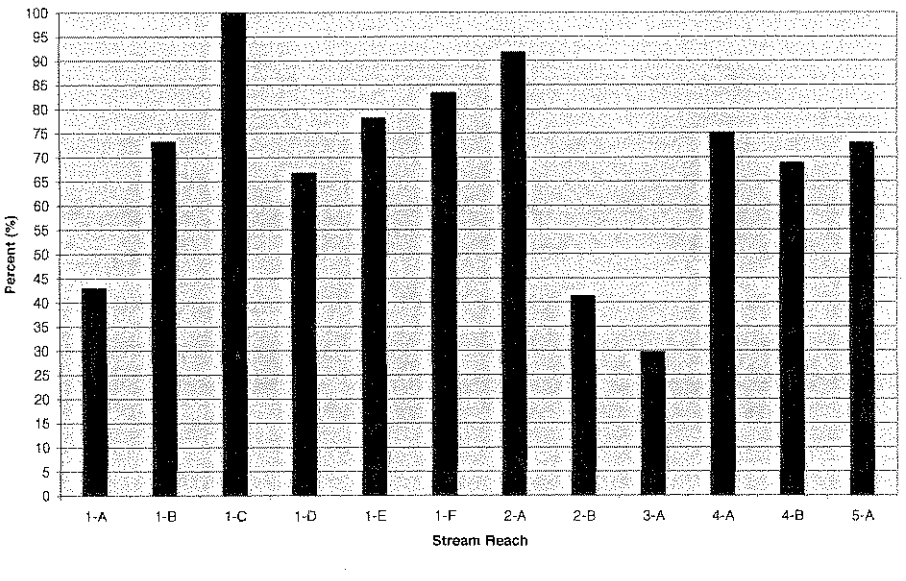


FIGURE 2. PERCENTAGE OF CHIRONOMIDAE PLUS OLIGOCHAETA FOR INDIVIDUAL STREAM REACHES



The results of the three biotic metrics suggested that Reach 3-A and 2-B may have the best condition, with 12 and 8 total taxa and only 30 and 41 percent Chironomidae + Oligochaeta, respectively. The results also suggested that Reach 1-C, 2-A and 1-F may have the worst biotic condition, each with only 4 total taxa and 100, 92, and 83 percent Chironomidae + Oligochaeta, respectively. Note that although Reach 1-B and 1-E had relatively high Taxa Richness (12 and 10, respectively), both reaches had relatively high Percent Chironomidae + Oligochaeta (73 and

78, respectively). The relatively high taxa richness suggests that these reaches provide a relatively suitable substrate for colonization; however, the high Percent Chironomidae + Oligochaeta suggests that these reaches may have lower water quality.

Permanent Biological Monitoring Reach Selection. The Banking Instrument defines the number of permanent biological monitoring reaches as the total length (in linear feet) of samplable restored stream divided by 2000. Of the approximately 21,000 linear feet of stream restoration within the Snakeden Branch Watershed portion of the NVSRB, approximately 16,000 linear feet is samplable for macroinvertebrates, thus eight permanent monitoring reaches were established within the study area. However, WSSI established an extra permanent biological monitoring reach (for a total of nine permanent biological monitoring reaches) in anticipation of potential future modifications of the study area to ensure that the streams were adequately sampled. Based on the BioRecon (and pedestrian reconnaissance) results, WSSI established one permanent biological monitoring reach in the vicinity of Reach 1-A, 1-B, 1-C, 1-D, 1-E, 1-F, 2-A, and 4-A and 5-A, for a total of nine permanent monitoring reaches. The approximate location of these nine reaches is depicted on Exhibit 3b[10].

Because most of the restoration is being conducted along Snakeden Branch, six of the permanent monitoring reaches were chosen along the non-perennial (Reach 1-F) and perennial sections (Reach 1-A through 1-E) of Snakeden Branch, varying in condition. Reach 1-A was selected because it shows the lowest Taxa Richness. Reaches 1-B and 1-E[11] were chosen because they have the highest Taxa Richness. Reaches 1-C and 1-F were selected because the three metric scores suggest they have the lowest condition. Reach 1-D was selected because its metric scores were in the middle compared to the other reaches.

Three of the permanent biological monitoring stations will be established along unnamed perennial tributaries of Snakeden Branch (Reach 2-A, 2-B, and 4-A). Reach 2-A was selected because our results suggest it has the second lowest condition. Reach 2-B was selected because our results suggest it has the second highest condition. Reach 4-A was selected because it shows the lowest Taxa Richness.

Because the streams characterized by Photos #13 through #18 (Exhibit 4a) either lacked flowing water or had discontinuous flow during the reconnaissance fieldwork (and the pre-construction monitoring field work), these streams were eliminated as candidate permanent biological monitoring reaches.

VI. Biological Stream Monitoring

Biological Stream Monitoring Methodology. The biological stream monitoring consisted of two components: 1) Stream habitat assessment and 2) benthic macroinvertebrate assessment. The habitat assessment field work was conducted using guidance established in the DEQ standard operating procedures for stream habitat assessment (SOPs; DEQ 2006b) and the EPA's RBP for habitat (Barbour et al. 1999). The benthic macroinvertebrate assessment field work was conducted using guidance established in the SOPs for multi-habitat benthic macroinvertebrate sampling (DEQ 2006b).

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[10] *The locations of each of the nine stream reaches were approximated on Exhibit 3b using survey-located tagged trees, which were noted during the biological monitoring field work and are depicted on Exhibit 3b.*

[11] *Note that Reach 1-E is located in a section of stream that was previously restored. This section of stream will be enhanced as part of the NVSRB and will be studied closely to monitor its recovery.*

A total of nine permanent sampling reaches were selected based on the results of the pedestrian reconnaissance and BioRecon (Reach 1-A through 1-F, 2-A, 2-B, and 3-A)[12]. As required by the SOPs, each reach is 300 linear feet. The approximate location of each reach is depicted on Exhibit 3b. Photographs of each reach are included on Exhibit 4b. Benthic macroinvertebrate sampling field work was conducted by WSSI environmental scientists Christine A. Geist, PWS, CE and Joseph N. Carpenter between April 4 and 10, 2007. Habitat assessment field work was conducted by WSSI environmental scientists Craig E. Turner, PWD, PWD, Sean D. Sipple, CT, PWS, and Christine A. Geist, PWS, CE on December 11 and 12, 2006 in conjunction with the biological stream assessment reconnaissance field work.

In accordance with the SOPs, habitat conditions were assessed by qualitatively rating ten habitat parameters, including Epifaunal Substrate/Available Cover, Pool Substrate Characterization, Pool Variability, Sediment Deposition, Channel Flow Status, Channel Alteration, Channel Sinuosity, Bank Stability, Vegetative Protection, and Riparian Vegetative Zone. The overall habitat quality of each reach was determined by calculating the percentage of the best possible score[13], where the best possible score for each reach equals 200. The following formula was used to determine the percentage of best possible score for each reach:

Percentage of Best Possible Score = (Total Habitat Score)/(200)*100

Each reach was then assigned a narrative rating according to the calculated percentage of best possible score, where "Excellent" is >90, "Good" is 75-88, "Fair" is 60-73, and "Poor" is <58. WSSI Habitat Assessment Field Data Sheets (developed from the EPA's RBP Habitat Assessment Field Data Sheets) for each reach are included as Exhibit 6.

To assess benthic macroinvertebrate condition, 60 linear feet of best-available habitat was sampled in each reach using a D-Framed Net. Habitat types sampled include cobble/gravel, snags/leafpacks, under-cut banks, root-wads, and submerged vegetation. Benthic field data was recorded on WSSI Benthic Macroinvertebrate Field Data Sheets (developed from the EPA's RBP Benthic Macroinvertebrate Field Data Sheets), which are included as Exhibit 7.

Benthic macroinvertebrate samples were processed and subsampled by WSSI staff using guidance from the SOPs. Specifically, a fixed-count method was used, where one hundred twenty organisms were randomly picked from a gridded (numbered) tray and the organisms were identified to the family level (if possible) using a dissecting microscope. Each individual (containing a head) found in a sample was recorded and enumerated on a WSSI Benthic Macroinvertebrate I.D. and Enumeration Bench Sheet (Exhibit 5b).

Benthic macroinvertebrate data were analyzed by calculating the Stream Condition Index for Virginia Non-coastal Streams (VA-SCI), following guidance established in "A Stream Condition Index for Virginia Non-Coastal Streams" and "Using Probabilistic Monitoring Data to

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[12] *Note that the nine permanent monitoring reaches correspond with reaches of the NVSRB-Snakeden Branch plan sets, as follows: Reach 1-F corresponds with Reach 1 of the May 2007 plan set; Reach 1-E corresponds with Reach 2 of the August 2007 plan set; Reach 3-A corresponds with Reach 4 of the October 2007 plan set; Reaches 1-D and 1-C correspond with Reaches 5 and 7, respectively of the November 2007 plan set; and Reaches 1-B, 2-B, 2-A, and 1-A correspond with Reaches 12, 13, 15, and 17, respectively of pending plan sets.*

[13] *The SOPs indicate that overall habitat quality is determined by calculating the percent similarity to reference score. Since reference reaches were not available to assess, WSSI used the best possible score as the reference score.*

Validate the Non-Coastal Virginia Stream Condition Index". The VA-SCI is a multi-metric Index of Biotic Integrity developed for the DEQ to assess Streams of the Commonwealth. The VA-SCI uses seven biotic metrics and one biotic index including Total Taxa, EPT Taxa, Percent Ephemeroptera, Percent Plecoptera + Trichoptera (Excluding Hydropsychidae), Percent Scrapers, Percent Chironomidae, Percent Top Two Dominant Taxa, and Hilsenhoff Biotic Index. The individual metrics and index used are defined and described as follows:

- Total Taxa Richness. Total Taxa Richness represents the total number of taxa in a sample. Total Taxa Richness is expected to be relatively high in undisturbed streams and is expected to decrease in response to environmental disturbance. Total Taxa Richness can range from 0-22 for the VA-SCI.

- EPT Taxa Richness. EPT Taxa Richness represents the number of taxa from the aquatic insect orders Ephemeroptera, Plecoptera, and Trichoptera. EPT taxa are generally very sensitive to pollution. Total EPT Taxa Richness is expected to be relatively high in undisturbed streams, and it is expected to decrease in response to environmental disturbance. EPT Taxa Richness can range from 0-11 for the VA-SCI.

- Percent Ephemeroptera. The Percent Ephemeroptera represents the ratio of members of the aquatic insect order Ephemeroptera (mayflies) to the total number of individuals in a sample. Mayflies are generally very sensitive to pollution, thus Percent Ephemeroptera is expected to decrease in response to environmental disturbance. Percent Ephemeroptera can range from 0-61.3 for the VA-SCI.

- Percent Plecoptera + Trichoptera (Excluding Hydropsychidae). The Percent Plecoptera + Trichoptera (Excluding Hydropsychidae) represents the ratio of members of the aquatic insect orders Plecoptera (stoneflies) and Trichoptera (caddisflies) (excluding the those in the pollution tolerant family Hydropsychidae) to the total number of individuals in a sample. Percent Plecoptera + Trichoptera (Excluding Hydropsychidae) is expected to decrease in response to environmental disturbance. Percent Plecoptera + Trichoptera (Excluding Hydropsychidae) can range from 0-35.6 for the VA-SCI.

- Percent Scrapers. The Percent Scrapers represents the ratio of taxa adapted primarily for scraping food from a substrate to the total number of individuals in a sample. Percent Scrapers is expected to decrease in response to environmental disturbance. Percent Scrapers can range from 0-51.6 for the VA-SCI.

- Percent Chironomidae. The Percent Chironomidae represents the ratio of members of the aquatic insect family Chironomidae (non-biting midges) to the total number of individuals in a sample. Because chironomids are generally tolerant to pollution, Percent Chironomidae is expected to increase in response to environmental disturbance. Percent Chrionomidae can range from 0-100 for the VA-SCI.

