BIOASSESSMENT OF THE WEST BRANCH OF THE WOLF RIVER

by

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Abstract

A total of 120 aquatic macroinvertebrate samples were collected during the spring and fall of 2005 from 20 sampling sites located on six separate streams throughout the West Branch of the Wolf River (WBWR) watershed, Menominee County, Wisconsin. Individuals were identified to the lowest taxonomic level, and 12 macroinvertebrate metrics were calculated including the Biotic Index (BI). In addition, five categories of riparian land cover were calculated for comparison with three other Wolf River Basin watersheds. The objectives of this study were to establish baseline biological water quality data for the WBWR watershed using rapid bioassessment techniques. The second was to asses the affects of the Neopit Mill Pond impoundment on the WBWR, and the third objective was to investigate the potential of the WBWR watershed serving as a bench mark for this region of Wisconsin. The results of this study ranked water quality at most sites throughout the WBWR watershed as *excellent* during the spring and fall of 2005. However, sites directly below the Neopit Mill Pond dam had degraded water quality compared to upstream sites. Changes in macroinvertebrate community structure were also observed immediately below the impoundment which had significantly more filter-feeders ($p<0.05$) and less gatherers ($p<0.05$) than upstream sample sites. Water quality at sample sites 7.1 km and 13.2 km downstream from the dam gradually returned to pre-impoundment levels following a continuum of longitudinal, spatial, and physical characteristics in most instances. Consequently, the water quality of the WBWR had no apparent impact on the Wolf River. The West Branch of the Wolf River was compared to three other Little Wolf River watersheds to determine if the WBWR was unique

among other Wolf River Basin watersheds. Overall the water quality was classified as *excellent* in the WBWR compared to *very good* in the other Little Wolf River watersheds. Land cover within the WBWR had little urban development, more forest, and less agriculture and grassland than other Little Wolf River watersheds. Therefore, these results suggest that most WBWR sites, with the exception of sites immediately downstream from the Neopit Mill Pond dam, could be used as regional bench marks of high water quality for future regional management plans and comparisons with other watersheds in this area of Wisconsin.

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The Wolf River Basin (Fig. 1) is an expansive watershed that drains over 9508 km^2 of land, intersects eleven counties in the northeast portion of Wisconsin, and covers 6.6% of Wisconsin's total land area (WDNR 2001). Recently an integrated land and water biotic inventory of the Wolf River Basin was conducted by the Wisconsin Department of Natural Resources (WDNR) through the Natural Heritage Inventory (NHI) (Epstein et al. 2002). The NHI allows biologists to understand the abundance and distribution of many important aquatic species and communities with the intent of selecting the most appropriate sites for conservation of rare taxa and intact natural communities. In order for the WDNR to assign status or conservation priorities to species or communities a systematic search must be conducted. Unfortunately, inventory data were not collected within the Menominee Indian Reservation (MIR), which includes much of the West Branch of the Wolf River (WBWR) watershed. This void lies in the center of the northern section of the Wolf River Basin. Further sampling efforts in the northern portion of the Wolf River Basin have been identified by the WDNR and NHI as a high priority (Epstein et al. 2002).

The Menominee Indian Reservation, which occupies all of Menominee County, is the smallest county within the Wolf River Basin covering an area of 896 km^2. Forty-two kilometers of the Wolf River, flowing through Menominee County were designated by Congress in 1968 as a federal "Wild and Scenic River" (Garn et al. 2001). The WBWR (Fig. 2) and its tributaries drain nearly all of the western section of Menominee County before it flows into the Wolf River between Langlade and Keshena Falls. Although monitoring and inventory projects have recently taken place on the Wolf River, no

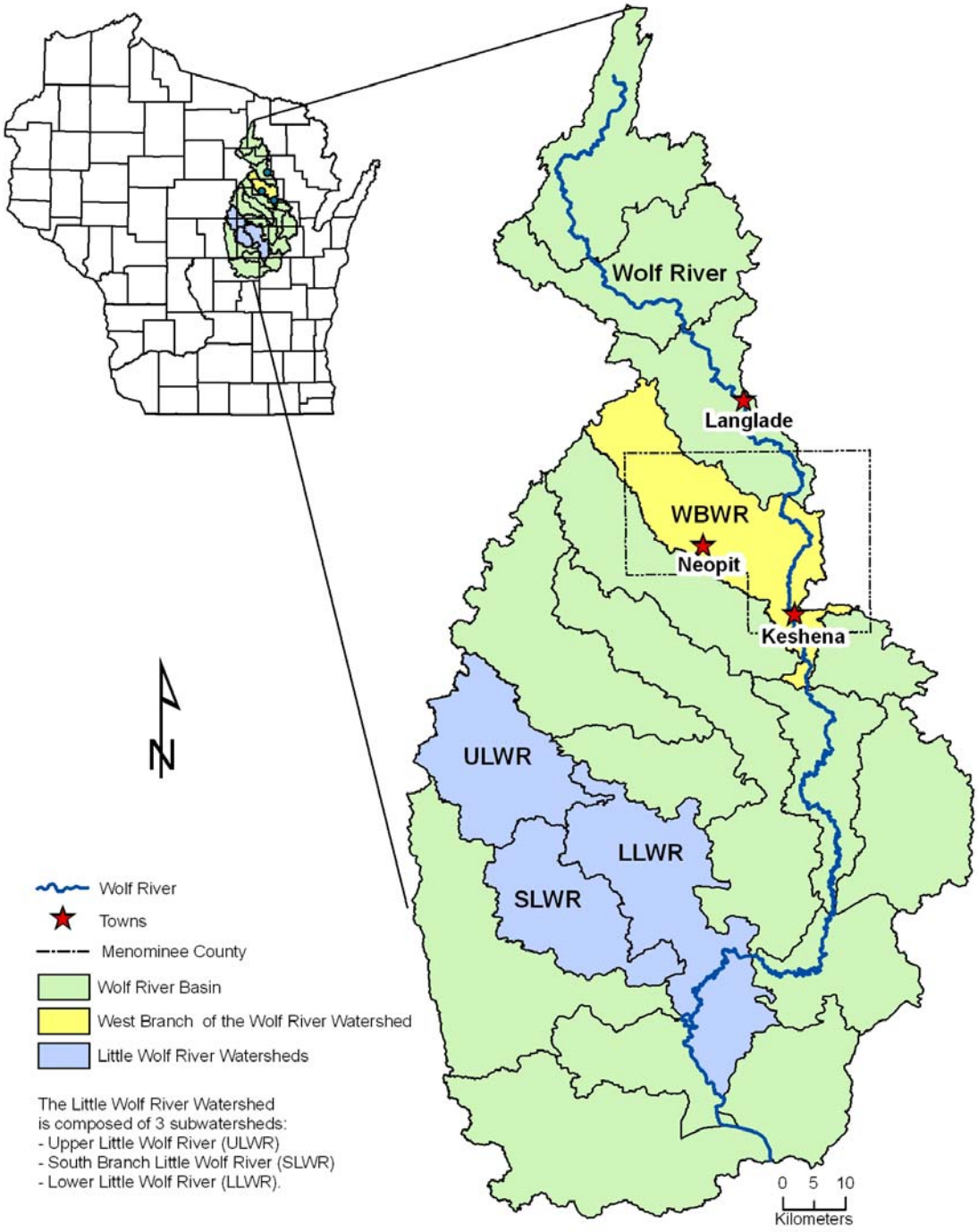

Figure 1. Map of the Wolf River Basin in Wisconsin including the location of the West Branch of the Wolf River (WBWR) and Little Wolf River watersheds.

studies on benthic ecology have been conducted within the MIR on the WBWR and its tributaries.

The West Branch of the Wolf River and its tributaries are important because they are pristine, first-through fourth-order streams that are spawning and rearing areas for brook trout (*Salvelinus fontinalis)* and brown trout (*Salmo trutta)*. Currently there is an 81.7 hectare mill pond impoundment with a maximum depth of three meters located in Neopit. This pond impounds the WBWR and prevents passage of Wolf River fish populations upstream of the dam (WDNR 2006; Fig. 2). Although the Mill Pond has been present for generations, it is not a natural feature of the landscape and was created in the early 20th century as a hydroelectric dam which has not operated since the early 1970's. This dam has a 4.26 m hydraulic height with a mean principal spillway discharge of 15.57 m^3/sec (WDNR 2006). Tribal biologists have observed changes in the fish community above and below this surface release dam, and there is interest by the tribal Environmental Services Department and the local population concerning the effects the dam has on fish populations and downstream water quality.

Garn et al. (2001) reported differences in Biotic Index (BI) values taken from sites on the Wolf River in 1998 at the north and south borders of the reservation. The northern location, near the Highway M Bridge near Langlade had a 2.70 BI value, and in Keshena at the southern end of the MIR the BI value was 3.19. The West Branch of the Wolf River is the largest tributary to the Wolf River between these locations, and samples taken directly above and below the confluence of the WBWR with the Wolf River determined the subsequent effect that the WBWR had on Wolf River water quality.

Although both BI values ranked water quality as *excellent*, results suggested that water quality may have decreased between Langlade and Keshena (Garn et al. 2001).

This study primarily used the BI and the Max 10 BI (BI 10) developed by Hilsenhoff (1987, 1998) to evaluate water quality of the WBWR and its tributaries. Both metrics rank water quality on a scale from zero (*excellent*) to ten (*very poor*) (Table 1). The BI is a measure of organic and nutrient pollution, which causes lowered dissolved oxygen levels. This, in turn, affects the ability of arthropod species, which require dissolved oxygen to survive in streams (Hilsenhoff 1987). Instantaneous physical and chemical measurements of water quality and pollution are of limited value because they measure short-term stress from pollution. In contrast, benthic community analyses can be used to identify and compare the degree of pollution, oxygen deprivation, and nutrient loading over a longer time scale. Macroinvertebrates, and specifically arthropods, are particularly useful for community analyses because they are abundant in most streams, they are not very mobile, and they have life cycles of one or more years (Hilsenhoff 1977). Often when stream conditions are physically or biologically altered, sensitive arthropod species become less abundant or totally disappear until the next generation (Hilsenhoff 1977).

Table 1. Water quality classifications for the Biotic Index (BI) (Hilsenhoff 1987)

BI Value	Water Quality Classification	Degree of Organic Pollution
0.00 – 3.50	Excellent	No apparent organic pollution
3.51 – 4.50	Very Good	Slight organic pollution
4.51 – 5.50	Good	Some organic pollution
5.51 – 6.50	Fair	Fairly significant organic pollution
6.51 – 7.50	Fairly Poor	Significant organic pollution
7.51 – 8.50	Poor	Very significant organic pollution
8.51 - 10.00	Very Poor	Severe organic pollution

In 1979 and 1980 the WDNR used the BI to evaluate more than 1000 stream sites in Wisconsin (Hilsenhoff 1987). Results from this monitoring experience helped to create more accurate macroinvertebrate tolerance values, more regional species keys, and seasonal correction factors (Hilsenhoff 1987, 1988). Regionally, the WDNR now has over 10,000 BI records in the state database (Szczytko 2006), and all records were collected using standardized WDNR protocols.

The objectives of this study were to establish baseline biological water quality data for the WBWR watershed using rapid bioassessment techniques. The second was to assess the affects of the Neopit mill pond impoundment on the WBWR, and the third objective was to investigate the potential of the WBWR serving as a bench mark for this region of Wisconsin.

Regardless of the future status of the Neopit Mill Pond dam, the results of this project can be integrated with the GEM Model of Local Capacity Building for Watershed Planning and Management (Phillips 2004) (Appendix A). The goal of this model is to build the capacity of local organizations and individuals to improve and/or maintain healthy watersheds by incorporating biophysical, socioeconomic, and regulatory factors into a sustainable watershed management plan (Phillips 2004). Biological water quality data contributes directly to the GEM model's assessment of *biophysical aspects* and the *monitoring* component of the watershed management plan (Appendix A). In the future, this information can be used to assist the Menominee Indian Reservation with their planning and management objectives for sustaining this healthy watershed.

Figure 2. Map of 20 sample sites on the West Branch of the Wolf River watershed, Menominee County, WI.

Methods

Description of the Study Area

A total of 120 samples were collected during the spring and fall of 2005 from 20 sampling sites on six streams throughout the WBWR watershed using established WDNR field and laboratory protocols (Hilsenhoff 1998, & 1987). Half of the samples (60) were collected during the spring season, and half of the samples were collected during the fall of 2005. Three replicate samples were taken from each sampling site during both seasons to assess variability. Among sampling sites, five percent were first order, 25 percent were second order, 50 percent were third order, five percent were fourth order, and 15 percent of sites were fifth order. Sampling sites were selected by the Menominee Environmental Services Department to represent a broad range of stream habitat throughout the WBWR watershed. These sites were verified during a survey trip in the spring of 2005 (Fig. 2), and all sites were documented with GPS coordinates (Table 2).

West Branch of the Wolf River - Sample Sites (4, 5, 7, 9, 10, 11, 12, 13, & 17)

Sample site 4 (Fig. 2) was located on a second order reach between Florence Lake (0.6 km upstream) and Upper Bass Lake (0.4 km downstream) and had 14.4 accumulated stream km (Table 3). Water velocity was 0.64 m/s and 0.42 m/s in spring and fall respectively (Table 3). This broad, shallow, partially unshaded reach between two lakes had substrates consisting of crushed mollusk shells amidst rocks and gravel. There was abundant periphyton growth on large submerged logs. Upstream riparian land cover included forest (51.10 %) and open water/wetland (38.61 %) and also small amounts of agriculture (3.55 %) and grassland (1.77 %) (Table 2).

Sample site 5 (Fig. 2) had 41.8 accumulated stream km, and it was located on a third order reach 0.3 km downstream from the confluence of Menominee Creek and 4.8 km downstream from sample site 4 (Table 3). Water velocity was 0.81 m/s and 0.51 m/s in spring and fall respectively (Table 3). Substrates consisted of cobble and gravel, and upstream riparian land cover was well forested (78.09 %) and included some open water/wetland (11.91 %) (Table 2).

Sample site 7 (Fig. 2) was located on a third order reach 7.1 km downstream from sample site 5, and it had 55.1 accumulated stream km (Table 3). Water velocity was 0.42 m/s and 0.80 m/s in spring and fall respectively (Table 3). Substrates primarily consisted of rock and rubble embedded in gravel outwash. Upstream riparian land cover was forest (59.88 %) and open water/wetland (39.12 %) (Table 2).

Sample site 9 (Figs. 2 and 5) was located on a third order reach 2.1 km downstream from the confluence of Elma Creek and 3.1 km downstream from sample site 7, and it had 65.2 accumulated stream km (Table 3). Water velocity was 1.09 m/s and 0.52 m/s in spring and fall respectively (Table 3). Substrates consisted of boulders with rock and cobble. Upstream riparian land cover mostly consisted of forest (68.36 %) and open water/wetland (18.76 %) with some agriculture (10.39 %) (Table 2).

Sample site 10 (Fig. 2) was located on a third order reach 3.5 km downstream from sample site 9, and it had 69.7 accumulated stream km (Table 3). Water velocity was 0.64 m/s and 0.45 m/s in spring and fall respectively (Table 3). Substrates consisted of rock and cobble amidst boulders. Upstream riparian land cover primarily consisted of forest (74.88 %) and some open water/wetland (15.12 %) (Table 2).

Sample site 11 (Figs. 2 and 6) was located 100m downstream from the Neopit Mill Pond dam on a third order reach. This site was also 3.1 km downstream from site 10 and 5.0 km downstream from site 1 on the Little West Branch of the Wolf River, and it had 144.2 accumulated stream km (Table 3). Water velocity was 1.40 m/s and 0.91 m/s in spring and fall respectively (Table 3). Re-suspended particulate matter limited light attenuation relative to sites 10 and 1 directly upstream, and periphyton and algae grew heavily on boulder and rock substrates. Upstream riparian land cover consisted of agriculture (9.96%), grassland (4.88%), forest (32.83%), and open water/wetland (37.92%). Roads and saw mill parking lots contributed to high urban (32.63%) land cover (Table 2).

Sample site 12 (Fig. 2) was located on a third order reach 7.1 km downstream from site 11, and it had 166.4 accumulated stream km (Table 3). Water velocity was 0.73 m/s and 0.67 m/s in spring and fall respectively (Table 3). Substrates consisted of rock rubble and cobble. Upstream riparian land cover was mostly forest (74.12 %) with some open water/wetland (15.88 %) (Table 2).

Sample site 13 (Fig. 2) was located on a third order reach 6.1 km downstream from site 12, and it had 187.1 accumulated stream km (Table 3). Water velocity was 0.49 m/s and 0.56 m/s in spring and fall respectively (Table 3). Substrates consisted of rock and cobble. Upstream riparian land cover was mostly forest (71.79 %) with some open water/wetland (18.21 %) (Table 2).

Sample site 17 (Fig. 3) was located 4.6 km downstream from the confluence of Little West Branch Creek and 7.9 km downstream from site 13. This fourth order reach had 288.8 accumulated stream km (Table 3). Water velocity was 0.64 m/s and 0.60 m/s

in spring and fall respectively (Table 3). This broad, shallow stream reach at the mouth of the WBWR had substrates consisting of rock embedded in sand and gravel outwash. Upstream riparian land cover consisted of forest (69.57 %), open water (20.09 %), and grassland (3.55 %) (Table 2).

Little West Branch of the Wolf River - Sample Sites (1, 2, & 3)

Sample site 1 (Fig. 2) was located on a second order reach 2.4 km upstream from the Neopit Mill Pond and 5.5 km downstream from sample site 2, and it had 65.4 accumulated stream km (Table 3). Water velocity was 0.33 m/s and 0.35 m/s in spring and fall respectively (Table 3). Substrates primarily consisted of rock and rubble. Upstream riparian land cover was heavily forested (85.07 %) with some open water/wetland (10.00 %) and agriculture (4.93 %) (Table 2).

Sample site 2 (Fig. 2) was located on a second order reach 9.6 km downstream from sample site 3, and it had 49.1 accumulated stream km (Table 3). Water velocity was 0.26 m/s and 0.62 m/s in spring and fall respectively (Table 3). Substrates consisted of rock, rubble, and cobble. Upstream riparian land cover was heavily forested (74.66 %) and contained open water/wetland (14.81 %) (Table 2).

Sample site 3 (Fig. 2) was located on a second order reach, and it had 31.1 accumulated stream km (Table 3). Water velocity was 0.31 m/s and 0.48 m/s in spring and fall respectively (Table 3). Substrates consisted of rock, rubble, and cobble. Upstream riparian land cover contained small amounts of agriculture (5.61 %) and grassland (10.39 %), but it mostly consisted of forest (56.46 %) and open water/wetland (30.86 %) (Table 2).

Elma Creek - Sample Site 8

Sample site 8 (Fig. 2) was located on the only first order reach sampled in this project and had 5.4 accumulated stream km (Table 3). This site received water from several upstream beaver impoundments and Lake Elma which was 2.1 km upstream. Water velocity was 0.44 m/s and 0.48 m/s in spring and fall respectively (Table 3). This habitat limited reach was 3 m wide and substrates mostly consisted of gravel. Upstream riparian land cover was mostly forest (67.15 %) and open water/wetland (22.78 %) (Table 2).

Menominee Creek - Sample Site 6

Sample site 6 (Fig. 2) was located on a second order reach with 11.8 accumulated stream km (Table 3). Water velocity was 1.12 m/s and 0.41 m/s in spring and fall respectively (Table 3). Substrates consisted of cobble and rubble. Upstream riparian land cover consisted of forest (67.18 %) and open water/wetland (22.22 %) (Table 2).

Little West Branch Creek - Sample Sites (14, 15, & 16)

Sample site 14 (Fig. 2) was located on a third order reach, and it had 47.7 accumulated stream km (Table 3). Water velocity was 0.69 m/s and 0.40 m/s in spring and fall respectively (Table 3). Substrates consisted of rock and cobble. Upstream riparian land cover included small amounts of agriculture (2.53%) and grassland (18.81%), but was mostly forest (58.06%) and open water/wetland (24.65%) (Table 2).

Sample site 15 (Fig. 2) was located on a third order reach, and it had 69.7 accumulated stream km (Table 3). This site was located 0.5 km downstream from the confluence of second order Fish Creek and 1.5 km downstream from sample site 14. Water velocity was 0.41 m/s and 0.30 m/s in spring and fall respectively (Table 3).

Substrates consisted of rock and rubble. Upstream riparian land cover was primarily forest (47.82 %) and open water/wetland (38.86 %) with some grassland (13.84 %) (Table 2).

Sample site 16 (Fig. 2) was located on a third order reach 1.6 km downstream from sample site 15, and it had 78.9 accumulated stream km (Table 3). Water velocity was 0.44 m/s and 0.49 m/s in spring and fall respectively (Table 3). Available sampling substrates consisted of bare bedrock with boulders and intermittent sandy outwash. Several upstream beaver impoundments created open water/wetland (38.02 %), and other upstream riparian land cover including forest (51.11 %) and grassland (7.01 %) (Table 2).

Wolf River Sample Sites (18, 19, & 20)

Sample site 18 (Fig. 2) had 1142.6 accumulated stream km, and it was located on a fifth order reach 100 m downstream from the confluence of the WBWR and 800m downstream from sample site 19 (Table 3). Water velocity was 0.58 m/s and 0.65 m/s in spring and fall respectively (Table 3). Substrates consisted of boulders embedded in rock, rubble, and cobble. Upstream riparian land cover consisted of forest (68.08 %) and open water/wetland (18.23 %) and a small amount of grassland (11.75 %) (Table 2).

Sample site 19 (Fig. 2) had 845.2 accumulated stream km from three upstream watersheds including: the Upper Wolf River and Post Lake watershed, the Lily River watershed, and the Langlade and Evergreen River watershed (Table 3). This fifth order sample site was located 700 m upstream from the confluence of the WBWR. Water velocity was 0.43 m/s and 0.65 m/s in spring and fall respectively (Table 3). Substrates consisted of boulders embedded in rock, rubble, and cobble. Upstream riparian land cover consisted of forest (62.39 %) and open water/wetland (27.61 %) (Table 2).

Sample site 20 (Fig. 2) had 1155.5 accumulated stream km and was located on a fifth order reach 5.37 km downstream from site 18 (Table 3). Water velocity was 0.52 m/s and 0.42 m/s in spring and fall respectively, and substrates consisted of sandy outwash, boulders, and rock (Table 3). Unlike most sample sites, upstream riparian land cover consisted of high amounts of urban (15.26 %), and lower amounts of forest (58.03 %) than other sites (Table 2). Impervious surfaces within the upstream riparian land cover included the intersection of HWY 47 and HWY 55.

Table 2. Locations of sample sites and land cover in four watersheds in the Wolf River Basin, WI. Watersheds in this study include: Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), Lower Little Wolf River (LLWR), and West Branch of the Wolf River (WBWR).

Sample Number	Site	watershed	Lat	Long	Urban %	Agriculture %	Grassland %	Forest %	Open Water/ Wetland %
200510-69-10	10	SLWR	44.43365	-89.18830	0.00	44.74	26.80	27.51	17.25
200510-69-11	11	SLWR	44.43633	-89.14725	0.00	38.73	28.97	21.73	29.12
200510-69-12	12	SLWR	44.43852	-89.12881	0.00	27.25	39.78	26.69	25.04
200510-69-14	14	SLWR	44.40029	-89.02538	0.00	22.61	35.00	21.18	38.80
200510-69-16	16	SLWR	44.39658	-88.94598	0.00	48.28	9.36	15.33	34.46
200510-69-18	18	SLWR	44.45354	-89.03284	16.83	18.19	23.17	28.44	41.39
200510-69-19	19	SLWR	44.48687	-89.04100	0.00	11.53	31.82	24.55	45.55
200510-50-22	22	SLWR	44.51896	-89.24378	0.00	29.70	17.94	41.54	27.96
200510-69-23	23	SLWR	44.49712	-89.14996	0.00	45.10	26.51	16.15	28.08
200510-69-24	24	SLWR	44.48579	-89.14795	0.00	30.54	21.91	26.85	39.14
200509-50-25	25	ULWR	44.59762	-89.26679	0.00	23.61	33.71	35.58	26.05
200509-50-26	26	ULWR	44.64101	-89.32474	0.00	37.03	22.27	19.91	37.92
200509-50-29	29	ULWR	44.68169	-89.26569	0.00	12.37	14.24	43.83	40.05
200509-37-30	30	ULWR	44.71107	-89.30450	0.00	33.59	29.55	23.70	32.53
200509-37-31	31	ULWR	44.68475	-89.24240	0.00	28.45	21.83	48.92	14.97
200509-37-32	32	ULWR	44.74643	-89.28683	0.00	20.75	24.14	33.16	39.70
200509-37-33	33	ULWR	44.76110	-89.24403	0.00	32.96	25.61	16.39	43.11
200509-59-34	34	ULWR	44.70783	-89.17627	0.00	19.15	25.33	18.79	51.10
200509-69-35	35	ULWR	44.64611	-89.11222	0.00	20.51	18.99	42.84	33.77
200510-69-36	36	ULWR	44.61903	-89.07458	0.00	16.42	26.28	47.10	25.65
200509-69-37	37	ULWR	44.60595	-89.14700	0.00	31.65	30.87	13.78	39.50
200510-69-38	38	ULWR	44.62511	-88.99534	0.00	8.01	31.86	33.69	38.89
200510-69-39	39	LLWR	44.60675	-88.99494	0.00	14.51	29.62	50.96	17.43
200510-69-40	40	LLWR	44.54493	-89.02109	0.00	11.38	25.80	25.26	50.15
200510-69-41	41	LLWR	44.53427	-89.04659	0.00	15.50	18.13	47.86	32.07
200510-69-43	43	SLWR	44.56908	-89.17148	0.00	30.66	26.03	28.12	34.77
200510-69-44	44	SLWR	44.54626	-89.18368	0.00	45.80	24.75	16.56	28.64
200510-69-45	45	SLWR	44.55079	-89.20118	0.00	19.86	16.49	53.49	23.42
200510-69-46	46	LLWR	44.57139	-89.04149	0.00	0.00	6.02	41.68	47.68
200510-69-47	47	LLWR	44.58613	-89.03658	0.00	10.52	33.35	35.70	34.69

Table 2. (continued) Locations of sample sites and land cover in four watersheds in the Wolf River Basin, WI. Watersheds in this study include: Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), Lower Little Wolf River (LLWR), and West Branch of the Wolf River (WBWR).

Sample Number	Site	watershed	Lat	Long	Urban %	Agriculture %	Grassland %	Forest %	Open Water/ Wetland %
200510-69-48	48	LLWR	44.56819	-88.93554	0.00	50.17	15.56	14.75	30.21
200510-69-53	53	LLWR	44.51361	-88.90472	0.00	38.11	15.22	5.97	44.10
200510-69-54	54	LLWR	44.50462	-88.92043	0.00	50.28	0.00	11.84	36.62
200510-69-56	56	LLWR	44.41269	-88.86515	0.00	45.68	4.90	39.59	13.97
200510-69-57	57	SLWR	44.40236	-88.91302	0.00	28.50	15.57	21.86	46.99
200509-37-58	58	ULWR	44.73933	-89.29859	0.00	17.14	16.14	40.89	39.67
200510-69-59	59	ULWR	44.63689	-89.02197	0.00	20.85	38.34	27.38	31.77
200509-50-60	60	ULWR	44.63926	-89.28687	0.00	29.85	34.87	22.15	32.15
200510-69-63	63	LLWR	44.39278	-88.83639	0.00	36.01	19.15	44.22	8.47
200509-69-64	64	ULWR	44.67150	-89.16579	0.00	4.39	8.81	38.45	49.83
200509-40-01	1	WBWR	44.98728	-88.88008	0.00	4.93	0.00	85.07	0.00
200509-40-02	2	WBWR	45.01775	-88.92097	0.00	0.00	0.00	74.66	14.81
200509-40-03	3	WBWR	45.08268	-88.96635	0.00	5.61	10.39	56.46	30.86
200509-40-04	4	WBWR	45.11727	-88.88433	0.00	3.55	1.77	51.10	38.61
200509-40-05	5	WBWR	45.08107	-88.87762	0.00	0.00	0.00	78.09	11.91
200509-40-06	6	WBWR	45.08142	-88.88402	0.00	0.00	0.00	67.18	22.22
200509-40-07	7	WBWR	45.03860	-88.85662	0.00	0.00	0.00	59.88	30.12
200509-40-08	8	WBWR	45.03100	-88.86462	0.00	0.00	1.76	67.15	22.78
200509-40-09	9	WBWR	45.01835	-88.87445	0.00	10.39	0.00	68.36	18.76
200509-40-10	10	WBWR	44.99197	-88.85495	0.00	0.00	0.00	74.88	15.12
200509-40-11	11	WBWR	44.98135	-88.82793	32.63	9.96	4.88	32.86	37.92
200509-40-12	12	WBWR	44.95473	-88.76462	0.00	0.00	0.00	74.12	15.88
200509-40-13	13	WBWR	44.94382	-88.71558	0.00	0.00	0.00	71.79	18.21
200509-40-14	14	WBWR	44.98992	-88.72748	0.00	2.53	18.81	58.06	24.65
200509-40-15	15	WBWR	44.99237	-88.71363	0.00	0.00	13.84	47.82	38.86
200509-40-16	16	WBWR	44.98197	-88.70560	0.00	0.00	7.01	51.11	38.02
200509-40-17	17	WBWR	44.93053	-88.65235	0.00	0.00	3.55	69.57	20.09
200509-40-18	18	WBWR	44.92990	-88.65035	0.00	0.00	11.75	68.08	18.23
200509-40-19	19	WBWR	44.93642	-88.65125	0.00	0.00	0.00	62.39	27.61
200509-40-20	20	WBWR	44.89667	-88.65200	15.26	0.00	11.77	58.03	23.40

Table 3. West Branch of the Wolf River chemical and physical measurements, Menominee County, WI (spring and fall 2005).

Sample Number	Site	Season	Stream Order	Accumulated Stream km	Temperature (° C)	pH	DO (mg/l)	Conductivity (µS/cm)	Velocity (m/s)	Alkalinity (mg/l)
20050505-40-01	1	Spring	2	65.4	6.27	7.99	12.77	384	0.33	
20050505-40-02	2	Spring	2	49.1	6.11	8.14	12.25	395	0.26	
20050505-40-03	3	Spring	2	31.1	6.91	8.14	11.91	419	0.31	
20050505-40-04	4	Spring	2	14.4	10.13	8.23	12.81	368	0.64	
20050505-40-05	5	Spring	3	41.8	9.31	8.08	11.78	345	0.81	
20050505-40-06	6	Spring	2	11.8	9.64	7.77	11.16	262	1.12	
20050505-40-07	7	Spring	3	55.1	11.26	8.17	11.40	321	0.42	
20050505-40-08	8	Spring	1	5.4	15.48	8.10	9.58	293	0.44	
20050505-40-09	9	Spring	3	65.2	11.95	8.20	11.19	316	1.09	
20050505-40-10	10	Spring	3	69.7	13.15	8.26	11.30	311	0.64	
20050505-40-11	11	Spring	3	144.2	11.30	8.41	13.11	325	1.40	
20050505-40-12	12	Spring	3	166.4	13.16	8.44	10.50	324	0.73	
20050506-40-13	13	Spring	3	187.1	11.31	8.27	11.12	321	0.49	
20050506-40-14	14	Spring	3	47.7	10.96	7.93	10.54	218	0.69	
20050506-40-15	15	Spring	3	69.7	11.08	7.96	10.54	222	0.41	
20050506-40-16	16	Spring	3	78.9	11.48	7.92	10.76	224	0.44	
20050506-40-17	17	Spring	4	288.8	13.38	8.27	11.17	303	0.64	
20050506-40-18	18	Spring	5	1142.6	13.22	8.25	11.13	303	0.58	
20050506-40-19	19	Spring	5	845.2	14.29	8.14	10.81	233	0.43	
20050506-40-20	20	Spring	5	1155.5	15.36	8.31	10.17	253	0.52	
20050922-40-01	1	Fall	2	65.4	15.01	8.14	9.91	364	0.35	174
20050922-40-02	2	Fall	2	49.1	14.68	8.03	9.42	380	0.62	182
20050922-40-03	3	Fall	2	31.1	14.92	8.16	9.51	404	0.48	196
20050922-40-04	4	Fall	2	14.4	18.01	8.46	8.41	356	0.42	184
20050922-40-05	5	Fall	3	41.8	16.37	7.98	6.11	326	0.51	172
20050923-40-06	6	Fall	2	11.8	18.23	8.25	6.81	320	0.41	166
20050923-40-07	7	Fall	3	55.1	13.88	8.18	7.41	331	0.80	170
20050923-40-08	8	Fall	1	5.4	12.07	8.16	7.15	317	0.48	164
20050923-40-09	9	Fall	3	65.2	13.01	8.29	6.89	332	0.52	172
20050923-40-10	10	Fall	3	69.7	13.56	8.21	7.92	330	0.45	166

Table 3. (continued) West Branch of the Wolf River chemical and physical measurements, Menominee County, WI (spring and fall 2005).

