

**The Impact of a Small Dam Removal on Benthic  
Macroinvertebrate Communities of Mill Creek  
(Washtenaw Co., MI.)**

By

Matthew J. Knittel

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Thesis Committee:

Professor Michael J. Wiley, Chair

Assistant Research Scientist and Intermittent Lecturer, Catherine M. Riseng



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This is for my father and my mother.

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**Abstract**

Dams have been built around the world for various uses since the beginning of civilization. Lately, many more modern dams do not serve their original purpose and/or are in need of repair or removal. Due to the drastic altering of the river-scape that dams have created, removing dams is also a high disturbance event. Unfortunately there have been few studies documenting the impacts of dam removal. This study focuses on the removal of a low-head dam in Southeast Michigan and the impacts the removal has the macroinvertebrate communities at 3 sites upstream and 1 site downstream. Qualitative samples were collected, then using the Hilsenoff Biotic Index paired t-tests were conducted. The results show a significant, slight increase in HBI score occurred after the dam removal, as well as an increase in the average EPT Richness and % EPT Species Composition. These findings are similar to other studies in that macroinvertebrate communities improved quickly after dam removal, leading to the conclusion of increased water quality.

## **Introduction**

The first dams created are believed to have been built around 3000 BC in the Mesopotamia region, to provide irrigation and flood control (EHP 1997, Helms 1977). Many other ancient dams have been discovered throughout the Middle-East and Europe with a greater number of dams, and more advanced dams during the age of the Roman Empire (Smith 1971). With the coming of hydropower more dams were being constructed around the world to run mills, and eventually generate electricity (EHP 1997). Currently, across the world, there are more than 48,000 dams over 15 meters high, and millions more smaller dams (WWF 2010).

Dams have been used in the United States since the arrival of European settlers (Smith 1971). The majority of dams in the US were built between 1950 and 1979, mostly for the purpose of recreation and flood control (Burroughs et al. 2009, Pollard & Reed 2004, The Heinz Center 2002). In the United States alone there are approximately 2.5 million dams, and by the year 2020 80% of these will be at least 50 years old (Burroughs et al. 2009, National Research Council 1992). Most are located on mid- and first-order streams, in the headwaters of larger rivers (Pollard & Reed 2004, Dynesius & Nillson, 1994). According to the National Research Council and Army Corps of Engineers there are 83,9897 aging dams that are in need of repair (National Research Council 1992). Of these, 42,073 of them under 25ft. tall and the vast majority (57,508) are privately owned (National Research Council 1992). Meanwhile a smaller fraction (23,843) is owned by governments (16,536 owned by local governments, 4,232 owned by state governments and 3,075 owned by the federal government) (National Research Council 1992).

According to the Michigan Department of Natural Resources (DNR), there are approximately 2,500 dams in the state of Michigan (fig. 1) (DNRE 2010). A large number of these are located in Southeast Michigan.