- Percent Top Two Dominant. The Percent Top Two Dominant is the ratio of the top two most abundant taxa in a sample to the total number of individuals in a sample. Percent Top Two Dominant is expected to increase in response to environmental disturbance. Percent Top Two Dominant can range from 30.8-100 for the VA-SCI.

- Hilsenhoff Biotic Index (HBI). The Hilsenhoff Biotic Index is the abundance-weighted average tolerance of assemblage of organisms (Family taxonomic level). The HBI is

expected to increase in response to environmental disturbance. The HBI can range from 3.2-10 for the VA-SCI.

- The VA-SCI was calculated by taking the weighted average of the individual metric (and index) scores, with an VA-SCI range of 0-100. The weighting is as follows:
    - Total Taxa: Score = 100 x (X/22), where X = Metric Value
    - EPT Taxa: Score = 100 x (X/11), where X = Metric Value
    - Percent Ephemeroptera: Score = 100 x (X/61.3), where X = Metric Value
    - Percent Plecoptera + Trichoptera less Hydropsychidae: Score = 100 x (X/35.6), where X = Metric Value
    - Percent Scrapers: Score = 100 x (X/51.6), where X = Metric Value
    - Percent Chironomidae: Score = 100 x [(100-X) (100-0)], where X = Metric Value
    - Percent Top 2 Dominant: Score = 100 x [(100-X) (100-30.8)], where X = Metric Value
    - Hilsenhoff Biotic Index: Score = 100 x [(100-X) (100-3.2)], where X = Metric Value

Each reach was then assigned a narrative rating according to the calculated VA-SCI, where "Excellent" is >73, "Good" is 60-72, "Stress" is 43-59, and "Severe Stress" is <42.

Biological Stream Monitoring Results and Discussion. Habitat results show that all nine stream reaches (Reaches 1-A through 1-F, 2-A, 2-B, and 3-A) have either "Poor" or "Fair" habitat conditions (Table 2, below; Exhibit 6). Reach 1-E and 1-F have the best habitat, with habitat assessment scores of 130 out of 200 ("Fair"). Reach 1-B has the worst habitat, with a habitat assessment score of 103 out of 200 ("Poor"). The low habitat assessment scores are due to the lack of epifaunal substrate/available cover for stream fauna, highly embedded epifaunal substrate, overwidened stream channels, bank instability, and lack of vegetation protection along the stream banks. The average habitat assessment score for all streams assessed within the Snakeden Branch Watershed portion of the NVSRB is 117, which is 58 percent of the best possible score ("Fair").

Table 2. Total Habitat Assessment Scores

REACH	Habitat Assessment Score	Percent Best Possible Score	Narrative Rating
1-A	114	57	Poor
1-B	103	52	Poor
1-C	116	58	Fair
1-D	121	61	Fair
1-E	130	65	Fair
1-F	113	57	Poor
2-A	112	56	Poor
2-B	118	59	Fair
3-A	112	56	Poor
Average	**115**	**58**	**Fair**

Benthic macroinvertebrate results show that individuals from 18 taxa[14] were collected from all nine reaches collectively (Table 3, below; Exhibit 5b) during the pre-construction henthic macroinvertebrate monitoring. These 18 taxa include ancylid, physid, and ramshorn snails (Families Ancylidae, Physidae, and Planorhidae, respectively), fingernail clams (Family Sphaeridae), oligochaete and horsehair worms (Families Naididae and Tubificidae and Phylum Nematomorpha, respectively), scuds (Family Crangonyctidae), aquatic moth larvae (Family Pyralidae), non-biting midge, blackfly, soldierfly, mothfly, deerfly, and cranefly larvae (Families Chironomidae, Simulidae, Stratiomyidae, Syrphidae, Tabanidae, and Tipulidae, respectively), and common net-spinning and fingernet caddisfly larvae (Families Hydropsychidae and Philipotamidae, respectively). Of all 18 taxa collected, non-biting midge larvae comprised the majority of individuals in each reach, with numbers ranging from 62-135.

Table 3. Snakeden Branch Raw Data

TAXA	REACH								
	1-A	1-B	1-C	1-D	1-E	1-F	2-A	2-B	3-A
Ancylidae	-	-	1	-	-	-	-	-	-
Calopterygidae	1	-	-	-	-	-	-	-	-
Chironomidae	96	135	86	62	111	104	93	88	100
Crangonyctidae	1	-	-	-	-	-	-	-	-
Hydropsychidae	-	1	8	-	-	-	-	-	-
Naididae	-	-	1	-	-	-	-	2	-
Nematomorpha	-	-	-	-	-	-	4	-	-
Oligochaeta	-	-	-	17	2	3	-	1	1
Philipotamidae	2	-	-	-	-	-	-	-	-
Physidae	2	-	2	-	-	-	4	7	3
Planorbidae	1	-	-	-	-	-	-	2	-
Pyralidae	-	-	1	-	-	-	3	2	-
Simulidae	1	1	-	-	-	-	-	1	-
Sphaeridae	-	-	-	-	-	-	1	1	-
Stratiomyidae	-	-	-	-	-	-	1	-	-
Syrphidae	-	-	-	-	-	-	-	-	1
Tabanidae	1	-	-	-	-	-	-	-	-
Tipulidae	-	-	1	-	-	-	1	1	-
Tubificidae	13	-	8	-	1	1		1	5
Total	**118**	**137**	**108**	**79**	**114**	**108**	**107**	**106**	**110**

The above data collected for each reach were used to calculate the biotic metrics, indices, and VA-SCI. The results of our data analysis indicate that all nine stream reaches (Reaches 1-A through 1-F, 2-A, 2-B, and 3-A) are in "Severe Stress" prior to stream restoration activities based on their VA-SCI scores (Table 4). The highest VA-SCI score was observed at Reach 2-B (18.26) and the lowest VA-SCI score was observed at Reach 1-E (9.11). The average VA-SCI numerical score for all streams assessed within the Snakeden Branch Watershed portion of the NVSRB is 13.15 ("Severe Stress").

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[14] *Although 19 taxa are listed in Table 3, Oligochaeta was not included as part of the total taxa collected within the study area, because individuals were too damaged to identify to the family-level.*

Table 4. Snakeden Branch Biotic Metric and Index Weighting and VA-SCI									
METRIC	REACH								
	1-A	1-B	1-C	1-D	1-E	1-F	2-A	2-B	3-A
Total Taxa	36.36	13.64	36.36	9.09	9.09	9.09	31.82	40.91	18.18
EPT Taxa	9.09	9.09	9.09	0.00	0.00	0.00	0.00	0.00	0.00
Percent Ephemeroptera	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percent Plecoptera + Trichoptera (Excluding Hydropsychidae)	4.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percent Scrapers	4.93	0.00	5.38	0.00	0.00	0.00	7.24	16.45	5.29
Percent Chironomidae	18.64	1.46	20.37	21.52	2.63	3.70	13.08	16.98	9.09
Percent Top Two Dominant	11.02	0.00	8.03	0.00	1.27	1.34	8.10	15.00	6.57
HBI	53.09	58.93	55.28	46.16	59.86	60.73	61.02	56.74	55.61
VA-SCI Numerical Score	**17.81**	**10.39**	**16.81**	**9.60**	**9.11**	**9.36**	**15.16**	**18.26**	**11.84**
VA-SCI Narrative Score	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**
Average VA-SCI Numerical Score	**13.15**								
Average VA-SCI Narrative Score	**Severe Stress**								

These scores are the result of the low number of total taxa, low number of total EPT taxa, lack of Ephemeroptera taxa, low percentage of Plecoptera + Trichoptera (excluding Hydropsychidae taxa), low percentage of Scraper taxa, high percentage of Chironomidae, high percentage of top two dominant taxa, and high HBI found within the reaches assessed (Table 5, below).

Table 5. Snakeden Branch Biotic Metric and Index Scores								
Reach	Total Taxa[15]	Total EPT Taxa	Percent Ephemeroptera	Percent Plecoptera + Trichoptera (Excluding Hydropsychidae)	Percent Scrapers	Percent Chironomidae	Percent Top Two Dominant	HBI
1-A	9	1	0.00	1.69	2.54	81.36	92.37	6.39
1-B	3	1	0.00	0.00	0.00	98.54	100.00	5.99
1-C	8	1	0.00	0.00	2.78	79.63	94.44	6.24
1-D	2	0	0.00	0.00	0.00	78.48	100.00	6.86
1-E	2	0	0.00	0.00	0.00	97.37	99.12	5.93
1-F	2	0	0.00	0.00	0.00	96.30	99.07	5.87
2-A	7	0	0.00	0.00	3.74	86.92	94.39	5.85
2-B	9	0	0.00	0.00	8.49	83.02	89.62	6.14
3-A	4	0	0.00	0.00	2.73	90.91	95.45	6.22

[15] *Although Table 3 lists 10 and 5 taxa for Reaches 2-B and 5-A, Oligochaeta was not included in the calculation of Total Taxa because individuals were too damaged to identify to family-level.*

Given the low habitat scores, it is not surprising that the VA-SCI scores are low as well. In general, biological diversity and habitat in streams are closely linked (Raven et al. 1998). Thus, the low VA-SCI scores are likely due to several confounding abiotic factors, including highly impervious land cover, high nutrient, toxicant and sediment input from adjacent land use, channel alteration, high sediment deposition, bank instability, lack of vegetative protection along the stream banks, and lack of epifaunal substrate/available cover.

An analysis of land use within the watershed of each stream reach indicates that each watershed is highly developed, with all reaches having greater than 20 percent impervious land cover (with a weighted watershed average of 38 percent), as depicted in the Land Cover Map (Exhibit 8), and Table 6, below. Reach 1-E has the highest imperviousness, with 50 percent impervious land cover. Reaches 2-A and 2-B have the lowest imperviousness, with 26 and 25 percent impervious land cover, respectively. It is important to note that Reach 1-E has the lowest VA-SCI score (9.11) and Reach 2-B has the highest VA-SCI score (18.26), suggesting a link between impervious land cover and VA-SCI scores. It has been documented that increases in watershed imperviousness reduce macroinvertebrate diversity, such that when imperviousness exceeds 10 to 15 percent, macroinvertebrate diversity becomes low (Klein 1979). Runoff from the highly impervious land within these watersheds produces a high volume and velocity of flowing water and sediment in the stream channels during storm events. Because the streams we studied are laterally unstable (e.g., overwidened channel, lack of vegetative protection along the stream banks, and bank instability) and incised, these streams likely do not overflow their channel during bankfull flood events. As a result, epifaunal substrate/available cover within these streams becomes highly mobile and benthic macrofauna can not easily colonize the available substrate (Debrey and Lockwood 1990) or get buried and killed by high sediment deposition (Wood and Armitage 1997).

Table 6. Impervious Land Cover and VA-SCI for Each Reach

REACH	Watershed Acres	Percent Impervious	VA-SCI
1-A	863	38	17.81
1-B	540	45	10.39
1-C	386	46	16.81
1-D	291	45	9.60
1-E	77	50	9.11
1-F	55	47	9.36
2-A	256	26	15.16
2-B	169	25	18.26
3-A	75	49	11.84

Nutrients, pesticides, and other chemical pollutants that enter the streams through runoff can also have a negative effect on the macroinvertebrate community (Wright et al 1995; O'Halloran et al. 1996; Kiffney and Clements 1994. Sources for such pollutants within the streams we assessed likely include residential lawns, roads, the Reston National Golf Course, waterfowl and faulty sewer lines. Evidence of nutrient pollution input into Snakeden Branch can be found in the DEQ Final 2006 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report), dated October 30, 2006 and approved by the EPA on October 16, 2006. In this report the DEQ identified Snakeden Branch as an impaired water body, based on high numbers of *Escherichia coli*, which is an indicator of fecal bacterial contamination from

urban/residential areas within the watershed (Exhibit 9[16]; DEQ 2006c). High amounts of such pollutants into streams inevitably result in a shift in macroinvertebrate community composition, where pollution tolerant taxa such as non-biting midges and oligochaete worms out-compete pollution sensitive taxa such as EPT (Shucler 1994). Thus, it is not a surprise that our baseline benthic macroinvertebrate data show low VA-SCI scores and non-biting midges as the dominant taxa. In addition, Maher (1999) found that highly suburbanized watersheds within Northern Virginia negatively impact macroinvertebrates and habitat when compared to forested areas with light development.