Sample Number	Site	Season	Stream Order	Accumulated Stream km	Temperature (° C)	pH	DO (mg/l)	Conductivity (µS/cm)	Velocity (m/s)	Alkalinity (mg/l)
20050922-40-11	11	Fall	3	144.2	19.27	8.44	7.20	337	0.91	168
20050922-40-12	12	Fall	3	166.4	18.55	8.18	9.17	338	0.67	166
20050922-40-13	13	Fall	3	187.1	18.69	8.26	8.84	330	0.56	166
20050923-40-14	14	Fall	3	47.7	13.68	8.10	7.94	265	0.40	104
20050923-40-15	15	Fall	3	69.7	12.72	7.94	8.11	267	0.30	134
20050923-40-16	16	Fall	3	78.9	13.37	7.96	8.13	267	0.49	138
20050923-40-17	17	Fall	4	288.8	16.15	8.25	7.96	330	0.60	144
20050923-40-18	18	Fall	5	1142.6	16.31	8.18	8.07	323	0.65	154
20050923-40-19	19	Fall	5	845.2	17.18	8.36	8.22	270	0.65	130
20050923-40-20	20	Fall	5	1155.5	18.27	8.45	8.00	290	0.42	136

Field Procedures

Sixty spring macroinvertebrate samples were collected on May 5th and 6th, 2005 shortly after ice-out when field conditions permitted access to the sites. Sixty fall samples were collected on September 22nd and 23rd, 2005. Standard WDNR rapid bioassessment procedures were used to collect all macroinvertebrate samples (Hilsenhoff 1988 & 1987). The 120 fall samples collected from the Lower Wolf River watersheds used in this study were collected two weeks after WBWR samples (Scott 2007), and no large storms or major changes in weather occurred between these collection times.

Recommended (Hilsenhoff 1988) in-stream riffle habitats were selected whenever possible for sampling, and a concerted effort was made to select physically comparable sites for all samples. Three replicate samples were taken at each site to estimate sampling variability. All samples were preserved in 80% isopropyl alcohol. Samples were collected using a rectangular 48X24 cm frame kick net with a 600µm mesh bag.

A Hydrolab Sonde Probe® was used to measure pH, dissolved oxygen, temperature, and conductivity. Alkalinity was also measured for fall WBWR watershed samples and was processed by the Menominee Environmental Services Department. Spring alkalinity measurements were not collected due to time and resource limitations. A Marsh-McBirney® Model 201 D portable electronic current meter was used to measure current velocity to the nearest 0.01 m/sec.

Laboratory Procedures

Collected field samples were visually inspected for decay after one week to determine if they required fresh preservative. During laboratory processing, each sample was rinsed with water and distributed evenly in a clear Pyrex® pan with a grid of 15

equal 5X5 cm permanent markings (Hilsenhoff 1987). A random numbers table was used to select a starting square, and each successive square (from right to left) was picked until a minimum of 125 arthropods with established BI tolerance values were sorted (Hilsenhoff 1982). A dissecting microscope and fiber optic light source, along with selected keys, were used to identify all non-Chironomid organisms to the lowest practical taxonomic unit. Chironomidae larvae were mounted on microscope slides in CMC-10® mounting medium (Master's Chemical Company, Inc.) and allowed to clear for a minimum of five days. The larvae were then enumerated and identified to the lowest practical taxonomic level using a compound binocular microscope.

Data Analysis

Differences in water quality between sampling locations on the WBWR, its tributaries, and its confluence into the Wolf River were measured using 12 metrics derived from the macroinvertebrate samples (Table 4). These metrics were calculated by the DNRBUG program, developed at the University of Wisconsin – Stevens Point, and included three pollution tolerance metrics, the Biotic Index (BI), 10-max biotic index (BI 10), and mean tolerance value (TOLVAL). Other richness and diversity metrics were used including: species richness (SR), generic richness (GR), the percent EPT taxa in each sample (COUNT_EPT), and the Shannon Weaver diversity index (DIV) (Shannon and Weaver 1949). Finally, five trophic feeding group (TFG) metrics were used including the percentage of scrapers (SCR), filter-feeders (FIL), shredders (SHR), gatherers (GAT), and collectors (COL) in each sample (collectors are the sum of GAT and FIL in each sample). Trophic feeding groups were determined from Merritt and Cummins (1996). All percentage metrics were arc sine transformed to increase

normality including COUNT_EPT, SCR, FIL, SHR, GAT, and COL (Sokal and Rohlf 1969).

The three pollution tolerance metrics used in this study (BI, BI 10, and TOLVAL) have ranges from 0 (*excellent*) to 10.00 (*very poor*) water quality (Table 1; Hilsenhoff 1987). On a continuum scale, the BI gives the least weight to rare taxa, BI 10 allows moderate weight, and TOLVAL gives the most weight. The 10 Max BI (BI 10), proposed by Hilsenhoff (1998), is a recent improvement to the BI, because it uses only 10 individuals from each taxon having more than 10 individuals. Therefore, it minimizes the effects of abundant, tolerant species in clean streams (Hilsenhoff 1998). The BI 10 was designed to reduce seasonal variability associated with the BI, and it also minimizes the problem of identifying species of immature larvae that may be abundant in summer samples (Hilsenhoff 1998). Also, BI values tend to be higher in summer because taxa with higher tolerance values are more abundant in seasonally warm water (Hilsenhoff 1988). To avoid seasonal variations in BI values, samples were only collected in early spring and fall.

The mean tolerance value (TOLVAL) represents the average tolerance value of all taxa collected in the BI samples, and it gives equal weight to rare and dominant taxa (Lillie & Schlesser 1994). The mean tolerance value may be less susceptible to seasonal changes and variations in sample sizes than the BI, but it is less sensitive (Hilsenhoff 1998).

Two taxa richness metrics were also calculated; species richness (SR), and generic richness (GR) (Gaufin 1957). Generally, water with high taxa richness is thought to be cleaner. Although, some cold headwater streams, like those in the WBWR, may

have low taxa richness due to limitations of microhabitat and colder temperatures and still have excellent water quality. Species Richness and GR are counts of the number of species or genera identified in the sample (Lillie et al. 2003). Because all richness metrics in this study used BI sample data, they represented only a sub sample of the true richness of the stream. Taxa richness metrics were useful as secondary data, but caution was used when interpreting results.

One EPT measure was used in this study, COUNT_EPT, which was the percentage of EPT taxa within each sample compared to all other taxa. Ephemeroptera Plecoptera and Trichoptera include the most intolerant orders of aquatic macroinvertebrates of poor water quality. As human disturbance increases, EPT are assumed to decrease (Merritt and Cummins 1996). Also, as EPT individuals are usually the food base for trout species and other popular sport fish, anglers often recognize the relationships and importance of EPT measures.

The Shannon Weaver diversity index (DIV), represents the distribution of individuals among different taxa present in a sample (Lillie et al. 2003, Shannon and Weaver 1949). In principle, macroinvertebrate communities having many taxa of even distribution are considered more undisturbed than simple communities of a few dominant taxa. Further, DIV values may vary directly with water quality, and low diversity may indicate an unstable macroinvertebrate community (Lillie et al. 2003). However, it is possible for intolerant taxa to be replaced by an equal diversity of tolerant taxa within a stream, and cold headwater streams usually have low diversity and high water quality because of microhabitat limitations.

Trophic functional feeding group (TFG) classifications characterize the food base of a community relative to stream order and can be useful in measuring the impact of organic and sometimes toxic pollution. Functional feeding groups represent general modes of food acquisition based on the principal feeding mechanism of the organism (Merritt and Cummins 1996). Cummins (1977) described five functional macroinvertebrate feeding groups; scrapers, filterers, shredders, gatherers, and collectors. Functional feeding class designations are assigned for most aquatic insects in Wisconsin based on food habits, diet, and mouth part morphology (Lillie et al. 2003). The DNRBUG program generates the relative composition of feeding groups among total individual and total genera in a sample.

Upstream riparian land cover data were derived from the WISCLAND Geographical Information System database (WNDR 1998). Five land cover categories were defined: urban, agriculture, grassland, forest, and open water/wetland. Stream buffer zones were delineated with ArcMap 9.0, and the percentage of land cover within a 500 m wide and 1.5 km long buffer zone upstream from each sample site was calculated (Table 2).

Table 4. Aquatic macroinvertebrate metrics calculated in this study.

Metric	Definition
Pollution tolerance metrics	
BI	Biotic Index - Calculated as $\sum(n_i t_i)/N$, where n_i is the number of individuals of species i (or genus i), t_i is the tolerance value assigned to species i (or genus i), and N is the total number of individuals in the sample (Hilsenhoff 1987).
BI 10	10 Max Biotic Index - Calculated like the Biotic Index with a maximum of 10 individuals of species i (Hilsenhoff 1998).
TOLVAL	Mean Tolerance Value – Calculated as $\sum t_i/T$ where t_i is the assigned pollution tolerance value for each taxa and T is the number of taxa in the sample (Lillie & Schlesser 1994).
EPT metric (Gaufin 1957)	
COUNT_EPT	Percent of Ephemeroptera, Plecoptera, and Trichoptera individuals in the sample.
Community Richness metrics (Gaufin 1957)	
SR	Species Richness - Number of species in the sample.
GR	Generic Richness - Number of genera in the sample.
Diversity metric (Shannon and Weaver 1949)	
DIV	Shannon-Weaver Diversity Index
Trophic Feeding Group metrics (Merritt and Cummins 1996)	
SCR	Percent scraper individuals in a sample.
FIL	Percent filter-feeder individuals in a sample.
SHR	Percent shredder individuals in a sample.
GAT	Percent gatherer individuals in a sample.
COL	Percent collector individuals in a sample.

Statistical Procedures

All taxonomic and field data were entered into DNRBUG, developed at the University of Wisconsin-Stevens Point (Aquatic Entomology Laboratory). Macroinvertebrate metrics, chemical data, and land use data were analyzed using two groups of statistical techniques. All statistical analyses were conducted using SPSS 14.0**.**

First, comparisons between selected sites within seasons were performed with Independent Samples T-tests ($p < 0.05$) and Mann-Whitney ($p < 0.05$) tests (SPSS 2005; Tables 5 and 6). These procedures were primarily used to measure the impact of the Neopit Mill Pond impoundment by comparing sites 1, 10, and 11 which included two upstream sites and one downstream site respectively. The Shapiro-Wilk and Leveine tests were used to evaluate data normality and distribution (SPSS 2005). Mann-Whitney nonparametric rank order tests were used to identify significant differences between some sites if data violated assumptions of normality and distribution (Tables 5 and 6). Variation of the three replicate samples from each site and season was determined by calculating the coefficient of variation (CV).

Second, baseline data comparisons among Wolf River Basin watersheds (West Branch of the Wolf River, Upper Little Wolf River, South Little Wolf River, and the Lower Little Wolf River) were performed with One Way ANOVA ($p < 0.05$) (SPSS 2005; Table 7). A myriad of physiochemical and biological dependent variables were evaluated, based on their response to the independent variable "watershed." Eleven variables with significant differences ($p < 0.05$) amongst watersheds were identified, and the Tukey HSD post hoc test was used to identify which of the four watersheds had significantly different metric values (Table 7).

Table 5. Comparison of BI, Richness, and Diversity metrics between selected sites. Significance (p< 0.05) was determined by an Independent Samples T-test for normal data or Mann-Whitney test (bold) for non-normal data. Blank fields indicate non significant differences. Data were collected during the spring and fall of 2005 in Menominee County, WI.

Site Comparisons	SEASON	BI	BI 10	TOLVAL	SR	GR	DIV
1 vs. 11	spring	p = 0.005	p = 0.003	p = 0.002	---	---	---
1 vs. 10	spring	---	---	---	p = 0.046	p = 0.046	p = 0.015
10 vs. 11	spring	p = 0.027	p = 0.006	p = 0.015	p = 0.046	p = 0.046	p = 0.011
7 vs. 9	spring	p = 0.001	p = 0.012	---	---	---	---
7 vs. 8	spring	---	---	---	---	---	---
8 vs. 9	spring	p = 0.000	p = 0.001	p = 0.009	---	---	---
11 vs. 12	spring	---	p = 0.024	p = 0.035	p = 0.046	---	---
12 vs. 13	spring	---	---	---	---	---	---
13 vs. 17	spring	p = 0.003	p =0.045	---	---	---	---
17 vs. 19	spring	---	---	---	p = 0.011	p = 0.012	p = 0.001
17 vs. 18	spring	p = 0.004	p = 0.042	p = 0.044	p = 0.004	p = 0.008	p = 0.013
18 vs. 19	spring	---	---	---	---	---	---
1 vs.11	fall	p = 0.000	p = 0.000	p = 0.001	---	p = 0.043	p = 0.033
1 vs. 10	fall	p = 0.019	p = 0.090		---	---	---
10 vs.11	fall	p = 0.000	p = 0.000	p = 0.003	---	---	---
7 vs. 9	fall	---	---	---	---	---	---
7 vs. 8	fall	p = 0.001	---	---	---	---	p = 0.022
8 vs. 9	fall	p = 0.002	---	---	---	---	p = 0.020
11 vs. 12	fall	---	---	---	---	---	---
12 vs. 13	fall	---	---	---	---	---	---
13 vs. 17	fall	p = 0.004	p = 0.021	---	---	---	---
17 vs. 19	fall	p = 0.046	---	---	---	---	---
17 vs. 18	fall	---	---	---	---	---	---
18 vs. 19	fall	---	---	---	p = 0.046	---	---

Table 6. Comparison of COUNT_EPT and Trophic Feeding Group metrics between selected sites. Significance (p< 0.05) was determined by an Independent Samples T-test for normal data or Mann-Whitney test (bold) for non-normal data. Blank fields indicate non significant differences. Data were collected during the spring and fall of 2005 in Menominee County, WI.

Site Comparisons	SEASON	COUNT_EPT	SCR	FIL	SHR	GAT	COL
1 vs. 11	spring	---	---	p = 0.000	---	p = 0.046	---
1 vs. 10	spring	---	---	p = 0.046	---	p = 0.047	---
10 vs. 11	spring	---	---	p = 0.046	---	p = 0.046	---
7 vs. 9	spring	p = 0.015	p = 0.046	---	---	p = 0.009	p = 0.034
7 vs. 8	spring	---	---	p = 0.046	---	---	---
8 vs. 9	spring	p = 0.046	p = 0.046	p = 0.046	---	p = 0.001	p = 0.033
11 vs. 12	spring	---	---	p = 0.002	---	p = 0.046	---
12 vs. 13	spring	---	---	p = 0.003	---	p = 0.033	---
13 vs. 17	spring	p = 0.003	---	p = 0.007	---	p = 0.046	---
17 vs. 19	spring	---	---	p = 0.034	p = 0.043	p = 0.046	---
17 vs. 18	spring	p = 0.002	---	p = 0.046	p = 0.046	p = 0.046	---
18 vs. 19	spring	---	---	---	---	---	---
1 vs. 11	fall	---	---	p = 0.009	p = 0.046	p = 0.046	p = 0.046
1 vs. 10	fall	---	---	---	---	---	---
10 vs.11	fall	---	---	p = 0.023	---	---	
7 vs. 9	fall	---	---	---	p = 0.026	---	---
7 vs. 8	fall	---	p = 0.011	---	---	---	p = 0.27
8 vs. 9	fall	---	p = 0.046	---	p = 0.046	p = 0.019	---
11 vs. 12	fall	---	---	---	p = 0.046	---	---
12 vs. 13	fall	---	---	---	---	---	---
13 vs. 17	fall	---	---	---	---	---	---
17 vs. 19	fall	---	---	---	p = 0.043	---	---
17 vs. 18	fall	---	---	p = 0.050	---	---	p = 0.046
18 vs. 19	fall	---	---	---	---	---	---

Table 7. Comparisons among four Wolf Basin watersheds in Wisconsin. Results of Tukey HSD post-hoc test following One Way ANOVA. Bold values indicate significant ($p \leq 0.05$) mean difference. Data were collected during the fall of 2005.

Dependent Variable	watershed (a)	watershed (b)	Mean Difference (a-b)	Sig.
BI	ULWR	SLWR	-0.45	0.39
		LLWR	-0.08	0.99
		WBWR	**0.81**	**0.01**
	SLWR	ULWR	0.45	0.39
		LLWR	0.37	0.65
		WBWR	**1.26**	**0.00**
	LLWR	ULWR	0.08	0.99
		SLWR	-0.37	0.65
		WBWR	**0.89**	**0.02**
	WBWR	ULWR	**-0.81**	**0.01**
		SLWR	**-1.26**	**0.00**
		LLWR	**-0.89**	**0.02**
BI10	ULWR	SLWR	-0.40	0.40
		LLWR	-0.14	0.96
		WBWR	**0.81**	**0.01**
	SLWR	ULWR	0.40	0.40
		LLWR	0.26	0.80
		WBWR	**1.21**	**0.00**
	LLWR	ULWR	0.14	0.96
		SLWR	-0.26	0.80
		WBWR	**0.95**	**0.00**
	WBWR	ULWR	**-0.81**	**0.01**
		SLWR	**-1.21**	**0.00**
		LLWR	**-0.95**	**0.00**
TOLVAL	ULWR	SLWR	-0.26	0.60
		LLWR	-0.16	0.89
		WBWR	**0.81**	**0.00**
	SLWR	ULWR	0.26	0.60
		LLWR	0.10	0.98
		WBWR	**1.07**	**0.00**
	LLWR	ULWR	0.16	0.89
		SLWR	-0.10	0.98
		WBWR	**0.97**	**0.00**
	WBWR	ULWR	**-0.81**	**0.00**
		SLWR	**-1.07**	**0.00**
		LLWR	**-0.97**	**0.00**

Table 7. (continued) Comparisons among four Wolf Basin watersheds in Wisconsin. Results of Tukey HSD post-hoc test following One Way ANOVA. Bold values indicate significant ($p \leq 0.05$) mean difference. Data were collected during the fall of 2005.

Dependent Variable	watershed (a)	watershed (b)	Mean Difference (a-b)	Sig.
SR	ULWR	SLWR	**4.62**	**0.03**
		LLWR	-0.07	1.00
		WBWR	1.12	0.88
	SLWR	ULWR	**-4.62**	**0.03**
		LLWR	-4.69	0.06
		WBWR	-3.50	0.12
	LLWR	ULWR	0.07	1.00
		SLWR	4.69	0.06
		WBWR	1.18	0.90
	WBWR	ULWR	-1.12	0.88
		SLWR	3.50	0.12
		LLWR	-1.18	0.90
GR_LN	ULWR	SLWR	**0.20**	**0.02**
		LLWR	-0.02	0.99
		WBWR	0.04	0.91
	SLWR	ULWR	**-0.20**	**0.02**
		LLWR	**-0.22**	**0.02**
		WBWR	-0.16	**0.06**
	LLWR	ULWR	0.02	0.99
		SLWR	**0.22**	**0.02**
		WBWR	**0.06**	0.84
	WBWR	ULWR	-0.04	0.91
		SLWR	0.16	**0.06**
		LLWR	**-0.06**	0.84
TEMP_C_LN	ULWR	SLWR	**-0.35**	**0.00**
		LLWR	**-0.24**	**0.00**
		WBWR	**-0.35**	**0.00**
	SLWR	ULWR	**0.35**	**0.00**
		LLWR	0.11	0.18
		WBWR	0.00	1.00
	LLWR	ULWR	**0.24**	**0.00**
		SLWR	-0.11	0.18
		WBWR	-0.11	0.15
	WBWR	ULWR	**0.35**	**0.00**
		SLWR	0.00	1.00
		LLWR	0.11	0.15

Table 7. (continued) Comparisons among four Wolf Basin watersheds in Wisconsin. Results of Tukey HSD post-hoc test following One Way ANOVA. Bold values indicate significant ($p \leq 0.05$) mean difference. Data were collected during the fall of 2005.

Dependent Variable	watershed (a)	watershed (b)	Mean Difference (a-b)	Sig.
Conductivity	ULWR	SLWR	**-63.71**	**0.00**
		LLWR	-12.30	0.82
		WBWR	**80.15**	**0.00**
	SLWR	ULWR	**63.71**	**0.00**
		LLWR	**51.41**	**0.00**
		WBWR	**143.86**	**0.00**
	LLWR	ULWR	12.30	0.82
		SLWR	**-51.41**	**0.00**
		WBWR	**92.45**	**0.00**
	WBWR	ULWR	**-80.15**	**0.00**
		SLWR	**-143.86**	**0.00**
		LLWR	**-92.45**	**0.00**
Agriculture_ln	ULWR	SLWR	-0.40	0.21
		LLWR	-0.25	0.70
		WBWR	**1.29**	**0.00**
	SLWR	ULWR	0.40	0.21
		LLWR	0.15	0.92
		WBWR	**1.69**	**0.00**
	LLWR	ULWR	0.25	0.70
		SLWR	-0.15	0.92
		WBWR	**1.54**	**0.00**
	WBWR	ULWR	**-1.29**	**0.00**
		SLWR	**-1.69**	**0.00**
		LLWR	**-1.54**	**0.00**
Grassland	ULWR	SLWR	0.60	1.00
		LLWR	8.40	**0.05**
		WBWR	**20.90**	**0.00**
	SLWR	ULWR	-0.60	1.00
		LLWR	7.80	0.10
		WBWR	**20.30**	**0.00**
	LLWR	ULWR	-8.40	**0.05**
		SLWR	-7.80	0.10
		WBWR	**12.50**	**0.00**
	WBWR	ULWR	**-20.90**	**0.00**
		SLWR	**-20.30**	**0.00**
		LLWR	**-12.50**	**0.00**

Table 7. (continued) Comparisons among four Wolf Basin watersheds in Wisconsin. Results of Tukey HSD post-hoc test following One Way ANOVA. Bold values indicate significant ($p \leq 0.05$) mean difference. Data were collected during the fall of 2005.

Dependent Variable	watershed (a)	watershed (b)	Mean Difference (a-b)	Sig.
Forest	ULWR	SLWR	5.23	0.66
		LLWR	-0.12	1.00
		WBWR	**-32.17**	**0.00**
	SLWR	ULWR	-5.23	0.66
		LLWR	-5.36	0.72
		WBWR	**-37.41**	**0.00**
	LLWR	ULWR	0.12	1.00
		SLWR	5.36	0.72
		WBWR	**-32.05**	**0.00**
	WBWR	ULWR	**32.17**	**0.00**
		SLWR	**37.41**	**0.00**
		LLWR	**32.05**	**0.00**
Open Water/Wetland	ULWR	SLWR	3.14	0.84
		LLWR	4.50	0.71
		WBWR	**12.64**	**0.00**
	SLWR	ULWR	-3.14	0.84
		LLWR	1.36	0.99
		WBWR	9.50	**0.05**
	LLWR	ULWR	-4.50	0.71
		SLWR	-1.36	0.99
		WBWR	8.14	0.19
	WBWR	ULWR	**-12.64**	**0.00**
		SLWR	-9.50	**0.05**
		LLWR	-8.14	0.19

Results and Discussion

West Branch of the Wolf River Watershed Baseline Data

Variability and Seasonal Change

The percent coefficient of variation (CV) was used to assess metric variability within the WBWR watershed. Metrics with less variability were assumed to be more reliable for the methods and techniques used in this study and were therefore presumed to be better indicators of water quality (Hooper 1993, Resh 1988).

The metrics with mean CV (mean of each three-replicate set or all sites and both seasons) values less than 10 included DIV and all pollution tolerance metrics (BI, BI 10, and TOLVAL) (Table 8). Annually, DIV had the lowest variability (CV = 8.53) of all metrics (Table 8). Although CV values were low, suggesting sufficient reliability, DIV consistently undervalued the water quality of stenothermic headwater streams. Homogeneous habitat characteristics, as discussed above, often result in low diversity regardless of water quality (Lillie et al. 2003). Of the pollution tolerance metrics, BI 10 (8.74) had lowest mean annual CV value suggesting it was the most reliable metric, but BI (9.08) and TOLVAL (9.64) also had similarly low variability (Table 8).

The richness metrics SR (12.75) and GR (12.94) both had mean annual CV values less than 15 and responded similarly in both seasons. This suggests that they were useful, but less reliable, indicators of water quality compared to BI 10 or DIV.

Metrics with mean annual CV values greater than 15, included COUNT_EPT and all TFG metrics except collectors. Two factors resulted in high CV values; microhabitat variation and low representation of individuals within groups. Replicates with low

COUNT_EPT values often had high amounts of intolerant riffle beetles (*Optioservus trivitatus*, BI = 2) or black flies (*Simulium corbis*, BI = 2), resulting in high CV values. Furthermore, microhabitat variation within sampling sites often resulted in an erratic representation of intolerant taxa from non-EPT orders.

Trophic feeding groups with low representation had high CV values. Shredders often had low but erratic representation among replicates. For instance, in spring, sample site 3 (Fig. 2) on the Little West Branch of the Wolf River had two shredders in the first replicate, 13 in the second, and zero in the third replicate (Appendix C). This resulted in a low mean (>10) high standard deviation (<10), and a CV over 100% (Appendix 2). Although TFGs were not independently reliable water quality indicators they were used in conjunction with the BI 10 and BI to examine statistical, and more importantly, biological differences within the WBWR watershed.

Table 8. Mean coefficient of variation (CV) values among 20 sample sites in the WBWR watershed, Menominee County, WI. Samples were taken during spring and fall of 2005.

METRIC	Mean CV Values		
	spring	fall	annual
BI	10.34	7.81	9.08
BI10	9.53	7.95	8.74
TOLVAL	8.12	11.17	9.64
SR	12.40	13.10	12.75
GR	13.00	12.87	12.94
DIV	8.95	8.12	8.53
COUNT_EPT	17.40	15.44	16.42
SCR	21.63	15.33	18.48
FIL	25.69	23.75	24.72
SHR	104.52	46.66	75.59
GAT	9.33	21.03	15.18
COL	10.22	14.22	12.22

Water quality and macroinvertebrate communities experienced seasonal changes. Water quality in the WBWR was ranked higher in fall than in spring, based on the BI, BI 10, and TOLVAL (Fig. 3). These results were consistent with other Wolf River Basin

watersheds during 2004 and 2005 (Scott 2007). Also, the structure of macroinvertebrate communities between seasons was different which reflected seasonal habitat variability including: temperature, dissolved oxygen, and forms of available carbon or nutrition (Fig. 4). The higher abundance of scrapers in fall utilized periphyton and abundant colonies of bacteria growing on course particulate organic matter (CPOM, particles > than1mm) (Merritt and Cummins 1996). Filter-feeders were more abundant in fall and utilized suspended fine particulate organic matter (FPOM, particles < 1mm and > 50µm) (Monaghan et al. 2001, Merritt and Cummins 1996). Higher autotrophic production and decomposition in fall resulted in a greater abundance of this nutrition source (McCullough et al. 1979). In spring, greater amounts of deposited FPOM were utilized by GAT (Monaghan et al. 2001). Richness, diversity, and EPT measures showed no consistent patterns between seasons. This suggests that as community composition changed to conform to seasonal habitat variation, the overall diversity, richness, and percentage of EPT in samples remained constant (Fig. 4).

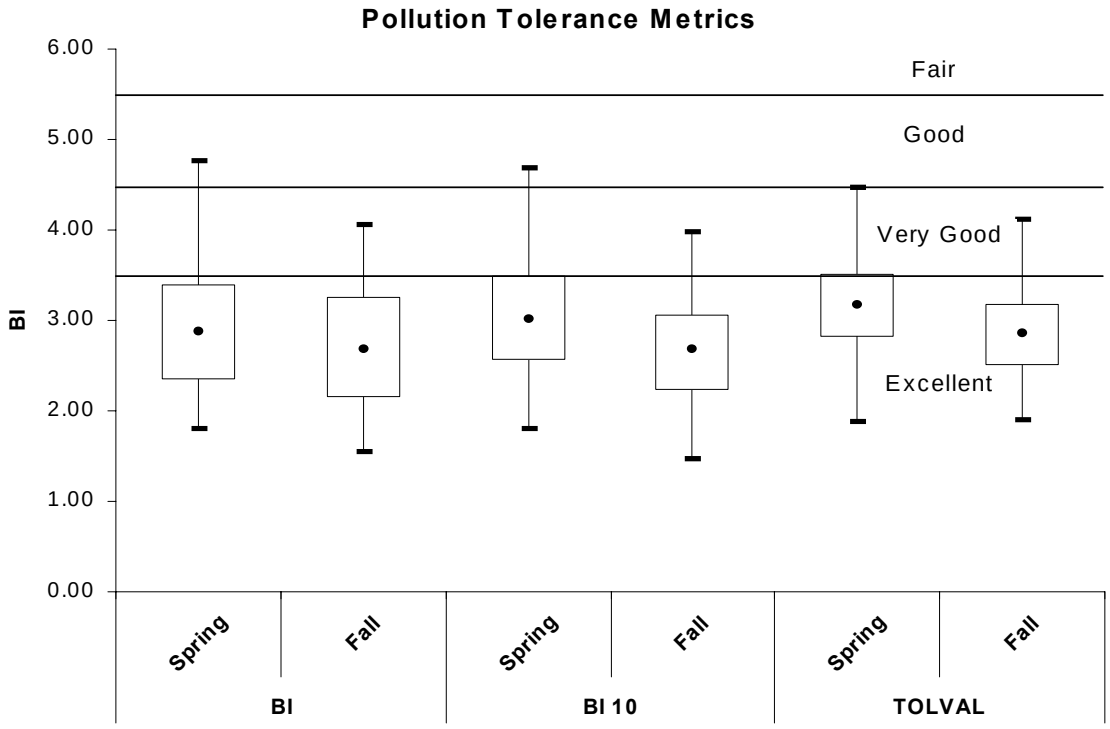

Figure 3. Distribution of mean pollution tolerance metrics during the spring and fall of 2005 in the WBWR watershed, Menominee County, WI. Dots represent mean values, boxes represent upper 25% and lower 75% quartiles, and lines represent highest and lowest values in data.