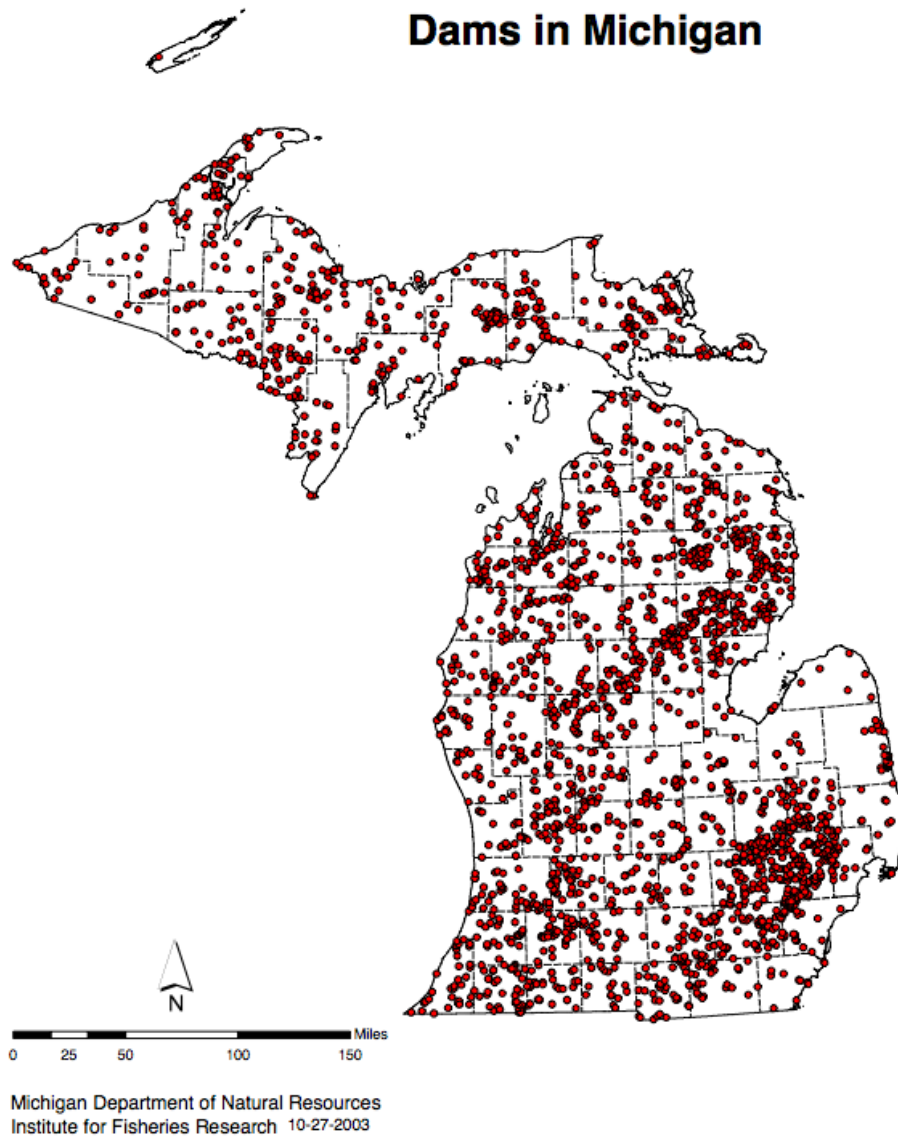


FIGURE 1. Map of Michigan dams. Taken from Michigan DNRE website.

Dams can have negative impacts on river ecosystems by disrupting movement of biota, sediment and nutrient transfer, flow and temperature regimes and the basic

geomorphology of the stream channel and bed (Doyle et al. 2005, Pollard & Reed 2004, HRWC 2003, American Rivers 2002, Bednarek 2001, Graf 1999, Death & Winterbourn 1995). Changes in channel substrate and other factors of the physical habitat lead to altered aquatic community composition (Doyle et al. 2005, Pollard & Reed 2004, HRWC 2003, American Rivers 2002, Bednarek 2001, Graf 1999, Death & Winterbourn 1995). Many have speculated that dam removal can be an important form of river restoration, improving water quality and ecological integrity (e.g. Bushnaw-Newton et al. 2002).

On the other hand, the process of dam removal itself has been found to be a large-scale disturbance for river systems (Doyle et al. 2005). Removing dams can drastically alter many aspects of the river ecosystem, including flow regimes, channel morphology, sediment loads, substrate conditions and more – all of which will have some impact the biota of the stream and the impounded reaches (Doyle et al. 2005, Pollard & Reed 2004, HRWC 2003, American Rivers 2002, Bednarek 2001, Graf 1999, Death & Winterbourn 1995). However, it is generally considered that removing aged and defunct dams will restore rivers to a more natural condition, despite initial disturbance (Doyle et al. 2005, Pollard 2004).

While there have been approximately 500 dams removed in the US (Burroughs et al. 2009) there has been very little analyses to the dam removal impacts (Burroughs et al, 2009, Doyle et al. 2005, Pollard & Reed 2004, Stanley et al, 2002). Furthermore, there has been even less extended study of the impacts of dam removals on river ecosystems (Burroughs et al, 2009, Doyle et al. 2005, Pollard & Reed 2004, Stanley et al, 2002).