VII. Conclusions

The above results indicate that the habitat of the streams within the Snakeden Branch watershed portion of the NVSRB is "Poor" to "Fair" and the streams themselves are in "Severe Stress". The low VA-SCI and habitat scores are likely due to several confounding abiotic factors, including highly impervious land cover, high nutrient, toxicant and sediment input from adjacent land use, channel alteration, high sediment deposition, bank instability, lack of vegetative protection along the stream banks, and lack of epifaunal substrate/available cover.

VIII. Limitations

This study is based on examination of the conditions on the site at the time of our review and does not address conditions in the future. Such conditions may change over time and will be addressed in subsequent monitoring reports. Our biological monitoring report has been prepared in accordance with generally accepted guidelines for the conduct of such evaluations. We make no other warranties, either expressed or implied, and our report is not a recommendation to buy, sell or develop the property.

We offer no opinion and do not purport to opine on the possible application of various building codes, zoning ordinances, other land use or platting regulations, environmental or health laws and other similar statutes, laws, ordinances, code and regulations affecting the possible use and occupancy of the property for the purpose for which it is being used, except as specifically provided above. The opinions set forth above are rendered only and exclusively for the benefit of the addressees, the COE, the DEQ, and no other parties, successors or assigns. The foregoing opinions are based on applicable laws, ordinances, and regulations in effect as of the date hereof and should not be construed to be an opinion as to the matters set out herein should such laws, ordinances or regulations be modified, repealed or amended.

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16 *Exhibit 9 contains an excerpt from Appendix A – List of Impaired (Category 3) Waters in 2006 from the The DEQ Final 2006 305(b)/303(d) Water Quality Assessment Integrated Report (Integrated Report), dated October 30, 2006 and approved by the EPA on October 16, 2006.*

This document is solely for your benefit and is not to be quoted in whole or in part or otherwise referred to in any statement or document (except for purposes of identification) nor is it to be filed with any governmental agency or other person (other than the COE and DEQ), without the prior written consent of this firm, unless required by law.

WETLAND STUDIES AND SOLUTIONS, INC.

Sean D. Sipple, CT, PWS
Environmental Scientist

Taylor S. Sprenkle, WPIT
Environmental Scientist

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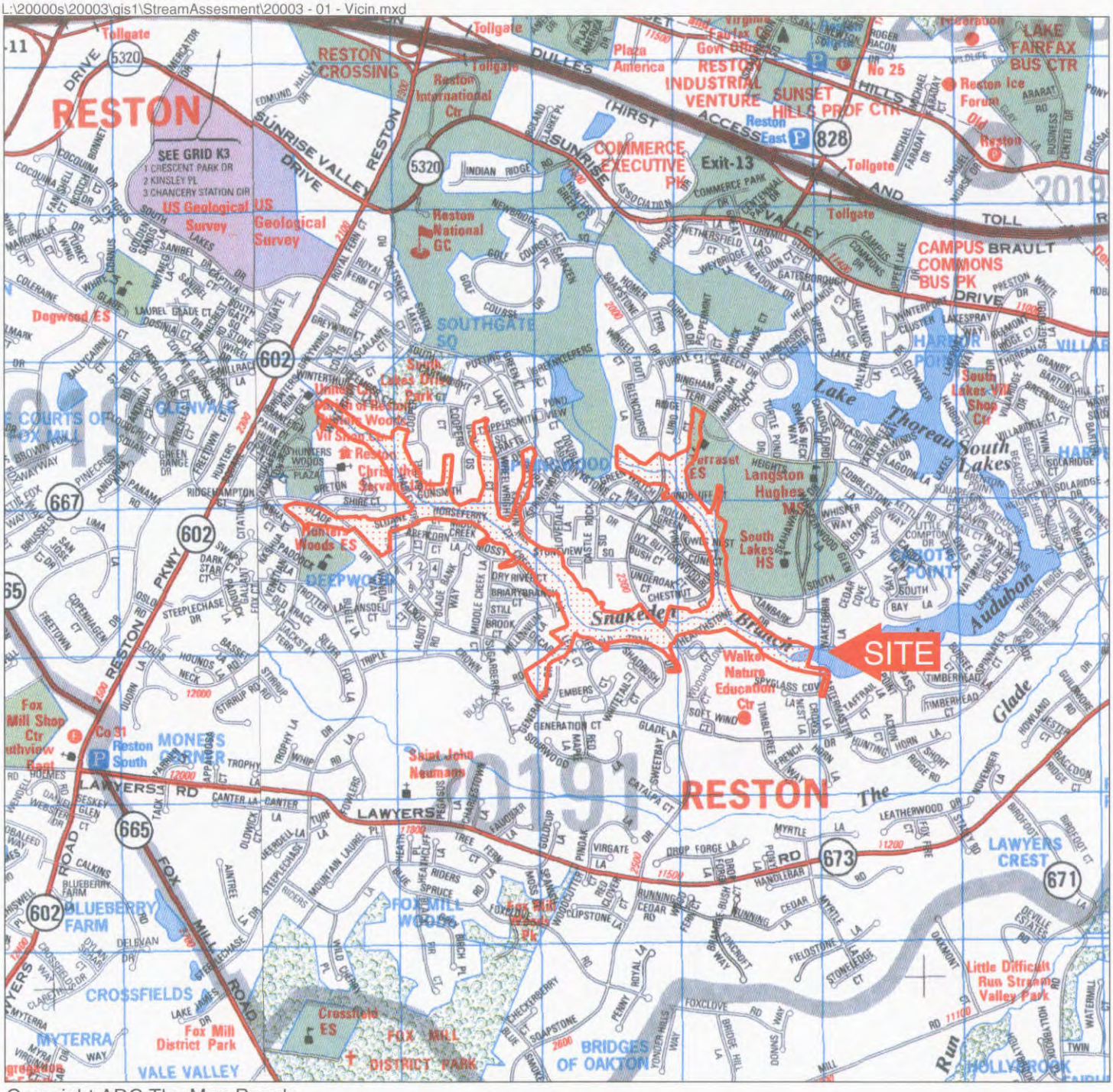
Exhibit 1

L:\20000s\20003\gis1\StreamAssesment\20003 - 01 - Vicin.mxd



Vicinity Map
Snakeden Branch
WSSI #20003
Scale: 1" = 2000'

N
W E
S

Exhibit 2

L:\20000s\20003\gis1\StreamAssesment\20003 - 02 - USGS.mxd

USGS Quad Map
Vienna, VA-MD 1994
Snakeden Branch
WSSI #20003
Scale: 1" = 2000'

N
W E
S

Latitude: 38°55'59" N
Longitude: 77°21'00" W
Hydrologic Unit Code (HUC): 02070008
Stream Class: III
Name of Watershed: Snakeden Branch

Exhibit 3

Tab A

BIOLOGICAL STREAM ASSESSMENT RECONNAISSANCE NOTES:

1. Wetland Studies and Solutions, Inc. (WSSI) performed a biological stream asssessment reconnaissance on the Snakeden Branch Watershed portion of the Northern Virginia Stream Restoration Bank (NVSRB). The biological stream assessment reconnaissance consisted of three components: 1) a pedestrian reconnaissance, 2) a Biological Reconnaissance (BioRecon) (a.k.a. Problem Identification Survey), and 3) permanent biological monitoring reach selection. The pedestrian reconnaissance was used to determine which streams within the study area contain enough flowing water to sample. The BioRecon was used to determine the general condition of the streams within the study area. Combined, both the pedestrian reconnaissance and BioRecon helped prioritize the placement of permanent biological monitoring reaches along representative stream reaches within the study area.

2. The BioRecon was conducted using guidance established in the Environmental Protection Agency's "Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers" for benthic macroinvertebrates, dated July 1999.

3. Topographic information provided by Fairfax County Digital Data and Air Survey Corp., boundary information provided by WSSI, and a February 23, 2004 natural color image provided by Air Survey Corp. were used as a base for this attachment.

4. The boundaries of jurisdictional wetlands and other waters of the U.S. located within the limits of the Snakeden Branch Watershed portion of the NVSRB were delineated and survey-located by WSSI as described in the Snakeden Branch Reach 1 and Snakeden Branch Reach 2 delineation reports, dated February 14, 2005 and May 18, 2005, respectively . The U.S. Army Corps of Engineers verified the Snakeden Branch Reach 1 and Snakeden Branch Reach 2 delineations, both with a jurisdictional determination (JD) dated May 17, 2006 (JD # 05-R0601 and JD #05-R1495, respectively). Note that for logistical purposes, Snakeden Branch Reach 1 and Snakeden Branch Reach 2 have been further divided into 17 manageable restoration reaches, as depicted on the NVSRB - Snakeden Branch plan sets, dated May, August, October, November, and December 2007. The BioRecon reaches for this report are located within a portion of these 17 reaches. The locations of the BioRecon reaches relative to these 17 reaches are as follows: BioRecon Reach 1-F corresponds with Reach 1 of the May 2007 plan set; BioRecon Reach 1-E corresponds with Reach 2 of the August 2007 plan set; BioRecon Reach 5-A corresponds with Tributary 1 of Reach 3 of the October 2007 plan set; BioRecon Reaches 4-A and 4-B correspond with Reach 4 of the October 2007 plan set; BioRecon Reaches 1-D and 1-C correspond with Reaches 5 and 7, respectively of the November 2007 plan set; BioRecon Reach 3-A corresponds with Tributary 7 of Reach 11 of the December 2007 plan set; and Reaches 1-B, 2-B, 2-A, and 1-A correspond with Reaches 12, 13, 16, and 17, respectively of pending plan sets.

5. Reconnaissance fieldwork for the Snakeden Branch Watershed portion of the NVSRB was performed by WSSI on December 11 and 12, 2006 by Craig E. Tumer, PWS, PWD, Christine A. Geist, CE, WPIT and Sean D. Sipple, CT, WPIT. Assessments were conducted on Snakeden Branch and four unnamed tributaries to Snakeden Branch. Five streams were assessed for a total of twelve stream reaches.

6. The results of the biological stream assessment reconnaissance indicated that only five streams have enough flowing water to establish permanent biological monitoring stations. The remainder of the streams within the study area contain only ephemeral or intermittent flows and did not contain enough flowing water to sample . The BioRecon results showed that these streams are likely in poor biotic condition. Based on the stream assessment reconnaissance, permanent biological reaches should be established in the vicinity of Reaches 1-A, 1-B, 1-C, 1-D, 1-E, 1-F, 2-A, 4-A and 5-A, for a total of nine permanent monitoring reaches.