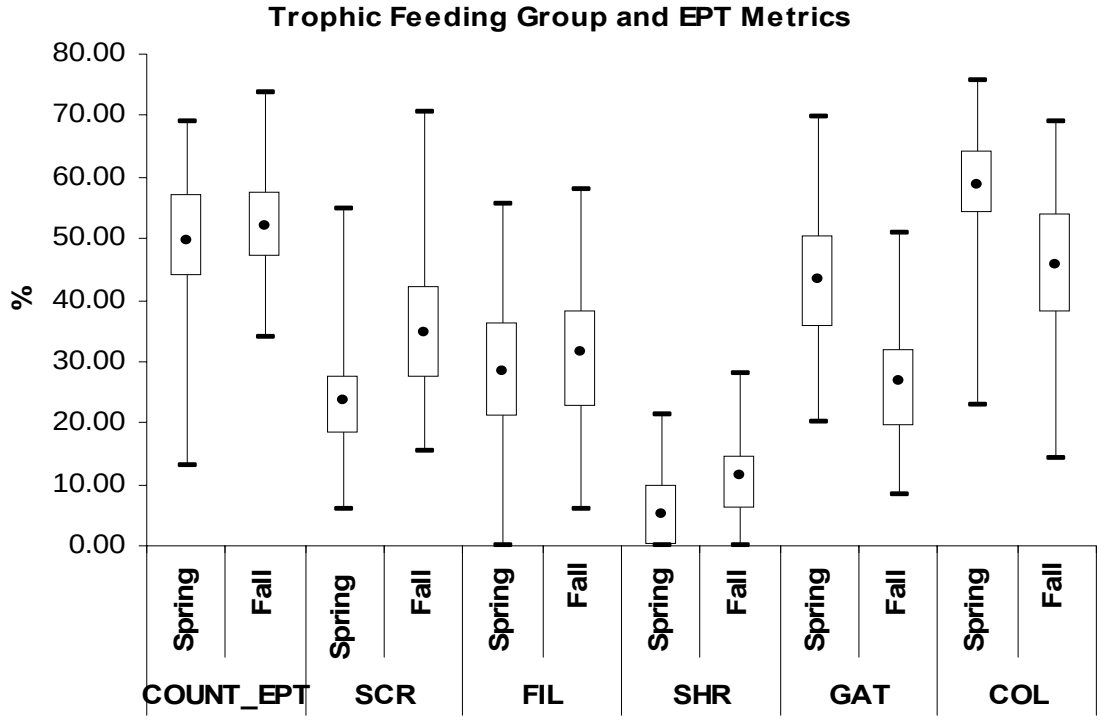

Figure 4. Distribution of mean COUNT_EPT and TFG metrics during the spring and fall of 2005 in the WBWR watershed, Menominee County, WI. Dots represent mean values, boxes represent upper 25% and lower 75% quartiles, and lines represent highest and lowest values in data.

Stream Order Characteristics

Trends in water quality classifications are discussed below, progressing from stream order one through three. Stream orders four and five were grouped together because of the close proximity and similar physical characteristics of these sites (Fig. 2). All metric values discussed below are a mean of a three replicate sample set, and variation from each site was determined by calculating the coefficient of variation (CV) (Appendix B).

First Order Sites

Site 8 on Elma Creek was the only first order stream in the study. Therefore, data are limited on this stream order, and results may not be representative of other first order WBWR watershed streams. In spring 2005 site 8 had *very good* water quality (BI 10 = 3.74) with a low CV of 2.55 (Appendix B). In fact, the CV was low on nearly all metrics indicating homogeneity among replicates. A high abundance of immature *Stenelmis spp*. riffle beetles were present in samples from this site (Appendix C). These immature specimens could not be identified to species level, so they were assigned to the BI value (5) for the genus. Further downstream, more mature *S. sandersoni* (BI = 4) and *S. crenata* (BI = 5) were identified from single samples. This suggests that if specimens were more mature and identifiable, BI results might have been lower. Chironomids and simuliids were also abundant in Elma Creek including *Lopescladius sp*. and *Simulium vericundum* which resulted in low COUNT_EPT (34.65) compared to second order streams (Appendix B). Mean spring SR and GR values (30.33 and 28.00 respectively) were similar to other spring samples from third order streams and were higher than many second order reaches (Appendix B).

Trophic Feeding Group measures at Elma Creek revealed a low mean abundance (1.91) of SHR, and an equal abundance of the groups SCR, FIL, and GAT (34.22, 33.60, and 29.67 respectively) (Appendix B). The high abundance of FIL and GAT at this first order site suggests that there were high levels of FPOM resulting from organic matter decomposition and seston from Lake Elma and beaver impoundments upstream (McCullough et al. 1979).

Fall BI 10 measures (3.12) were slightly lower than spring (Appendix B). Species Richness (18), GR (16), and DIV (2.83) values were lower than values in second and third order streams. Like spring, the high percentage of FIL (31.29) and GAT (14. 94) indicated high amounts of FPOM (Appendix B).

In general, low CV values among all metrics sampled in spring and fall in this first order stream indicated that sampled microhabitats were homogenous. Low SR, GR, and DIV measures were characteristic of shaded first order streams which often had low temperature and substrate variation. The high abundance of filter feeders, and in turn, FPOM necessary for their diet, made this site unusual and was likely to be the result of Lake Elma and other beaver impoundments upstream. In contrast, Vannote et al. (1980) stated that most headwater streams are characteristically driven by allochthonous carbon (CPOM) which is often exploited by shredders.

Second Order

Twenty-five percent of sites occurred on second order streams including sites 1, 2, and 3 on the Little West Branch of the Wolf River and sites 4 and 6 on the WBWR and Menominee Creek respectively (Fig. 2). Spring BI 10 values ranged from 2.24 to 3.79 and indicated *excellent* water quality at all second order sites except for site 4 (BI 10 =

3.79) which had *very good* water quality (Appendix B). Habitat factors associated with lake outlets including temperature, sunlight, and nutrient deposition may have encouraged communities with tolerant macroinvertebrates (Richardson and Mackay 1991). Although samples at site 4 were dominated by *Ephemerella invaria* (BI = 1), more tolerant species were also present including *Stenelmis spp.*(BI = 5) and several Chironomids including: *Polypedilum uresipedilium* (BI = 5), *Conchapelopia spp.* (BI = 6.0), and *Eukiefferiella brehmi group* (BI = 8). In other second order sites a high abundance of intolerant Ephemeroptera and Coleoptera riffle beetle taxa were present including *Baetis tricaudatus* (BI = 2), *Ephemerella invaria* (BI = 1), and *Optioservus trivittatus* (BI = 2).

Species Richness and GR measures ranged from 19.67 - 26.00 and 19.33 - 26.00 respectively and were low compared to other stream orders (Appendix B). Spring DIV values, which ranged from 2.98 – 3.77, were also slightly lower than third order streams (Appendix B). Spring COUNT_EPT measures (48.34 – 61.22) were similar to third order sites and both were much greater than fourth and fifth order sites (Appendix B). Spring second order sites also had a low abundance of SHR and FIL and a high abundance of GAT and SCR, which indicated abundant sources of CPOM and periphyton during this season. Low SCR abundance may have been related to late spring sampling. Macroinvertebrate life cycles often occur relative to the abundance of particular food supplies. Cummins and Klug (1979) recognize this pattern in shredders whose fall through early spring growth period overlaps the maximum availability of deciduous leaf litter.

Fall samples also rated water quality as *excellent* in second order streams and had the lowest recorded BI 10 values (1.62 – 3.06) in this study (Appendix B). Again, site 4, a headwater reach of the WBWR, had the highest BI 10 value. Species Richness (25.00 – 28.67) and GR (24.00 – 26.00) in second order streams was mid-range for this watershed, and DIV measures (2.98 – 3.48) were similar to other stream orders (Appendix B). Gatherers, SCR, and FIL were the most abundant trophic feeding groups at second order sites respectively. The greater abundance of scrapers in fall samples compared to spring, showed the importance of late summer and early fall periphyton growth on substrates.

Third Order Sites

Half of sampling sites were located on third order streams including sites: 5, 7, 9, 10, 11, 12, 13, 14, 15, and 16 (Fig. 2). In spring, BI 10 measures ranged from 2.79 to 3.29 except for site 11 (BI 10 = 3.85) and 7 (BI 10 = 3.64) (Appendix B). The Biotic Index values rated water quality as *excellent* at most third order streams and *very good* at sites 11 (post impoundment) and 7 on the WBWR (Appendix B).

One rare taxa, *Blepharicera tenenuipes*, a net-winged midge (BI = 0) was found on the WBWR at site 9 (Fig. 5). Historically, there was one record from 1980 of a net-winged midge in BI riffle samples in Wisconsin (Szczytko 2006)**.** Species Richness values were highest in third order streams (22.67 – 36.67), but the range of GR values (22.00 – 31.33) was similar to other stream orders (Appendix B). However, high spring DIV values (3.34 – 4.27) reflected more heterogeneous habitats at some third order sites (Appendix B). Again, high COUNT_EPT values (28.68 – 64.82) indicated especially high water quality at third order sites on the WBWR (site 13) and the Little West Branch Creek (site 16) (Appendix B). Vannote et al. (1980) found diversity and richness

measures to be greatest in third to fifth order streams due to the highest variation in water temperature, light, and other chemical and physical measures. However, the large percentage of sites (50 %) on third order streams in this study might explain some variation among results (Appendix B).

Figure 5. Picture of sample site 9, located upstream of the Neopit Mill Pond, on the West Branch of the Wolf River, Menominee County, WI, Spring 2005.

Spring TFG values were similar at all third order sites except at site 11 (Fig. 6) which was immediately below the Mill Pond impoundment. Gatherers, FIL, and SCR had the highest abundance, and SHR values were generally below 10 % (Appendix B). A detailed assessment of site 11 is located in the section entitled "Analysis of the Noepit Mill Pond." In fall, most third order sites had mean BI 10 values below 3 (1.86 – 2.81) except for sites 11 (3.28), 12 (3.21) and 13 (3.68) below the impoundment (Table 10). These results indicated that all third order sites had *excellent* water quality except for site

12 which had *very good* water quality (Fig. 2; Table 10). Fall SR and GR values were similar to results at fourth and fifth order sites, with the exception of site 11 which had very low SR (18.67) and GR (16.3) values (Table 10). Third order streams had both the highest and lowest diversity measures of all WBWR sites in fall. Diversity for Site 15 on Little West Branch Creek was 4.06, and for site 11 it was 3.00 (Table 10).

Figure 6. Picture of sample site 11 and the Neopit Mill Pond dam on the West Branch of the Wolf River, Menominee County, WI, Spring 2005.

Fall TFG values throughout third order reaches were similar, with the exception of site 11 and in some cases 12 which was 5.88 km downstream from the impoundment. Shredders were least abundant at third order sites (6.54 – 13.58), especially at site 11 (2.71) probably due to lowered amounts of CPOM (Appendix B; Vannote et al. 1980). Filter-feeders, SCR, and GAT were almost equally abundant (21.05 - 44.04, 18.63 – 42.69, and 23.80 – 38.81 respectively) (Appendix B). However, site 11 had an unusually

high FIL value (49.94) and correspondingly low GAT value (16.9) (Appendix B). Site 12 also had a low GAT value (16.0) which reflected the down stream impact of the impoundment (Appendix B). Although both FIL and GAT utilized FPOM, the higher temperatures and constant high discharge below the impoundment may have limited GAT egg abundance and maturation and encouraged FIL individuals (Mackay and Waters 1986, Alexander and Smock 2005).

In general, third order streams had the highest mean DIV values (4.06 at Little West Branch Creek) during fall (Appendix B). Vannote (1980) associated high DIV values with habitats having high variation in daily temperature, discharge, and substrate size. Most third order reaches had *excellent* water quality during spring and fall. However, post impoundment WBWR sites often had a lower *very good* water quality ranking. With the exception of post impoundment WBWR reaches, most third order streams had little or no human impact or organic enrichment. Upstream riparian land cover at third order sites was predominantly forest (Table 2).

Fourth and Fifth Order Sites

Fourth and fifth order sites included: site 17, fourth order WBWR, and sites 18, 19, and 20, fifth order Wolf River. Because of similar characteristics and proximity, these sits were analyzed together. Mean spring BI 10 values ranged from 2.90 to 3.83 and ranked water quality as *excellent* and *very good* (Appendix B). Wolf River sites 19 (4.56) and 18 (4.29) had the highest recorded DIV values in this study (Appendix B). Gatherer, FIL, and SCR values were similar at all fourth and fifth order sites in spring.

Mean fall BI 10 values ranged from 2.70 to 3.08 indicating *excellent* water quality (Appendix B). In all cases BI values were lower than TOLVAL suggesting an abundance

of rare and intolerant taxa at the mouth of the WBWR and in the Wolf River. Species Richness, GR, and DIV measures followed patterns similar to spring data. Mean fall COUNT_EPT values (42.8 – 48.8) at fourth and fifth order sites were lower than most third order sites due to high riffle beetle abundance (*Optioservus trivittatus)* (BI = 2) at all sites (Appendix B). This species was much more abundant in WBWR samples than *O. fastiditus* (BI = 4), which was more common in Lower Little Wolf River streams (Scott 2007). Scrapers were the most abundant TFG in fall at fourth and fifth order sites. Filter-feeders were also common, but SHR and GAT were in low abundance. These TFG measures suggested the importance of nutrition from periphyton and deposited FPOM rather than CPOM (Merritt and Cummins 1996).

These results indicate that, regardless of stream order or season, water quality within the WBWR was *excellent*. Biotic Index values were lower in fall than spring suggesting higher water quality (Figs. 4 and 7). Fall samples also had a higher abundance of mature specimens which could be identified to the lowest possible taxonomic level; thereby resulting in greater data resolution and lower BI, and BI 10 values (Figs. 4 and 7). Stream reaches with *very good* rather than *excellent* water quality were frequently located below the mill pond impoundment or in habitat limited first order reaches (Figs. 4 and 7).

Analysis of the Neopit Mill Pond

This section examines the impact of the mill pond impoundment relative to other WBWR sites (Tables 5 and 6). First, upstream sites one and 10 were compared to site 11, post impoundment (Fig. 2). Post impoundment sites 12 and 13, which were 7.1 km and 13.2 km downstream from the mill pond dam respectively, were also compared to assess the distance and magnitude of any impacts. Second, water quality impacts were compared to variability and results throughout the watershed. Third, the water quality of the Wolf River was examined above and below the confluence of the West Branch.

Site 11 had significantly higher pollution tolerance values than site1 for spring and fall 2005 respectively including BI (p= 0.005, 0.000), BI 10 (p= 0.003, 0.000), and TOLVAL (p= 0.002, 0.001) (Table 5; Fig. 10). In addition, FIL values were higher (p= 0.000, 0.009) and GAT values were lower (p= 0.046, 0.046) (Table 6; Fig. 12). During fall, site 11 also had significantly less GR (p = 0.043) and DIV (p = 0.033) (Table 5).

Site 11 also had higher pollution tolerance values than site 10 during spring and fall 2005 seasons respectively including BI (p = 0.027, 0.019), BI 10 (p = 0.006, 0.000) and TOLVAL (p= 0.015, 0.003) (Table 5; Fig. 10). Again, FIL was significantly higher (p = 0.046, 0.023) and GAT significantly lower (p = 0.046, 0.046) at site 11 compared to 10 `during spring and fall respectively (Table 6; Fig. 12). Also, in spring SR (p = 0.046), GR (p = 0.046), and DIV (p = 0.011) were significantly lower below the impoundment (Table 5).

These results indicated that the Neopit Mill Pond impoundment significantly degraded downstream water quality on the WBWR. All pollution tolerance metrics for spring and fall were significantly ($p < 0.05$) higher below the impoundment compared to.

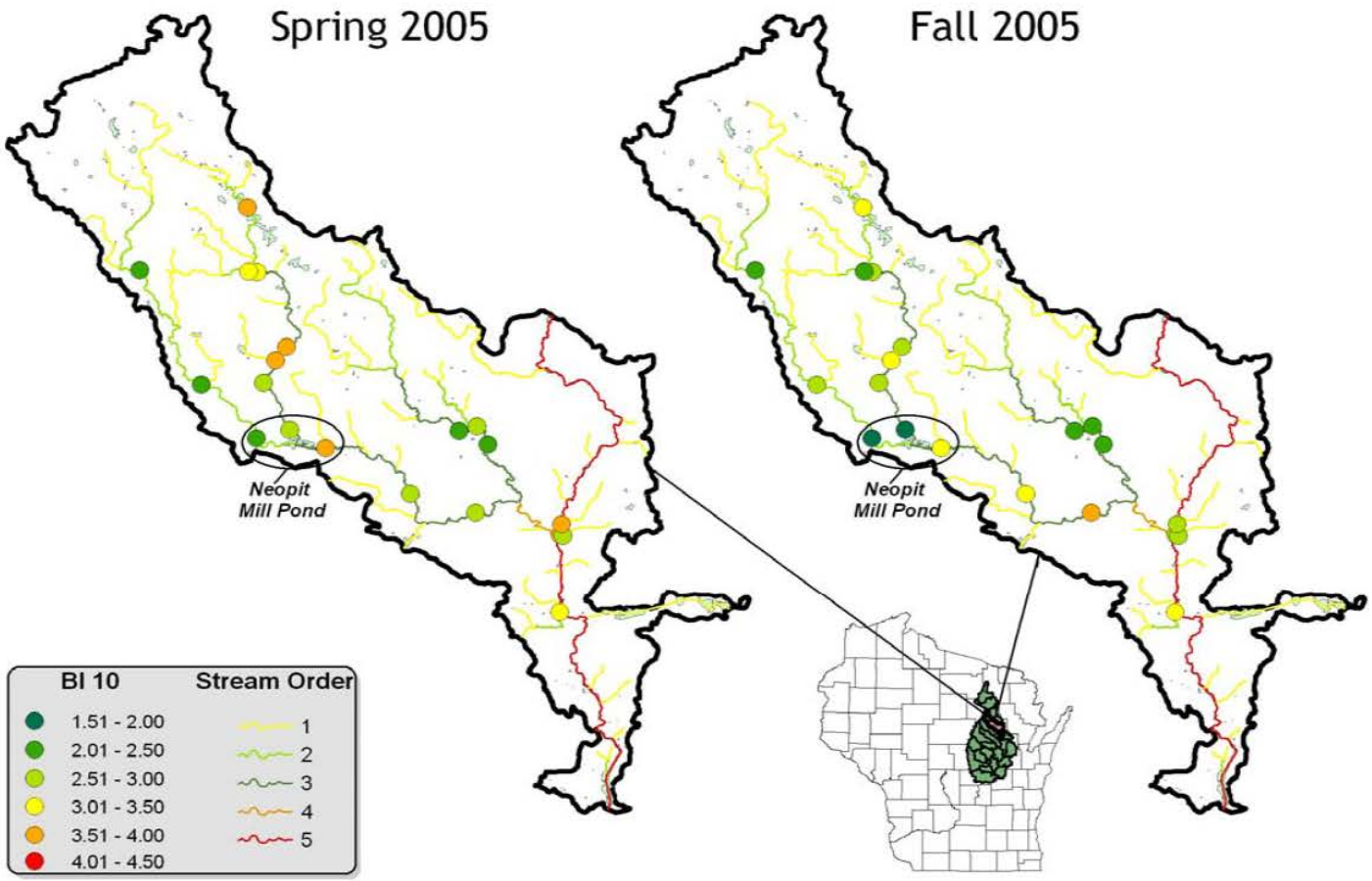

Figure 7. Map of mean BI 10 values at sample sites within the WBWR watershed in 2005 in Menominee County, WI.

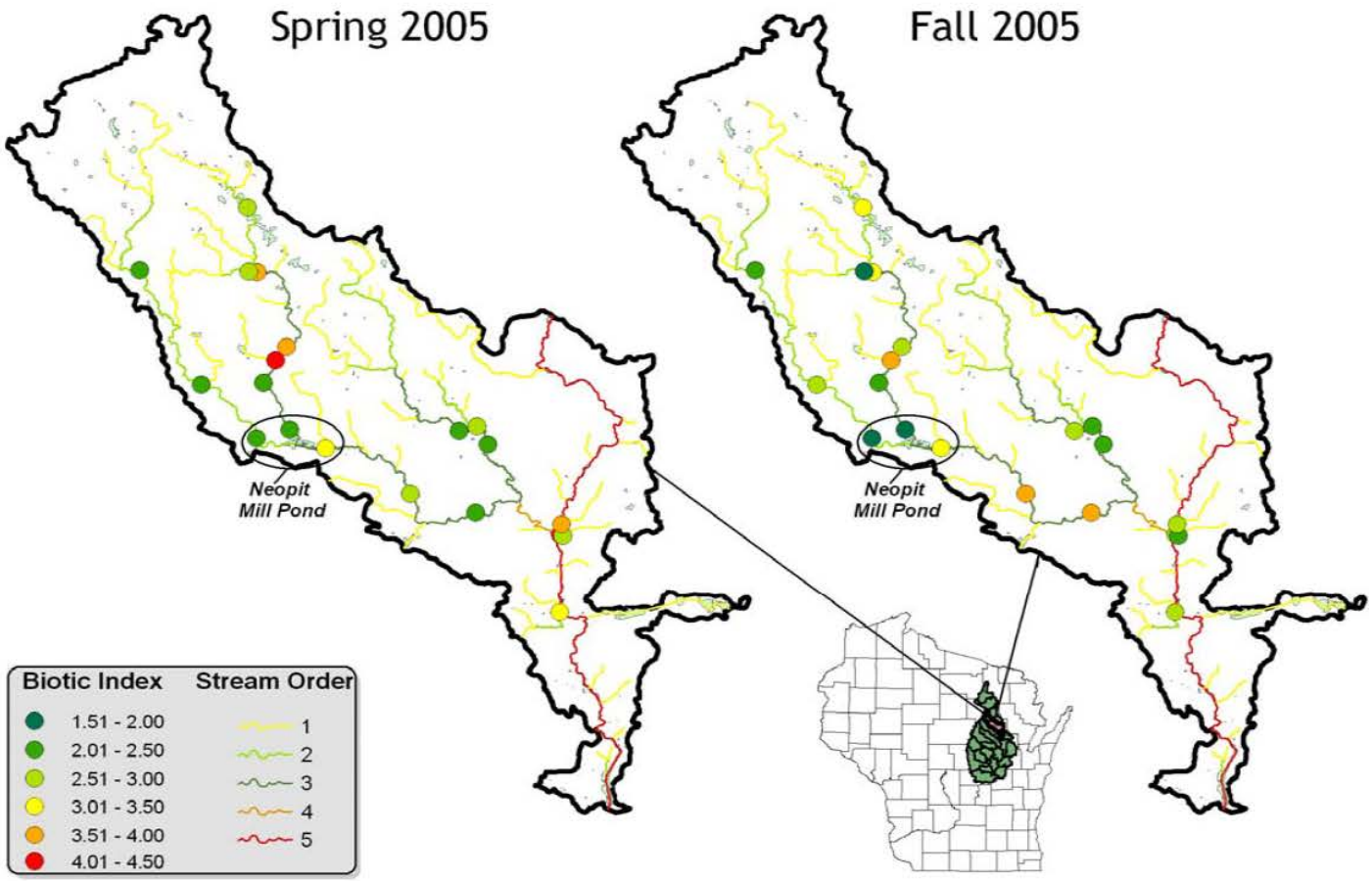

Figure 8. Map of mean BI values at sample sites throughout the WBWR watershed in 2005 in Menominee County, WI.

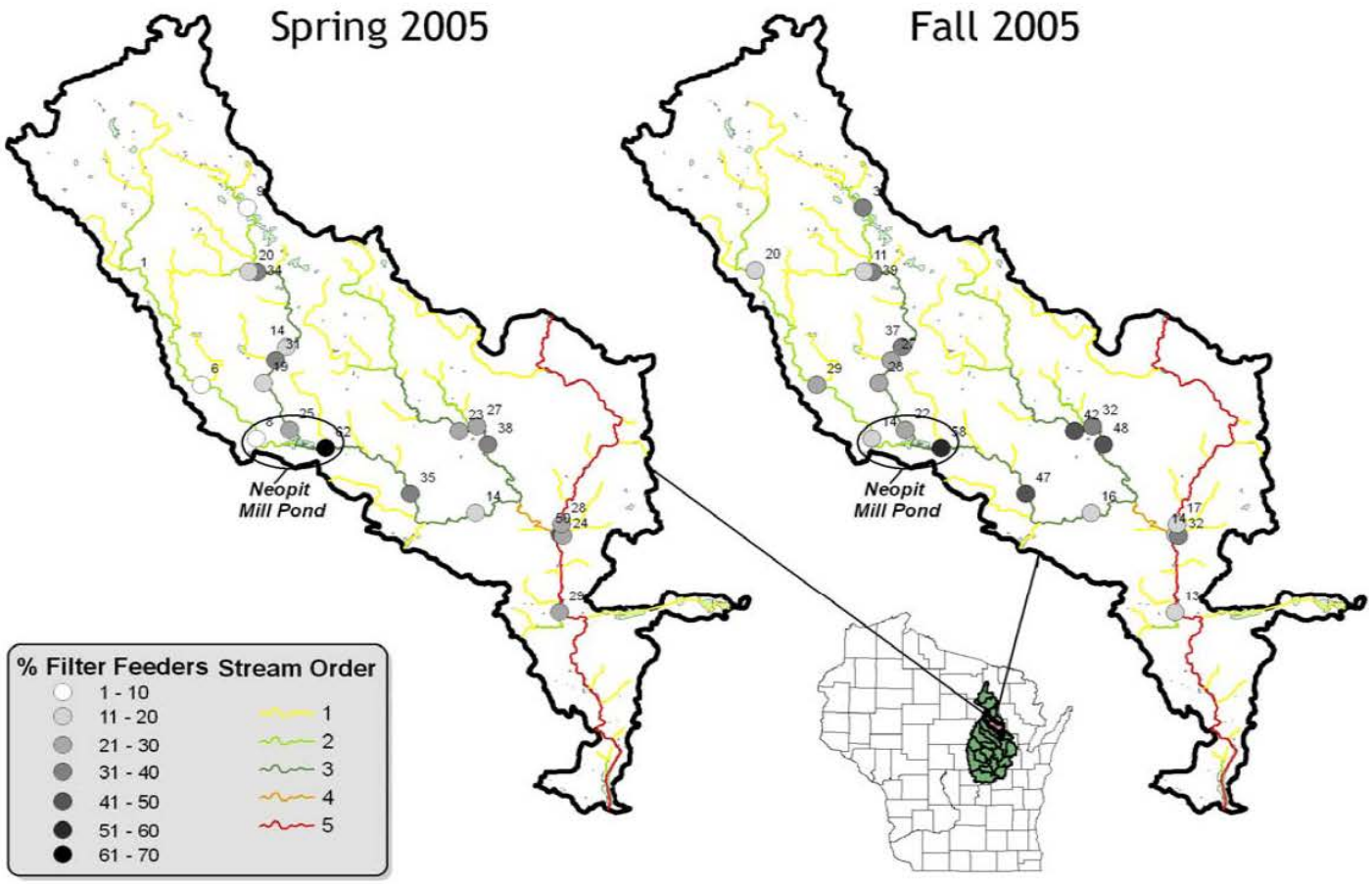

Figure 9. Map of the mean percentage of filter-feeders at sample sites throughout the WBWR watershed in 2005 in Menominee County, WI.

sites directly above (Figs. 7 and 8), which suggests an increase in organic enrichment below the dam (Hilsenhoff 1987).

In addition to biological water quality, the structure of the macroinvertebrate community changed below the impoundment. Filter-feeders were 2.5 to 7.5 times more abundant below the impoundment (Fig. 9). This indicated an increase in suspended FPOM. The increase in FIL was accompanied by a decrease in GAT for both seasons (Fig 12). Because both FIL and GAT utilized FPOM other factors probably limited GAT production. Mundahl and Kraft (1988) found that that elevated mean daily temperatures reduced egg development in many GAT taxa below surface release dams in the Upper Peninsula of Michigan. Richardson and Mackay (1991) found that GAT below impoundments had to expend excessive energy to maintain optimal position within the stream which ultimately resulted in smaller individuals and lower populations.

Sites 11, 12, and 13 were compared to evaluate any downstream effects, in a longitudinal spatial scale, related to the impoundment (Figs. 11, 13). In spring, site 12, 7.1 km downstream from the dam, had significantly lower BI 10 ($p = 0.024$) and TOLVAL ($p = 0.035$) values than site 11 (Table 5). Also, FIL was significantly lower ($p = 0.002$) and GAT was higher ($p = 0.046$) in spring (Table 6; Fig. 13). Site 13, 13.2 km downstream from the dam, showed similar spring trends. Pollution tolerance metrics were not significantly different, but again, FIL values were significantly lower ($p = 0.003$) and GAT values were higher ($p = 0.046$) (Table 6; Fig. 13). Overall, as the downstream distance from the dam increased, post impoundment sites in spring had gradually decreasing FIL values and increasing GAT values. Pollution tolerance metrics

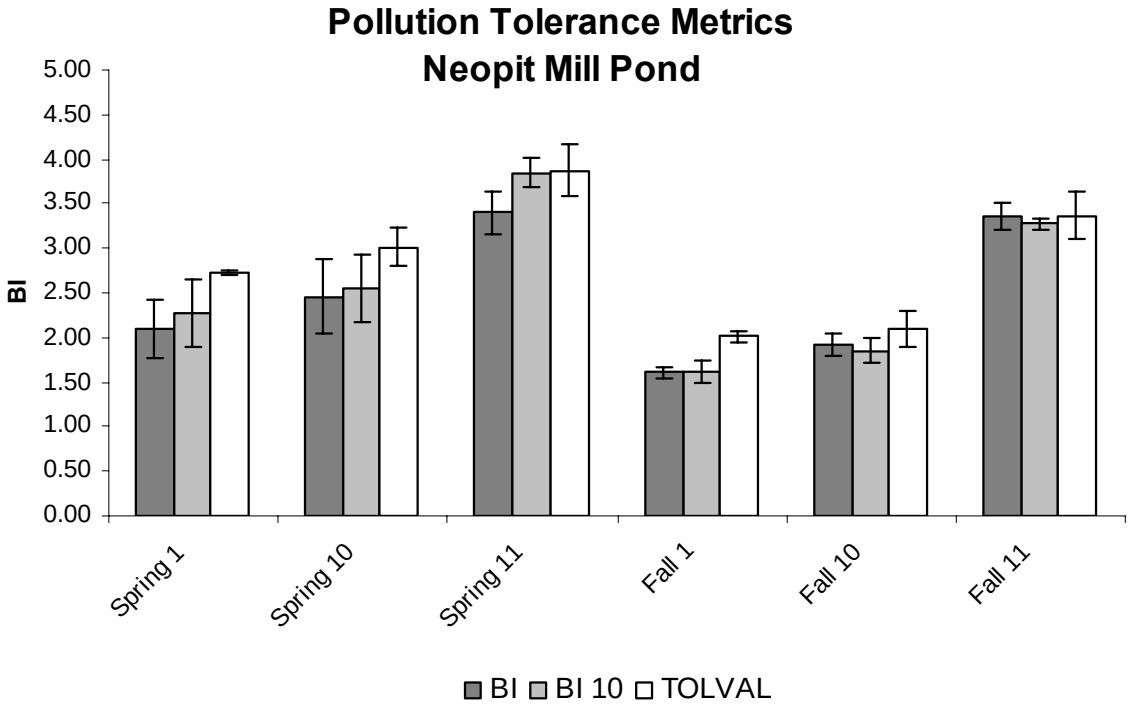

Figure 10. Pollution tolerance metric values at sites above (1&10) and below (11) the Neopit Mill Pond dam, Menominee County, WI during 2005. Whiskers represent standard deviation values (Appendix B).

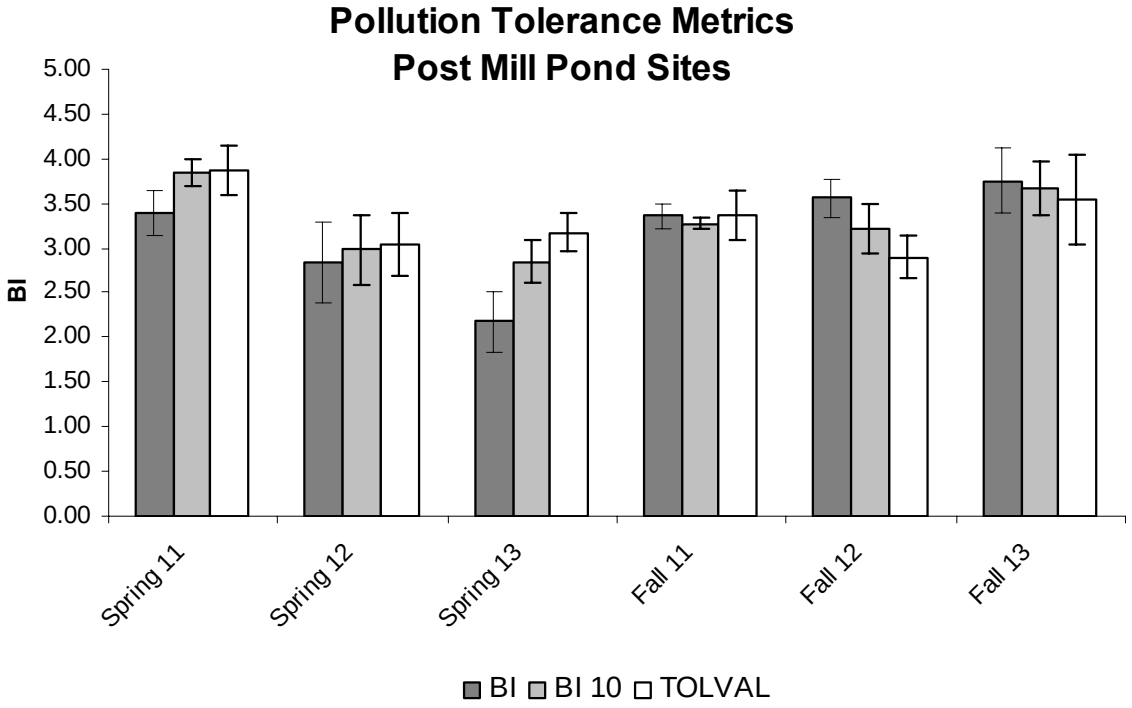

Figure 11. Pollution tolerance metric values at sites following the Mill Pond dam, Menominee County, WI during 2005. Whiskers represent standard deviation values (Appendix B).