Mill Creek (Washtenaw County, Michigan) runs 226 miles in its 145 square mile watershed in Southeast Michigan (Gajewski et al, 2010, HRWC 2003). Draining mostly agricultural lands (with an increasing amount of urban area), Mill Creek conflues with the Huron River just north of the town of Dexter (Gajewski et al 2010, HRWC 2003). Most of Mill Creek was at one point channelized, with many reaches still this way (Gajewski et al 2010, HRWC 2003). A few dams have existed along Mill Creek, most notably the dam in Dexter just upstream of the confluence with the Huron River (Gajewski et al 2010, HRWC 2003). This dam has existed since 1824 when it was built to run mills, and then was replaced in 1932 with a 15-foot gravity dam to create a pond for recreation (Gajewski et al 2010, HRWC 2003). This dam interrupts Mill Creeks' biological connection with the Huron River mainstem (HRWC 2003). Due to the ecological impacts as well as the rapidly declining condition of the dam, it was removed in 2008 (Gajewski et al 2010).

Channelization and damming have caused Mill Creek to have more unstable flow regimes (Gajewski et al 2010, HRWC 2003) that have damaged the ecological welfare of Mill Creek, including its benthic macroinvertebrate communities (HRWC 2003). In 2003 a study of the tributaries of the Huron River by Dakin and Martin reported that 19 of the 87 benthic macroinvertebrate species sampled in Mill Creek, were catalogued as "sensitive" species. This study examined the entirety of the stream, not just reaches directly impacted by the dam. The restoration plan put into effect after the dam's removal intended to restore the stream to a natural condition, as well as stabilize banks and increase habitat for stream biota (Gajewski et al 2010).

My study was conducted in order to determine the impact the recent dam removal on the benthic macroinvertebrate communities of Mill Creek. By collecting samples from multiple reaches across Mill Creek (see Fig. 3) and comparing them to similar data on benthic macroinvertebrate composition and biodiversity from previous years, I hoped to find evidence for either positive or negative impacts of the dam removal. Based on findings from previous studies on (Burroughs et al, 2009, Doyle et al. 2005, Pollard & Reed 2004, Bushnaw-Newton 2002, Stanley et al, 2002, Bednarek 2001) I expected to see an increase in the quality (as defined by an increase in Hilsenhoff Biotic Index scores) of benthic macroinvertebrate communities.

QuickTime™ and a  
decompressor  
are needed to see this picture.

FIGURE 2. The former dam site along Mill Creek in Dexter, Michigan. (Photo by James Minesky)