Table 1. NOVA Stream Bank - Snakeden Branch Benthic Indices

Station	Total Individuals	Total Taxa Richness	EPT Taxa Richness	%Chironomidae + Oligochaeta
1-A	7	4	1	43
1-B	41	12	1	73
1-C	13	4	0	100
1-D	15	7	1	67
1-E	41	10	2	78
1-F	6	4	0	83
2-A	24	4	1	92
2-B	17	8	0	41
3-A	44	12	0	30
4-A	4	3	0	75
4-B	16	4	0	69
5-A	107	6	0	73

LEGEND

- STUDY AREA BOUNDARY
- PERENNIAL STREAM (PER FAIRFAX COUNTY RPA MAP)
- NON-PERENNIAL STREAM (PER FAIRFAX COUNTY RPA MAP)
- JURSIDICTIONAL WETLAND AREAS
- UPL UPLAND

COWARDIN CLASSIFICATION

- PFO PALUSTRINE FORESTED WETLAND
- R3 RIVERINE PERENNIAL

NVS NORTH ZONE 1983

RESTON PARKWAY (ROUTE 602) · COLTS NECK ROAD · GLADE DRIVE · SOUTH LAKES DRIVE · BANK WAY · MIDDLE CREEK LANE · MILLENIUM LANE · SOAPSTONE DRIVE · OLD TRAIL DRIVE · LAKE AUDUBON

NON-PERENNIAL, 1 INCH FLOW · NON-PERENNIAL, NO FLOW · NON-PERENNIAL, DISCONTINUOUS FLOW

REACH 1F · REACH 1E · REACH 5A · REACH 2B · REACH 4B · REACH 4A · REACH 4D · REACH 1C · REACH 3A · REACH 1B · REACH 2A · REACH 1A

PHOTO #1 · PHOTO #2 · PHOTO #3 · PHOTO #4 · PHOTO #5 · PHOTO #6 · PHOTO #7 · PHOTO #8 · PHOTO #9 · PHOTO #10 · PHOTO #11 · PHOTO #12 · PHOTO #13 · PHOTO #14 · PHOTO #15 · PHOTO #16 · PHOTO #17 · PHOTO #18

Wetland Studies and Solutions, Inc.
5300 Wellington Branch Drive, Suite 100 • Gainesville, VA 20155
Phone 703.679.5600 • Fax 703.679.5601
wetlandsinc.com

NORTHERN VIRGINIA STREAM RESTORATION BANK
SNAKEDEN BRANCH
Fairfax County, Virginia

EXHIBIT 3A: BIOLOGICAL STREAM ASSESSMENT RECONNAISSANCE MAP

REVISIONS

No.	Date	Description	Rev. By	App. By

SCALE: 1"=200'

DATE: JANUARY 2008

Horizontal Datum: NAD 83

Vertical Datum: NGVD 29

Boundary and Topo Source:
Fairfax County Digital Data
Air Survey Corp

Design	SDS	Approved	MSR
Draft	SDS		

Computer File Name:
L:\2003\Bioassess\CAD\Recon.map.dwg

sheet # 1 of 1

Tab B

BIOLOGICAL STREAM MONITORING NOTES:

1. Wetland Studies and Solutions, Inc. (WSSI) performed biological stream monitoring on the Snakeden Branch Watershed portion of the Northern Virginia Stream Restoration Bank (NVSRB). This monitoring was conducted pursuant to the maintenance and monitoring requirements defined in the Northern Virginia Stream Restoration Bank (NVSRB) Banking Instrument. This pre-construction monitoring report characterize the baseline conditions against which future biological monitoring in the study area will be compared.

The biological stream monitoring consisted of two components: 1) stream habitat assessment and 2) benthic macroinvertebrate assessment. The habitat assessment field work was conducted using guidance established in the Virginia Department of Environmental Quality's (DEQs) standard operating procedures (SOPs) for stream habitat assessment and the U.S. Environmental Protection Agency's (EPAs) "Rapid Bioassessment Protocols for Use in Wadable Streams and Rivers" for habitat, dated July 1999. The benthic macroinvertebrate assessment field work was conducted using guidance established in the DEQs SOPs for multi-habitat benthic macroinvertebrate sampling. Habitat data from these stream assessments were used to calculate the percentage of best available habitat for each reach. Benthic macroinvertebrate data from these stream assessments were used to calculate the Stream Condition Index for Non-coastal Streams of Virginia (VA-SCI).

2. Prior to conducting the biological stream monitoring field work, WSSI performed a pedestrian reconnaissance and a BioRecon to prioritize stream reaches for assessment and to establish permanent monitoring stations. BioRecon was conducted using guidance established in the EPAs "Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers" for benthic macroinvertebrates, dated July 1999.

Based on the results of the biological reconnaissance, nine permanent biological monitoring reaches were established along Snakeden Branch and two unnamed tributaries to Snakeden Branch. Pre-construction biological assessment fieldwork was conducted along these permanent monitoring stations on December 11 and 12, 2006 (habitat assessment field work) by Craig E. Tumer, PWS, PWD, Sean D. Sipple, CT, PWS, and Christine A. Geist, CE, PWS, and between April 4 and April 10, 2007 (macroinvertebrate sampling field work) by Christine A. Geist, CE, PWS and Joseph N. Carpenter.

3. Our baseline habitat results indicate that habitat of the streams within the Snakeden Branch Watershed portion of the NVSRB is "Poor" to "Fair", with habitat assessment scores of 130 (out of 200) or less (See "Total Habitat Assessment Scores for Snakeden Branch" table on this map). The low habitat assessment scores are due to the lack of epifaunal substrate/available cover for aquatic stream fauna, highly embedded epifaunal substrate, overwidened stream channels, bank instability, and lack of vegetation protection along the stream banks.

4. Baseline benthic macroinvertebrate results indicate that streams within the Snakeden Branch Watershed portion of the NVSRB are in "Severe Stress", with VA-SCI scores below 20 (out of 100) for all streams assessed (See "Snakeden Branch Biotic Metric and Index Weighting and VA-SCI" and "Snakeden Branch Biotic Metric Scores" tables on this map. The low VA-SCI scores are likely due to several confounding abiotic factors, including highly impervious land cover, high nutrient, toxicant and sediment input from adjacent land use, channel alteration, high sediment deposition, bank instability, lack of vegetative protection along the stream banks, and lack of epifaunal substrate/available cover.

5. Topographic information provided by Fairfax County Digital Data and Air Survey Corp., boundary information provided by WSSI, and a February 23, 2004 natural color image provided by Air Survey Corp. were used as a base for this attachment.

6. The boundaries of jurisdictional wetlands and other waters of the U.S. located within the limits of the Snakeden Branch portion of the NVSRB were delineated and survey-located by WSSI as described in the Snakeden Branch Reach 1 and Snakeden Branch Reach 2 delineation reports, dated February 14, 2005 and May 18, 2005 , respectively. The U.S. Army Corps of Engineers verified the Snakeden Branch Reach 1 and Snakeden Branch Reach 2 delineations, with jurisdictional determinations (JD) dated May 17, 2006 (JD # 05-R0601 and JD #05-R1495, respectively). Note that for logistical purposes, Snakeden Branch Reach 1 and Snakeden Branch Reach 2 have been further divided into 17 manageable restoration reaches, as depicted on the NVSRB - Snakeden Branch plan sets, dated May, August, October, November, and December 2007. The biological monitoring reaches for this report are located within a portion of these 17 reaches. The locations of the biological monitoring reaches relative to these 17 reaches are as follows: Reach 1-F corresponds with Reach 1 of the May 2007 plan set; Reach 1-E corresponds with Reach 2 of the August 2007 plan set; Reach 3-A corresponds with Reach 4 of the October 2007 plan set; Reaches 1-D and 1-C correspond with Reaches 5 and 7, respectively of the November 2007 plan set; and Reaches 1-B, 2-B, 2-A, and 1-A correspond with Reaches 12, 13, 15, and 17, respectively of pending plan sets.

7. The locations of each of the nine stream reaches were approximated on this exhibit using survey-located trees, which were noted during the biological monitoring field work.

Snakeden Branch Biotic Metric and Index Weighting and VA-SCI

METRIC	REACH								
	1-A	1-B	1-C	1-D	1-E	1-F	2-A	2-B	3-A
Total Taxa	40.91	13.64	36.36	9.09	9.09	9.09	31.82	40.91	18.18
EPT Taxa	9.09	9.09	9.09	0.00	0.00	0.00	0.00	0.00	0.00
Percent Ephemeroptera	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percent Plecoptera + Trichoptera (Excluding Hydropsychidae)	4.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percent Scrapers	4.93	0.00	5.38	0.00	0.00	0.00	7.24	16.45	5.29
Percent Chironomidae	18.64	1.46	20.37	21.52	2.63	3.70	13.08	16.98	9.09
Percent Top Two Dominant	11.02	0.00	8.03	0.00	1.27	1.34	8.10	15.00	6.57
HBI	53.09	58.93	55.28	46.16	59.86	60.73	61.02	56.74	55.61
VA-SCI Numerical Score	**17.81**	**10.39**	**16.81**	**9.60**	**9.11**	**9.36**	**15.16**	**18.26**	**11.84**
VA-SCI Narrative Score	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**	**Severe Stress**
Average VA-SCI Numerical Score	**13.15**								
Average VA-SCI Narrative Score	**Severe Stress**								

Snakeden Branch Biotic Metric Scores

Reach	Total Taxa	Total EPT Taxa	Percent Ephemeroptera	Percent Plecoptera + Trichoptera (Excluding Hydropsychidae)	Percent Scrapers	Percent Chironomidae	Percent Top Two Dominant	HBI
1-A	9	1	0.00	1.69	2.54	81.36	92.37	6.39
1-B	3	1	0.00	0.00	0.00	98.54	100.00	5.99
1-C	8	1	0.00	0.00	2.78	79.63	94.44	6.24
1-D	2	0	0.00	0.00	0.00	78.48	100.00	6.86
1-E	2	0	0.00	0.00	0.00	97.37	99.12	5.93
1-F	2	0	0.00	0.00	0.00	96.30	99.07	5.87
2-A	7	0	0.00	0.00	3.74	86.92	94.39	5.85
2-B	9	0	0.00	0.00	8.49	83.02	89.62	6.14
3-A	4	0	0.00	0.00	2.73	90.91	95.45	6.22