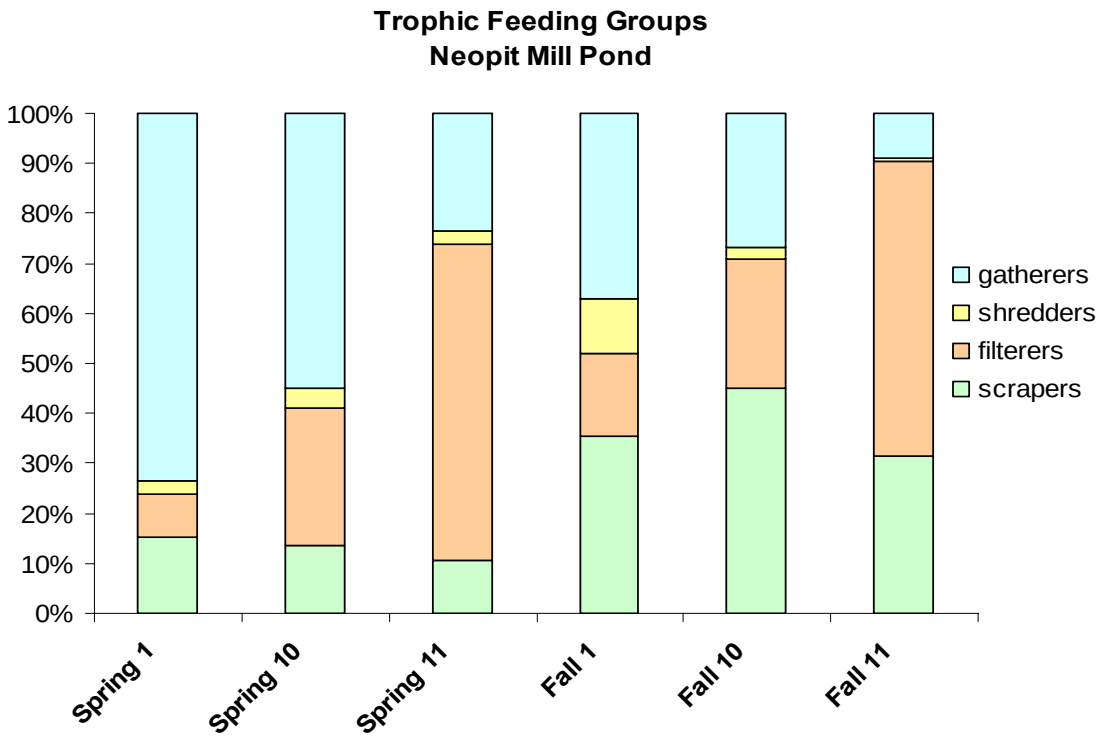

Figure 12. Mean TFG values for sites above (1&10) and below (11) the Neopit Mill Pond dam, Menominee County, WI during 2005.

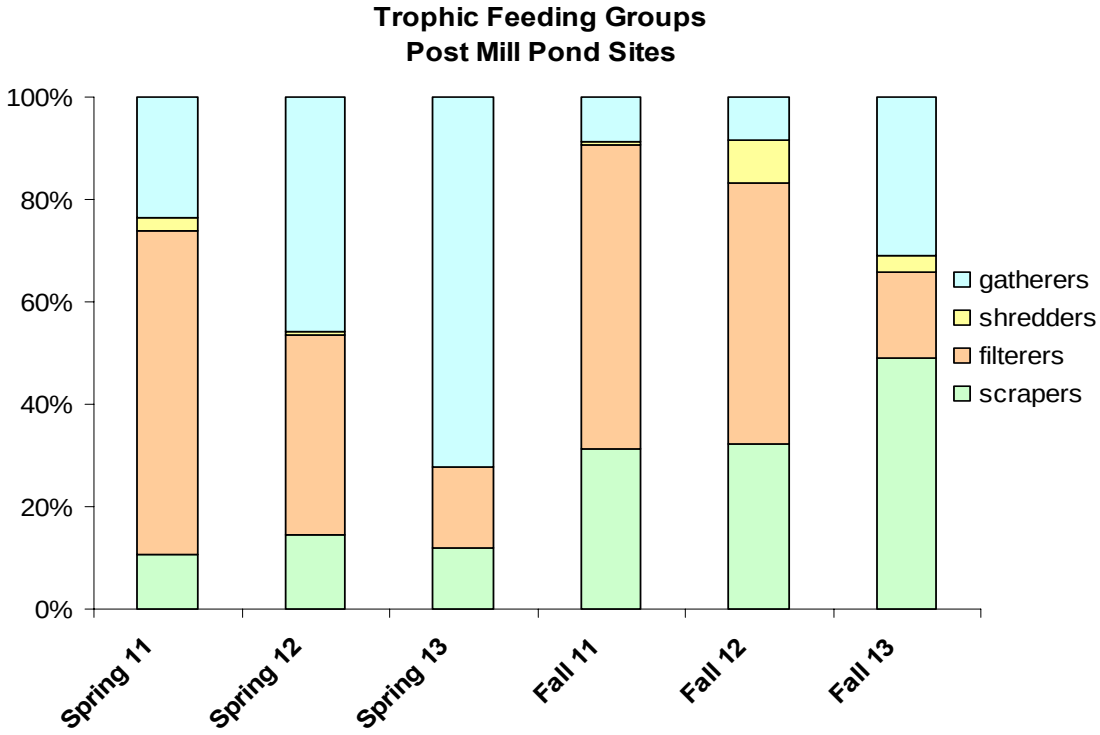

Figure 13. Mean TFG values for sites below the Neopit Mill Pond dam, Menominee County, WI during 2005.

in spring demonstrated that water quality gradually improved in the 13.94 km reach from site 11 (BI 10 = 3.85) to site 13 (BI 10 = 2.85) (Appendix B; Fig. 11).

Fall values, however, did not consistently reflect these results. A similar decrease in FIL and increase in GAT occurred between sites 11, 12, and 13, but these differences were not significant. Also, pollution tolerance metrics did not gradually decrease, but remained constant (BI 10 = 3.28, 3.21, and 3.68) between sites 11, 12, and 13 respectively (Appendix B; Fig. 7 and 11). This may have been the result of higher temperatures at sites 11 (19.27 °C), 12 (18.55 °C), and 13 (18.69 °C) (Table 3).

These results indicated that water quality and macroinvertebrate communities on the WBWR returned to pre-impoundment levels following a continuum of longitudinal spatial and physical change between sites 11 and 13 in most instances. The high abundance of filter-feeders immediately following the dam diminished as gatherers proportionally increased (Fig. 13).

Results from this study are similar to those of others (Richardson and Mackay 1991, Mackay and Waters 1986, Morin et al. 1991, and Monaghan et al. 2001). Several factors explained the decrease in filter-feeders. The most frequently documented explanation was that high quality seston from lentic habitats ideally supported hydropsychid caddisflies and simuliid black flies at site 11 immediately below the dam. Living material such as zooplankton provided greater protein content for net spinning caddisflies than allochthonous particulates in non-outflow streams (Richardson and Mackay 1991). Conversely, lake water surface films often contained complex lipids which were re-suspended following impoundment. Combinations of these nutritious, microfine particles (0.45-25 μm) often supported other filter-feeding specialists.

Simuliids, for instance, used cephalic fans to capture these particles in shallow water.

Eventually, ingested nutrients were egested releasing a more homogenous filter-feeding food base resulting in decreased abundance and variation in size for downstream filter-feeders. Despite factors responsible for higher filter-feeder production below ponds, Morin et al. (1988) found that their downstream effects were often limited to short distances. In his study of 16 lake outlets in southern Quebec, black fly larvae ingested between 32% and 55% of the seston flux or 0.8-1.4% per linear meter of stream. In a separate study, Monaghan et al. (2001) observed that filter-feeder capture of particulate organic matter (POM) resulted in significant depletion or alteration of their own food resource thereby limiting resource availability downstream. This change in feeding strategy suggested a shift from suspended to deposited FPOM farther downstream.

Other studies have found several other outlet characteristics that favored filter-feeders including constant discharge, structure, and temperature. Discharge below impoundments was often higher and less variable on a seasonal basis than sites above (Ziser 1985). For this reason, outlets deliver high quality nutrients at a more even pace throughout the year. Mackay and Waters (1986) speculated that moss and algal growth was also stimulated by nutrients released from sediments trapped by dams or by nutrients from feces of fish and waterfowl. Hydropsychid larvae relied on rough-textured surfaces, such as algae and moss as attachment sites for their retreats and capture sets (Mackay and Waters 1986). Elevated temperatures, combined with a nutritious food source, facilitated early maturation, and sometimes trivoltinism in Virginia streams (Alexander and Smock 2005). In addition, higher mean temperatures did not seem to inhibit egg growth of filter feeding outlet specialists.

In contrast to filter-feeders, gatherer abundance was lower below the impoundment than above. This trend was not as strong, but no less important. Gatherers include collectors that utilize deposited rather than suspended FPOM (Merritt and Cummins 1996). Food abundance (FPOM) appeared suitable for gatherers, but temperature and stream flow appeared to limit abundance below the dam. Previous investigations have reported that human activities that slightly modify normal temperature regimes of lotic systems may produce subtle but significant changes in life histories of mayflies or other aquatic organisms (Mundahl and Kraft 1988, Richardson and Macay 1991). Mundahl and Kraft (1988) observed that growth rates of *Ephemerella subvaria* were suppressed following a surface release hydroelectric power plant in Michigan's Upper Peninsula. Further downstream, *E. subvaria* biomass was significantly greater. Gatherers, unlike hydropsychids and simuliids, cannot affix themselves to structure, and therefore, demands for position maintenance result in less energy channeled into growth (Mackay and Waters 1986, Mundahl and Kraft 1988). Constant high discharge directly below impoundment outlets may require too much energy for some gatherers to maintain healthy populations. Farther downstream, gatherers and other intolerant taxa often increased as filter feeders decreased.

Elevated BI values were observed in other regions of the WBWR including site 8 in spring (4.00) and fall (3.82) (Appendix B). However, BI 10 values were lower than BI values for spring (3.74) and fall (3.12) (Appendix B). Site 9, directly below the confluence of Elma Creek, had lower BI (2.46 and 2.37) and BI 10 (2.56 and 2.75) values than site 8 or 7 for spring and fall respectively (Appendix B). These results indicated that high BI and BI 10 values at site 8 were due to stenothermic habitat limitations of the first

order sites, and no negative downstream impacts were observed. Vannote (1980) stated that highly shaded, groundwater-fed headwater streams have the least change in temperature and therefore communities in these regions are assembled from species which can function within a narrow temperature range on a restricted nutritional base.

Water quality surrounding the confluence of the WBWR and the Wolf River was also examined using sites. Mean pollution tolerance metrics during spring (BI 10 = 2.90) and fall (BI 10 = 2.70) at site 18 ranked water quality as *excellent* directly below the confluence of the WBWR and the Wolf River (Appendix B). Above the confluence, during the spring (BI 10 = 3.83) and fall (BI = 2.80) at site 19 water quality was ranked as *very good* and *excellent* (Appendix B). There were no significant differences in richness, diversity, EPT, or TFG metrics between sites 18 and 19 for both spring and fall of 2005 (Tables 5 and 6). Near Keshena on the Wolf River at site 20, BI 10 values in spring (3.36) and fall (3.08) ranked water quality as *excellent* (Appendix B).

Overall, the WBWR appeared to have little impact on the water quality of Wolf River during spring and fall 2005. Comparisons between 1997 historical Wolf River data taken near Langlade (north) and Keshena (site 20) suggested that the WBWR had a negative effect on the water quality of the Wolf River (Garn et al. 2001). However, results from this study at sites immediately above and below the confluence of the WBWR within the Wolf River demonstrated no change in water quality or community structure during the spring or fall of 2005. Compared to site 18, the slightly higher BI 10 values near Keshena (site 20) may have been a result of the increased 15 % urban upstream riparian land cover (Table 2).

Comparison of WBWR to other Wolf Basin Watersheds

Macroinvertebrate bioassessment techniques have been widely used by resource managers in Wisconsin to prioritize and monitor the results of management efforts. Regional benchmarks from un-impacted reference sites are needed to properly evaluate results from impaired watersheds. The objective of this section was to investigate the potential of the WBWR serving as a bench mark for this region of Wisconsin and the Wolf River Basin.

To this end, fall 2005 West Branch data were compared to fall 2005 data from the Little Wolf River (LWR) Sub-Basin including: the Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), and Lower Little Wolf River (LLWR) (Fig. 1). The Little Wolf River and WBWR data were collected within a two week period from mid to late September 2005 using the same field procedures used in this study. The same biologists collected all samples, processed them in the same laboratory, and used the same taxonomic keys and references for identification. Climactic conditions for both studies were very similar, and no major weather changes occurred between collection dates. Although, summer 2005 was historically dry, climactic trends were similar among all 4 watersheds. Because the spring Little Wolf River data were collected in 2004, comparisons between spring 2005 WBWR data were not made.

The West Branch of the Wolf River had significantly lower BI, BI 10, and TOLVAL values ($p < 0.05$) than LWR watersheds (Table 7). Overall, WBWR mean watershed water quality values were at least 0.81 to 1.26 BI units lower than other Little Wolf River watersheds. The mean BI, BI 10, and TOLVAL values were not significantly different between the three LWR watersheds (Fig. 14). More importantly, all three LWR

watersheds were classified as having *very good* water quality (mean BI 10 = 3.5 – 4.5), whereas mean WBWR BI 10 values were below 3.5 and ranked water quality as *excellent* (Fig. 14).

There were some differences in richness metrics, SR and GR, among watersheds although results were difficult to interpret. The West Branch of the Wolf River had similar SR and GR values compared to most Little Wolf River watersheds (Table 7). However, the South Branch of the Little Wolf River had significantly lower DIV, SR, and GR values ($p < 0.05$) than the Upper Little Wolf, which had the highest DIV ($p < 0.05$) among all Wolf Basin watersheds sampled (Table 7).

Although several physiochemical measurements were taken during macroinvertebrate sample collections, only two variables were different among watersheds. First, temperature was significantly lower ($p < 0.05$) in the Upper Little

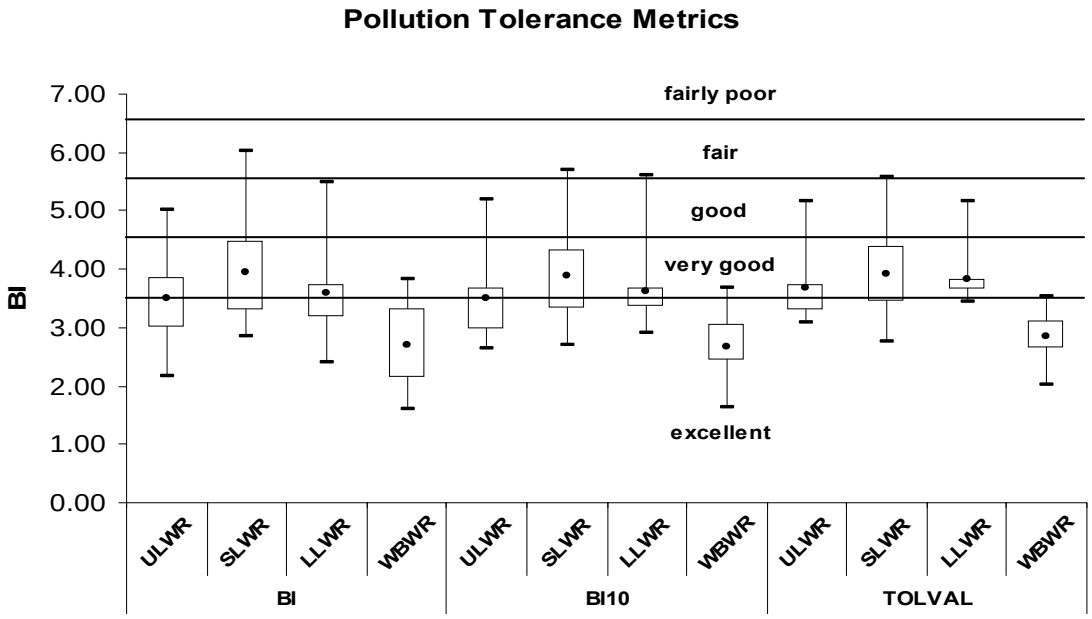

Figure 14. Comparison of three pollution tolerance metrics (BI, BI 10, and TOLVAL) among four Wolf River Basin watersheds in Wisconsin, fall 2005. Watersheds in this study include: Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), Lower Little Wolf River (LLWR), and West Branch of the Wolf River (WBWR). Dots represent mean values, boxes represent upper 25% and lower 75% quartiles, and lines represent highest and lowest values in data.

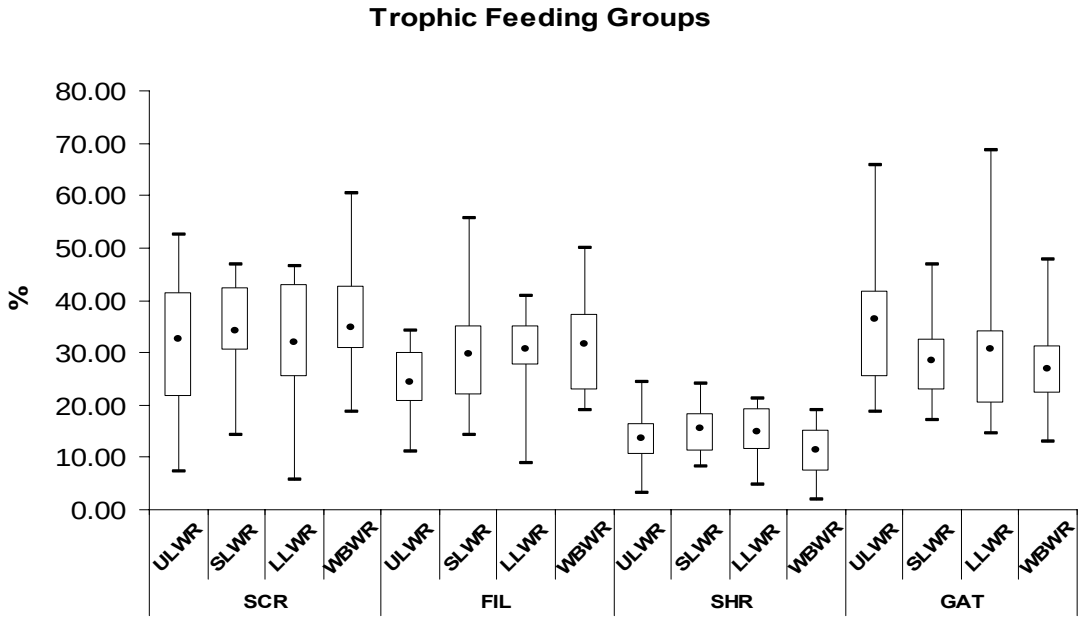

Figure 15. Comparison of TFG metrics among four Wolf River Basin watersheds in Wisconsin, fall 2005. Watersheds in this study include: Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), Lower Little Wolf River (LLWR), and West Branch of the Wolf River (WBWR). Dots represent mean values, boxes represent upper 25% and lower 75% quartiles, and lines represent highest and lowest values in data.

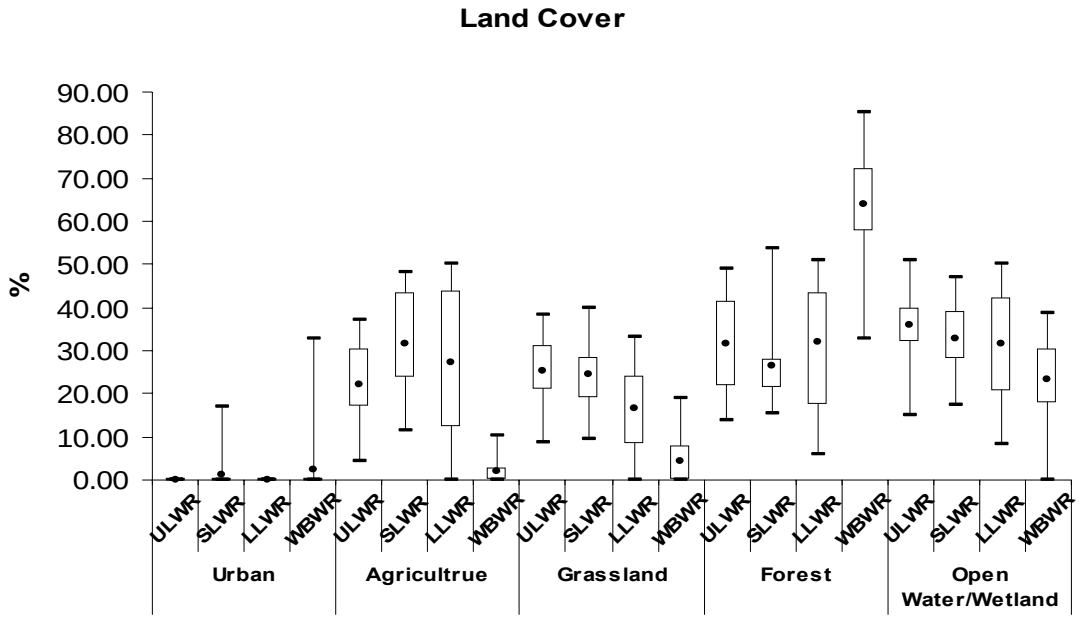

Figure 16. The mean percentage of land cover values within a 1.6 km long and 500m wide buffer zone starting upstream of each sample site in fall 2005, Wolf River Basin, WI. Watersheds in this study include: Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), Lower Little Wolf River (LLWR), and West Branch of the Wolf River (WBWR). Dots represent mean values, boxes represent upper 25% and lower 75% quartiles, and lines represent highest and lowest values in data.

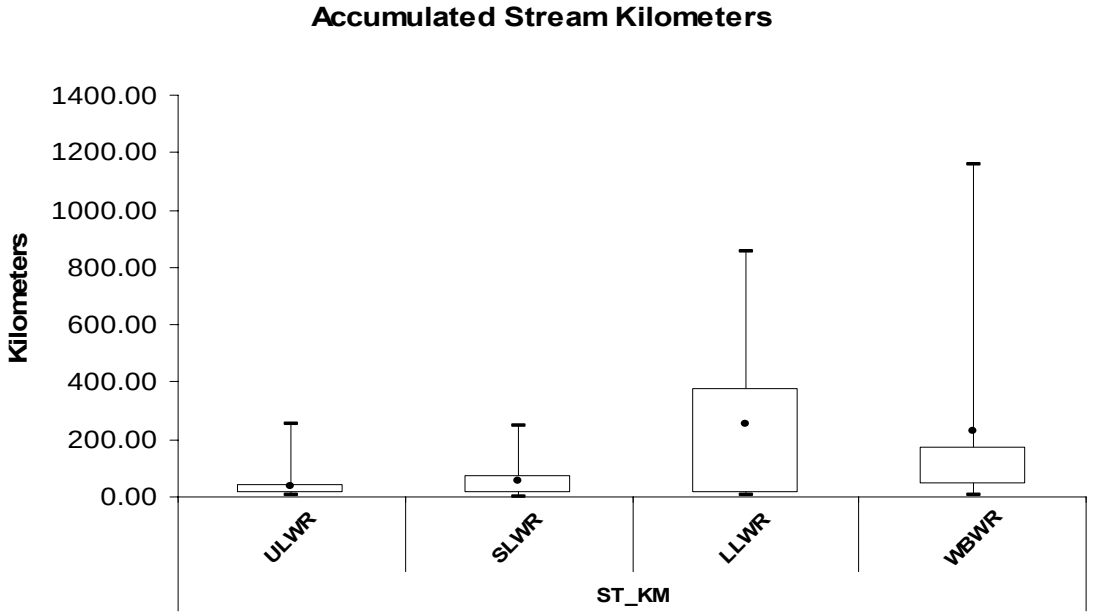

Figure 17. Comparison of accumulated stream kilometers at sample sites within four Wolf River Basin watersheds in fall 2005 including: Upper Little Wolf River (ULWR), South Branch of the Little Wolf River (SLWR), Lower Little Wolf River (LLWR), and West Branch of the Wolf River (WBWR). Dots represent mean values, boxes represent upper 25% and lower 75% quartiles, and lines represent highest and lowest values in data.

Wolf compared to all other watersheds (Table 7). The Upper Little Wolf River was a headwater system, and sampling sites had the least accumulated upriver stream kilometers. In fact, 75% of Upper Little Wolf sample sites were fed by less than 43.45 accumulated stream km compared to 72.42 km., 378.19 km, and 170.59 km for the South Branch of the Little Wolf, Lower Little Wolf, and West Branch of the Wolf respectively (Fig. 17). Second, conductivity was significantly lowest in the WBWR ($p < 0.05$, 323.8 µs/cm) (Table 7). The South Branch of the Little Wolf River had the highest conductivity (467.7 µs/cm) (Table 7). The Upper Little Wolf River and Lower Little Wolf River had similar conductivity values, but together had significantly lower values than the South Branch of the Little Wolf River and higher values than the WBWR ($p < 0.05$) (Table 9). Again, results were difficult to interpret because conductivity could have been the result of natural, geological conditions, or anthropogenic impacts like agriculture or runoff from impervious surfaces. Furthermore, measurements were made only once at the time of sampling. However, trends in conductivity resembled trends in agriculture within buffer zones suggesting a correlation between agriculture and dissolved soil ions.

Four of five land cover variables were examined including agriculture, grassland, forest, and open water/wetland (Fig. 16). Urban land cover was not ubiquitous enough to perform analyses, and agriculture was almost nonexistent in the WBWR. Other Lower Wolf River watersheds had similar levels of Agriculture. Grassland was also lowest in the West Branch of the Wolf River, and was most abundant in the Upper Little Wolf River. Open water/wetland was highest in the Upper Little Wolf River and lowest in the WBWR. These results suggested that the *excellent* water quality in the WBWR was a

result of riparian buffers that were high in forest cover and low in agriculture, grassland, and open water/wetland land cover.

Clearly, there were many similarities among watersheds. For instance, macroinvertebrate community structures, represented by TFG values in each watershed, were nearly equal despite lower BI values in the WBWR (Figs. 12 and 13). Likewise, COUNT_EPT in all watersheds was similar (Fig. 15). A comparison of taxonomic results (Scott 2007) showed that TFG niches in different watersheds were being filled by cogenators. For instance, the riffle beetle, *Optioservus trivittatus* (BI = 2) was much more prevalent in the WBWR, whereas *O. fastiditius* (BI = 4) was more abundant in Little Wolf River watersheds. Both species require similar niches, but *O. fastiditus* is more tolerant. *Baetis tricaudatus* (BI = 2), an Ephemeroptera gatherer was very abundant in the WBWR, but *Baetis flavistriga* (BI = 4) was more prevalent in Little Wolf River watersheds. These few examples explain how watersheds with similar TFG, EPT, and DIV (Fig. 15) values could have different BI, BI 10 and TOLVAL values (Fig. 14)

The results of this study indicated that the WBWR was unique among other Wolf River Basin watersheds for several reasons. Land cover characteristics in the WBWR, included abundant forest cover with little urban development, agriculture, or grassland. These characteristics more closely resembled pre-settlement conditions. The corresponding WBWR biological water quality measures also suggested that most riffle sites in this watershed represented appropriate undisturbed reference sites for future regional studies. Overall the water quality was classified as *excellent* in the WBWR and *very good* in the other Little Wolf River watersheds (Fig. 14).

Summary and Recommendations

The results of this study ranked water quality at most sites throughout the WBWR watershed as *excellent* during the spring and fall of 2005. However, sites directly below the Neopit Mill Pond dam had degraded water quality compared to upstream sites. These results indicated that, in most instances, water quality and macroinvertebrate communities on the WBWR returned to pre-impoundment levels following continuum of longitudinal spatial and physical change between sites 11 and 13 downstream from the dam. Consequently, the water quality of the WBWR had no noticeable impact on the Wolf River.

The West Branch of the Wolf River was compared to three other Little Wolf River watersheds to determine if the WBWR was unique among other Wolf River Basin watersheds. Overall the water quality was classified as *excellent* in the WBWR compared to *very good* in the other Little Wolf River watersheds (Fig. 14). Land cover within the WBWR contained little urban development, more forest, and less agriculture and grassland than other Little Wolf River watersheds. Therefore, these results suggest that most WBWR sites, with the exception of sites immediately downstream from the Neopit Mill Pond dam, could be used as a regional water quality bench mark for future management plans.

Removing the Neopit Mill Pond dam is likely to improve water quality at downstream reaches on the WBWR. Studies on successful projects in Wisconsin (Stanley et al. 2002, Kanehl et al. 1997) and throughout the United States (Bushaw-Newton et al. 2002, Thomson et al. 2005) have reported improvements in water quality and biological integrity following small dam removal.

Regardless of the future status of the Neopit Mill Pond dam, the results of this project can be integrated with the GEM Model of Local Capacity Building for Watershed Planning and Management (Phillips 2004) (Appendix A). The goal of this model is to build the capacity of local organizations and individuals to improve and/or maintain healthy watersheds by incorporating biophysical, socioeconomic, and regulatory factors into a sustainable watershed management plan (Phillips 2004). Biological water quality data contributes directly to the GEM model's assessment of *biophysical aspects* and the *monitoring* component of the watershed management plan (Appendix A). In the future, this information can be used to assist the Menominee Indian Reservation with their planning and management objectives for sustaining this healthy watershed.