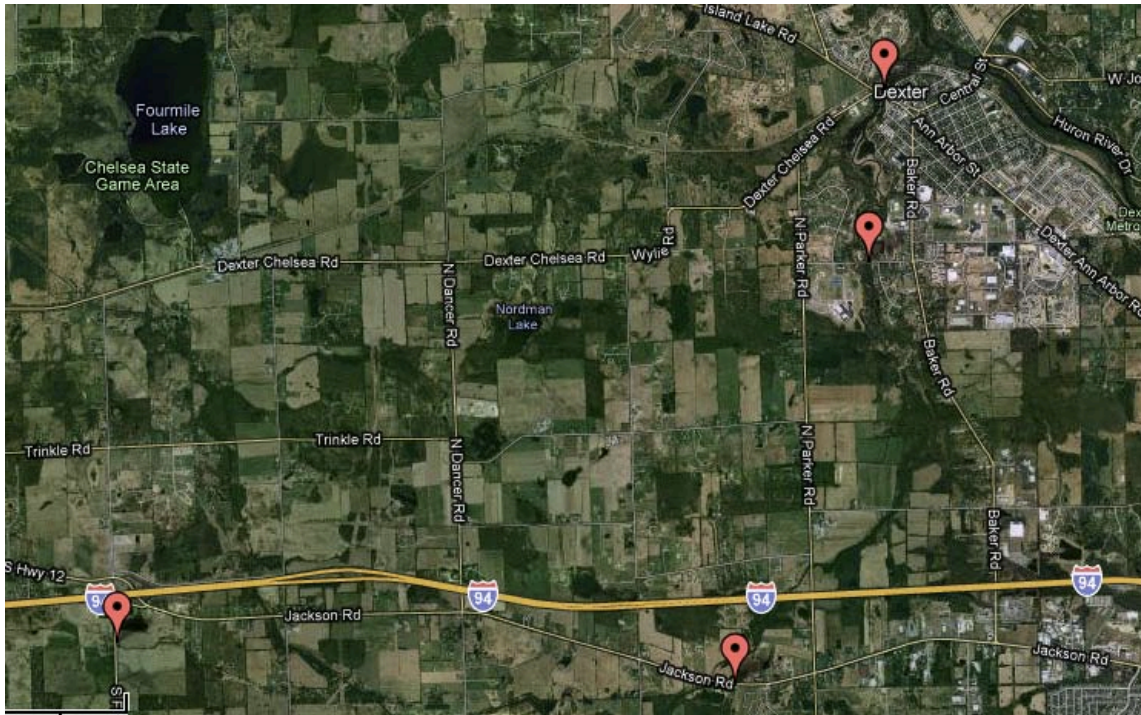


FIGURE 3. Site Locations sampled in 2005 to 2010 (From left to right: Fletcher Road, Jackson Road, Shield Road, Warrior Creek Park)

TABLE 1. Site locations and access points within the Mill Creek study area, Mill Creek, Michigan.

| Site Name          | Geographic Coordinates               | Approximate Location                   | Location Upstream or Downstream of Dam | Distance from Dam (km) | Access Point            |
|--------------------|--------------------------------------|--|--|------------------------|-------------------------|
| Fletcher Rd.       | N 42° 17' 37.77"<br>W 83° 58' 34.63" | Fletcher Rd. and Jackson Rd.           | Upstream                               | 16.42                  | Large culvert           |
| Jackson Rd.        | N 42° 17' 25.72"<br>W 83° 54' 26.53" | Jackson Rd. and Bee Tree Ln            | Upstream                               | 7.41                   | Bridge, upstream side   |
| Shield Rd.         | N 42° 19' 30.63"<br>W 83° 53' 32.78" | Shield Rd. and Weber Dr.               | Upstream                               | 2.14                   | Bridge, downstream side |
| Warrior Creek Park | N 42° 20' 25.53"<br>W 83° 53' 22.82" | Off of Main St. by the Fire Department | Downstream                             | 0.05                   | At Warrior Creek Park   |

## Methods

Macroinvertebrates were sampled in the fall (September 2009) and spring (March 2010) from four locations in Mill Creek where samples were collected in previous years by the Huron River Watershed Council (HRWC). (see Fig. 3, Table 1). The HRWC has established sites along the Huron and its tributaries that they sample twice a year for macroinvertebrates. I chose 4 of their sites that had similar habitat and that were closest to the site of the dam. Qualitative, timed samples (10 minutes) were taken at each site. The collector attempted to sample every habitat-type present at each site to ensure that any and all macroinvertebrate species present would be collected and counted. To collect the samples, 30 cm D-frame nets were used and the macroinvertebrates were preserved in 70% ethanol to be identified to genus (except for chironomids, and noninsect invertebrates which were identified to family) and sorted later.

Previously collected samples from the Huron River Watershed Council were collected bi-annually (April and September) by volunteers following a similar timed, multi-habitat, qualitative sampling method. The collected samples were preserved in 70% ethanol, sorted and identified to family in the laboratory, and then placed in storage. I later retrieved samples from 2005 to 2009 and identified the invertebrates to genus (except for chironomids, and non-insect invertebrates which were identified to family).

The Hilsenhoff Biotic Index (HBI, Hilsenhoff 1987), overall species richness, number of Ephemeroptera, Plecoptera, and Trichoptera taxa (EPT), and percent of total collection comprised of EPT species were used to evaluate differences in benthic macroinvertebrate communities.

Hilsenhoff Biotic Index scores were determined to the generic level based on Hilsenhoff's (1987) formula:

$$BI = \frac{\sum n_i a_i}{N}$$

Where  $n_i$  is the number of specimens in each taxonomic group,  $a_i$  is the pollution tolerance

score for that taxonomic group, and  $N$  is the total number of organisms in sample.

Pollution tolerance scores for taxa ranged from 0 (extremely pollution sensitive) to 10 (extremely pollution tolerant).