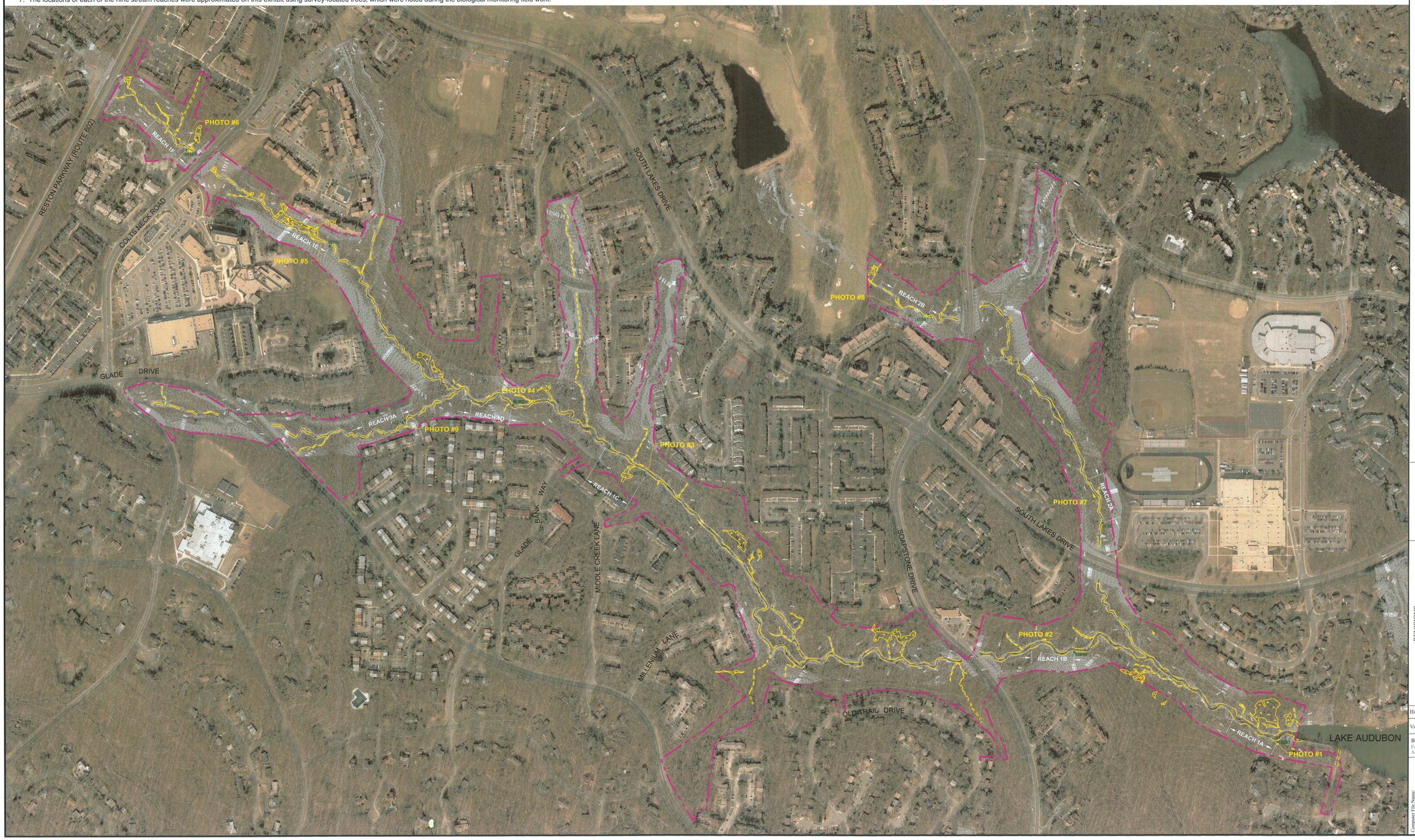
LEGEND

- STUDY AREA BOUNDARY
- PERENNIAL STREAM (PER FAIRFAX COUNTY RPA MAP)
- NON-PERENNIAL STREAM (PER FAIRFAX COUNTY RPA MAP)
- JURISDICTIONAL WETLAND AREAS
- UPL UPLAND
- t1995 SURVEY-LOCATED TREE (NOTE 7)

VCS NORTH ZONE 1983

Total Habitat Assessment Scores for Snakeden Branch

REACH	Habitat Assessment Score	Percent Best Possible Score	Narrative Rating
1-A	114	57	Poor
1-B	103	52	Poor
1-C	116	58	Fair
1-D	121	61	Fair
1-E	130	65	Fair
1-F	113	57	Poor
2-A	112	56	Poor
2-B	118	59	Fair
3-A	112	56	Poor
Average	**115**	**58**	**Fair**



Wetland Studies and Solutions, Inc.
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NORTHERN VIRGINIA STREAM RESTORATION BANK
SNAKEDEN BRANCH
Fairfax County, Virginia

EXHIBIT 3B: BIOLOGICAL STREAM MONITORING MAP

REVISIONS

No.	Date	Description	Rev. By	App. By

DATE: JANUARY 2008 SCALE: 1"=200'

Horizontal Datum: NAD 83

Vertical Datum: NGVD 29

Boundary and Topo Source:
Fairfax County Digital Data
Air Survey Corp.

Computer File Name: Snakeden.dwg	Design	Draft	Approved
	SDS	SDS	MSR

sheet # 1 of 1

L:\20000s\20003\CADD\05-ENVR\Biomonitoring\Year 1 - 2007 Monitoring\BioassessmentMap.dwg

Exhibit 4

Tab A

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

1. **Looking northwest (upstream) at Reach 1-A of Snakeden Branch on the eastern portion of the study area.**

2. **Looking west (upstream) at Reach 1-B of Snakeden Branch on the eastern portion of the study area.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

3. **Looking northwest (upstream) at Reach 1-C of Snakeden Branch on the central portion of the study area.**

4. **Looking southwest (upstream) at Reach 1-D of Snakeden Branch on the central portion of the study area**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

5. **Looking northwest (upstream) at Reach 1-E of Snakeden Branch on the western portion of the study area.**

6. **Looking northwest (upstream) at Reach 1-F of Snakeden Branch on the western portion of the study area.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

7. **Looking northwest (upstream) at Reach 2-A of an unnamed tributary to Snakeden Branch on the eastern portion of the study area.**

8. **Looking northwest (upstream) at Reach 2-B of an unnamed tributary to Snakeden Branch on the eastern portion of the study area.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

9. **Looking north (upstream) at Reach 3-A, an unnamed tributary of Snakeden Branch on the eastern portion of the study area.**

10. **Looking northwest (upstream) at Reach 4-A of an unnamed tributary of Snakeden Branch on the western portion of the study area.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

11. **Looking west (upstream) at Reach 4-B of an unnamed tributary of Snakeden Branch on the western portion of the study area.**

12. **Looking north-northeast (upstream) at Reach 5-A of an unnamed tributary of Snakeden Branch on the western portion of the study area.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

13. **Looking west (upstream) at an unnamed tributary of Snakeden Branch on the eastern portion of the study area. This stream only had standing water during the reconnaissance field work and was not samplable.**

14. **Looking southeast (upstream) at an unnamed tributary of Snakeden Branch on the eastern portion of the study area. This stream lacked flowing water during the reconnaissance field work.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

15. **Looking south (upstream) at an unnamed tributary of Snakeden Branch on the central portion of the study area. This stream lacked flowing water during the reconnaissance field work.**

16. **Looking northeast (upstream) at an unnamed tributary of Snakeden Branch on the central portion of the site. This stream lacked flowing water during the reconnaissance field work.**

EXHIBIT 4A
BIOLOGICAL RECONNAISSANCE PHOTOGRAPHS
PHOTOS TAKEN BETWEEN DECEMBER 11 AND 12, 2006
SNAKEDEN BRANCH WATERSHED
WSSI #20003

17. **Looking south (downstream) at an unnamed tributary of Snakeden Branch on the western portion of the study area. This stream lacked flowing water during the reconnaissance field work.**

18. **Looking southwest (upstream) at an unnamed tributary of Snakeden Branch on the western portion of the study area. This stream lacked flowing water during the reconnaissance field work.**

Tab B

EXHIBIT 4B
BIOLOGICAL STREAM ASSESSMENT PHOTOGRAPHS
PHOTOGRAPHS TAKEN BETWEEN APRIL 4 AND APRIL 10, 2007
SNAKEDEN BRANCH WATERSHED
WSSI #20003

1. **Looking northwest (upstream) at Reach 1-A of Snakeden Branch on the eastern portion of the study area.**

2. **Looking west (upstream) at Reach 1-B of Snakeden Branch on the eastern portion of the study area.**

EXHIBIT 4B
BIOLOGICAL STREAM ASSESSMENT PHOTOGRAPHS
PHOTOGRAPHS TAKEN BETWEEN APRIL 4 AND APRIL 10, 2007
SNAKEDEN BRANCH WATERSHED
WSSI #20003

3. **Looking northwest (upstream) at Reach 1-C of Snakeden Branch on the central portion of the study area.**

4. **Looking southwest (upstream) at Reach 1-D of Snakeden Branch on the central portion of the study area.**

EXHIBIT 4B
BIOLOGICAL STREAM ASSESSMENT PHOTOGRAPHS
PHOTOGRAPHS TAKEN BETWEEN APRIL 4 AND APRIL 10, 2007
SNAKEDEN BRANCH WATERSHED
WSSI #20003

5. **Looking northwest (upstream) at Reach 1-E of Snakeden Branch on the western portion of the study area.**

6. **Looking northwest (upstream) at Reach 1-F of Snakeden Branch on the western portion of the study area.**

EXHIBIT 4B
BIOLOGICAL STREAM ASSESSMENT PHOTOGRAPHS
PHOTOGRAPHS TAKEN BETWEEN APRIL 4 AND APRIL 10, 2007
SNAKEDEN BRANCH WATERSHED
WSSI #20003

7. **Looking northwest (upstream) at Reach 2-A of an unnamed tributary of Snakeden Branch on the eastern portion of the study area.**

8. **Looking northwest (upstream) at Reach 2-B of an unnamed tributary of Snakeden Branch on the eastern portion of the study area.**

EXHIBIT 4B
BIOLOGICAL STREAM ASSESSMENT PHOTOGRAPHS
PHOTOGRAPHS TAKEN BETWEEN APRIL 4 AND APRIL 10, 2007
SNAKEDEN BRANCH WATERSHED
WSSI #20003

9. **Looking west (upstream) at Reach 3-A, an unnamed tributary of Snakeden Branch on the western portion of the study area.**

Exhibit 5

Tab A

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	7

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	1	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.	3	Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	7

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	1
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	2	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		**TUBELLARIA - Flatworms**	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-B	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	41

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.	1	Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	3
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**	3	Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**	1	Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	18	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	1
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	3
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-B	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	41

Pedicia sp.		Microvelia sp.	1	Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	2
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	5	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.	1	Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	2
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-C	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	13

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**	1	Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**	3	Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	6	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-C	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	13

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	3	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-D	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	15

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	1
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	5	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	1
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-D	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	15

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	1
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	4	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.	2	Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.	1	Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		**TUBELLARIA - Flatworms**	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-E	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	41

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	13
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**	1	Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**	3	Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	6	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA	1	Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Craytish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)	1	Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	1
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-E	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	41

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisopotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	5
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	1
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	9	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		COLLEMBOLA - Springtails	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-F	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	6

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	1
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	2	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)	1	Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-F	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	6

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	2	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	24

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	14	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	24

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	1
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	8	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		**TUBELLARIA - Flatworms**	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	1
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-B	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	17

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE	1	Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	1	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE	1	Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	3	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.	1	Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	1
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-B	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	17

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	3	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.	6	Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		COLLEMBOLA - Springtails	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	3-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	44

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.	13	Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	1
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE	3	Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA	4	Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.	2	Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	1
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE	1	Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	1
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	3-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	44

Pedicia sp.	1	Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	12	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.	4	Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.	1	Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		COLLEMBOLA - Springtails	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	4-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	4

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**	1	**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)	1	Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	4-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	4

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	2	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		COLLEMBOLA - Springtails	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	4-B	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	16

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	3
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladiinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	4-B	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	16

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	8	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.	4	Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		COLLEMBOLA - Springtails	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	1
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	5-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	107

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.	7	Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**		**Tanypodinae**	1
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE	1	Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	5-A	SDS/CAG	1	N/A
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
12/14/2006	12/14/2006	SDS	SDS	N/A	107

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	77	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.	20	Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**		**COLLEMBOLA - Springtails**	
BELOSTOMATIDAE		Pteronarcys sp.		**ISOTOMURIDAE**	
Belostoma sp.		**PELTOPERLIDAE**		Isotomurus sp.	1
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Tab B

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-A	CAG/JNC	1	123
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/5/2007	11/5/2007	SDS	SDS	25	118

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	96	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	1
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE	1	Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladiinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	1
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-A	CAG/JNC	1	123
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/5/2007	11/5/2007	SDS	SDS	25	118

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**	1	**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms		**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	13	**PHILOPOTAMIDAE**	2
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE	2	Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE	1	Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-B	CAG/JNC	1	142
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
10/22/2007	9/20/2007	SDS	BTA	26	137

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	135	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	1
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-B	CAG/JNC	1	142
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
10/22/2007	9/20/2007	SDS	BTA	26	137

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	1
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms		**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		**TUBELLARIA - Flatworms**	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-C	CAG/JNC	1	121
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/2/2007	11/2/2007	SDS	SDS	21	108

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	86	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccomis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	1
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-C	CAG/JNC	1	121
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/2/2007	11/2/2007	SDS	SDS	21	108

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**	1	Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	8
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms		**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**	1	Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	8	**PHILOPOTAMIDAE**	
ANCYLIDAE	1	**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE	2	Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-D	CAG/JNC	1	91
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/9/2007	11/6/2007	JDF	JDF/SDS	102	79