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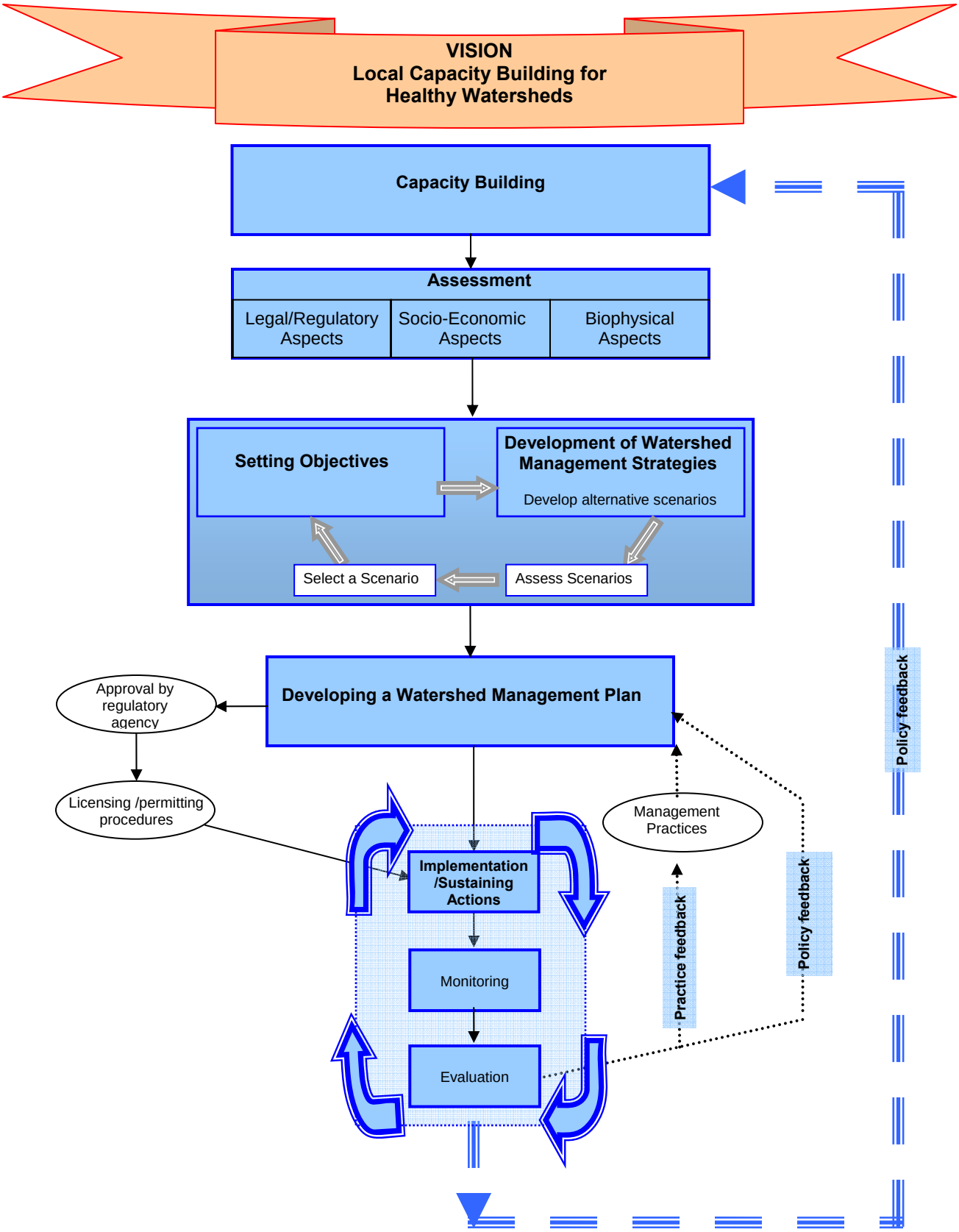
Appendices

Appendix A.

Diagram of generalized model of local capacity building for watershed planning and management. From Global Environmental Management Education Center, *Building Healthy Watersheds: Wingspread Proceedings 2004* (Phillips 2004).


VISION
Local Capacity Building for
Healthy Watersheds
Capacity Building
Assessment
Legal/Regulatory Aspects
Socio-Economic Aspects
Biophysical Aspects
Setting Objectives
Development of Watershed Management Strategies
Develop alternative scenarios
Select a Scenario
Assess Scenarios
Developing a Watershed Management Plan
Approval by regulatory agency
Licensing /permitting procedures
Implementation /Sustaining Actions
Monitoring
Evaluation
Management Practices
Practice feedback
Policy feedback
Policy feedback

Appendix B. Macroinvertebrate metric, percent coefficient of variation, and standard deviation values for a three replicate set at each sample site. Samples were collected during the spring and fall of 2005 in Menominee County, Wisconsin.

SEASON		Spring	spring	spring	spring	spring	spring	spring	spring
SITE		1	2	3	4	5	6	7	8
ORDER		2	2	2	2	3	2	3	1
	MEAN	2.09	2.05	2.33	2.84	3.61	2.86	3.58	4.00
BI	CV	15.57	11.28	18.72	8.50	2.67	14.96	5.29	5.76
	SD	0.33	0.23	0.44	0.24	0.10	0.43	0.19	0.23
	MEAN	2.27	2.24	2.34	3.79	3.30	3.44	3.64	3.74
BI 10	CV	16.76	8.62	19.92	2.92	2.75	13.46	11.31	2.55
	SD	0.38	0.19	0.47	0.11	0.09	0.46	0.41	0.10
	MEAN	2.73	2.78	2.41	3.71	3.24	3.23	3.29	3.49
TOLVAL	CV	1.15	8.95	19.24	5.10	7.25	16.35	10.93	6.45
	SD	0.03	0.25	0.46	0.19	0.23	0.53	0.36	0.23
	MEAN	23.00	22.00	24.33	19.67	29.67	26.00	24.67	30.33
SR	% CV	7.53	4.55	31.39	20.55	17.30	10.18	28.47	1.90
	SD	1.73	1.00	7.64	4.04	5.13	2.65	7.02	0.58
	MEAN	21.00	19.67	21.33	19.33	28.33	26.00	23.67	28.00
GR	% CV	4.76	5.87	32.92	23.89	14.26	10.18	29.68	7.14
	SD	1.00	1.15	7.02	4.62	4.04	2.65	7.02	2.00
	MEAN	3.17	3.13	3.24	2.98	3.89	3.77	3.48	3.81
DIV	% CV	14.49	10.29	19.48	6.74	7.11	1.93	19.60	9.85
	SD	0.46	0.32	0.63	0.20	0.28	0.07	0.68	0.38
	MEAN	61.22	52.79	53.54	55.79	47.88	48.34	28.68	34.65
COUNT_EPT	% CV	14.64	8.07	14.21	5.18	6.24	14.07	47.87	1.02
	SD	8.96	4.26	7.61	2.89	2.99	6.80	13.73	0.35
	MEAN	19.62	33.07	11.28	24.33	34.17	27.38	42.28	34.22
SCR	% CV	61.38	16.19	26.88	5.50	11.81	24.96	26.42	19.68
	SD	12.04	5.35	3.03	1.34	4.04	6.83	11.17	6.74
	MEAN	15.60	13.45	2.71	17.00	35.62	26.03	20.99	33.60
FIL	% CV	31.83	28.03	173.21	15.44	9.53	28.78	46.60	21.99
	SD	4.97	3.77	4.69	2.63	3.40	7.49	9.78	7.39
	MEAN	8.47	5.24	9.75	1.91	1.91	1.91	4.62	1.91
SHR	% CV	34.41	95.57	109.28	173.21	173.21	173.21	90.38	173.21
	SD	2.91	5.01	10.66	3.31	3.31	3.31	4.18	3.31
	MEAN	54.43	50.42	66.56	52.40	29.77	44.61	29.30	29.67
GAT	% CV	9.59	8.14	5.33	8.51	3.42	7.09	27.04	13.50
	SD	5.22	4.10	3.55	4.46	1.02	3.16	7.92	4.01
	MEAN	59.14	53.59	67.11	57.68	49.82	56.97	37.98	48.34
COL	% CV	10.20	8.32	5.69	5.52	7.17	16.46	35.46	15.74
	SD	6.04	4.46	3.82	3.18	3.57	9.38	13.47	7.61

Appendix B. (continued) Macroinvertebrate metric, percent coefficient of variation, and standard deviation values for a three replicate set at each sample site. Samples were collected during the spring and fall of 2005 in Menominee County, Wisconsin.

SEASON		Spring	spring	spring	spring	spring	spring	spring	spring
SITE		9	10	11	12	13	14	15	16
ORDER		3	3	3	3	3	3	3	3
	MEAN	2.29	2.46	3.40	2.84	2.18	2.45	2.59	2.14
BI	% CV	5.78	16.81	7.18	15.70	15.49	2.60	14.46	3.51
	SD	0.13	0.41	0.24	0.45	0.34	0.06	0.37	0.08
	MEAN	2.50	2.56	3.85	2.98	2.85	2.47	2.69	2.28
BI 10	% CV	7.56	14.97	4.23	13.11	8.40	3.07	14.99	4.46
	SD	0.19	0.38	0.16	0.39	0.24	0.08	0.40	0.10
	MEAN	2.79	3.02	3.87	3.04	3.17	2.82	2.96	2.90
TOLVAL	% CV	4.37	7.27	7.41	11.67	6.86	4.19	4.27	3.91
	SD	0.12	0.22	0.29	0.36	0.22	0.12	0.13	0.11
	MEAN	28.00	36.67	22.67	28.33	28.00	33.00	33.67	31.33
SR	% CV	10.71	8.33	2.55	5.39	10.71	9.09	13.39	9.21
	SD	3.00	3.06	0.58	1.53	3.00	3.00	4.51	2.89
	MEAN	23.67	31.33	22.00	26.00	25.00	29.00	30.33	26.33
GR	% CV	14.84	3.69	4.55	10.18	10.58	6.90	12.48	10.96
	SD	3.51	1.15	1.00	2.65	2.65	2.00	3.79	2.89
	MEAN	3.36	4.27	3.39	3.87	3.34	4.20	4.27	3.61
DIV	% CV	8.09	2.07	9.56	6.01	15.34	3.27	1.73	13.99
	SD	0.27	0.09	0.32	0.23	0.51	0.14	0.07	0.51
	MEAN	56.20	51.93	54.04	54.39	61.53	52.88	54.36	64.82
COUNT_EPT	% CV	5.03	17.57	9.56	6.87	8.44	11.98	4.82	6.55
	SD	2.83	9.12	5.17	3.74	5.20	6.33	2.62	4.25
	MEAN	19.96	20.04	18.24	20.82	18.81	21.76	19.05	11.32
SCR	% CV	5.10	31.24	31.55	24.02	21.79	19.60	5.56	24.43
	SD	1.02	6.26	5.75	5.00	4.10	4.26	1.06	2.77
	MEAN	25.55	29.46	51.97	36.46	22.11	28.28	31.31	38.24
FIL	% CV	8.73	22.02	6.06	5.77	15.31	24.65	18.87	5.41
	SD	2.23	6.49	3.15	2.10	3.39	6.97	5.91	2.07
	MEAN	3.83	11.02	9.08	2.71	0.00	0.00	3.32	4.62
SHR	% CV	86.60	8.19	33.02	173.21	0.00	0.00	173.21	90.38
	SD	3.31	0.90	3.00	4.69	0.00	0.00	5.76	4.18
	MEAN	51.16	44.62	28.61	39.96	53.63	43.28	47.31	42.30
GAT	% CV	2.39	6.60	8.39	11.22	10.50	4.79	10.61	8.80
	SD	1.22	2.94	2.40	4.48	5.63	2.07	5.02	3.72
	MAN	62.75	59.81	67.74	61.53	63.03	56.90	64.73	66.88
COL	% CV	2.94	14.59	9.85	8.44	9.75	8.62	4.45	9.86
	SD	1.84	8.73	6.67	5.20	6.15	4.91	2.88	6.59

Appendix B. (continued) Macroinvertebrate metric, percent coefficient of variation, and standard deviation values for a three replicate set at each sample site. Samples were collected during the spring and fall of 2005 in Menominee County, Wisconsin.

SEASON		spring	spring	spring	spring	Fall	fall	fall	fall
SITE		17	18	19	20	1	2	3	4
ORDER		4	5	5	5	2	2	2	2
	MEAN	4.33	2.64	3.85	3.28	1.60	2.74	2.03	3.29
BI	% CV	10.67	6.97	20.75	4.14	3.82	16.11	10.48	9.37
	SD	0.46	0.18	0.80	0.14	0.06	0.44	0.21	0.31
	MEAN	3.52	2.90	3.83	3.36	1.62	2.61	2.03	3.06
BI 10	% CV	9.37	5.38	19.30	7.54	8.18	17.95	8.78	2.95
	SD	0.33	0.16	0.74	0.25	0.13	0.47	0.18	0.09
	MEAN	3.58	3.09	3.78	3.72	2.01	2.66	2.38	3.00
TOLVAL	% CV	7.04	4.86	16.16	8.94	3.16	26.38	23.62	2.47
	SD	0.25	0.15	0.61	0.33	0.06	0.70	0.56	0.07
	MEAN	23.00	34.67	35.00	23.00	25.00	26.67	28.67	26.00
SR	% CV	4.35	9.27	13.09	30.12	4.00	4.33	23.74	11.54
	SD	1.00	3.21	4.58	6.93	1.00	1.15	6.81	3.00
	MEAN	21.67	31.33	32.67	20.33	24.67	26.00	25.33	24.00
GR	% CV	7.05	9.75	12.37	27.97	4.68	3.85	21.74	15.02
	SD	1.53	3.06	4.04	5.69	1.15	1.00	5.51	3.61
	MEAN	3.28	4.29	4.56	3.59	3.85	3.69	3.72	3.68
DIV	% CV	6.59	8.16	3.70	10.91	5.49	6.23	9.01	7.00
	SD	0.22	0.35	0.17	0.39	0.21	0.23	0.34	0.26
	MEAN	35.00	52.35	36.97	36.79	54.87	46.50	49.22	45.64
COUNT_EPT	% CV	11.40	3.62	29.72	14.03	11.07	23.60	3.59	19.08
	SD	3.99	1.90	10.99	5.16	6.07	10.97	1.77	8.71
	MEAN	23.92	31.41	22.30	20.44	32.56	25.10	33.89	36.79
SCR	% CV	17.24	13.50	18.89	26.80	6.80	35.96	16.55	22.46
	SD	4.12	4.24	4.21	5.48	2.21	9.03	5.61	8.26
	MEAN	44.97	29.11	31.72	32.32	21.43	32.02	25.98	32.86
FIL	% CV	15.66	2.66	5.10	28.24	21.76	34.23	23.88	36.14
	SD	7.04	0.77	1.62	9.13	4.66	10.96	6.20	11.87
	MEAN	1.91	13.27	12.46	5.76	17.25	18.20	19.10	6.03
SHR	% CV	173.21	14.52	6.41	100.17	20.58	32.44	61.66	87.94
	SD	3.31	1.93	0.80	5.77	3.55	5.90	11.77	5.31
	MEAN	31.45	39.78	41.35	47.91	33.30	34.57	27.46	25.77
GAT	% CV	11.63	11.39	7.03	10.59	14.12	39.64	8.93	10.40
	SD	3.66	4.53	2.91	5.07	4.70	13.70	2.45	2.68
	MEAN	61.95	53.39	57.69	67.33	41.55	52.40	39.57	44.83
COL	% CV	7.24	7.73	5.51	10.94	4.80	8.75	11.58	22.37
	SD	4.48	4.13	3.18	7.36	2.00	4.58	4.58	10.03

Appendix B. (continued) Macroinvertebrate metric, percent coefficient of variation, and standard deviation values for a three replicate set at each sample site. Samples were collected during the spring and fall of 2005 in Menominee County, Wisconsin.

SEASON		fall	fall	fall	Fall	fall	fall	fall	fall
SITE		5	6	7	8	9	10	11	12
ORDER		3	2	3	1	3	3	3	3
	MEAN	3.42	1.90	2.57	3.82	2.37	1.92	3.36	3.56
BI	% CV	12.75	5.21	7.50	2.87	14.50	6.70	4.22	6.04
	SD	0.44	0.10	0.19	0.11	0.34	0.13	0.14	0.21
	MEAN	2.81	2.39	2.61	3.12	2.75	1.86	3.28	3.21
BI 10	% CV	3.35	4.74	7.53	8.48	18.67	6.97	1.95	8.72
	SD	0.09	0.11	0.20	0.26	0.51	0.13	0.06	0.28
	MEAN	2.83	2.59	2.80	3.10	2.88	2.09	3.37	2.90
TOLVAL	% CV	6.94	16.99	16.25	12.47	14.17	9.34	7.92	8.07
	SD	0.20	0.44	0.45	0.39	0.41	0.20	0.27	0.23
	MEAN	25.00	26.33	22.33	18.00	21.33	22.00	18.67	26.33
SR	% CV	10.58	10.96	11.27	25.46	9.76	22.73	25.32	17.12
	SD	2.65	2.89	2.52	4.58	2.08	5.00	4.73	4.51
	MEAN	22.00	25.33	22.00	16.00	20.67	22.00	16.33	24.33
GR	% CV	16.39	8.22	9.09	22.53	7.39	22.73	24.74	14.43
	SD	3.61	2.08	2.00	3.61	1.53	5.00	4.04	3.51
	MEAN	3.38	3.36	3.41	2.83	3.44	3.63	3.00	3.54
DIV	% CV	14.04	4.77	6.22	6.28	6.32	6.32	13.74	9.29
	SD	0.47	0.16	0.21	0.18	0.22	0.23	0.41	0.33
	MEAN	51.07	58.93	49.60	48.65	52.78	50.29	52.39	53.39
COUNT_EPT	% CV	14.29	2.78	1.17	6.75	16.58	16.22	17.83	7.58
	SD	7.30	1.64	0.58	3.28	8.75	8.16	9.34	4.05
	MEAN	32.84	24.01	33.59	42.51	32.63	38.51	33.58	33.16
SCR	% CV	17.61	11.89	8.46	4.76	17.51	19.53	21.48	9.69
	SD	5.78	2.86	2.84	2.02	5.71	7.52	7.21	3.21
	MEAN	37.41	18.91	37.26	31.29	31.41	28.01	49.94	43.45
FIL	% CV	41.77	16.52	3.31	19.75	23.78	18.21	18.59	9.61
	SD	15.63	3.12	1.23	6.18	7.47	5.10	9.28	4.17
	MEAN	6.54	14.06	5.74	1.91	14.20	7.95	2.71	16.08
SHR	% CV	21.12	46.77	0.00	173.21	29.80	26.72	173.21	27.22
	SD	1.38	6.58	0.00	3.31	4.23	2.12	4.69	4.38
	MEAN	23.80	47.69	24.57	14.94	31.00	28.38	16.98	16.02
GAT	% CV	8.17	6.66	7.73	41.52	12.60	28.04	16.75	10.47
	SD	1.94	3.17	1.90	6.20	3.90	7.96	2.84	1.68
	MEAN	47.90	53.95	47.49	36.58	47.52	42.57	55.20	47.88
COL	% CV	26.63	4.50	3.49	14.52	17.80	21.98	14.58	8.41
	SD	12.76	2.43	1.66	5.31	8.46	9.36	8.05	4.03

Appendix B. (continued) Macroinvertebrate metric, percent coefficient of variation, and standard deviation values for a three replicate set at each sample site. Samples were collected during the spring and fall of 2005 in Menominee County, Wisconsin.

SEASON		fall	fall	Fall	Fall	fall	fall	fall	Fall
SITE		13	14	15	16	17	18	19	20
ORDER		3	3	3	3	4	5	5	5
	MEAN	3.76	2.73	2.06	2.17	2.49	2.42	2.64	2.94
BI	% CV	9.69	8.31	7.80	17.11	2.41	6.72	2.75	1.85
	SD	0.36	0.23	0.16	0.37	0.06	0.16	0.07	0.05
	MEAN	3.68	2.49	2.11	2.46	2.98	2.70	2.80	3.08
BI 10	% CV	8.15	14.48	8.19	11.70	4.26	9.69	2.39	1.90
	SD	0.30	0.36	0.17	0.29	0.13	0.26	0.07	0.06
	MEAN	3.54	2.72	2.45	2.79	3.08	3.20	3.26	3.53
TOLVAL	% CV	14.25	8.24	13.66	12.14	2.57	5.64	10.69	8.46
	SD	0.50	0.22	0.33	0.34	0.08	0.18	0.35	0.30
	MEAN	26.00	28.67	32.33	30.67	24.00	28.00	22.67	32.33
SR	% CV	6.66	5.33	7.14	21.22	12.50	15.57	5.09	11.71
	SD	1.73	1.53	2.31	6.51	3.00	4.36	1.15	3.79
	MEAN	23.67	25.67	28.33	28.33	23.33	24.67	21.33	29.00
GR	% CV	6.45	5.95	4.08	19.44	15.05	12.39	10.83	12.43
	SD	1.53	1.53	1.15	5.51	3.51	3.06	2.31	3.61
	MEAN	3.50	3.83	4.06	3.78	2.99	3.51	3.45	3.97
DIV	% CV	4.63	7.95	2.69	10.80	20.71	4.45	9.04	7.52
	SD	0.16	0.30	0.11	0.41	0.62	0.16	0.31	0.30
	MEAN	49.08	59.65	65.14	67.38	42.86	47.70	48.85	48.10
COUNT_EPT	% CV	13.62	6.19	7.48	9.08	12.99	9.27	6.92	10.56
	SD	6.69	3.69	4.87	6.12	5.57	4.42	3.38	5.08
	MEAN	42.69	20.15	20.66	18.63	60.37	45.96	43.20	44.43
SCR	% CV	18.78	14.74	18.64	15.27	14.72	3.81	24.48	3.41
	SD	8.02	2.97	3.85	2.84	8.89	1.75	10.57	1.52
	MEAN	21.05	40.14	34.27	44.04	20.80	34.23	23.38	21.38
FIL	% CV	67.54	16.75	17.69	17.52	39.57	4.54	35.53	8.35
	SD	14.22	6.72	6.06	7.72	8.23	1.55	8.31	1.78
	MEAN	9.88	11.33	13.58	7.33	8.56	11.38	15.07	18.88
SHR	% CV	17.26	44.06	38.13	18.82	28.56	21.34	24.71	39.64
	SD	1.71	4.99	5.18	1.38	2.45	2.43	3.72	7.48
	MEAN	31.50	30.12	38.81	31.27	13.01	17.39	25.91	26.99
GAT	% CV	48.44	12.36	9.22	21.16	44.29	11.59	59.99	8.58
	SD	15.26	3.72	3.58	6.62	5.76	2.01	15.54	2.31
	MEAN	42.01	54.99	57.44	60.69	25.38	39.61	37.93	35.63
COL	% CV	20.61	5.94	3.94	13.45	38.24	5.99	27.91	8.94
	SD	8.66	3.27	2.26	8.17	9.71	2.37	10.59	3.19

Appendix C.

Taxa lists of all samples. The sample ID numbers, e.g. 20050505-40-01, are listed at the beginning of each sample and at the top of each page which: lists the year (2005), the month (05), the day that the sample was collected (05), the county that the sample was collected in (40), and the site number code that the sample was given (01). Organism ID numbers are also listed for each sample, e.g. 02010116, where: the order (02), the family (01), the genus (01), and the species (16) is listed. The column TOLVAL gives the pollution tolerance value for each species as described by Table 1. The column TFG lists the trophic feeding group for each species where 1 = predator, 2 = gatherer, 3 = filter-feeder, 4 = filter feeder, 5 = shredder, and 6 = herbivore. Finally, TAXKEY lists the taxonomic key used to identify each insect. Each sample is sorted in ascending order starting with the greatest number of macroinvertebrates in the *first* sample. The other three replicates generally follow similar patterns.

West Branch of the Wolf River Project Taxa List

SAMPLE NUMBER 20050505-40-01

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
1	02010116	30	43	91	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
1	02040404	22	21	43	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
1	07020502	12	1	32	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
1	08280100	11	6	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
1	04190103	9	0	0	TRICHOPTERA	NEOPHYLAX	OLIGIUS	3.0	2	Bright 2003
1	08110211	7	0	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
1	08300900	6	2	1	DIPTERA	C. (CRICOTOPUS)	**UNIDENTIFIED**	7.0	5	Epler 2001
1	07020501	6	0	8	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
1	01050401	6	3	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
1	01060405	5	0	0	PLECOPTERA	ISOPERLA	FRISONI	0.0	1	Hilsenhoff 1995,82
1	02040406	5	6	8	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
1	08301401	4	1	1	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
1	05010301	3	0	2	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
1	04040707	3	11	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
1	02060201	2	5	8	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
1	08301405	2	0	0	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
1	14040000	2	0	0	GASTROPODA	**UNIDENTIFIED**			2	Pennak 1978

SAMPLE NUMBER 20050505-40-01

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
1	02070205	1	3	4	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
1	04020201	1	0	0	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
1	08070300	1	0	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
1	02040601	1	0	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
1	08322501	1	0	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
1	02010116	1	2	0	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
1	02060400	1	1	4	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
1	08310502	1	0	1	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
1	08303000	0	1	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
1	01050801	0	5	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
1	04010202	0	1	2	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
1	08306900	0	1	1	DIPTERA	HELENIELLA	**UNIDENTIFIED**			Epler 2001
1	04010101	0	0	2	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
1	01050100	0	5	5	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
1	04110103	0	0	2	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
1	08140100	0	1	0	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
1	08305404	0	1	0	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
1	01060401	0	0	8	PLECOPTERA	ISOPERLA	BILINEATA	4.0	1	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-01

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
1	08310800	0	2	1	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
1	04090100	0	0	4	TRICHOPTERA	MOLANNA	**UNIDENTIFIED**	6.0	2	Hilsenhoff 1995
1	01060407	0	4	0	PLECOPTERA	ISOPERLA	MARLYNIA	4.0	1	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	02040404	25	16	6	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
2	02010116	23	21	59	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
2	07020502	15	0	34	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
2	08140100	12	10	7	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
2	04020100	8	16	0	TRICHOPTERA	AGAPETUS	**UNIDENTIFIED**	0.0	2	Hilsenhoff 1995
2	07020501	6	10	18	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
2	04040705	3	0	0	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
2	04110101	3	0	1	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
2	08280300	3	0	0	DIPTERA	POTTHASTIA	**UNIDENTIFIED**	2.0	3	Epler 2001
2	04190100	2	0	0	TRICHOPTERA	NEOPHYLAX	**UNIDENTIFIED**	3.0	2	Hilsenhoff 1995
2	08110310	2	0	1	DIPTERA	PROSIMULIUM	VERNALE		4	Merritt, Cummins 96
2	01050401	2	1	0	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	08310400	1	0	0	DIPTERA	PARATANYTARSUS	**UNIDENTIFIED**	6.0		Epler 2001
2	02060400	1	0	0	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
2	08304806	1	0	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
2	09010201	1	4	1	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
2	04130200	1	0	0	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995
2	02040406	1	1	1	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
2	08070300	1	0	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
2	04020300	1	0	15	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
2	08306900	1	1	1	DIPTERA	HELENIELLA	**UNIDENTIFIED**			Epler 2001
2	08310800	1	0	0	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
2	02060400	1	0	0	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
2	08325600	0	0	1	DIPTERA	POLYPEDILUM	**UNIDENTIFIED**	6.0	5	Epler 2001
2	02040414	0	16	10	EPHEMEROPTERA	EPHEMERELLA	D. DOROTHEA	1.0	3	Hilsenhoff 1995,82
2	08303000	0	0	4	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
2	08310100	0	1	0	DIPTERA	CLADOTANYTARSUS	**UNIDENTIFIED**	7.0	3	Epler 2001
2	02070205	0	4	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
2	08301300	0	0	1	DIPTERA	EPOICOCLADIUS	**UNIDENTIFIED**	4.0	3	Epler 2001
2	04040100	0	0	3	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	08280200	0	1	0	DIPTERA	PAGASTIA	**UNIDENTIFIED**	1.0		Epler 2001
2	08030215	0	1	0	DIPTERA	BEZZIA/PALPOMYIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
2	08322501	0	2	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
2	07051000	0	0	1	COLEOPTERA	COPTOTOMUS	**UNIDENTIFIED**		1	Hilsenhoff 1995
2	08010101	0	0	2	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
2	01060412	0	2	0	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
2	01060412	0	0	3	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
2	04040707	0	1	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
2	04060100	0	3	1	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
2	02040403	0	0	1	EPHEMEROPTERA	EPHEMERELLA	EXCRUCIANS	1.0	3	Hilsenhoff 1995,82
2	04140201	0	4	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
2	08310502	0	1	3	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
2	05010301	0	3	1	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966

SAMPLE NUMBER 20050505-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	02010116	30	2	39	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
3	02040404	15	20	39	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	08140100	12	15	4	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
3	02040406	9	7	14	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
3	02040414	6	2	6	EPHEMEROPTERA	EPHEMERELLA	D. DOROTHEA	1.0	3	Hilsenhoff 1995,82
3	02070205	2	0	11	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
3	08070300	2	0	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
3	09010201	2	3	6	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
3	07020502	2	2	7	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
3	01060412	2	1	3	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
3	04060100	1	1	0	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
3	03040101	1	0	0	ODONATA	CORDULEGASTER	MACULATA	3.0	1	Needham et al. 2000
3	08010101	1	0	0	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
3	01050401	1	0	5	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
3	01050100	1	1	3	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
3	04010202	1	6	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
3	08305200	0	0	7	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
3	08272300	0	0	3	DIPTERA	RHEOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
3	01030100	0	8	0	PLECOPTERA	LEUCTRA	**UNIDENTIFIED**	0.0	5	Hilsenhoff 1995
3	04020201	0	0	1	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005

SAMPLE NUMBER 20050505-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	08304806	0	2	2	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
3	04070500	0	1	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
3	03010401	0	1	0	ODONATA	BOYERIA	VINOSA	2.0	1	Needham et al. 2000
3	08301900	0	0	1	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
3	01020201	0	0	1	PLECOPTERA	HAPLOPERLA	BREVIS	1.0	2	Hitchcock 1974
3	08301401	0	2	20	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
3	08310800	0	0	2	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
3	08306700	0	1	9	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
3	01050100	0	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
3	08301405	0	5	2	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
3	02040405	0	1	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
3	01010301	0	0	1	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
3	04140201	0	3	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
3	04020300	0	0	2	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
3	08304708	0	2	4	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001
3	04020100	0	1	0	TRICHOPTERA	AGAPETUS	**UNIDENTIFIED**	0.0	2	Hilsenhoff 1995
3	08303000	0	4	2	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
3	02060201	0	4	7	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	04040301	0	0	1	TRICHOPTERA	DIPLECTRONA	MODESTA	0.0	4	Hilsenhoff 1995
3	08280100	0	17	4	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
3	08306900	0	0	1	DIPTERA	HELENIELLA	**UNIDENTIFIED**			Epler 2001
3	04190100	0	1	0	TRICHOPTERA	NEOPHYLAX	**UNIDENTIFIED**	3.0	2	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-04

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
4	02040404	84	25	135	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
4	07020600	28	12	36	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
4	02011102	25	0	17	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
4	02040601	20	17	14	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
4	08326203	6	3	9	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
4	04040100	6	3	6	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
4	08270700	6	10	12	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
4	08301401	6	5	4	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
4	08272600	5	0	0	DIPTERA	TELOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
4	04040401	4	0	3	TRICHOPTERA	MACROSTEMUM	ZEBRATUM	3.0	4	Hilsenhoff 1995
4	03060505	3	3	3	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000

SAMPLE NUMBER 20050505-40-04

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
4	01050401	2	0	2	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
4	02061500	2	0	3	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
4	08310504	2	0	0	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
4	07020604	2	3	1	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
4	04060100	1	0	0	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
4	07020502	1	0	0	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
4	04040707	1	3	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
4	08110218	1	0	0	DIPTERA	SIMULIUM	VITTATUM	4.0	4	Hilsenhoff 1985a
4	04010101	1	1	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
4	04070100	1	0	1	TRICHOPTERA	CERACLEA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
4	08305200	1	0	0	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
4	08322900	1	0	0	DIPTERA	PARACHIRONOMUS	**UNIDENTIFIED**	5.0	1	Epler 2001
4	01060000	0	1	0	PLECOPTERA	**UNIDENTIFIED**			1	Hilsenhoff 1995
4	09010201	0	0	1	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
4	08140800	0	0	1	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
4	05010301	0	0	2	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
4	08140100	0	0	2	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
4	08326202	0	4	0	DIPTERA	P. (URESIPEDILUM)	AVICEPS	5.0	5	Epler 2001

SAMPLE NUMBER 20050505-40-04

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
4	08301900	0	0	2	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
4	08070300	0	1	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
4	02040400	0	0	12	EPHEMEROPTERA	EPHEMERELLA	**UNIDENTIFIED**		3	Hilsenhoff 1995
4	04070500	0	0	1	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
4	08303000	0	0	1	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
4	02170100	0	23	16	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
4	08310800	0	2	6	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001

SAMPLE NUMBER 20050505-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	04040702	21	18	8	TRICHOPTERA	CERATOPSYCHE	ALTERNANS	3.0	4	Schmude, Hils. 1986
5	04040100	19	25	36	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
5	07020600	17	23	28	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
5	08140100	12	3	5	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
5	02011102	10	13	9	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
5	02070205	8	10	7	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
5	07020500	7	17	20	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
5	04040707	6	4	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050505-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	04020202	5	4	1	TRICHOPTERA	GLOSSOSOMA	NIGRIOR	0.0	2	Wiggins 1996
5	02040404	4	1	0	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
5	07020604	3	5	3	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
5	03060505	3	6	6	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
5	08270700	3	3	2	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
5	08301401	3	5	4	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
5	08110211	2	0	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
5	08304806	2	1	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
5	02060201	2	1	0	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
5	02061500	2	6	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
5	08301900	2	0	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
5	02040601	2	1	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
5	01050401	2	1	2	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
5	02010116	1	1	1	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
5	08326203	1	1	1	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
5	02050101	1	3	13	EPHEMEROPTERA	EPHEMERA	SIMULANS	1.0	3	McCafferty 1975
5	14010100	1	0	0	GASTROPODA	FERRISIA	**UNIDENTIFIED**		2	Pennak 1978
5	08274200	1	0	0	DIPTERA	P. (HOLOTANYPUS)	**UNIDENTIFIED**	9.0	1	Epler 2001