Samples were also categorized into functional feeding groups based on taxonomic descriptions from Merritt & Cummins (1998). These groups were: shredders, filterers, gatherers, predators, scrapers, piercers and unknown.

#### *Statistical analysis*

An initial paired t-test of HBI values was conducted comparing fall (September) and the spring (March and April) samples to be sure that the species composition was similar enough the samples could be consolidated together and used to compare before and after effects of the dam removal. Then seasonally pooled data were compared, again using a Paired T-test, to evaluate pre- and post dam removal community structure. It is assumed in these tests that the two populations follow a normal distribution, that the variance in each is similar (however, due to the similar sample sizes this renders the test highly robust to uneven variances), and that the data was sampled independently from within and without. All statistics were completed using SPSS (SPSS Inc. IBM).

## Results

No significant difference (Paired T-test;  $\alpha=0.984$ ) between seasonal collections could be found, and thus all collections from a single year were pooled by site for further analysis.

TABLE 1. Paired t-test comparing 1) spring and fall samples for HBI scores and 2) before and after dam removal for multiple indices. \* denotes significance.

| <b><i>t</i>-test pairings</b>   | <b><i>t</i></b> | <b>Sig. (2-tailed)</b> |
|---|-----------------|------------------------|
| HBI Score Fall – HBI Score Spring   | .020            | .984                   |
| Species Richness Before Dam Removal –<br>Species Richness After Dam Removal | .954            | .361                   |
| EPT Richness Before Dam Removal –<br>EPT Richness After Dam Removal         | -.074           | .942                   |
| % EPT Richness Before Dam Removal –<br>% EPT Richness After Dam Removal     | -1.338          | .208                   |
| HBI Score Before Dam Removal –<br>HBI Score After Dam Removal               | 2.355           | .038*                  |

Comparing results from samples before the dam removal to samples after the dam I found not significant change in community metrics except for the HBI score (See Appendices A). The HBI score after the dam removal was significantly ( $\alpha=0.038$ ) lower than the HBI score before the dam removal (Table 1). Implying overall quality had improved. Other metrics did not show a significant change in between before and after the dam removal. Species richness (SPPRICHNESS), EPT richness (EPTRICHNESS), and the percent of EPT species (PCTEPT) before dam removal compared to after dam removal were all insignificantly different (Table 1).

To further explore the cause of the significant result of the HBI score several additional tests were conducted. First, functional feeding groups (FFG) were analyzed to determine if there was a significant difference between the populations of macroinvertebrates before the dam removal compared to after the dam removal. However, all of the functional feeding group comparisons were insignificant.

TABLE 2. Pooled averages for all sites for various metrics.

|                    | <b>HBI Scores</b> | <b>Species Richness</b> | <b>EPT Richness</b> | <b>% EPT Species</b> |
|--------------------|-------------------|-------------------------|---------------------|----------------------|
| Before Dam Removal | 5.066             | 13.548                  | 5.278               | 41.42                |
| After Dam Removal  | 4.498             | 11.583                  | 8.083               | 51.74                |

The pooled averages of HBI scores, EPT Richness and Percent EPT Species show an overall increase (in the case of the HBI score ‘increase’ is seen as a better score), while only Species Richness decreases overall (Table 2).

TABLE 3. Averages for all sites for various metrics.

| <b>Fletcher Rd. Site</b> | <b>HBI Scores</b> | <b>Species Richness</b> | <b>EPT Richness</b> | <b>% EPT Species</b> |
|--------------------------|-------------------|-------------------------|---------------------|----------------------|
| Before Dam Removal       | 5.400             | 15.250                  | 5.000               | 33.25                |
| After Dam Removal        | 5.520             | 7.333                   | 4.000               | 53.00                |
| <b>Jackson Rd. Site</b>  | <b>HBI Scores</b> | <b>Species Richness</b> | <b>EPT Richness</b> | <b>% EPT Species</b> |
| Before Dam Removal       | 4.432             | 13.200                  | 5.600               | 50.00                |
| After Dam Removal        | 4.056             | 16.333                  | 16.666              | 53.66                |
| <b>Shield Rd. Site</b>   | <b>HBI Scores</b> | <b>Species Richness</b> | <b>EPT Richness</b> | <b>% EPT Species</b> |
| Before Dam               | 4.950             | 14.142                  | 5.714               | 41.85                |