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	62	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccomis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-D	CAG/JNC	1	91
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/9/2007	11/6/2007	JDF	JDF/SDS	102	79

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms		**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	17	**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Rhyacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-E	CAG/JNC	1	122
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
10/31/2007	10/31/2007	SDS	SDS	13	114

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	111	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-E	CAG/JNC	1	122
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
10/31/2007	10/31/2007	SDS	SDS	13	114

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisopotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	2	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	1	**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealeuctra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-F	CAG/JNC	1	121
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/6/2007	11/5/2007	SDS	SDS	11	108

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	104	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	1-F	CAG/JNC	1	121
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/6/2007	11/5/2007	SDS	SDS	11	108

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	3	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	1	**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE		Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-A	CAG/JNC	1	124
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/2/2007	11/2/2007	SDS	SDS	20	107

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE	1	Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	93	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	1
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	1
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-A	CAG/JNC	1	124
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/2/2007	11/2/2007	SDS	SDS	20	107

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**	3	Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms	4	Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms		**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**		**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE	4	Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Rhyacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-B	CAG/JNC	1	122
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
10/19/2007	9/20/2007	SDS	MHS	10	106

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE	1	Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	88	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccomis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	1
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	1
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	2-B	CAG/JNC	1	122
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
10/19/2007	9/20/2007	SDS	MHS	10	106

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**	2	Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anispotera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	1	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**	2	Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	1	**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cymellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE	7	Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE	2	Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET*

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	3-A	CAG/JNC	1	125
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/1/2007	11/1/2007	SDS	SDS	24	110

BIVALVIA - Clams		Forcipomyia sp.		Synorthocladius sp.	
SPHAERIDAE		Probezzia sp.		Thienemanniella sp.	
Sphaerium sp.		Sphaeromias sp.		Tvetenia sp.	
Pisidium sp.		Stilobezzia sp.		Unniella sp.	
Musculium sp.		**CHAOBORIDAE**		Xylotopus sp.	
CORBICULIDAE		Chaborus sp.		Zalutschia sp.	
Corbicula fluminea sp.		**CHIRONOMIDAE**	100	**Tanypodinae**	
UNIONIDAE		**Chironominae**		Ablabesmyia sp.	
BRANCHIOBDELLIDA		**Chironomini**		Alotanypus sp.	
BRANCHIOBDELLIDAE		Chironomus sp.		Apsectrotanypus sp.	
TETRASTEMMATIDAE		Cryptochironomus sp.		Clinotanypus sp.	
COLEOPTERA - Beetles		Cryptotendipes sp.		Conchapelopia sp.	
CANTHERIDAE		Demicryptochironomus sp.		Guttipelopia sp.	
CURCULIONIDAE		Dicrotendipes sp.		Krenopelopia sp.	
DRYOPIDAE		Einfeldia sp.		Labrundinia sp.	
Helichus sp.		Endochironomus sp.		Larsia sp.	
DYTISCIDAE		Glyptotendipes sp.		Macropelopia sp.	
Agabus sp.		Kiefferulus sp.		Meropelopia sp.	
Hydroporous sp.		Microtendipes sp.		Paramerina sp.	
Coptotomus sp.		Nilothauma sp.		Pentaneura sp.	
Oreodytes sp.		Pagastiella sp.		Procladius sp.	
Laccornis sp.		Parachironomus sp.		Psectrotanypus sp.	
Dytiscus sp.		Paracladopelma sp.		Rheopelopia sp.	
ELMIDAE		Paratendipes sp.		Tanypus sp.	
Microcylloepus sp.		Phaenopsectra sp.		Thienemannimyia gp.	
Optioservus sp.		Polypedilum sp.		Thienemannimyia sp.	
Stenelmis sp.		Stenochironomus sp.		Trissopelopia sp.	
Promoresia sp.		Stictochironomus sp.		Zavrelimyia sp.	
Macronychus sp.		Tribelos sp.		**CULICIDAE**	
Dubiraphia sp.		Zavreliella sp.		Aedes	
Ancyronyx sp.		**Tanytarsini**		Anopheles	
Oulimnius sp.		Cladotanytarsus sp.		Culex	
GYRINIDAE		Constempellina sp.		Culiseta	
Dineutus		Micropsectra sp.		Mansonia	
Gyrinus		Micropsectra/Tanysarsus complex		Orthopodomyia	
HALIPIDAE		Paratanytarsus sp.		Psorophora	
Haliplus sp.		Rheotanytarsus sp.		Toxorhynchites	
HYDROPHILIDAE		Stempellina sp.		Uranotaenia	
Cymbiodyta sp.		Stempellinella sp.		Wyeomyia	
Berosus sp.		Sublettea sp.		**DIXIDAE**	
Derallus sp.		Tanytarsus sp.		Dixa sp.	
Helochares sp.		Zavrelia sp.		**DOLICHOPODIDAE**	
Helophorus sp.		**Diamesinae**		**EMPIDIDAE**	
Hydrophilus sp.		Diamesa sp.		Chelifera sp.	
Hydrochus sp.		Pagastia sp.		Clinocera sp.	
Tropisternus sp.		Potthastia sp.		Hemerodromia sp.	
Hydrobius sp.		Prodiamesa sp		Dolichocephala sp.	
Laccobius sp.		Sympotthastia sp.		**EPHYDRIDAE**	
PSEPHENIDAE		**Orthocladiinae**		**PELCORHYNCHIDAE**	
Psephenus sp.		Brillia sp.		Glutops sp.	
Ectopria sp.		Cardiocladius sp.		**PSYCHODIDAE**	
Dicranopselaphus sp.		Chaetocladius sp.		Pericoma sp.	
PTILODACTYLIDAE		Corynoneura sp.		Psycoda sp.	
Anchytarsus sp.		Cricotopus sp.		**SIMULIDAE**	
COPEPODA		Cricotopus/Orthocladius sp.		Simulium sp.	
CRUSTACEA (Amphipoda- Scuds)		Diplocladius sp.		Prosimulium sp.	
CRANYONYCTIDAE		Eukiefferiella sp.		Cnephia sp.	
Stygonectes sp.		Heleniella sp.		Twinia sp.	
Crangonyx sp.		Heterotrissocladius sp.		Stegopterna sp.	
Synurella sp.		Hydrobaenus sp.		Ectemnia sp.	
GAMMARIDAE		Limnophyes sp.		**STRATIOMYIDAE**	
Gammarus sp.		Lopescladius sp.		Oxycera sp.	
HYALELLIDAE		Mesocricotopus sp.		Odontomyia sp.	
Hyalella sp.		Mesosmittia sp.		**SYRPHIDAE**	1
CRUSTACEA (Decopoda - Crayfish)		Nanocladius sp.		Chrysogaster sp.	
CAMBARIDAE		Orthocladinae A		Eristalis sp.	
PALAEMONIDAE		Orthocladius sp.		**TABANIDAE**	
CRUSTACEA (Isopoda- Sowbugs)		Parachaetocladius sp.		Chrysops sp.	
ASELIDAE		Parakiefferiella sp.		Tabanus sp.	
Caecidotea sp.		Parametriocnemus sp.		**TANYDERIDAE**	
Lirceus sp.		Paraphaenocladius sp.		**THAUMALEIDAE**	
DIPTERA - True Flies		Parasmittia sp.		Thaumalea sp.	
ATHERICIDAE		Paratrichocladius sp.		**TIPULIDAE**	
Atherix sp.		Paratrissocladius sp.		Antocha sp.	
BLEPHARICERIDAE		Psectrocladius sp.		Hexatoma sp.	
CECIDOMYIIDAE		Pseudorthocladius sp.		Leptotarsus sp.	
CERATOPOGNIDAE		Psilometriocnemus sp.		Molophilus sp.	
Alluaudomyia sp.		Rheocricotopus sp.		Tipula sp.	
Bezzia sp.		Rheosmittia sp.		Psuedolimnophila sp.	
Ceratopogon sp.		Smittia sp.		Dicranota sp.	
Culicoides sp.		Stilocladius sp.		Limnophila sp.	
Dasyhelea sp.		Symposiocladius sp.		Ormosia sp.	

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WSSI BENTHIC MACROINVERTEBRATE I.D. AND ENUMERATION BENCH SHEET

Site	WSSI #	Reach	Collectors	# Jars in Sample	Total No. Organisms Sorted
Snakeden Branch	20003	3-A	CAG/JNC	1	125
Date ID'd	**Date Sorted**	**Taxonomist**	**Sorter**	**# Grids in Subsample**	**Total No. Organisms ID'd**
11/1/2007	11/1/2007	SDS	SDS	24	110

Pedicia sp.		Microvelia sp.		Paranemoura sp.	
Limonia sp.		HIRUDINEA - Leeches		Prostoia sp.	
Pilaria sp.		HOPLONEMERTEA - Ribbon Worms		Shipsa sp.	
Erioptera sp.		**TETRASTEMMATIDAE**		**CHLOROPERLIDAE**	
Rhabdomastix sp.		Prostoma sp.		Alloperla sp.	
TRICHOCERIDAE		LEPIDOPTERA - Moth Larvae		Haploperla sp.	
Trichocera sp.		**NOCTUIDAE**		Sweltsa sp.	
EPHEMEROPTERA - Mayflies		Archanara sp.		**TAENIOPTERGIDAE**	
AMELETIDAE		Bellura sp.		Strophopteryx sp.	
Ameletus sp.		**PYRALIDAE**		Taeniopteryx sp.	
BAETIDAE		MEGALOPTERA - Dobsonflies		TRICHOPTERA - Caddisflies	
Acentrella sp.		**CORYDALIDAE**		**BRACHYCENTRIDAE**	
Acerpenna sp.		Chauliodes sp.		Brachycentrus sp.	
Baetis sp.		Corydalus sp.		**CALAMOCERATIDAE**	
Centroptilum sp.		Nigronia sp.		Heteroplectron sp.	
Diphetor sp.		**SIALIDAE**		**DIPSEUDOPSIDAE**	
BAETISCIDAE		Sialis sp.		Phylocentropus sp.	
Baetisca sp.		NEMATODA - Roundworms		**GLOSSOSOMATIDAE**	
CAENIDAE		NEMATOMORPHA - Horsehair Worms		Glossosoma sp.	
Caenis sp.		ODONATA (Anisoptera - Dragonflies)		Agapetus sp.	
EPHEMERELLIDAE		**AESHNIDAE**		**HELICOPSYCHIDAE**	
Dannella sp.		Anax sp.		Helicopsyche sp.	
Drunella sp.		Basiaeshna sp.		**HYDROPSYCHIDAE**	
Ephemerella sp.		Boyeria sp.		Cheumatopsyche sp.	
Eurylophella sp.		**CORDULEGASTRIDAE**		Diplectrona sp.	
Serratella sp.		Cordulegaster sp.		Hydropsyche sp.	
EPHEMERIDAE		**CORDULIIDAE**		Parapsyche sp.	
Ephemera sp.		**GOMPHIDAE**		Potamyia sp.	
HEPTAGENIIDAE		Arigomphus sp.		**HYDROPTILIDAE**	
Epeorus sp.		Gomphus sp.		Hydroptila sp.	
Leucrocuta sp.		Hagenius sp.		Leucotrichia sp.	
Stenacron sp.		Lanthus sp.		Ochrotrichia sp.	
Stenonema sp.		Stylogomphus sp.		**LEPIDOSTOMATIDAE**	
LEPTOPHLEBIDAE		**LIBELLULIDAE**		Lepidostoma sp.	
Leptophlebia sp.		**MACROMIIDAE**		**LEPTOCERIDAE**	
Habrophlebia sp.		Macromia sp.		Triaenodes sp.	
Habrophlebiodes sp.		**PETALURIDAE**		Ceraclea sp.	
Paraleptophlebia sp.		ODONATA Zygoptera - Damselflies)		Oecetis sp.	
NEOEPHEMERIDAE		**CALOPTERYGIDAE**		**LIMNEPHILIDAE**	
OLIGONEURIDAE		Calopteryx sp.		Apatina sp.	
Isonychia sp.		**COENAGRIONIDAE**		Hydatophylax sp.	
POLYMITARCYIDAE		Argia sp.		Ironoquia sp.	
POTAMANTHIDAE		**LESTIDAE**		Pycnopsyche sp.	
SIPHLONEURIDAE		OLIGOCHAETA - Oligochaete Worms	1	**MOLANNIDAE**	
Siphlonurus sp.		**LUMBRICINA**		Molanna sp.	
TRICORYTHIDAE		**ENCHYTRAEIDAE**		**ODONTOCERIDAE**	
Tricorythodes sp.		**NAIDIDAE**		Psilotreta sp.	
GASTROPODA - Snails		**TUBIFICIDAE**	5	**PHILOPOTAMIDAE**	
ANCYLIDAE		**LUMBRICULIDAE**		Chimarra sp.	
Ferissa sp.		POLYCHAETA - Polychaete Worms		Wormaldia sp.	
HYDROBIIDAE		**AEOLOSOMATIDAE**		**PHRYGANEIDAE**	
LYMNAEIDAE		Aeolosoma sp.		Ptilostomis sp.	
Fossaria sp.		PLECOPTERA - Stonefly Larvae		**POLYCENTROPIDAE**	
Stagnicola sp.		**PERLIDAE**		Cyrnellus sp.	
Pseudosuccinea sp.		Acroneuria sp.		Polycentropus sp.	
PHYSIDAE	3	Beloneuria sp.		**PSYCHOMYIDAE**	
Physella sp.		Eccoptura sp.		Lype sp.	
PLANORBIDAE		Neoperla sp.		Psychomyia sp.	
Menetus sp.		Perlesta sp.		**RHYACOPHILIDAE**	
Gyraulus sp.		*Perlinella sp.*		Ryacophila sp.	
PLEUROCERIDAE		**PERLODIDAE**		**UENOIDAE**	
VIVIPARIDAE		Clioperla sp.		Neophylax sp.	
Viviparus sp.		Diploperla sp.		TUBELLARIA - Flatworms	
HAPLOSCLERIDA		Isoperla sp.		**PLANARIIDAE**	
SPONGILLIDAE		Cultus sp.		**DENDROCOELIDAE**	
HEMIPTERA - True Bugs		**PTERONARCYIDAE**			
BELOSTOMATIDAE		Pteronarcys sp.			
Belostoma sp.		**PELTOPERLIDAE**			
Lethocerus sp.		Peltoperla sp.			
CORIXIDAE		**LEUCTRIDAE**			
GELASTOCORIDAE		Leuctra sp.			
GERRIDAE		Zealuectra sp.			
Trepobates sp.		Paraleuctra sp.			
HEBRIDAE		**CAPNIDAE**			
HYDROMETRIDAE		Allocapnia sp.			
MESOVELIIDAE		Paracapnia sp.			
NEPIDAE		**NEMOURIDAE**			
Nepa sp.		Amphinemura sp.			
Ranatra sp.		Ostrocerca sp			
VELIIDAE		Nemoura sp.			