SAMPLE NUMBER 20050505-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	08310504	1	2	0	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
5	08010101	1	0	0	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
5	01060410	1	2	0	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
5	04040703	1	0	0	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
5	04040700	1	0	0	TRICHOPTERA	CERATOPSYCHE	**UNIDENTIFIED**		4	Hilsenhoff 1995
5	08070300	1	1	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
5	08322900	1	0	0	DIPTERA	PARACHIRONOMUS	**UNIDENTIFIED**	5.0	1	Epler 2001
5	08140800	1	0	0	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
5	08303000	1	2	2	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
5	08272700	0	0	1	DIPTERA	THIENEMANNIMYIA	**UNIDENTIFIED**	6.0	1	Epler 2001
5	07020502	0	0	7	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
5	04080501	0	1	0	TRICHOPTERA	HYDATOPHYLAX	ARGUS	2.0	5	Hilsenhoff 1995
5	09010201	0	0	2	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
5	02061500	0	0	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995,82
5	08301304	0	0	1	DIPTERA	EPOICOCLADIUS	SP. #3 JACOBSEN	4.0	3	Epler 2001
5	08305404	0	1	2	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
5	02040406	0	7	4	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
5	04110103	0	5	0	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	01050100	0	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
5	05010301	0	2	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
5	08270800	0	2	1	DIPTERA	DJALMABATISTA	**UNIDENTIFIED**	3.0	1	Epler 2001

SAMPLE NUMBER 20050505-40-06

Menominee Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
6	02070205	39	40	43	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
6	07020500	21	10	21	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
6	07020600	11	6	3	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
6	08030300	6	0	1	DIPTERA	CULICOIDES	**UNIDENTIFIED**	10.0	1	Hilsenhoff 1995
6	08306700	5	0	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
6	01050401	4	5	0	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
6	08310800	4	7	10	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
6	04040100	4	10	3	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
6	04020202	4	1	1	TRICHOPTERA	GLOSSOSOMA	NIGRIOR	0.0	2	Wiggins 1996
6	08301402	4	0	3	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
6	01020203	3	1	0	PLECOPTERA	HAPLOPERLA	ORPHA		2	Hitchcock 1974
6	02061500	3	2	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-06

Menominee Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
6	02040406	3	3	5	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
6	08030215	2	0	1	DIPTERA	BEZZIA/PALPOMYIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
6	05010301	2	1	1	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
6	08304806	2	7	13	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
6	08326202	2	0	4	DIPTERA	P. (URESIPEDILUM)	AVICEPS	5.0	5	Epler 2001
6	04110101	1	9	11	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
6	08110211	1	6	1	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
6	01080300	1	0	0	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
6	02050101	1	0	0	EPHEMEROPTERA	EPHEMERA	SIMULANS	1.0	3	McCafferty 1975
6	08310504	1	0	0	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
6	08270700	1	0	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
6	01060410	1	3	0	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
6	02060201	1	18	10	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
6	08010101	1	0	3	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
6	08140100	1	0	1	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
6	08140800	1	0	0	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
6	01050100	0	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
6	07020501	0	0	3	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050505-40-06

Menominee Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
6	08110311	0	0	12	DIPTERA	PROSIMULIUM	**PUPA**		4	Merritt, Cummins 96
6	08110304	0	5	1	DIPTERA	PROSIMULIUM	MIXTUM	3.0	4	Hilsenhoff 1985a
6	04040702	0	0	1	TRICHOPTERA	CERATOPSYCHE	ALTERNANS	3.0	4	Schmude, Hils. 1986
6	02011102	0	3	3	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
6	08301900	0	0	3	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
6	08070300	0	0	5	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
6	08326203	0	1	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
6	04050301	0	1	0	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
6	09010201	0	1	2	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
6	03060505	0	0	2	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
6	02010116	0	3	5	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	07020502	34	20	40	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
7	07020600	29	12	13	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
7	07020500	26	27	2	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
7	08010101	21	10	10	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	08301401	12	15	20	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
7	08070300	8	2	2	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
7	04020300	3	0	0	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
7	08326202	2	0	0	DIPTERA	P. (URESIPEDILUM)	AVICEPS	5.0	5	Epler 2001
7	03060505	2	1	0	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
7	04110101	2	1	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
7	08304808	1	0	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
7	08140100	1	5	5	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
7	02040406	1	6	1	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
7	08304806	1	1	2	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
7	08270801	1	0	0	DIPTERA	DJALMABATISTA	PULCHER	3.0	1	Epler 2001
7	02010116	1	5	17	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
7	07020601	1	2	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
7	08280200	1	0	0	DIPTERA	PAGASTIA	**UNIDENTIFIED**	1.0		Epler 2001
7	08310504	1	5	8	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
7	08322501	1	0	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
7	08140800	0	10	7	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
7	01060410	0	1	0	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	04040100	0	15	16	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
7	08030215	0	1	0	DIPTERA	BEZZIA/PALPOMYIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
7	02070205	0	1	1	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
7	04130200	0	1	1	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995
7	04070600	0	5	2	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
7	04010203	0	2	4	TRICHOPTERA	MICRASEMA	WATAGA	2.0	5	Hilsenhoff 1985b
7	08110214	0	0	1	DIPTERA	SIMULIUM	TUBEROSUM	4.0	4	Hilsenhoff 1985a
7	02040601	0	3	4	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
7	01060412	0	0	2	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
7	04030101	0	1	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
7	04040707	0	6	14	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
7	01050100	0	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
7	04010101	0	0	2	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
7	03040101	0	1	0	ODONATA	CORDULEGASTER	MACULATA	3.0	1	Needham et al. 2000
7	08110211	0	1	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
7	08301900	0	0	3	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
7	08303000	0	2	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
7	09010201	0	1	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972

SAMPLE NUMBER 20050505-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	02061500	0	3	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
7	02060201	0	3	2	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
7	02040405	0	2	2	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
7	04020201	0	2	0	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005

SAMPLE NUMBER 20050505-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	07020600	19	53	16	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
8	08301900	17	8	10	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
8	08110216	8	3	20	DIPTERA	SIMULIUM	VERECUNDUM	6.0	4	Hilsenhoff 1985a
8	07020502	7	0	0	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
8	02061506	7	7	3	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
8	08310504	6	1	1	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
8	02010116	6	0	0	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
8	02060602	6	2	6	EPHEMEROPTERA	STENONEMA	FEMORATUM	5.0	2	Hilsenhoff 1995,82
8	08110214	5	4	27	DIPTERA	SIMULIUM	TUBEROSUM	4.0	4	Hilsenhoff 1985a
8	01050401	4	2	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
8	04040100	3	25	12	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	02060201	3	0	0	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
8	02070205	3	3	10	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
8	08303000	3	6	7	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
8	02060500	3	0	0	EPHEMEROPTERA	STENACRON	**UNIDENTIFIED**		3	Hilsenhoff 1995
8	08301401	3	1	0	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
8	08310800	3	1	2	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
8	07020604	3	5	0	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
8	08310703	2	0	0	DIPTERA	STEMPELLINA	SP. A	2.0		Epler 2001
8	07020500	2	0	3	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
8	04020201	2	2	1	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
8	04040707	2	0	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
8	08270700	2	4	1	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
8	08070300	2	4	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
8	03060500	1	0	2	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
8	08304806	1	2	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
8	08010101	1	0	0	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
8	05010301	1	2	2	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
8	02061100	1	1	0	EPHEMEROPTERA	LEUCROCUTA	**UNIDENTIFIED**		2	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	04110101	1	3	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
8	02040601	1	5	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
8	03060402	1	0	0	ODONATA	HYLOGOMPHUS	VIRIDIFRONS		1	Needham et al. 2000
8	08140800	1	17	2	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
8	02061500	1	0	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
8	02040405	0	1	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
8	01050300	0	0	4	PLECOPTERA	NEOPERLA	**UNIDENTIFIED**		1	Hitchcock 1974
8	03010401	0	1	1	ODONATA	BOYERIA	VINOSA	2.0	1	Needham et al. 2000
8	01020203	0	0	2	PLECOPTERA	HAPLOPERLA	ORPHA		2	Hitchcock 1974
8	04081300	0	0	1	TRICHOPTERA	PYCNOPSYCHE	**UNIDENTIFIED**	4.0	5	Hilsenhoff 1995
8	02040404	0	1	4	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
8	07020301	0	1	1	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
8	01050100	0	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
8	01050000	0	0	1	PLECOPTERA	**UNIDENTIFIED**			1	Hilsenhoff 1995
8	08326300	0	0	1	DIPTERA	STENOCHIRONOMUS	**UNIDENTIFIED**	5.0	5	Epler 2001
8	08301402	0	2	0	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
8	02061509	0	0	1	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
8	08304000	0	0	1	DIPTERA	RHEOCRICOTOPUS	**UNIDENTIFIED**	6.0	3	Epler 2001

SAMPLE NUMBER 20050505-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	02061503	0	1	0	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
8	08326203	0	1	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
8	02040400	0	1	0	EPHEMEROPTERA	EPHEMERELLA	**UNIDENTIFIED**		3	Hilsenhoff 1995
8	09010201	0	0	1	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972

SAMPLE NUMBER 20050505-40-09

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
9	02010116	95	51	44	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
9	04040707	29	9	4	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
9	02040406	24	4	7	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
9	07020600	14	3	5	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
9	08110211	12	4	8	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
9	01050100	9	3	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
9	02040404	8	2	4	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
9	07020500	7	3	3	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
9	07020502	7	9	4	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
9	08010101	6	5	4	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
9	04040100	5	2	2	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-09

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
9	08301401	5	3	1	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
9	08140100	4	4	3	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
9	08303000	4	0	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
9	04040708	3	2	1	TRICHOPTERA	CERATOPSYCHE	WALKERI	1.0	4	Schmude, Hils. 1986
9	04040706	3	3	1	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
9	08301900	3	0	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
9	02070205	3	3	3	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
9	08304806	2	0	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
9	02060602	2	0	0	EPHEMEROPTERA	STENONEMA	FEMORATUM	5.0	2	Hilsenhoff 1995,82
9	07020604	2	0	0	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
9	04010101	1	0	2	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
9	08070300	1	2	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
9	02040601	1	2	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
9	04040703	1	0	0	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
9	01050401	1	3	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
9	08310800	1	2	1	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
9	01050800	1	0	0	PLECOPTERA	AGNETINA	**UNIDENTIFIED**		1	Hilsenhoff 1995
9	02060201	1	4	2	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050505-40-09

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
9	05010301	1	2	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
9	03060505	0	2	0	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
9	07020301	0	2	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
9	01060410	0	0	1	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
9	08305404	0	1	0	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
9	08280100	0	1	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
9	02040405	0	0	2	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
9	08304808	0	3	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
9	02061509	0	1	0	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
9	01070100	0	1	0	PLECOPTERA	PTERONARCYS	**UNIDENTIFIED**	0.0	5	Hilsenhoff 1995,82
9	08020101	0	0	1	DIPTERA	BLEPHARICERA	TENUIPES	0.0	2	Hilsenhoff 1995
9	04060100	0	1	1	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
9	08301402	0	4	1	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
9	09010201	0	1	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972

SAMPLE NUMBER 20050505-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	07020502	26	4	1	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050505-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	02010116	20	5	10	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
10	08010101	15	2	2	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
10	08301401	12	2	2	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
10	02060201	8	12	9	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
10	04140201	7	5	12	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
10	04040707	7	7	12	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
10	07020600	6	5	3	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
10	09010201	6	2	1	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
10	01050100	6	5	2	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
10	04040708	5	22	12	TRICHOPTERA	CERATOPSYCHE	WALKERI	1.0	4	Schmude, Hils. 1986
10	08304806	5	0	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
10	02040406	5	7	6	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
10	08310502	4	3	0	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
10	08110211	4	0	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
10	08301402	4	1	5	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
10	05010301	3	1	1	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
10	08280200	3	0	0	DIPTERA	PAGASTIA	**UNIDENTIFIED**	1.0		Epler 2001
10	04010202	3	3	1	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b

SAMPLE NUMBER 20050505-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	02070205	3	6	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
10	02061509	3	1	4	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
10	08300910	2	0	0	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
10	08303000	2	0	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
10	08322501	2	1	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
10	02040601	2	7	5	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
10	04010203	2	2	0	TRICHOPTERA	MICRASEMA	WATAGA	2.0	5	Hilsenhoff 1985b
10	08326203	2	1	1	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
10	02061500	2	0	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
10	08270700	2	0	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
10	01050100	1	0	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
10	07020500	1	0	0	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
10	04040701	1	0	0	TRICHOPTERA	CERATOPSYCHE	ALHEDRA	3.0	4	Schmude, Hils. 1986
10	04050301	1	1	2	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
10	01060410	1	1	0	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
10	04070600	1	1	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
10	01060501	1	1	0	PLECOPTERA	CLIOPERLA	CLIO	1.0		Hilsenhoff 1995
10	08305404	1	0	0	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001

SAMPLE NUMBER 20050505-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	02060500	1	0	0	EPHEMEROPTERA	STENACRON	**UNIDENTIFIED**		3	Hilsenhoff 1995
10	08301300	0	1	0	DIPTERA	EPOICOCLADIUS	**UNIDENTIFIED**	4.0	3	Epler 2001
10	08310504	0	2	3	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
10	08280100	0	2	1	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
10	08301405	0	0	2	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
10	01050401	0	4	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
10	08310800	0	1	1	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
10	04040200	0	0	4	TRICHOPTERA	HYDROPSYCHE	**UNIDENTIFIED**		4	Hilsenhoff 1995
10	08301900	0	1	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
10	04040100	0	0	3	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
10	04040706	0	1	1	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
10	02060602	0	0	2	EPHEMEROPTERA	STENONEMA	FEMORATUM	5.0	2	Hilsenhoff 1995,82
10	02040404	0	2	0	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
10	04020201	0	0	1	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
10	08300918	0	0	2	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
10	02061506	0	2	0	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
10	08140100	0	3	12	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
10	08306700	0	1	2	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001

SAMPLE NUMBER 20050505-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	07140200	0	0	1	COLEOPTERA	LISTRONOTUS	**UNIDENTIFIED**			Hilsenhoff 1995
10	02040405	0	1	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
10	08304808	0	2	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
10	04010101	0	1	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b

SAMPLE NUMBER 20050505-40-11

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
11	04040705	37	55	45	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
11	04040707	25	1	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
11	08304808	16	11	3	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
11	07140200	16	2	3	COLEOPTERA	LISTRONOTUS	**UNIDENTIFIED**			Hilsenhoff 1995
11	04110103	15	6	5	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
11	08326203	11	5	12	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
11	02010116	11	17	15	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
11	04040100	11	26	31	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
11	07020600	10	5	13	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
11	04140201	6	3	6	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
11	02011102	4	0	2	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050505-40-11

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
11	08300918	4	1	6	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
11	02040601	3	1	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
11	08310502	2	1	3	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
11	08306700	2	1	7	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
11	07020500	2	0	4	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
11	03060500	2	0	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
11	07020502	2	2	9	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
11	08326000	1	3	1	DIPTERA	P. (POLYPEDILUM)	**UNIDENTIFIED**	6.0	5	Epler 2001
11	08301900	1	0	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
11	08270700	1	0	1	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
11	07020301	1	0	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
11	03060505	1	1	2	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
11	02040404	1	0	2	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
11	02061509	1	1	2	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
11	08301406	0	1	2	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001
11	08070300	0	1	3	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
11	08322501	0	1	3	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
11	08305404	0	0	1	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001

SAMPLE NUMBER 20050505-40-11

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
11	08110211	0	1	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a

SAMPLE NUMBER 20050505-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	02040404	34	17	24	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
12	04040705	16	18	1	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
12	04040100	15	14	21	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
12	08140100	9	1	0	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
12	04040703	9	5	5	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
12	04110104	7	9	2	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
12	01050401	6	8	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
12	07020502	6	17	9	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
12	02040601	5	8	4	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
12	07020600	4	7	2	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
12	04040707	4	0	3	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
12	08110211	3	6	1	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
12	04010203	3	0	0	TRICHOPTERA	MICRASEMA	WATAGA	2.0	5	Hilsenhoff 1985b
12	08301406	3	0	0	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001

SAMPLE NUMBER 20050505-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	02070205	3	7	3	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
12	08304808	3	7	2	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
12	08320800	3	0	3	DIPTERA	CRYPTOCHIRONOMUS	**UNIDENTIFIED**	8.0	1	Epler 2001
12	08326203	2	5	3	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
12	02170100	2	0	0	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
12	08303000	1	4	16	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
12	02090103	1	3	0	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
12	04050301	1	1	0	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
12	02040405	1	0	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
12	07020601	1	0	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
12	04020300	1	0	0	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
12	08310703	1	0	0	DIPTERA	STEMPELLINA	SP. A	2.0		Epler 2001
12	08310502	1	0	1	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
12	08306700	1	2	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
12	03060500	1	0	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
12	03060505	0	1	0	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
12	08010101	0	1	1	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
12	08301900	0	1	1	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001

SAMPLE NUMBER 20050505-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	08301401	0	0	3	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
12	08300800	0	0	1	DIPTERA	CORYNONEURA	**UNIDENTIFIED**	7.0	3	Epler 2001
12	01050801	0	6	5	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
12	03010401	0	1	0	ODONATA	BOYERIA	VINOSA	2.0	1	Needham et al. 2000
12	04040208	0	2	3	TRICHOPTERA	HYDROPSYCHE	SCALARIS	2.0	4	Schmude, Hils. 1986
12	07020500	0	5	0	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
12	02061500	0	0	2	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
12	02061509	0	1	0	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
12	08326010	0	0	1	DIPTERA	P. (POLYPEDILUM)	FALLAX	4.0	5	Epler 2001
12	08304806	0	0	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
12	01050100	0	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
12	08070300	0	1	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
12	08140800	0	1	0	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
12	04070600	0	1	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
12	02010116	0	1	0	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
12	05010301	0	1	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966

SAMPLE NUMBER 20050506-40-13

SAMPLE NUMBER 20050506-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	02040404	84	40	70	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
13	02070205	10	5	5	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
13	07020601	9	0	3	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
13	07020502	7	6	5	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
13	04040100	5	5	10	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
13	02061509	4	1	2	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
13	08326203	4	10	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
13	02060201	3	0	2	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
13	01050100	3	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
13	02170100	3	0	4	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
13	08110211	2	1	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
13	02040601	2	0	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
13	04110104	2	1	1	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
13	02090103	2	1	4	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
13	04040707	2	0	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
13	08140100	2	0	5	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
13	01050801	2	7	6	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
13	08322501	2	1	1	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001

SAMPLE NUMBER 20050506-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	08320800	1	1	0	DIPTERA	CRYPTOCHIRONOMUS	**UNIDENTIFIED**	8.0	1	Epler 2001
13	01060410	1	0	0	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
13	04040703	1	1	4	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
13	01050401	1	7	2	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
13	02011102	1	0	0	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
13	07020600	1	5	1	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
13	08322502	1	0	0	DIPTERA	MICROTENDIPES	RYDALENSIS	6.0	4	Epler 2001
13	08010101	1	1	0	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
13	02061503	0	1	2	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
13	08141100	0	1	0	DIPTERA	PSEUDOLIMNOPHILA	**UNIDENTIFIED**	2.0		Hilsenhoff 1995
13	08301900	0	0	3	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
13	08304806	0	2	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
13	08303000	0	4	1	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
13	08070300	0	3	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
13	08280100	0	1	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
13	04070600	0	4	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
13	04030101	0	2	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
13	07020500	0	1	0	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050506-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	04040705	0	7	9	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
13	02040405	0	0	2	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
13	01050300	0	2	2	PLECOPTERA	NEOPERLA	**UNIDENTIFIED**		1	Hitchcock 1974
13	08305200	0	1	0	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
13	02061500	0	2	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
13	08304808	0	2	3	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
13	04020200	0	2	0	TRICHOPTERA	GLOSSOSOMA	**UNIDENTIFIED**	0.0	2	Hilsenhoff 1995
13	08301402	0	0	1	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
13	08301401	0	0	3	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
13	08310502	0	0	2	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
13	08300800	0	1	0	DIPTERA	CORYNONEURA	**UNIDENTIFIED**	7.0	3	Epler 2001
13	04040214	0	1	0	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050506-40-14

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	02040404	16	7	14	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
14	08140100	11	8	5	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
14	04040707	10	9	3	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050506-40-14

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	07020500	10	7	16	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
14	04140201	9	2	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
14	01050100	8	4	8	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
14	08310800	7	2	0	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
14	02010116	7	11	14	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
14	04040703	6	9	3	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
14	03060505	5	6	7	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
14	02040406	3	0	2	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
14	08304806	3	0	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
14	02070205	3	3	4	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
14	07020601	3	2	2	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
14	02060201	3	7	2	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
14	08010101	3	1	1	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
14	08310502	3	0	1	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
14	05010301	2	1	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
14	02040405	2	8	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
14	02050100	2	0	0	EPHEMEROPTERA	EPHEMERA	**UNIDENTIFIED**		3	Hilsenhoff 1995
14	04010101	2	0	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b

SAMPLE NUMBER 20050506-40-14

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	01060412	2	1	3	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
14	04070600	2	0	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
14	08322501	2	0	3	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
14	02061506	2	3	2	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
14	08301401	2	0	3	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
14	04020300	2	4	3	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
14	04190100	1	0	0	TRICHOPTERA	NEOPHYLAX	**UNIDENTIFIED**	3.0	2	Hilsenhoff 1995
14	08304708	1	0	0	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001
14	08280300	1	0	1	DIPTERA	POTTHASTIA	**UNIDENTIFIED**	2.0	3	Epler 2001
14	08301400	1	1	0	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
14	08323602	0	1	0	DIPTERA	ROBACKIA	DEMEIJEREI		3	Epler 2001
14	15010200	0	1	0	PELECYPODA	SPHAERIUM	**UNIDENTIFIED**		4	Burch 1972
14	01060410	0	2	1	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
14	04040100	0	7	0	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
14	08110211	0	0	1	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
14	08303000	0	0	1	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
14	02040601	0	2	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
14	08110214	0	0	2	DIPTERA	SIMULIUM	TUBEROSUM	4.0	4	Hilsenhoff 1985a

SAMPLE NUMBER 20050506-40-14

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	08304800	0	1	1	DIPTERA	TVETENIA	**UNIDENTIFIED**	5.0	3	Epler 2001
14	08326000	0	0	1	DIPTERA	P. (POLYPEDILUM)	**UNIDENTIFIED**	6.0	5	Epler 2001
14	08301900	0	0	4	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
14	08326203	0	0	2	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
14	02061500	0	3	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
14	08305200	0	1	2	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
14	02090103	0	2	3	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
14	01060501	0	1	0	PLECOPTERA	CLIOPERLA	CLIO	1.0		Hilsenhoff 1995
14	07060100	0	0	1	COLEOPTERA	HALIPLUS	**UNIDENTIFIED**		6	Hilsenhoff 1995
14	08070300	0	1	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
14	07020501	0	0	1	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
14	04040705	0	13	2	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
14	07020600	0	0	1	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
14	04070500	0	1	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
14	01050401	0	1	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
14	02011102	0	0	1	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050506-40-15

SAMPLE NUMBER 20050506-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	04140201	17	0	5	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
15	02040406	13	1	0	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
15	02040404	13	8	13	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
15	14010100	8	0	0	GASTROPODA	FERRISIA	**UNIDENTIFIED**		2	Pennak 1978
15	02060201	8	3	5	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
15	01050100	6	5	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
15	08140100	5	3	4	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
15	02070205	4	2	3	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
15	04040705	4	20	12	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
15	08310502	4	1	0	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
15	02010116	3	13	17	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
15	01060501	3	0	0	PLECOPTERA	CLIOPERLA	CLIO	1.0		Hilsenhoff 1995
15	08110211	3	3	2	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
15	02061509	3	0	0	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
15	02040601	3	0	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
15	07020502	3	3	2	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
15	07020601	3	1	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
15	04010203	3	0	0	TRICHOPTERA	MICRASEMA	WATAGA	2.0	5	Hilsenhoff 1985b

SAMPLE NUMBER 20050506-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	04040100	2	2	4	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
15	04040703	2	2	3	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
15	08310800	2	9	1	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
15	08322501	2	0	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
15	02040405	2	1	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
15	08322502	1	0	0	DIPTERA	MICROTENDIPES	RYDALENSIS	6.0	4	Epler 2001
15	08301401	1	3	9	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
15	08010101	1	0	2	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
15	08306700	1	1	2	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
15	08304806	1	3	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
15	04010202	1	0	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
15	07020301	1	0	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
15	01050401	1	0	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
15	08304708	1	0	0	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001
15	04070600	1	2	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
15	08130100	1	0	0	DIPTERA	CHRYSOPS	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
15	08305404	1	4	1	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
15	08326202	1	3	0	DIPTERA	P. (URESIPEDILUM)	AVICEPS	5.0	5	Epler 2001

SAMPLE NUMBER 20050506-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	15010200	1	0	0	PELECYPODA	SPHAERIUM	**UNIDENTIFIED**		4	Burch 1972
15	04010101	1	0	2	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
15	04040201	0	0	2	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986
15	04190100	0	1	3	TRICHOPTERA	NEOPHYLAX	**UNIDENTIFIED**	3.0	2	Hilsenhoff 1995
15	04020300	0	3	2	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
15	04110104	0	0	1	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
15	08301300	0	0	1	DIPTERA	EPOICOCLADIUS	**UNIDENTIFIED**	4.0	3	Epler 2001
15	02061500	0	3	2	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
15	03060500	0	3	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
15	08303000	0	4	1	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
15	07020600	0	2	3	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
15	08301900	0	2	1	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
15	01020203	0	0	1	PLECOPTERA	HAPLOPERLA	ORPHA		2	Hitchcock 1974
15	08110216	0	0	4	DIPTERA	SIMULIUM	VERECUNDUM	6.0	4	Hilsenhoff 1985a
15	01060412	0	3	1	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
15	05010301	0	0	1	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
15	08304808	0	0	4	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001

SAMPLE NUMBER 20050506-40-16

SAMPLE NUMBER 20050506-40-16

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
16	04040705	50	15	21	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
16	02010116	31	13	16	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
16	02040404	23	7	23	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
16	04040707	8	0	10	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
16	02060201	7	6	6	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
16	08110214	6	2	0	DIPTERA	SIMULIUM	TUBEROSUM	4.0	4	Hilsenhoff 1985a
16	08140100	6	0	1	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
16	08301401	5	0	1	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
16	01060412	5	8	2	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
16	04140201	4	0	1	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
16	01060401	4	2	2	PLECOPTERA	ISOPERLA	BILINEATA	4.0	1	Hilsenhoff 1995,82
16	04040703	3	4	10	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
16	02040601	3	5	4	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
16	08304806	2	3	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
16	04010202	2	2	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
16	04010101	2	1	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
16	04030101	2	0	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
16	01050401	1	0	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050506-40-16

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
16	04040100	1	4	2	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
16	08310800	1	4	0	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
16	01050100	1	9	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
16	08010101	1	0	2	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
16	02040405	1	0	3	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
16	04040706	1	0	0	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
16	04020100	1	0	0	TRICHOPTERA	AGAPETUS	**UNIDENTIFIED**	0.0	2	Hilsenhoff 1995
16	08070300	1	1	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
16	07020502	1	2	4	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
16	08303000	1	2	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
16	04040201	0	0	1	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986
16	07020600	0	1	1	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
16	02011102	0	0	1	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
16	08306700	0	0	1	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
16	02090103	0	0	1	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
16	04040200	0	1	1	TRICHOPTERA	HYDROPSYCHE	**UNIDENTIFIED**		4	Hilsenhoff 1995
16	08300800	0	0	1	DIPTERA	CORYNONEURA	**UNIDENTIFIED**	7.0	3	Epler 2001
16	03010401	0	1	0	ODONATA	BOYERIA	VINOSA	2.0	1	Needham et al. 2000

SAMPLE NUMBER 20050506-40-16

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
16	04110101	0	2	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
16	03060505	0	1	1	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
16	08310502	0	0	1	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
16	08322501	0	1	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
16	02061500	0	1	2	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
16	07020601	0	1	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
16	08110209	0	5	0	DIPTERA	SIMULIUM	PUGETENSE		4	Hilsenhoff 1985a
16	04020201	0	0	1	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
16	03020200	0	1	0	ODONATA	HETAERINA	**UNIDENTIFIED**		1	Hilsenhoff 1995
16	08323601	0	0	1	DIPTERA	ROBACKIA	CLAVIGER		3	Epler 2001
16	08305200	0	1	0	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
16	02070205	0	3	6	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
16	08110239	0	0	6	DIPTERA	SIMULIUM	QUEBECENSE		4	Hilsenhoff 1985a
16	08326202	0	0	1	DIPTERA	P. (URESIPEDILUM)	AVICEPS	5.0	5	Epler 2001
16	02040406	0	2	4	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
16	08304808	0	1	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
16	14040000	0	1	0	GASTROPODA	**UNIDENTIFIED**			2	Pennak 1978
16	04200100	0	1	0	TRICHOPTERA	APATANIA	**UNIDENTIFIED**		2	Hilsenhoff 1995

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West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
17	08322501	37	46	58	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
17	08326203	13	6	12	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
17	04020300	13	2	0	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
17	04070600	11	4	5	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
17	02040404	10	10	3	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
17	07020502	8	6	4	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
17	04140201	5	5	6	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
17	04050000	5	3	2	TRICHOPTERA	**UNIDENTIFIED**			6	Hilsenhoff 1995
17	08306700	3	1	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
17	08140100	3	3	3	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
17	04050301	2	0	5	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
17	07020600	2	6	5	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
17	08301401	2	0	2	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
17	04010202	1	0	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
17	02061503	1	0	0	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
17	08070300	1	0	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
17	04040208	1	0	0	TRICHOPTERA	HYDROPSYCHE	SCALARIS	2.0	4	Schmude, Hils. 1986
17	08304708	1	0	0	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001

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West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
17	02040601	1	0	3	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
17	08301405	1	0	0	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
17	08301900	1	0	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
17	08304600	1	0	0	DIPTERA	SYNORTHOCLADIUS	**UNIDENTIFIED**	2.0	3	Epler 2001
17	08303000	1	0	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
17	08320800	1	0	0	DIPTERA	CRYPTOCHIRONOMUS	**UNIDENTIFIED**	8.0	1	Epler 2001
17	04040707	1	1	3	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
17	01050100	0	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
17	02070205	0	0	1	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
17	02011102	0	1	1	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
17	01060410	0	0	1	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
17	05010301	0	1	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
17	02040405	0	2	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
17	08322900	0	0	1	DIPTERA	PARACHIRONOMUS	**UNIDENTIFIED**	5.0	1	Epler 2001
17	04040100	0	5	0	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
17	08300800	0	1	0	DIPTERA	CORYNONEURA	**UNIDENTIFIED**	7.0	3	Epler 2001
17	08301400	0	0	1	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
17	07020200	0	1	0	COLEOPTERA	DUBIRAPHIA	**UNIDENTIFIED**	6.0		Hils., Schmude 1992

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West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
17	07020202	0	1	0	COLEOPTERA	DUBIRAPHIA	MINIMA	5.0		Hils., Schmude 1992
17	02010116	0	0	1	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
17	04070500	0	0	1	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
17	04040705	0	2	2	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
17	08304808	0	0	1	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
17	08140800	0	1	0	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
17	08310800	0	4	0	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
17	08310700	0	0	1	DIPTERA	STEMPELLINELLA	**UNIDENTIFIED**	4.0		Epler 2001
17	08270800	0	0	1	DIPTERA	DJALMABATISTA	**UNIDENTIFIED**	3.0	1	Epler 2001