|                                    |                   |                             |                     |                          |
|------------------------------------|-------------------|-----------------------------|---------------------|--------------------------|
| Removal<br>After Dam<br>Removal    | 4.006             | 8.333                       | 3.333               | 45.66                    |
| <b>Warrior Creek<br/>Park Site</b> | <b>HBI Scores</b> | <b>Species<br/>Richness</b> | <b>EPT Richness</b> | <b>% EPT<br/>Species</b> |
| Before Dam                         | 5.548             | 11.600                      | 4.800               | 40.60                    |
| Removal<br>After Dam<br>Removal    | 4.410             | 14.333                      | 8.333               | 54.66                    |

Table 3 shows the average scores at the Fletcher Rd. site decrease, except for Percent EPT species, which has the largest increase of all the sites in that category. At the Shield Rd. site the average HBI score and average Percent EPT Species improves, while average Species Richness and average EPT Richness numbers worsen. The average scores for all metrics improves at the Jackson Rd. and Warrior Creek Park sites.

## Discussion

My findings are similar to those found by many other studies showing that after dam removal, benthic macroinvertebrates assemblages, as seen through HBI scores improved. (Doyle et al. 2005, Pollard & Reed 2004, Bushaw-Newton et al. 2002). These changes occurred rapidly after dam removal (within a year) – a result found by many other studies (Doyle et al. 2005, Pollard & Reed 2004, Bushaw-Newton et al. 2002). Due to the rapid colonization, any detriments that may have occurred to downstream benthic invertebrate communities due to increased sediment loading from behind the dam were not evident.

Overall, HBI scores improved slightly for the Warrior Creek Park, Shield Rd. and Jackson Rd. sites after the dam was removed; however, the difference was not large.



Improved HBI scores is similar to what has been found by others (Doyle et al. 2005, Pollard & Reed 2004, Bushaw-Newton et al. 2002). There was not a very large difference however. This may be because all of the sites had very similar scores to begin with, that all indicated relatively good conditions (Table 3), and it was unlikely that any site would drastically improve after the dam removal because no site was in very poor condition prior to the removal of the dam. It is also possible that conditions could continue to improve for some sites in the future as the habitats continue to return to a more natural state and overall water quality improves.

I did not observe any significant changes in FFG and total number of species between sites after the dam removal. Again, this could be due to the similarities the sites shared before the dam removal, the short time span after the dam removal the sites were sampled, and a limited number of samples. Species richness, EPT richness and percent EPT may all change within the next few years as the stream continues to cut through previously impounded sediments, washing the sediment downstream.

The significant improvement in HBI scores is most likely due to the overall increase in the EPT Species Richness and the Percent EPT Species composition (Table 2). Many EPT species have lower HBI tolerance scores and would therefore lower the overall HBI scores, implying better quality water. However, the overall average Species Richness declined which is an unexpected result. If the water quality is improving (as the improved HBI scores and increased EPT Richness and Percent EPT Species indicates), it seems more likely for overall Species Richness to increase rather than decrease.

Examining each site individually (Table 3) further explains the results seen in the pooled averages. The HBI score for all sites improves except for the Fletcher Rd. site,

while the largest change is at the Warrior Creek Park site. Though the Fletcher Rd. Site was the only site to have a decrease in the quality of the HBI score, this change was minor, changing from 5.40 from before the dam removal to 5.52 after the dam removal. The Fletcher Rd. site is 16.42 kilometers away, and therefore is unlikely to have any major impacts from the dam removal. At the time of this study there was major road construction occurring on intersecting roads, which may have led to the decreased quality of HBI score. Due to the Warrior Creek Park site being directly downstream of where the dam was in place, it is logical that the largest increase in quality of HBI score (5.548 to 4.410) would be here (Doyle et al. 2005, Pollard & Reed 2004, Bushaw-Newton et al. 2002).