* Taxa in grey are higher-level taxa (i.e., phylum, class, subclass order). Taxa in bold are either family or subfamily-level taxa.

Exhibit 6

Wetland Studies and Solutions, Inc.

EXHIBIT 6: HABITAT ASSESSMENT FIELD DATA SHEET - SUMMARY WORKSHEET

Project Name and WSSI Number: Northern Virginia Stream Restoration Bank: Snakeden Branch (WSSI # 20003)

Stream ID: Snakeden Branch and Unnamed Tributaries to Snakeden Branch

Date: 12/11/06 - 12/12/06

Evaluators: SDS/CAG

HUC: 02070008

Assessment Period: Prerestoration

Assessment Reach Name		Condition Category										TOTAL SCORE	Percent of Best Possible Score***	Reach Length	Stream Type
		Substrate	*Embedded-ness*	*Velocity*	*Sediment Depostion*	*Flow Status*	*Channel Alteration*	*Frequency of Riffles*	*Bank Stability**	*Vegetation Protection**	*Riparian Zone**				
Stream 1	1-A	Marginal	Marginal	Optimal	Marginal	Marginal	Optimal	Optimal	Poor	Poor	Optimal	114	57	300	R3
	1-B	Marginal	Marginal	Optimal	Marginal	Marginal	Optimal	Optimal	Poor	Poor	Optimal	103	52	300	R3
	1-C	Marginal	Marginal	Optimal	Marginal	Suboptimal	Optimal	Suboptimal	Poor	Poor	Optimal	116	58	300	R3
	1-D	Marginal	Marginal	Optimal	Marginal	Suboptimal	Optimal	Optimal	Poor	Poor	Optimal	121	61	300	R3
	1-E	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Suboptimal	Marginal	Suboptimal	Suboptimal	Suboptimal	Suboptimal	130	65	300	R3
	1-F	Marginal	Suboptimal	Suboptimal	Marginal	Marginal	Suboptimal	Optimal	Marginal	Marginal	Optimal	113	57	300	R4/RE**
Stream 2	2-A	Marginal	Marginal	Optimal	Marginal	Marginal	Optimal	Optimal	Poor	Poor	Optimal	112	56	300	R3
	2-B	Suboptimal	Marginal	Optimal	Marginal	Marginal	Suboptimal	Suboptimal	Marginal	Marginal	Suboptimal	118	59	300	R3
Stream 3	3-A	Marginal	Suboptimal	Optimal	Marginal	Marginal	Optimal	Optimal	Poor	Poor	Optimal	112	56	300	R3
												Total		2,700	

* The score for Bank Stability, Vegetation Protection and Riparian Zone combines the left and right bank scores.

** The stream is characterized as non-perennial by Fairfax County and is thus either intermittent or ephemeral.

*** Percentage of Best Possible Score= (Total Habitat Score)/(200)*100

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-A		863	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	9
3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	18
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
			Total Score		50

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-A		863	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category: Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	20
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstructions is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	18
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	9
Total Score					114

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-B		540	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	16
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	6
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
			Total Score		45

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WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-B		540	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category: Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	16
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	16
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	9
Total Score					103

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3	Potomac	12/12/2006	N/A
Investigators		**HUC**		**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-C		386	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	10
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	16
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	9
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	15
			Total Score		58

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-C		386	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	20
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	12
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	9
Total Score					116

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-D		291	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	9
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	10
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	17
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	11
			Total Score		55

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WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-D		291	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category: Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	19
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	19
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	3
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	3
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	9
Total Score					121

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-E		77	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Score**
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	11
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	11
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	15
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	11
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	13
			Total Score		61

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WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-E		77	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category: Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	15
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	7
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	7
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	8
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	8
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	8
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	8
Total Score					130

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R4		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-F		55	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	9
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	12
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	15
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
			Total Score		52

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R4		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-F		55	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Parameter	Condition Category: Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	14
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	18
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	3
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	3
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	3
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	3
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	8
Total Score					113

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
2-A		256	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Unnamed Tributary to Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Score**
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	8
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	9
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	19
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
			Total Score		50

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
2-A		256	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Unnamed Tributary to Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Score**
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	16
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	19
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	10
Total Score					112

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WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
2-B		169	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Unnamed Tributary to Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Score**
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	14
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	10
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	17
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	10
			Total Score		58

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/11/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
2-B		169	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Unnamed Tributary to Snakeden Branch			

Habitat Parameter	Condition Category: Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	15
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	15
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	4
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	4
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	4
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	4
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	5
			Total Score		118

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
3-A		75	300	1	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Unnamed Tributary to Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	**Suboptimal**	**Marginal**	**Poor**	**Score**
1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble, or other stable habitat and at stage to allow full colonization potential (i.e. snags/logs that are not new fall and not transient).	40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintainance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization.	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	11
Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast shallow)(slow is <0.3m/s, deep is >0.5 m)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low)	Dominated by 1 velocity/depth regime (usually slow-deep).	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	17
4. Sediment Deposition	Little or no enlargement of islands or point bars and <5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	7
5. Channel Flow status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the availible channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the availible channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	10
			Total Score		52

Wetland Studies and Solutions, Inc.

WSSI HABITAT ASSESSMENT FIELD DATA SHEET-HIGH GRADIENT STREAMS

Project #	Site	Cowardin	River Basin	Date	Time
20003	NOVA Stream Bank	R3		12/12/2006	N/A
Investigators		**HUC**	Potomac	**Locality**	
SDS; CAG		02070008		Fairfax County	
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
3-A		75	300	1	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Unnamed Tributary to Snakeden Branch			

Habitat Parameter	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	Score
6. Channel Alteration	Channelization or dredging absent or minimal; stream width normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e. dredging, may be present, but recent channelization is not present.	Channeliztion may be extensive; embankments or shoring structures present on both banks; and 40-80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	16
7. Frequency of Riffles	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distances between riffles divided by the width of the stream is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.	
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0	18
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
9. Vegetation Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetation disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	2
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	2
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e. parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riperian zone <6 meters; little or no riparian vegetation due to human activities.	
Score Left Bank	10 9	8 7 6	5 4 3	2 1 0	9
Score Right Bank	10 9	8 7 6	5 4 3	2 1 0	9
Total Score					112

Exhibit 7

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WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/4/2007	10:43 AM

Investigators	HUC	Locality
CAG/JNC	2070008	Fairfax County

Reach	D.A. (Acres)	Reach Length (LF)	Order
1-A	863	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	75	Sand	25	Rootwads	10	Vegetated Banks	2		
Submerged Macrophytes	0			Undercut Banks	10	Other	5		

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	5	*Undercut Banks*	3.5
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	5		
				Vegetated Banks	0	*Other*	6.5

General Comments

Caught brown bullhead catfish, bluegill sunfish, and two-lined salamander in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	2	Slimes	2
Filamentous Algae	0	Macroinvertebrates	1
Macrophytes	0	Fish	2

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WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/5/2007	9:51 AM
Investigators		**HUC**	**Locality**		
CAG/JNC		2070008	Fairfax County		
Reach		**D.A. (Acres)**	**Reach Length (LF)**	**Order**	
1-B		540	300	3	
Latitude	**Longitude**	**Stream Name**			
38°55'58"	77°21'01"	Snakeden Branch			

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	75	**Sand**	25	**Rootwads**	2	**Vegetated Banks**	0		
Submerged Macrophytes	0	**Undercut Banks**	5	**Other**	2				

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	10	*Undercut Banks*	4
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	4		
				Vegetated Banks	0	*Other*	2

General Comments

Caught one creek chub and black nose dace in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	2	Slimes	1
Filamentous Algae	1	Macroinvertebrates	0
Macrophytes	0	Fish	1

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/5/2007	12:33 PM

Investigators	HUC	Locality	
CAG/JNC	2070008	Fairfax County	
Reach	**D.A. (Acres)**	**Reach Length (LF)**	**Order**
1-C	386	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	70	**Sand**	20	**Rootwads**	20	**Vegetated Banks**	0		
Submerged Macrophytes	10	**Undercut Banks**	10	**Other**	2				

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	7	*Undercut Banks*	3
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	6		
				Vegetated Banks	0	*Other*	4

General Comments

Caught one blacknose dace and bullfrog tadpole in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	2	Slimes	1
Filamentous Algae	1	Macroinvertebrates	0
Macrophytes	0	Fish	1

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/10/2007	10:02 AM

Investigators	HUC	Locality	
CAG/JNC	2070008	Fairfax County	
Reach	**D.A. (Acres)**	**Reach Length (LF)**	**Order**
1-D	291	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	80	**Sand**	15	**Rootwads**	30	**Vegetated Banks**	0		
Submerged Macrophytes	0			**Undercut Banks**	15	**Other**	5		