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	04020300	32	5	13	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
18	02040404	30	25	18	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
18	08322501	15	5	8	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
18	07020502	13	8	6	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
18	04040707	9	3	1	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
18	07020600	8	8	5	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	04010202	8	3	8	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
18	04040705	6	9	8	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
18	04070600	5	5	3	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
18	04140201	5	4	7	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
18	08301405	5	7	0	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
18	04040100	4	3	2	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
18	08304806	4	0	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
18	08310502	3	4	2	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
18	08140100	3	6	0	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
18	08326203	2	0	1	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
18	08303000	2	0	1	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
18	04040208	2	0	0	TRICHOPTERA	HYDROPSYCHE	SCALARIS	2.0	4	Schmude, Hils. 1986
18	02060201	2	2	1	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
18	08301405	2	0	3	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
18	04110101	1	0	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
18	01050801	1	0	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
18	08070300	1	5	3	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
18	02070205	1	1	3	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	02060400	1	0	0	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
18	02040601	1	3	3	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
18	08306700	1	4	6	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
18	02061509	1	7	0	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
18	03060505	1	1	2	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
18	04040401	1	0	0	TRICHOPTERA	MACROSTEMUM	ZEBRATUM	3.0	4	Hilsenhoff 1995
18	02040405	1	1	1	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
18	09010201	0	1	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
18	08300800	0	0	0	DIPTERA	CORYNONEURA	**UNIDENTIFIED**	7.0	3	Epler 2001
18	08326106	0	0	1	DIPTERA	P. (TRIPODURA)	HALTERALE	3.0	5	Epler 2001
18	08300918	0	2	0	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
18	08301402	0	1	1	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
18	01060412	0	2	0	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
18	02010116	0	5	1	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
18	04040202	0	3	1	TRICHOPTERA	HYDROPSYCHE	CUANIS	6.0	4	Schmude, Hils. 1986
18	01050100	0	2	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
18	08110200	0	0	1	DIPTERA	SIMULIUM	**UNIDENTIFIED**		4	Hilsenhoff 1985a
18	08301406	0	4	0	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	08010101	0	1	3	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
18	08310700	0	0	1	DIPTERA	STEMPELLINELLA	**UNIDENTIFIED**	4.0		Epler 2001
18	08110211	0	0	1	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
18	08304808	0	1	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
18	08311000	0	0	2	DIPTERA	SUBLETTEA	**UNIDENTIFIED**			Epler 2001
18	04050301	0	3	10	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
18	02170100	0	1	1	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
18	08310800	0	1	1	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
18	07020601	0	2	2	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
18	02061503	0	0	4	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
18	04110104	0	2	3	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
18	02011102	0	0	1	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	08310100	15	2	1	DIPTERA	CLADOTANYTARSUS	**UNIDENTIFIED**	7.0	3	Epler 2001
19	02061503	11	16	13	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
19	08311000	11	0	3	DIPTERA	SUBLETTEA	**UNIDENTIFIED**			Epler 2001

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	08310502	10	5	3	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
19	08322501	7	3	2	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
19	08310800	7	3	0	DIPTERA	TANYTARSUS	**UNIDENTIFIED**	6.0	4	Epler 2001
19	08304600	6	0	0	DIPTERA	SYNORTHOCLADIUS	**UNIDENTIFIED**	2.0	3	Epler 2001
19	08270700	4	0	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
19	04140201	4	3	5	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
19	07020600	4	3	5	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
19	03060505	4	2	2	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
19	08070300	4	3	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
19	08303000	4	0	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
19	08326203	3	0	1	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
19	08306700	3	8	8	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
19	08301406	3	2	5	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001
19	08305200	3	4	1	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
19	08301405	2	0	0	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
19	08140100	2	1	1	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
19	08304808	2	4	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
19	08300910	2	1	0	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	04010202	2	2	4	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
19	07020502	2	8	4	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
19	08301400	2	6	7	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
19	04040214	1	2	5	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986
19	07020601	1	1	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
19	08326106	1	0	0	DIPTERA	P. (TRIPODURA)	HALTERALE	3.0	5	Epler 2001
19	08301402	1	1	0	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001
19	02090103	1	0	0	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
19	09010201	1	0	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
19	04070600	1	1	4	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
19	04040705	1	5	9	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
19	08304708	1	0	0	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001
19	04050301	1	2	3	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
19	07020200	1	1	1	COLEOPTERA	DUBIRAPHIA	**UNIDENTIFIED**	6.0		Hils., Schmude 1992
19	08320800	1	0	0	DIPTERA	CRYPTOCHIRONOMUS	**UNIDENTIFIED**	8.0	1	Epler 2001
19	01050100	0	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
19	01050401	0	0	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
19	08110211	0	0	3	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a

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Wolf River

SITE ID	NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	04110103	0	1	0	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
19	08110214	0	1	1	DIPTERA	SIMULIUM	TUBEROSUM	4.0	4	Hilsenhoff 1985a
19	08110200	0	2	0	DIPTERA	SIMULIUM	**UNIDENTIFIED**		4	Hilsenhoff 1985a
19	08310700	0	2	2	DIPTERA	STEMPELLINELLA	**UNIDENTIFIED**	4.0		Epler 2001
19	04130400	0	1	0	TRICHOPTERA	POLYCENTROPUS	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
19	02040405	0	3	2	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
19	02040601	0	1	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
19	02060201	0	6	1	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
19	02170100	0	3	2	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
19	02010116	0	2	3	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
19	01080302	0	1	0	PLECOPTERA	TAENIOPTERYX	NIVALIS	2.0	5	Hitchcock 1974
19	05010201	0	1	0	MEGALOPTERA	CORYDALUS	CORNUTUS	6.0	1	Hilsenhoff 1995
19	02060400	0	1	0	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
19	08010101	0	3	3	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
19	01060412	0	1	0	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
19	02040404	0	4	0	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
19	07020604	0	1	1	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992

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Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	08326106	20	10	1	DIPTERA	P. (TRIPODURA)	HALTERALE	3.0	5	Epler 2001
20	08326010	17	5	0	DIPTERA	P. (POLYPEDILUM)	FALLAX	4.0	5	Epler 2001
20	08326203	15	0	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
20	02040404	10	20	6	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
20	02060400	6	0	0	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
20	07020600	5	2	6	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
20	04040705	4	6	14	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
20	08110211	4	7	26	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
20	08310502	2	0	0	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
20	08070300	2	0	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
20	04010202	2	1	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
20	04140201	2	8	3	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
20	02061503	1	1	2	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
20	04040208	1	0	0	TRICHOPTERA	HYDROPSYCHE	SCALARIS	2.0	4	Schmude, Hils. 1986
20	08300800	1	0	0	DIPTERA	CORYNONEURA	**UNIDENTIFIED**	7.0	3	Epler 2001
20	08305200	1	0	0	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
20	08311000	1	0	0	DIPTERA	SUBLETTEA	**UNIDENTIFIED**			Epler 2001
20	04020300	1	9	0	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995

SAMPLE NUMBER 20050506-40-20

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	04040100	1	0	0	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
20	02040405	1	2	0	EPHEMEROPTERA	EPHEMERELLA	NEEDHAMI	2.0	3	Hilsenhoff 1995,82
20	08322501	1	0	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
20	04040207	1	0	0	TRICHOPTERA	HYDROPSYCHE	PHALERATA	1.0	4	Schmude, Hils. 1986
20	01060400	1	0	0	PLECOPTERA	ISOPERLA	**UNIDENTIFIED**		1	Hilsenhoff 1995
20	08304808	1	2	20	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
20	08280300	1	0	0	DIPTERA	POTTHASTIA	**UNIDENTIFIED**	2.0	3	Epler 2001
20	08301406	1	1	0	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001
20	07020502	1	4	0	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
20	08301405	0	1	3	DIPTERA	EUKIEFFERIELLA	DEVONICA GROUP	5.0	3	Epler 2001
20	04070600	0	5	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
20	08304806	0	1	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
20	08301401	0	1	0	DIPTERA	EUKIEFFERIELLA	BREHMI GROUP	8.0	3	Epler 2001
20	08306700	0	8	5	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
20	07040201	0	1	0	COLEOPTERA	PSEPHENUS	HERRICKI	4.0	2	Hils., Schmude 1992
20	03060500	0	1	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
20	08320800	0	1	0	DIPTERA	CRYPTOCHIRONOMUS	**UNIDENTIFIED**	8.0	1	Epler 2001
20	08140100	0	1	1	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050506-40-20

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	02040601	0	1	7	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
20	04040202	0	1	1	TRICHOPTERA	HYDROPSYCHE	CUANIS	6.0	4	Schmude, Hils. 1986
20	08301400	0	11	7	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
20	08280100	0	5	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
20	08301402	0	1	0	DIPTERA	EUKIEFFERIELLA	CLARIPENNIS	8.0	3	Epler 2001

SAMPLE NUMBER 20050922-40-01

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
1	07020502	49	29	39	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
1	05010301	24	6	2	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
1	02040406	20	10	19	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
1	02040601	14	19	5	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
1	04060100	12	6	7	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
1	02010116	10	3	5	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
1	02070205	7	9	2	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
1	04110101	7	10	10	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
1	04040705	7	0	0	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
1	01050100	5	7	6	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-01

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
1	02040404	4	0	0	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
1	04010202	3	2	14	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
1	07020301	3	2	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
1	09010201	2	0	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
1	08272300	2	0	0	DIPTERA	RHEOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
1	02060201	2	10	1	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
1	04020100	2	10	7	TRICHOPTERA	AGAPETUS	**UNIDENTIFIED**	0.0	2	Hilsenhoff 1995
1	01050801	2	5	3	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
1	01020203	2	0	0	PLECOPTERA	HAPLOPERLA	ORPHA		2	Hitchcock 1974
1	04020300	2	1	1	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
1	01020200	2	0	2	PLECOPTERA	HAPLOPERLA	**UNIDENTIFIED**		2	Hilsenhoff 1995
1	08030215	1	0	0	DIPTERA	BEZZIA/PALPOMYIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
1	08304806	1	2	0	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
1	04010101	1	0	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
1	08010101	1	2	1	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
1	08110211	1	0	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
1	01080300	0	1	0	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
1	02061503	0	1	0	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82

SAMPLE NUMBER 20050922-40-01

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
1	02090103	0	0	1	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
1	02061500	0	6	3	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
1	08280100	0	1	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
1	01060410	0	0	4	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
1	01060400	0	0	3	PLECOPTERA	ISOPERLA	**UNIDENTIFIED**		1	Hilsenhoff 1995
1	08300918	0	0	1	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
1	01050401	0	13	4	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
1	04010102	0	0	1	TRICHOPTERA	BRACHYCENTRUS	LATERALIS	1.0	4	Hilsenhoff 1985b
1	04040707	0	7	20	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
1	04040100	0	2	1	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
1	04030101	0	0	1	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
1	08140100	0	2	3	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	04040706	25	5	23	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
2	08140100	14	33	4	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
2	07020502	12	18	57	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050922-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	04040100	12	6	17	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
2	04040707	11	0	14	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
2	09010201	11	52	4	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
2	01080300	9	2	1	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
2	02040406	8	1	14	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
2	04110101	7	0	15	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
2	04010202	6	0	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
2	04060100	6	16	7	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
2	05010301	5	0	5	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
2	08010101	4	2	4	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
2	01050401	4	0	4	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
2	02060201	2	0	3	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
2	08070300	2	7	4	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
2	04010104	2	2	6	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
2	08270700	1	1	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
2	08300910	1	1	0	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
2	01060412	1	0	0	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
2	04140201	1	4	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	01050801	1	0	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
2	04020300	1	4	1	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
2	01050100	1	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
2	08280100	1	0	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
2	08303000	1	0	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
2	08304600	1	0	0	DIPTERA	SYNORTHOCLADIUS	**UNIDENTIFIED**	2.0	3	Epler 2001
2	08304806	1	0	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
2	04020201	0	0	3	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
2	02010116	0	3	1	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
2	08280300	0	0	0	DIPTERA	POTTHASTIA	**UNIDENTIFIED**	2.0	3	Epler 2001
2	08301413	0	1	0	DIPTERA	EUKIEFFERIELLA	DEVONICA GRP.	5.0	3	Epler 2001
2	08322501	0	3	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
2	01010301	0	0	16	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
2	08326202	0	1	0	DIPTERA	P. (URESIPEDILUM)	AVICEPS	5.0	5	Epler 2001
2	04180101	0	3	3	TRICHOPTERA	GOERA	STYLATA	0.0	2	Hilsenhoff 1995
2	02070205	0	0	2	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
2	01060410	0	2	6	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
2	04130200	0	1	0	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-02

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
2	02061509	0	3	1	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
2	08310100	0	1	0	DIPTERA	CLADOTANYTARSUS	**UNIDENTIFIED**	7.0	3	Epler 2001
2	08110211	0	0	1	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
2	04170101	0	1	0	TRICHOPTERA	PHYLOCENTROPUS	PLACIDUS	5.0	4	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	07020502	32	37	48	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
3	04010202	24	29	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
3	02040406	14	17	14	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
3	04020201	9	5	13	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
3	08140100	9	22	4	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
3	05010301	9	18	5	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
3	04040706	7	8	27	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
3	04060100	7	4	2	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
3	04010104	6	22	0	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
3	01010301	6	3	4	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
3	01050401	5	1	7	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	07020501	4	5	2	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
3	08070300	4	6	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
3	01050100	4	7	3	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
3	09010201	3	3	11	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
3	01060410	3	7	0	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
3	02060201	2	0	0	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
3	01080300	2	0	0	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
3	04010101	2	1	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
3	01050801	2	1	1	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
3	04040707	2	4	0	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
3	04020300	1	1	2	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
3	05020100	1	0	0	MEGALOPTERA	SIALIS	**UNIDENTIFIED**	4.0	1	Hilsenhoff 1995
3	08301400	1	1	0	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
3	02010116	1	0	1	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
3	02070205	1	5	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
3	04020100	1	0	0	TRICHOPTERA	AGAPETUS	**UNIDENTIFIED**	0.0	2	Hilsenhoff 1995
3	08170800	1	0	0	DIPTERA	OXYCERA	**UNIDENTIFIED**		2	Hilsenhoff 1995
3	08280300	1	0	0	DIPTERA	POTTHASTIA	**UNIDENTIFIED**	2.0	3	Epler 2001

SAMPLE NUMBER 20050922-40-03

Little West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
3	04040100	1	1	3	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
3	08300910	1	0	0	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
3	08305500	0	1	0	DIPTERA	ORTHOCLADIUS	**UNIDENTIFIED**	6.0	3	Epler 2001
3	08303000	0	1	0	DIPTERA	PARAMETRIOCNEMUS	**UNIDENTIFIED**	5.0	3	Epler 2001
3	08110211	0	0	1	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
3	08270700	0	1	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
3	08301900	0	1	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
3	04110101	0	0	14	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
3	01060406	0	1	2	PLECOPTERA	ISOPERLA	LATA	0.0	1	Hilsenhoff 1995,82
3	04070500	0	1	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
3	04040701	0	0	2	TRICHOPTERA	CERATOPSYCHE	ALHEDRA	3.0	4	Schmude, Hils. 1986
3	04040703	0	1	0	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
3	08322501	0	1	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
3	08326106	0	3	0	DIPTERA	P. (TRIPODURA)	HALTERALE	3.0	5	Epler 2001
3	04180101	0	0	2	TRICHOPTERA	GOERA	STYLATA	0.0	2	Hilsenhoff 1995
3	04140201	0	1	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
3	08304000	0	1	0	DIPTERA	RHEOCRICOTOPUS	**UNIDENTIFIED**	6.0	3	Epler 2001

SAMPLE NUMBER 20050922-40-04

SAMPLE NUMBER 20050922-40-04

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
4	07020600	39	18	47	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
4	03060500	19	8	6	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
4	02011102	14	4	0	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
4	02040601	14	24	10	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
4	07020604	11	5	1	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
4	15010200	10	12	0	PELECYPODA	SPHAERIUM	**UNIDENTIFIED**		4	Burch 1972
4	04030101	9	8	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
4	07020502	5	2	16	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
4	08270700	5	1	2	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
4	02061500	4	5	2	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
4	02040406	3	7	8	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
4	08301406	3	0	2	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001
4	04040703	3	8	18	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
4	04160101	3	0	0	TRICHOPTERA	AGARODES	DISTINCTUS	3.0	5	Hilsenhoff 1995
4	04070300	3	0	0	TRICHOPTERA	MYSTACIDES	**UNIDENTIFIED**		3	Hilsenhoff 1995
4	02170100	2	5	1	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
4	05010301	2	0	1	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
4	04040401	2	5	8	TRICHOPTERA	MACROSTEMUM	ZEBRATUM	3.0	4	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-04

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
4	02130100	2	0	0	EPHEMEROPTERA	TRICORYTHODES	**UNIDENTIFIED**	4.0	3	Hilsenhoff 1995
4	02061503	2	6	0	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
4	09010201	2	1	1	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
4	02030200	1	0	0	EPHEMEROPTERA	CAENIS	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995
4	04060100	1	2	0	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
4	08301900	1	0	1	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
4	08306700	1	0	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
4	08141100	1	4	5	DIPTERA	PSEUDOLIMNOPHILA	**UNIDENTIFIED**	2.0		Hilsenhoff 1995
4	02011002	1	1	1	EPHEMEROPTERA	ACENTRELLA	TURBIDA	2.0	3	Hilsenhoff 1995,82
4	02070205	1	0	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
4	04040100	1	11	6	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
4	03060505	1	3	4	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
4	04070600	1	0	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
4	04040707	1	21	5	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
4	08070300	0	0	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
4	04010202	0	1	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
4	07020501	0	1	0	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
4	04040706	0	2	0	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050922-40-04

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
4	08110223	0	4	0	DIPTERA	SIMULIUM	PICTIPES	4.0	4	Hilsenhoff 1985a
4	08300918	0	1	0	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
4	04110103	0	16	11	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
4	07020601	0	0	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
4	01050401	0	2	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	04040100	96	12	53	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
5	07020600	33	26	24	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
5	07020502	17	18	11	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
5	02070205	17	12	7	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
5	04040707	14	1	10	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
5	04040703	13	2	5	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
5	02061509	11	4	2	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
5	03060500	11	9	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
5	07020301	11	0	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
5	02061500	10	19	3	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	02040601	6	9	4	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
5	02010116	6	5	0	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
5	02010101	5	0	0	EPHEMEROPTERA	BAETIS	BRUNNEICOLOR	4.0	3	Hilsenhoff 1995,82
5	08141100	3	0	0	DIPTERA	PSEUDOLIMNOPHILA	**UNIDENTIFIED**	2.0		Hilsenhoff 1995
5	05010301	3	15	4	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
5	02061506	2	2	1	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
5	04060100	2	3	1	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
5	09010201	1	2	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
5	08140100	1	1	2	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
5	08326203	1	0	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
5	07020601	1	10	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
5	03060505	1	3	1	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
5	01050100	1	0	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
5	04070300	1	0	0	TRICHOPTERA	MYSTACIDES	**UNIDENTIFIED**		3	Hilsenhoff 1995
5	08010101	1	11	0	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
5	04030100	1	9	0	TRICHOPTERA	HELICOPSYCHE	**UNIDENTIFIED**		2	Hilsenhoff 1995
5	02011102	1	0	0	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
5	02090103	1	2	1	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82

SAMPLE NUMBER 20050922-40-05

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
5	01050801	1	1	1	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
5	04040706	0	0	2	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
5	01050401	0	1	0	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
5	04070500	0	3	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
5	08300910	0	0	1	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
5	08274200	0	4	0	DIPTERA	P. (HOLOTANYPUS)	**UNIDENTIFIED**	9.0	1	Epler 2001
5	16090000	0	1	0	OLIGOCHAETA	**UNIDENTIFIED**			3	Pennak 1978
5	01050300	0	2	1	PLECOPTERA	NEOPERLA	**UNIDENTIFIED**		1	Hitchcock 1974
5	08301400	0	0	2	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
5	04110101	0	0	1	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
5	04040202	0	1	0	TRICHOPTERA	HYDROPSYCHE	CUANIS	6.0	4	Schmude, Hils. 1986
5	07020501	0	0	1	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
5	02040406	0	0	3	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
5	08305404	0	3	0	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
5	04110103	0	1	0	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82

SAMPLE NUMBER 20050922-40-11

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY

SAMPLE NUMBER 20050922-40-11

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
11	04040705	32	5	17	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
11	04040100	32	21	45	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
11	04110103	25	18	19	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
11	04040707	12	13	10	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
11	07020502	11	42	28	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
11	07020600	10	16	10	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
11	07020500	7	0	6	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
11	02040601	4	0	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
11	02010104	3	1	1	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
11	08326203	2	3	1	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
11	03060505	1	1	1	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
11	02070205	1	1	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
11	02061503	1	1	1	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
11	08306700	1	0	4	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
11	08304808	1	0	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
11	04140201	1	7	4	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
11	08070300	0	1	2	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
11	14040000	0	3	0	GASTROPODA	**UNIDENTIFIED**			2	Pennak 1978

SAMPLE NUMBER 20050922-40-11

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
11	14070102	0	1	0	GASTROPODA	VALVATA	TRICARINATA		2	Pennak 1978
11	09020101	0	1	0	AMPHIPODA	HYALLELA	AZTECA	8.0	3	Holsinger 1972
11	03060500	0	1	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
11	04040703	0	1	2	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
11	08301900	0	2	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
11	08271000	0	1	0	DIPTERA	HELOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
11	04070100	0	0	1	TRICHOPTERA	CERACLEA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
11	08300918	0	3	0	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
11	02061506	0	2	0	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
11	15010200	0	5	0	PELECYPODA	SPHAERIUM	**UNIDENTIFIED**		4	Burch 1972
11	07020501	0	0	1	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
11	04030101	0	4	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
11	08140100	0	6	4	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	04040100	39	32	52	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
12	07020502	12	28	23	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050922-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	04110104	10	2	7	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
12	07020500	9	5	6	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
12	07020600	7	7	7	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
12	02040601	6	3	4	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
12	02061500	5	3	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
12	02011606	5	10	4	EPHEMEROPTERA	PLAUDITUS	PUNCTIVENTRIS	5.0	3	Hilsenhoff 1995,82
12	01050100	4	4	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
12	02090103	4	3	0	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
12	04040707	3	7	9	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
12	04040214	3	1	3	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986
12	08300918	3	9	16	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
12	01050300	3	1	1	PLECOPTERA	NEOPERLA	**UNIDENTIFIED**		1	Hilsenhoff 1995
12	01050100	3	1	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
12	03060500	2	3	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
12	02061503	2	1	2	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
12	02170100	2	4	2	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
12	04040203	2	1	0	TRICHOPTERA	HYDROPSYCHE	DICANTHA	2.0	4	Schmude, Hils. 1986
12	08306700	2	0	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001

SAMPLE NUMBER 20050922-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	05010201	1	1	0	MEGALOPTERA	CORYDALUS	CORNUTUS	6.0	1	Hilsenhoff 1995
12	04050301	1	0	0	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
12	04040401	1	2	1	TRICHOPTERA	MACROSTEMUM	ZEBRATUM	3.0	4	Hilsenhoff 1995
12	01050801	1	3	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
12	08010101	1	2	2	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
12	02061506	1	2	1	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
12	07020601	1	0	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
12	04030101	1	2	1	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
12	01080300	1	0	1	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
12	08301400	0	1	0	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
12	04010202	0	1	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
12	04050500	0	1	1	TRICHOPTERA	OCHROTRICHIA	**UNIDENTIFIED**	4.0	3	Hilsenhoff 1995
12	02061509	0	2	0	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
12	15010200	0	1	0	PELECYPODA	SPHAERIUM	**UNIDENTIFIED**		4	Burch 1972
12	04190101	0	1	0	TRICHOPTERA	NEOPHYLAX	CONCINNUS	3.0	2	Bright 2003
12	09020101	0	1	0	AMPHIPODA	HYALLELA	AZTECA	8.0	3	Holsinger 1972
12	02040406	0	0	1	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
12	08140100	0	0	3	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-12

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
12	08110214	0	1	0	DIPTERA	SIMULIUM	TUBEROSUM	4.0	4	Hilsenhoff 1985a

SAMPLE NUMBER 20050922-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	07020502	48	4	19	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
13	07020600	26	17	5	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
13	04040100	23	1	28	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
13	07020500	11	2	8	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
13	02090103	10	4	8	EPHEMEROPTERA	ANTHOPOTAMUS	VERTICIS	4.0	4	Hilsenhoff 1995,82
13	04030101	8	12	6	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
13	02011604	7	2	0	EPHEMEROPTERA	PLAUDITUS	DUBIUS	4.0	3	Hilsenhoff 1995,82
13	02050101	5	6	1	EPHEMEROPTERA	EPHEMERA	SIMULANS	1.0	3	McCafferty 1975
13	02061500	4	8	6	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
13	02061509	4	2	4	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
13	07020601	3	0	5	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
13	07020501	3	0	0	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
13	01050401	3	0	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
13	03060505	3	0	2	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000

SAMPLE NUMBER 20050922-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	04040214	3	0	0	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986
13	02170100	3	0	0	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
13	04010202	3	0	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
13	07040201	2	0	0	COLEOPTERA	PSEPHENUS	HERRICKI	4.0	2	Hils., Schmude 1992
13	02011606	2	40	21	EPHEMEROPTERA	PLAUDITUS	PUNCTIVENTRIS	5.0	3	Hilsenhoff 1995,82
13	08301900	1	0	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
13	08300918	1	1	3	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
13	04140201	1	0	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
13	02061503	1	4	4	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
13	04050500	1	1	0	TRICHOPTERA	OCHROTRICHIA	**UNIDENTIFIED**	4.0	3	Hilsenhoff 1995
13	01050100	1	1	2	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
13	08140800	1	0	1	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
13	03060500	1	0	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
13	08140100	1	0	0	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
13	01080300	1	0	1	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
13	04070600	1	1	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
13	09020101	1	0	7	AMPHIPODA	HYALLELA	AZTECA	8.0	3	Holsinger 1972
13	02030200	0	4	0	EPHEMEROPTERA	CAENIS	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	08300900	0	1	0	DIPTERA	C. (CRICOTOPUS)	**UNIDENTIFIED**	7.0	5	Epler 2001
13	07020200	0	1	0	COLEOPTERA	DUBIRAPHIA	**UNIDENTIFIED**	6.0		Hils., Schmude 1992
13	08301300	0	1	0	DIPTERA	EPOICOCLADIUS	**UNIDENTIFIED**	4.0	3	Epler 2001
13	02060500	0	2	0	EPHEMEROPTERA	STENACRON	**UNIDENTIFIED**		3	Hilsenhoff 1995
13	08280100	0	0	1	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
13	02011102	0	2	0	EPHEMEROPTERA	ACERPENNA	PYGMAEA	4.0	3	Hilsenhoff 1995,82
13	05010301	0	0	2	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
13	08271000	0	1	0	DIPTERA	HELOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
13	09010201	0	23	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
13	04040703	0	0	6	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
13	02070205	0	19	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
13	08270800	0	0	1	DIPTERA	DJALMABATISTA	**UNIDENTIFIED**	3.0	1	Epler 2001
13	04040707	0	0	1	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
13	08310400	0	1	0	DIPTERA	PARATANYTARSUS	**UNIDENTIFIED**	6.0		Epler 2001
13	08010101	0	0	2	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
13	08303402	0	0	1	DIPTERA	P.	FLAVUS	8.0	3	Epler 2001
13	08326203	0	2	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
13	04130400	0	1	0	TRICHOPTERA	POLYCENTROPUS	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050922-40-13

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
13	14040000	0	3	0	GASTROPODA	**UNIDENTIFIED**			2	Pennak 1978
13	04070300	0	1	0	TRICHOPTERA	MYSTACIDES	**UNIDENTIFIED**		3	Hilsenhoff 1995
13	02010104	0	0	1	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050923-40-06

Menominee Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
6	02070205	65	69	55	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
6	07020502	17	16	5	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
6	02040406	9	10	14	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
6	04040100	8	3	2	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
6	02061509	7	4	6	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
6	08010101	7	5	7	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
6	07020600	4	3	2	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
6	01050401	4	1	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
6	04110101	4	4	10	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
6	08310502	4	1	1	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
6	04060100	3	1	16	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
6	04040707	3	1	5	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050923-40-06

Menominee Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
6	08141200	2	0	0	DIPTERA	TIPULA	**UNIDENTIFIED**	4.0	5	Hilsenhoff 1995
6	02060201	2	9	1	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
6	01010301	2	2	0	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
6	05010301	2	1	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
6	08150100	1	0	0	DIPTERA	DIXELLA	**UNIDENTIFIED**		3	Hilsenhoff 1995
6	08140100	1	0	2	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
6	04010202	1	0	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
6	03010401	1	0	0	ODONATA	BOYERIA	VINOSA	2.0	1	Needham et al. 2000
6	01050100	1	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
6	01080300	1	1	3	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
6	03060500	1	3	2	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
6	08300910	0	1	1	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
6	07020500	0	10	10	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
6	14040000	0	0	1	GASTROPODA	**UNIDENTIFIED**			2	Pennak 1978
6	04040706	0	0	1	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
6	04020201	0	1	1	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
6	01050801	0	0	3	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
6	08140800	0	2	2	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-06

Menominee Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
6	08070300	0	3	2	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
6	02011002	0	2	0	EPHEMEROPTERA	ACENTRELLA	TURBIDA	2.0	3	Hilsenhoff 1995,82
6	04070500	0	3	2	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
6	04010104	0	2	0	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
6	07020601	0	2	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
6	08272300	0	1	0	DIPTERA	RHEOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
6	07020501	0	3	1	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
6	01060406	0	2	0	PLECOPTERA	ISOPERLA	LATA	0.0	1	Hilsenhoff 1995,82
6	02040601	0	12	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
6	08304806	0	0	2	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001

SAMPLE NUMBER 20050923-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	04040707	37	36	32	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
7	04040100	31	19	24	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
7	07020502	22	25	28	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
7	07020500	22	9	22	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
7	08010101	14	13	5	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	07020600	11	7	2	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
7	02070205	11	5	10	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
7	02040601	10	17	8	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
7	08140800	7	5	8	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
7	04110101	7	0	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
7	01050100	6	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
7	02040406	5	3	3	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
7	02061506	4	2	4	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
7	02010116	4	1	1	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
7	08310502	3	0	0	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
7	04060100	2	1	1	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
7	04070600	2	0	2	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
7	13000000	2	0	0	TRICLADIDA				3	Pennak 1978
7	04130200	2	0	0	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995
7	07020601	1	1	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
7	08030215	1	0	0	DIPTERA	BEZZIA/PALPOMYIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
7	04070500	1	2	1	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
7	08306700	1	0	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001

SAMPLE NUMBER 20050923-40-07

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
7	08270801	1	1	1	DIPTERA	DJALMABATISTA	PULCHER	3.0	1	Epler 2001
7	08326203	1	2	0	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
7	08305200	1	0	0	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
7	07020604	1	0	0	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
7	08070300	0	0	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
7	08140100	0	1	0	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
7	01060406	0	1	0	PLECOPTERA	ISOPERLA	LATA	0.0	1	Hilsenhoff 1995,82
7	02061500	0	0	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
7	04020300	0	0	3	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
7	05010301	0	0	2	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
7	04010202	0	1	1	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
7	08270700	0	0	1	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
7	04020201	0	1	2	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
7	02060201	0	4	0	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	07020600	49	38	49	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050923-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	02061509	18	18	17	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
8	04040100	18	39	34	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
8	01050401	13	7	5	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
8	02061500	7	9	8	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
8	08301900	6	3	1	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
8	02061506	6	7	3	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
8	02010103	5	1	2	EPHEMEROPTERA	BAETIS	INTERCALARIS	6.0	3	Hilsenhoff 1995,82
8	07020601	4	0	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
8	08140800	3	7	3	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
8	05010301	3	0	3	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
8	07020604	3	2	3	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
8	04110101	2	4	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
8	03060500	2	0	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
8	02060500	2	0	0	EPHEMEROPTERA	STENACRON	**UNIDENTIFIED**		3	Hilsenhoff 1995
8	07020601	2	0	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
8	08305404	2	0	0	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
8	08270700	1	0	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
8	02040601	1	0	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050923-40-08