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	9	*Undercut Banks*	1
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	9		
				Vegetated Banks	0	*Other*	1

General Comments

Caught one blacknose dace in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	3	Slimes	3
Filamentous Algae	3	Macroinvertebrates	0
Macrophytes	0	Fish	1

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/10/2007	12:55 AM

Investigators	HUC	Locality	
CAG/JNC	2070008	Fairfax County	
Reach	**D.A. (Acres)**	**Reach Length (LF)**	**Order**
1-E	77	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	70	**Sand**	30	**Rootwads**	0	**Vegetated Banks**	50	
Submerged Macrophytes	0			**Undercut Banks**	0	**Other**		1

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	15	*Undercut Banks*	0
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	0		
				Vegetated Banks	2	*Other*	3

General Comments

Caught two two-lined salamanders in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	3	Slimes	2
Filamentous Algae	2	Macroinvertebrates	0
Macrophytes	1	Fish	0

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/10/2007	2:02 PM

Investigators	HUC	Locality	
CAG/JNC	2070008	Fairfax County	
Reach	**D.A. (Acres)**	**Reach Length (LF)**	**Order**
1-F	55	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	80	**Sand**	10	**Rootwads**	5	**Vegetated Banks**	0		
Submerged Macrophytes	0	**Undercut Banks**	5	**Other**	12				

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	12	*Undercut Banks*	6
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	0		
				Vegetated Banks	0	*Other*	2

General Comments

Caught two two-lined salamanders in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	3	Slimes	3
Filamentous Algae	3	Macroinvertebrates	0
Macrophytes	0	Fish	0

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/4/2007	12:50 PM

Investigators	HUC	Locality	
CAG/JNC	2070008	Fairfax County	
Reach	**D.A. (Acres)**	**Reach Length (LF)**	**Order**
2-A	256	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	50	**Sand**	0	**Rootwads**	10	**Vegetated Banks**	0	
Submerged Macrophytes	0	**Undercut Banks**	0	**Other**	60			

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	10	*Undercut Banks*	0
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	4		
				Vegetated Banks	0	*Other*	6

General Comments

Caught one two-lined salamander in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	2	Slimes	1
Filamentous Algae	0	Macroinvertebrates	0
Macrophytes	0	Fish	0

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/4/2007	2:00 PM

Investigators	HUC	Locality	
CAG/JNC	2070008	Fairfax County	
Reach	**D.A. (Acres)**	**Reach Length (LF)**	**Order**
2-B	169	300	3

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	80	**Sand**	0	**Rootwads**	5	**Vegetated Banks**	0	
Submerged Macrophytes	0	**Undercut Banks**	0	**Other**	12			

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	12	*Undercut Banks*	0
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	5		
				Vegetated Banks	0	*Other*	3

General Comments

Caught one green frog and one bullfrog tadpole in net.

Qualitative Listing of Aquatic Biota

Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

Periphyton	2	Slimes	0
Filamentous Algae	0	Macroinvertebrates	0
Macrophytes	0	Fish	0

Wetland Studies and Solutions, Inc.

WSSI BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

Project #	Site	Cowardin	River Basin	Date	Time
20003	Snakeden	R3	Potomac	4/10/2007	11:31 AM

Investigators	HUC	Locality
CAG/JNC	2070008	Fairfax County

Reach	D.A. (Acres)	Reach Length (LF)	Order
3-A	75	300	1

Latitude	Longitude	Stream Name
38°55'58"	77°21'01"	Snakeden Branch

Habitat Types (Indicate Percentage of Each Habitat Present)

Cobble	75	Sand	25	Rootwads	10	Vegetated Banks	0		
Submerged Macrophytes	0			Undercut Banks	10	Other	15		

Sample Collection

Gear Used		How Were Samples Collected?		Number of Jabs/Kicks Taken from Each Habitat			
D-Frame	x	*Wading*	x				
Kick-Net		*From Bank*		*Cobble*	11	*Undercut Banks*	0
Other		*From Boat*		*Sand*	0	*Submerged Macro-phytes*	0
				Rootwads	1		
				Vegetated Banks	0	*Other*	8

General Comments

Caught one blacknose dace in net.

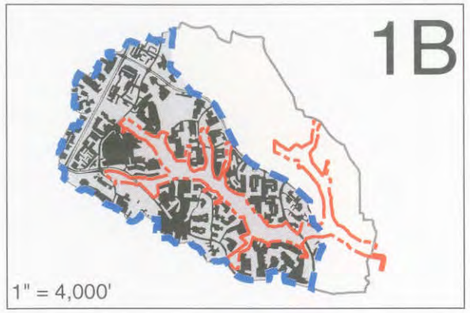
Qualitative Listing of Aquatic Biota

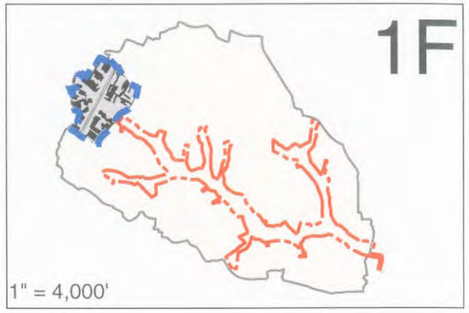
Indicate Estimated Abundance: 0=Absent/Not Observed, 1=Rare, 2=Common, 3=Abundant, 4=Dominant

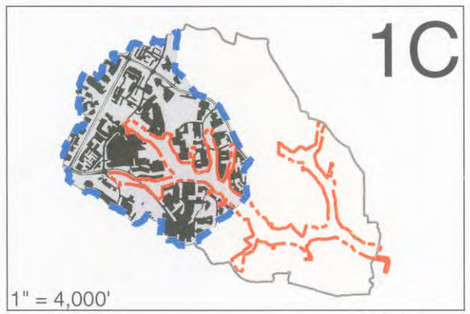
Periphyton	3	Slimes	3
Filamentous Algae	3	Macroinvertebrates	0
Macrophytes	0	Fish	1

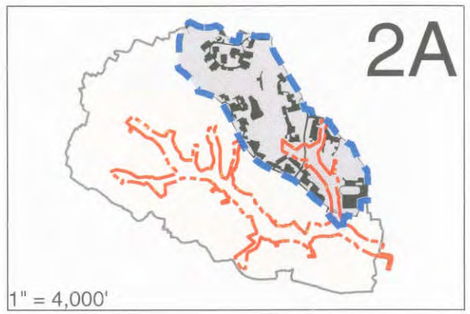
Exhibit 8

L:\20000s\20003\gis1\StreamAssessment\20003 - 08 - LandCoverRevised.mxd



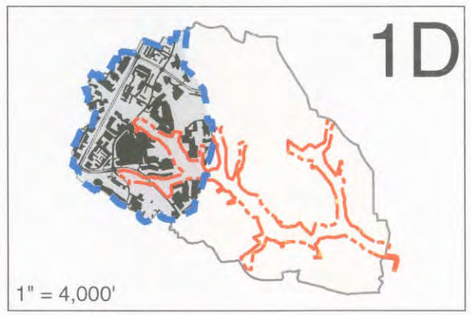


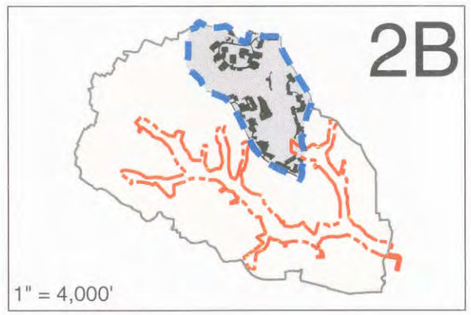




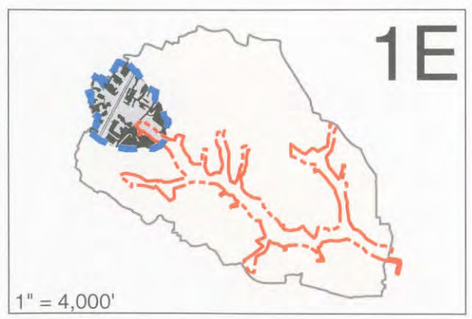
Land Cover Map

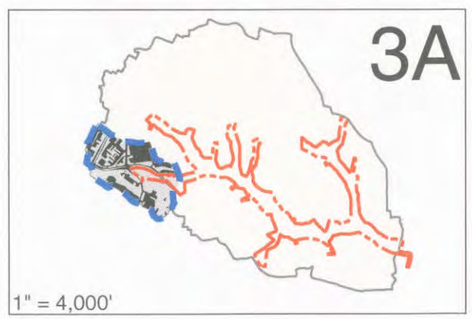
Snakeden Branch
Scale as Noted





Stream ID	Impervious Percent	Total Acres
1A	38%	863
1B	45%	540
1C	46%	386
1D	45%	291
1E	50%	77
1F	47%	55
2A	26%	256
2B	25%	169
3A	49%	75





SITE

DRAINAGE BOUNDARIES

IMPERVIOUS AREAS

PERVIOUS AREAS

Exhibit 9

*Appendix A - List of Impaired (Category 5) Waters in 2006**

Assessment Unit ID	Waterbody Name	City / County	Assessment Unit Description

Potomac and Shenandoah River Basins

TMDL Watershed Name: **Shenandoah River, South Fork**

TMDL Group ID: 00403

VAV-B35R_SSF01A00 — **South Fork Shenandoah River** — ROCKINGHAM CO

South Fork Shenandoah River from its confluence with Big Run downstream to its confluence with Naked Creek.

VA Overall AU Category: 5A

Use	Impairment		TMDL Group ID	First Listed on 303(d)	TMDL Schedule	Impairment Specific Comments and/or Impairment Specific VA Category
Recreation	Fecal Coliform	15.17 MILES	00403	2002	2010	

Sources: Source Unknown

VAV-B37R_SSF01A00 — **S.F. Shenandoah River** — PAGE CO, ROCKINGHAM CO

South Fork Shenandoah River from its confluence with Naked Creek downstream to its confluence with Stoney Run just above the Route 340 bridge at Alma.

VA Overall AU Category: 5A

Use	Impairment		TMDL Group ID	First Listed on 303(d)	TMDL Schedule	Impairment Specific Comments and/or Impairment Specific VA Category
Recreation	Fecal Coliform	18.28 MILES	00403	2002	2010	

Sources: Source Unknown

VAV-B38R_SSF01A00 — **South Fork Shenandoah River** — PAGE CO

South Fork Shenandoah River from its confluence with Stoney Run just above the Route 340 bridge at Alma downstream to its confluence with Hawksbill Creek.

VA Overall AU Category: 5A

Use	Impairment		TMDL Group ID	First Listed on 303(d)	TMDL Schedule	Impairment Specific Comments and/or Impairment Specific VA Category
Recreation	Fecal Coliform	16.09 MILES	00403	2002	2010	

Sources: Source Unknown
Wildlife Other than Waterfowl

TMDL Watershed Name: **Snakeden Branch**

TMDL Group ID: 60019

VAN-A11R_SNA01A02 — **Snakeden Branch** — FAIRFAX CO

Segment begins at the confluence with an unnamed tributary to Snakeden Branch, approximately 0.4 rivermile downstream from the Twin Branches Road bridge, and continues downstream until the confluence with Difficult Run.

VA Overall AU Category: 5A

Use	Impairment		TMDL Group ID	First Listed on 303(d)	TMDL Schedule	Impairment Specific Comments and/or Impairment Specific VA Category
Recreation	Escherichia coli	0.79 MILES	60019	2006	2018	Sufficient exceedances of the instantaneous E.coli bacteria criterion (2 of 8 samples - 25.0%) were recorded at DEQ's ambient water quality monitoring station (1ASNA000.21) at the Route 677 bridge to assess this stream segment as not supporting of the recreation use goal for the 2006 water quality assessment.

Sources: Source Unknown