Elma Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
8	08100100	1	0	0	DIPTERA	PERICOMA	**UNIDENTIFIED**	4.0	3	Hilsenhoff 1995
8	01050100	1	0	3	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
8	04040201	1	1	0	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986
8	02061503	1	0	0	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
8	08070300	1	0	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
8	02040406	1	1	0	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
8	04030101	0	0	2	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
8	04160101	0	0	1	TRICHOPTERA	AGARODES	DISTINCTUS	3.0	5	Hilsenhoff 1995
8	07020502	0	9	2	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
8	08010101	0	0	1	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
8	01050300	0	1	14	PLECOPTERA	NEOPERLA	**UNIDENTIFIED**		1	Hilsenhoff 1995
8	02070205	0	5	0	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953

SAMPLE NUMBER 20050923-40-09

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
9	02040406	31	26	17	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
9	07020502	21	38	14	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
9	04040707	18	22	33	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050923-40-09

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
9	04040100	10	2	14	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
9	02011606	9	13	0	EPHEMEROPTERA	PLAUDITUS	PUNCTIVENTRIS	5.0	3	Hilsenhoff 1995,82
9	08010101	8	13	4	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
9	08300918	7	11	1	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
9	02070205	7	0	10	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
9	07020600	7	5	6	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
9	02061506	4	1	6	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
9	02061500	4	0	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
9	07020604	3	0	0	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
9	02040601	3	0	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
9	04040706	2	0	0	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
9	01050401	2	2	0	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
9	03060500	2	0	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
9	04040705	2	0	0	TRICHOPTERA	CERATOPSYCHE	MOROSA MOROSA	2.0	4	Schmude, Hils. 1986
9	08322501	1	0	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
9	08140100	1	0	0	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
9	08140800	1	0	1	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
9	09020101	1	2	0	AMPHIPODA	HYALLELA	AZTECA	8.0	3	Holsinger 1972

SAMPLE NUMBER 20050923-40-09

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
9	01010301	1	4	3	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
9	04050301	1	0	1	TRICHOPTERA	LEUCOTRICHIA	PICTIPES	2.0	2	Hilsenhoff 1995
9	04010202	1	3	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
9	03060505	1	0	0	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
9	04110101	1	0	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
9	08271000	0	1	1	DIPTERA	HELOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
9	04070600	0	1	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
9	04110103	0	1	1	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
9	07020500	0	13	3	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
9	04020300	0	1	2	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
9	07020601	0	1	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
9	04030101	0	0	1	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
9	02060201	0	0	2	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
9	04060100	0	0	3	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
9	04020201	0	0	1	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
9	08280100	0	1	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
9	01050100	0	3	2	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
9	02010104	0	0	1	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050923-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	07020502	23	18	37	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
10	04040707	22	28	17	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
10	02040601	16	7	4	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
10	02061506	13	6	8	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
10	02010104	11	0	0	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
10	04020201	11	3	7	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
10	07020500	11	0	0	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
10	01050100	6	8	0	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
10	02060201	5	2	2	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
10	08280100	5	17	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
10	02040406	4	0	0	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
10	02061500	4	5	3	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
10	04110201	3	4	2	TRICHOPTERA	DOLOPHILODES	DISTINCTUS	0.0	4	Hilsenhoff 1995
10	05010301	3	0	8	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
10	02070205	3	3	7	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
10	01050401	2	2	0	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
10	03090000	2	0	0	ODONATA	**UNIDENTIFIED**			1	Hilsenhoff 1995
10	04020300	2	3	3	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-10

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
10	04030101	2	3	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
10	08010101	2	1	11	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
10	08070300	1	0	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
10	04060100	1	0	3	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
10	07020600	1	4	18	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
10	08305200	1	0	0	DIPTERA	NANOCLADIUS	**UNIDENTIFIED**	3.0	3	Epler 2001
10	04010202	1	3	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
10	04010104	1	1	2	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
10	04110103	1	0	0	TRICHOPTERA	CHIMARRA	OBSCURA	4.0	4	Hilsenhoff 1995,82
10	01010301	1	0	0	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
10	08301900	1	0	0	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
10	08030200	0	1	0	DIPTERA	BEZZIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
10	07020601	0	1	2	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
10	08310504	0	1	1	DIPTERA	RHEOTANYTARSUS	EXIGUUS GROUP	6.0	4	Epler 2001
10	04070600	0	1	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
10	04040100	0	1	0	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
10	08271000	0	1	2	DIPTERA	HELOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001

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SAMPLE NUMBER 20050923-40-14

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	04040706	25	29	36	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
14	02040601	16	5	1	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
14	03060500	15	15	9	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
14	02070205	12	12	7	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
14	04040100	10	16	28	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
14	04040707	9	1	18	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
14	02061500	8	6	0	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
14	07020502	7	12	11	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
14	04010202	5	3	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
14	02010104	5	4	6	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
14	04060100	5	3	0	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
14	02061506	4	5	11	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
14	08010101	4	5	1	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
14	07020600	3	5	0	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
14	02040406	3	13	8	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
14	04130200	2	12	0	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995
14	14040000	2	0	0	GASTROPODA	**UNIDENTIFIED**			2	Pennak 1978
14	01050100	2	0	4	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-14

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	05010301	2	3	7	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
14	04070500	2	0	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
14	04070600	2	0	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
14	08304808	1	0	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
14	04020300	1	1	0	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
14	01060408	1	1	1	PLECOPTERA	ISOPERLA	NANA	5.0	1	Hilsenhoff 1995,82
14	04140201	1	5	2	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
14	08272300	1	0	0	DIPTERA	RHEOPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
14	08273705	1	0	0	DIPTERA	A. (ABLABESMYIA)	MALLOCHI	8.0	1	Epler 2001
14	04110104	1	0	0	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
14	04190100	1	0	1	TRICHOPTERA	NEOPHYLAX	**UNIDENTIFIED**	3.0	2	Hilsenhoff 1995
14	02040404	1	0	0	EPHEMEROPTERA	EPHEMERELLA	INVARIA	1.0	3	Hilsenhoff 1995,82
14	08310503	0	1	0	DIPTERA	RHEOTANYTARSUS	SP. A	6.0	4	Epler 2001
14	08140100	0	6	3	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
14	07020501	0	0	1	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
14	04110101	0	0	5	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
14	02061509	0	0	1	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
14	03060505	0	1	3	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000

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Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
14	04010104	0	1	0	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
14	02050101	0	2	2	EPHEMEROPTERA	EPHEMERA	SIMULANS	1.0	3	McCafferty 1975
14	08300900	0	1	0	DIPTERA	C. (CRICOTOPUS)	**UNIDENTIFIED**	7.0	5	Epler 2001
14	08322501	0	0	1	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
14	01080300	0	1	1	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
14	07020500	0	7	0	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
14	04040214	0	1	0	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986
14	04030101	0	0	1	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
14	07020601	0	2	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
14	07020301	0	1	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
14	02061503	0	1	0	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
14	04020201	0	0	2	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
14	04010101	0	1	0	TRICHOPTERA	BRACHYCENTRUS	AMERICANUS	1.0	4	Hilsenhoff 1985b
14	02010103	0	1	0	EPHEMEROPTERA	BAETIS	INTERCALARIS	6.0	3	Hilsenhoff 1995,82
14	08300918	0	0	1	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001

SAMPLE NUMBER 20050923-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY

SAMPLE NUMBER 20050923-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	02040406	21	17	14	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
15	02040601	20	14	9	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
15	04040707	15	30	19	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
15	02010103	11	4	2	EPHEMEROPTERA	BAETIS	INTERCALARIS	6.0	3	Hilsenhoff 1995,82
15	04040100	9	14	26	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
15	07020502	9	7	11	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
15	04060100	7	6	4	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
15	04020300	7	6	2	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
15	03060500	6	1	3	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
15	02070205	6	11	24	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
15	04010104	5	0	1	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
15	02061506	4	13	9	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
15	05010301	4	4	8	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
15	04190100	3	0	0	TRICHOPTERA	NEOPHYLAX	**UNIDENTIFIED**	3.0	2	Hilsenhoff 1995
15	07020501	3	1	0	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
15	08306700	3	0	1	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
15	02061500	2	0	3	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
15	07020601	1	0	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050923-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	08310100	1	0	0	DIPTERA	CLADOTANYTARSUS	**UNIDENTIFIED**	7.0	3	Epler 2001
15	08130100	1	0	0	DIPTERA	CHRYSOPS	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
15	08301400	1	0	0	DIPTERA	EUKIEFFERIELLA	**UNIDENTIFIED**	8.0	3	Epler 2001
15	04140201	1	3	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
15	08324200	1	0	0	DIPTERA	XENOCHIRONOMUS	**UNIDENTIFIED**	0.0	1	Epler 2001
15	02060201	1	1	0	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
15	04040706	1	3	1	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
15	07020600	1	0	0	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
15	01060408	1	0	0	PLECOPTERA	ISOPERLA	NANA	5.0	1	Hilsenhoff 1995,82
15	08010101	1	1	3	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
15	04020201	1	1	4	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
15	01040301	1	2	0	PLECOPTERA	PROSTOIA	COMPLETA	1.0	5	Hilsenhoff 1995,85
15	04070600	1	1	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
15	14010100	1	0	0	GASTROPODA	FERRISIA	**UNIDENTIFIED**		2	Pennak 1978
15	08304708	1	0	0	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001
15	08070300	0	1	0	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
15	04130200	0	0	1	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995
15	02010101	0	0	2	EPHEMEROPTERA	BAETIS	BRUNNEICOLOR	4.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050923-40-15

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	08140200	0	0	1	DIPTERA	DICRANOTA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
15	04110101	0	2	5	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
15	01050100	0	1	4	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
15	04070500	0	0	2	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
15	04110201	0	1	3	TRICHOPTERA	DOLOPHILODES	DISTINCTUS	0.0	4	Hilsenhoff 1995
15	01010301	0	1	0	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
15	08110211	0	2	3	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
15	04010202	0	5	0	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
15	01060410	0	0	1	PLECOPTERA	ISOPERLA	SIGNATA	2.0	1	Hilsenhoff 1995,82
15	08140800	0	0	1	DIPTERA	LIMNOPHILA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
15	01060412	0	0	2	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
15	07020301	0	0	1	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
15	02061503	0	0	2	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
15	08304806	0	0	4	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
15	02061509	0	0	1	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82
15	02010104	0	3	0	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
15	08273500	0	1	1	DIPTERA	HAYESOMYIA	**UNIDENTIFIED**		1	Epler 2001
15	01080300	0	2	0	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995

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Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
15	04040703	0	1	3	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986

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Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
16	04040707	26	26	57	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
16	04040100	11	16	4	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
16	02061503	9	7	8	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
16	02061500	9	11	8	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
16	08010100	8	2	2	DIPTERA	ATHERIX	**UNIDENTIFIED**		1	Hilsenhoff 1995
16	07020502	6	2	2	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
16	02010103	5	0	0	EPHEMEROPTERA	BAETIS	INTERCALARIS	6.0	3	Hilsenhoff 1995,82
16	01050100	5	2	3	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
16	03060505	4	3	0	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
16	02040406	4	6	5	EPHEMEROPTERA	EPHEMERELLA	SUBVARIA	1.0	3	Hilsenhoff 1995,82
16	04030101	3	4	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
16	02040601	3	16	10	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
16	04110201	3	4	7	TRICHOPTERA	DOLOPHILODES	DISTINCTUS	0.0	4	Hilsenhoff 1995
16	02061509	2	2	0	EPHEMEROPTERA	MACCAFFERTIUM	VICARIUM	2.0	2	Hilsenhoff 1995,82

SAMPLE NUMBER 20050923-40-16

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
16	04020201	2	0	2	TRICHOPTERA	GLOSSOSOMA	INTERMEDIUM	0.0	2	Bright 2005
16	04010202	2	0	1	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
16	05010301	2	3	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
16	08140100	2	1	1	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
16	04040703	2	2	2	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
16	04110101	1	2	11	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
16	04070600	1	1	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
16	03060500	1	1	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
16	04130200	1	1	0	TRICHOPTERA	NEURECLIPSIS	**UNIDENTIFIED**	7.0	4	Hilsenhoff 1995
16	08310502	1	0	0	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
16	08280100	1	0	0	DIPTERA	DIAMESA	**UNIDENTIFIED**	5.0	3	Epler 2001
16	08304806	1	0	1	DIPTERA	TVETENIA	PAUCUNCA	4.0	3	Epler 2001
16	04070100	1	0	0	TRICHOPTERA	CERACLEA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
16	01060412	1	1	0	PLECOPTERA	ISOPERLA	TRANSMARINA	0.0	1	Hilsenhoff 1995,82
16	01050401	1	0	1	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
16	07020301	1	1	0	COLEOPTERA	MACRONYCHUS	GLABRATUS	4.0	3	Hils., Schmude 1992
16	02010104	1	8	3	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
16	07020600	1	4	1	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992

SAMPLE NUMBER 20050923-40-16

Little West Branch Creek

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
16	04070500	1	1	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
16	08110211	0	0	2	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
16	08322502	0	1	0	DIPTERA	MICROTENDIPES	RYDALENSIS	6.0	4	Epler 2001
16	08305404	0	1	0	DIPTERA	N.	SP. #5 JACOBSEN	3.0	3	Epler 2001
16	08270700	0	2	0	DIPTERA	CONCHAPELOPIA	**UNIDENTIFIED**	6.0	1	Epler 2001
16	04140101	0	3	1	TRICHOPTERA	LYPE	DIVERSA	2.0	2	Hilsenhoff 1995
16	01010301	0	1	0	PLECOPTERA	PARACAPNIA	ANGULATA	1.0		Hitchcock 1974
16	02030200	0	1	0	EPHEMEROPTERA	CAENIS	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995
16	04040706	0	1	0	TRICHOPTERA	CERATOPSYCHE	SLOSSONAE	4.0	4	Schmude, Hils. 1986
16	01080300	0	1	0	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
16	04010104	0	1	0	TRICHOPTERA	BRACHYCENTRUS	OCCIDENTALIS	1.0	4	Hilsenhoff 1985b
16	04140201	0	1	3	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
16	14010100	0	3	2	GASTROPODA	FERRISIA	**UNIDENTIFIED**		2	Pennak 1978
16	04060100	0	1	1	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
16	02070205	0	24	9	EPHEMEROPTERA	PARALEPTOPHLEBIA	MOLLIS	1.0	3	Burks 1953
16	07020601	0	2	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
16	04040201	0	1	0	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050923-40-17

SAMPLE NUMBER 20050923-40-17

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
17	07020502	50	56	37	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
17	04020300	17	39	32	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
17	04040707	17	5	18	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
17	07020500	12	32	13	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
17	07020600	7	4	6	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
17	04050300	6	1	6	TRICHOPTERA	LEUCOTRICHIA	**UNIDENTIFIED**		2	Hilsenhoff 1995
17	04040100	5	1	1	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
17	02011604	4	4	0	EPHEMEROPTERA	PLAUDITUS	DUBIUS	4.0	3	Hilsenhoff 1995,82
17	04140201	4	1	2	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
17	04040214	3	0	2	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986
17	04040201	3	0	0	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986
17	02010103	2	0	5	EPHEMEROPTERA	BAETIS	INTERCALARIS	6.0	3	Hilsenhoff 1995,82
17	04010202	2	2	1	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
17	06010201	2	0	0	LEPIDOPTERA	NYMPHULA	EKTHLIPSIS	7.0	5	Hilsenhoff 1995
17	04030101	2	4	0	TRICHOPTERA	HELICOPSYCHE	BOREALIS	3.0	2	Hilsenhoff 1995
17	08070300	2	1	6	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
17	02061503	2	1	1	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
17	03060500	1	1	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-17

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
17	02170100	1	0	4	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
17	03060505	1	1	0	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
17	02061500	1	1	2	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
17	05010301	1	0	0	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
17	04110101	1	0	0	TRICHOPTERA	CHIMARRA	ATERRIMA	4.0	4	Hilsenhoff 1995,82
17	07040201	1	1	0	COLEOPTERA	PSEPHENUS	HERRICKI	4.0	2	Hils., Schmude 1992
17	01050801	1	0	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
17	01050100	1	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
17	08110211	1	0	0	DIPTERA	SIMULIUM	CORBIS	2.0	4	Hilsenhoff 1985a
17	08326203	0	0	1	DIPTERA	P. (URESIPEDILUM)	FLAVUM	5.0	5	Epler 2001
17	04110104	0	0	1	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
17	04070600	0	2	2	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
17	01080300	0	0	1	PLECOPTERA	TAENIOPTERYX	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
17	01050300	0	1	0	PLECOPTERA	NEOPERLA	**UNIDENTIFIED**		1	Hilsenhoff 1995
17	07020200	0	1	0	COLEOPTERA	DUBIRAPHIA	**UNIDENTIFIED**	6.0		Hils., Schmude 1992
17	04040400	0	0	1	TRICHOPTERA	MACROSTEMUM	**UNIDENTIFIED**		4	Hilsenhoff 1995
17	08301900	0	0	1	DIPTERA	LOPESCLADIUS	**UNIDENTIFIED**		3	Epler 2001
17	08304808	0	0	1	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001

SAMPLE NUMBER 20050923-40-17

West Branch of the Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
17	08273500	0	1	0	DIPTERA	HAYESOMYIA	**UNIDENTIFIED**		1	Epler 2001
17	02011606	0	0	6	EPHEMEROPTERA	PLAUDITUS	PUNCTIVENTRIS	5.0	3	Hilsenhoff 1995,82
17	08304600	0	0	1	DIPTERA	SYNORTHOCLADIUS	**UNIDENTIFIED**	2.0	3	Epler 2001
17	07020501	0	6	0	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
17	08140200	0	3	2	DIPTERA	DICRANOTA	**UNIDENTIFIED**	3.0	1	Hilsenhoff 1995
17	08140100	0	1	3	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
17	07020601	0	0	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
17	04050900	0	0	2	TRICHOPTERA	STACTOBIELLA	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-18

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	07020502	40	23	30	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
18	04040707	29	33	26	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
18	07020500	15	23	12	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
18	08140100	11	5	6	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
18	07020600	9	4	0	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
18	02170100	9	3	7	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
18	04040214	9	4	1	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050923-40-18

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	02061503	9	7	3	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
18	04010202	4	3	3	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
18	08070300	4	3	3	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
18	02011600	3	1	0	EPHEMEROPTERA	PLAUDITUS	**UNIDENTIFIED**		3	Hilsenhoff 1995,82
18	02061500	3	7	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
18	04020300	3	12	11	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
18	04040100	3	0	2	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
18	04110104	2	7	0	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82
18	04140201	2	4	0	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
18	04060100	2	1	0	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
18	08300910	2	1	0	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
18	08310502	2	0	1	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
18	08141100	1	0	0	DIPTERA	PSEUDOLIMNOPHILA	**UNIDENTIFIED**	2.0		Hilsenhoff 1995
18	03060500	1	2	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
18	08322501	1	0	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
18	04050900	1	0	0	TRICHOPTERA	STACTOBIELLA	**UNIDENTIFIED**	2.0	5	Hilsenhoff 1995
18	04030100	1	1	0	TRICHOPTERA	HELICOPSYCHE	**UNIDENTIFIED**		2	Hilsenhoff 1995
18	04040207	1	2	2	TRICHOPTERA	HYDROPSYCHE	PHALERATA	1.0	4	Schmude, Hils. 1986

SAMPLE NUMBER 20050923-40-18

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	08010101	1	1	6	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
18	07020601	1	0	0	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
18	04040400	0	1	1	TRICHOPTERA	MACROSTEMUM	**UNIDENTIFIED**		4	Hilsenhoff 1995
18	14010100	0	1	1	GASTROPODA	FERRISIA	**UNIDENTIFIED**		2	Pennak 1978
18	08030215	0	1	0	DIPTERA	BEZZIA/PALPOMYIA	**UNIDENTIFIED**	6.0	1	Hilsenhoff 1995
18	08273500	0	0	1	DIPTERA	HAYESOMYIA	**UNIDENTIFIED**		1	Epler 2001
18	09010201	0	1	0	AMPHIPODA	GAMMARUS	PSEUDOLIMNAEUS	4.0	3	Holsinger 1972
18	02010116	0	5	3	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
18	02061506	0	2	1	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
18	02010104	0	2	1	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
18	02030200	0	0	1	EPHEMEROPTERA	CAENIS	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995
18	07020601	0	1	2	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
18	04040201	0	1	1	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986
18	07020501	0	2	1	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
18	04070600	0	2	0	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
18	04040703	0	3	0	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
18	02060201	0	3	0	EPHEMEROPTERA	EPEORUS	VITREUS	0.0	3	Hilsenhoff 1995
18	04050300	0	14	8	TRICHOPTERA	LEUCOTRICHIA	**UNIDENTIFIED**		2	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-18

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
18	05010201	0	1	1	MEGALOPTERA	CORYDALUS	CORNUTUS	6.0	1	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-19

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	07020502	28	23	37	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
19	02061503	26	14	28	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
19	04040707	21	4	11	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
19	02061500	16	8	4	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
19	02170100	14	1	12	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
19	04050300	9	7	16	TRICHOPTERA	LEUCOTRICHIA	**UNIDENTIFIED**		2	Hilsenhoff 1995
19	08010101	5	2	9	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995
19	07020604	5	3	0	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
19	07020500	4	0	14	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
19	08310502	4	1	0	DIPTERA	RHEOTANYTARSUS	PELLUCIDUS	6.0	4	Epler 2001
19	04140201	4	15	2	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
19	03060500	4	2	1	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
19	04040214	4	1	0	TRICHOPTERA	HYDROPSYCHE	PLACODA	3.0	4	Schmude, Hils. 1986
19	08140100	3	22	6	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-19

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	07020601	3	0	5	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
19	04010202	2	10	1	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
19	04040400	1	0	1	TRICHOPTERA	MACROSTEMUM	**UNIDENTIFIED**		4	Hilsenhoff 1995
19	02030200	1	2	0	EPHEMEROPTERA	CAENIS	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995
19	08304808	1	0	0	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
19	08300918	1	0	1	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
19	02040601	1	0	0	EPHEMEROPTERA	SERRATELLA	DEFICIENS	2.0	3	Hilsenhoff 1995,82
19	08300910	1	0	2	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001
19	08110209	1	0	0	DIPTERA	SIMULIUM	PUGETENSE		4	Hilsenhoff 1985a
19	03060505	1	0	1	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
19	07020600	1	4	0	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
19	08300900	1	0	0	DIPTERA	C. (CRICOTOPUS)	**UNIDENTIFIED**	7.0	5	Epler 2001
19	01050801	1	0	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
19	08306700	0	1	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
19	04070600	0	15	1	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
19	04050500	0	2	0	TRICHOPTERA	OCHROTRICHIA	**UNIDENTIFIED**	4.0	3	Hilsenhoff 1995
19	04060100	0	4	2	TRICHOPTERA	LEPIDOSTOMA	**UNIDENTIFIED**	1.0	5	Hilsenhoff 1995
19	04020300	0	0	3	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995

SAMPLE NUMBER 20050923-40-19

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
19	04040100	0	2	5	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
19	07020200	0	0	1	COLEOPTERA	DUBIRAPHIA	**UNIDENTIFIED**	6.0		Hils., Schmude 1992
19	07020501	0	0	8	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
19	02050101	0	3	0	EPHEMEROPTERA	EPHEMERA	SIMULANS	1.0	3	McCafferty 1975
19	05010301	0	1	1	MEGALOPTERA	NIGRONIA	SERRICORNIS	0.0	1	Neunzig 1966
19	02020103	0	2	0	EPHEMEROPTERA	BAETISCA	LAURENTINA	3.0	3	Hilsenhoff 1995,84
19	08322501	0	2	0	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
19	08140300	0	1	0	DIPTERA	ERIOPTERA	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995
19	02010104	0	0	1	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82

SAMPLE NUMBER 20050923-40-20

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	07020502	20	21	17	COLEOPTERA	OPTIOSERVUS	TRIVITTATUS	2.0	2	Hils., Schmude 1992
20	04010202	18	4	3	TRICHOPTERA	MICRASEMA	RUSTICUM	2.0	5	Hilsenhoff 1985b
20	04040707	12	12	12	TRICHOPTERA	CERATOPSYCHE	SPARNA	1.0	4	Schmude, Hils. 1986
20	07020501	12	8	4	COLEOPTERA	OPTIOSERVUS	FASTIDITUS	4.0	2	Hils., Schmude 1992
20	07020500	12	1	0	COLEOPTERA	OPTIOSERVUS	**UNIDENTIFIED**	4.0	2	Hils., Schmude 1992
20	08300910	10	3	5	DIPTERA	C. (CRICOTOPUS)	BICINCTUS	6.0	5	Epler 2001

SAMPLE NUMBER 20050923-40-20

Wolf River

SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	02061503	9	0	4	EPHEMEROPTERA	MACCAFFERTIUM	MEDIOPUNCTATU	3.0	2	Hilsenhoff 1995,82
20	04050300	8	16	27	TRICHOPTERA	LEUCOTRICHIA	**UNIDENTIFIED**		2	Hilsenhoff 1995
20	08140100	8	6	2	DIPTERA	ANTOCHA	**UNIDENTIFIED**	3.0	3	Hilsenhoff 1995
20	04140201	6	9	11	TRICHOPTERA	PSYCHOMYIA	FLAVIDA	2.0	3	Hilsenhoff 1995
20	04020300	6	10	2	TRICHOPTERA	PROTOPTILA	**UNIDENTIFIED**	1.0	2	Hilsenhoff 1995
20	04070600	4	4	5	TRICHOPTERA	SETODES	**UNIDENTIFIED**	2.0	3	Hilsenhoff 1995
20	08070300	3	4	1	DIPTERA	CHELIFERA	**UNIDENTIFIED**	6.0		Hilsenhoff 1995
20	03060500	3	3	0	ODONATA	OPHIOGOMPHUS	**UNIDENTIFIED**	1.0	1	Hilsenhoff 1995
20	02061500	2	2	1	EPHEMEROPTERA	MACCAFFERTIUM	**UNIDENTIFIED**		2	Hilsenhoff 1995
20	07040201	2	0	2	COLEOPTERA	PSEPHENUS	HERRICKI	4.0	2	Hils., Schmude 1992
20	07020600	2	2	2	COLEOPTERA	STENELMIS	**UNIDENTIFIED**	5.0	2	Hils., Schmude 1992
20	02010101	1	1	0	EPHEMEROPTERA	BAETIS	BRUNNEICOLOR	4.0	3	Hilsenhoff 1995,82
20	01050401	1	2	0	PLECOPTERA	PARAGNETINA	MEDIA	1.0	1	Hilsenhoff 1995
20	08141200	1	0	0	DIPTERA	TIPULA	**UNIDENTIFIED**	4.0	5	Hilsenhoff 1995
20	01050801	1	1	0	PLECOPTERA	AGNETINA	CAPITATA	2.0	1	Dimick 1991 unpubl.
20	04040703	1	0	1	TRICHOPTERA	CERATOPSYCHE	BRONTA	5.0	4	Schmude, Hils. 1986
20	03060505	1	1	2	ODONATA	OPHIOGOMPHUS	RUPINSULENSIS	1.0	1	Needham et al. 2000
20	08304708	1	2	0	DIPTERA	THIENEMANNIELLA	XENA	6.0	3	Epler 2001

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SITE	ID NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	04030100	1	1	1	TRICHOPTERA	HELICOPSYCHE	**UNIDENTIFIED**		2	Hilsenhoff 1995
20	08304808	1	0	1	DIPTERA	TVETENIA	VITRACIES	5.0	3	Epler 2001
20	04040400	1	2	0	TRICHOPTERA	MACROSTEMUM	**UNIDENTIFIED**		4	Hilsenhoff 1995
20	08301406	1	2	0	DIPTERA	EUKIEFFERIELLA	GRACEI GROUP	5.0	3	Epler 2001
20	04040208	1	3	1	TRICHOPTERA	HYDROPSYCHE	SCALARIS	2.0	4	Schmude, Hils. 1986
20	14010100	1	2	0	GASTROPODA	FERRISIA	**UNIDENTIFIED**		2	Pennak 1978
20	02060400	1	0	0	EPHEMEROPTERA	RHITHROGENA	**UNIDENTIFIED**	0.0	3	Hilsenhoff 1995
20	07020604	1	7	5	COLEOPTERA	STENELMIS	SANDERSONI	4.0	2	Hils., Schmude 1992
20	01050100	0	0	1	PLECOPTERA	ACRONEURIA	**UNIDENTIFIED**	0.0	1	Hilsenhoff 1995
20	01050000	0	1	0	PLECOPTERA	**UNIDENTIFIED**			1	Hilsenhoff 1995
20	04050500	0	7	5	TRICHOPTERA	OCHROTRICHIA	**UNIDENTIFIED**	4.0	3	Hilsenhoff 1995
20	01060401	0	1	0	PLECOPTERA	ISOPERLA	BILINEATA	4.0	1	Hilsenhoff 1995,82
20	02030200	0	0	1	EPHEMEROPTERA	CAENIS	**UNIDENTIFIED**	7.0	3	Hilsenhoff 1995
20	08322501	0	2	1	DIPTERA	MICROTENDIPES	PEDELLUS GROUP	6.0	4	Epler 2001
20	01050600	0	1	0	PLECOPTERA	PERLINELLA	**UNIDENTIFIED**	1.0		Hilsenhoff 1995,85
20	08310100	0	0	1	DIPTERA	CLADOTANYTARSUS	**UNIDENTIFIED**	7.0	3	Epler 2001
20	02010104	0	0	1	EPHEMEROPTERA	BAETIS	FLAVISTRIGA	4.0	3	Hilsenhoff 1995,82
20	08010101	0	1	0	DIPTERA	ATHERIX	VARIEGATA	2.0	1	Hilsenhoff 1995

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SITE ID	NUMBER	REP1	REP2	REP3	ORDER	GENUS	SPECIES	TOLVAL	TFG	TAXKEY
20	08300500	0	2	0	DIPTERA	CARDIOCLADIUS	**UNIDENTIFIED**	5.0	1	Epler 2001
20	08321300	0	1	0	DIPTERA	DICROTENDIPES	**UNIDENTIFIED**	8.0	3	Epler 2001
20	08270000	0	0	1	DIPTERA	**UNIDENTIFIED**			1	Epler 2001
20	04040201	0	0	1	TRICHOPTERA	HYDROPSYCHE	BETTENI	6.0	4	Schmude, Hils. 1986
20	02010116	0	0	5	EPHEMEROPTERA	BAETIS	TRICAUDATUS	2.0	3	Hilsenhoff 1995,82
20	02061506	0	1	2	EPHEMEROPTERA	MACCAFFERTIUM	MODESTUM	1.0	2	Hilsenhoff 1995,82
20	01070000	0	0	1	PLECOPTERA	**UNIDENTIFIED**			5	Hilsenhoff 1995
20	05010201	0	1	0	MEGALOPTERA	CORYDALUS	CORNUTUS	6.0	1	Hilsenhoff 1995
20	07020601	0	1	1	COLEOPTERA	STENELMIS	CRENATA	5.0	2	Hils., Schmude 1992
20	04070500	0	1	0	TRICHOPTERA	OECETIS	**UNIDENTIFIED**	8.0	1	Hilsenhoff 1995
20	08306700	0	1	0	DIPTERA	CRICOTOPUS/ORTHO	**UNIDENTIFIED**			Epler 2001
20	04040100	0	0	1	TRICHOPTERA	CHEUMATOPSYCHE	**UNIDENTIFIED**	5.0	4	Hilsenhoff 1995
20	02170100	0	0	1	EPHEMEROPTERA	ISONYCHIA	**UNIDENTIFIED**	2.0	4	Hilsenhoff 1995
20	08300918	0	0	1	DIPTERA	C. (CRICOTOPUS)	TRIFASCIA	7.0	5	Epler 2001
20	04110104	0	2	0	TRICHOPTERA	CHIMARRA	SOCIA	0.0	4	Hilsenhoff 1995,82