Species Richness increased for the Warrior Creek Park and Jackson Rd. sites, while decreasing at the Fletcher Rd. and Shield Rd. sites. The Fletcher Rd. site had the largest change with a decrease of an average of about 8 species, although the Shield Rd. site also lost about an average of 6 species. Again, the Fletcher Rd. site decrease is possibly due to road construction negatively impacting the stream. The Shield Rd. site is only 2.14km away from where the dam was and therefore is more likely to be impacted by the removal of the dam. However, this is not to say that the removal of the dam caused the decrease of the average species richness. Both the Warrior Creek Park and Jackson Rd. sites gained on average about 3 species after the dam removal. It is possible, but cannot be proven that this is due to improved water quality and increased habitat due to the dam removal.

The EPT Species Richness somewhat mirrors the Species Richness results. Again the Warrior Creek Park and Jackson Rd. sites improve, while the Fletcher Rd. and Shield

Rd. site decline. However this time the Shield Rd. site has the largest decline (from an average of 5.714 EPT species to an average of 3.333 EPT species) and the Jackson Rd. site has the largest change and increase, starting from an average of 5.6 EPT species before the dam removal to an average of 16.666 EPT species after the dam removal. There seems to be no clear reason why these changes occurred, but again road construction and the removal of the dam may have played a part in these results.

Finally, the average Percent of EPT Species increased at all sites, with the Fletcher Rd. site having the largest increase (starting with an average of 33.25% and increasing to an average of 53% EPT species). This is not an all-together unexpected result as the Fletcher Rd. site lost an average of 8 species, and yet only lost an average of one EPT species. While the largest change was at the Fletcher Rd. site, the Warrior Creek Park site also saw a large change from an average of 40.6% to an average of 54.66% EPT species. This is likely due to a result of higher quality water now flowing into the site from a free flowing stream instead of impaired water from the impoundment (Doyle et al. 2005, Pollard & Reed 2004, Bushaw-Newton et al. 2002).

The largest improvements came from the Warrior Creek Park site. As this is the site nearest the removed dam, as well as the only downstream site, it is only logical that this site would have the largest improvements (Doyle et al. 2005, Pollard & Reed 2004, Bushaw-Newton et al. 2002).

A greater amount of downstream sites would likely have provided a clearer image of this improvement. However it was difficult to find sites further downstream due to 1) a lack of access points, 2) Mill Creek empties into the Huron River shortly after passing through Dexter and 3) there were no sites with previous data to compare to. The lack of

other sites with previous data was a major hindrance to this study. I would have liked to have sampled where the impoundment had been, but I could not find any previous data in that area. With a larger number of sample sites and more time to increase the amount of samples taken, more data could have been collected which may have resulted in more refined conclusions. Future studies at the sampled sites and other sites along Mill Creek will provide more data on the impacts of dam removal, as well as much needed data on the impacts of dam removal over time. In addition, as there are many dams that are in ill-repair and are in the process of being debated over removal or are scheduled to be removed (such as a dam in Traverse City, Michigan), future studies could sample the impacts of these removals and compare them to this study as well as others.

In conclusion, after the removal of the Mill Creek dam in Dexter, the benthic macroinvertebrate HBI scores for four sampled sites increased, meaning that those reaches of Mill Creek have improved in quality. This shows that the removal of small head dams should lead to the overall improvement of stream water quality and ecosystems.

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Appendix A -  
Data Metrics

| ROAD          | YEAR | SEASON | LOCATION (0=ABOVE, 1=BELOW) | DAM REMOVAL (0=BEFORE, 1=AFTER) | DISTANCE FROM DAM (km) | HABITAT SCORE | SPP RICHNESS | EPT RICHNESS |
|---------------|------|--------|-----------------------------|---------------------------------|------------------------|---------------|--------------|--------------|
| FLETCHER      | 2005 | SPRING | 0                           | 0                               | 16.42                  |               | 11           | 3            |
| FLETCHER      | 2005 | FALL   | 0                           | 0                               | 16.42                  | 69.50         | 17           | 3            |
| FLETCHER      | 2006 | SPRING | 0                           | 0                               | 16.42                  |               | 18           | 5            |
| FLETCHER      | 2006 | FALL   | 0                           | 0                               | 16.42                  |               | N/A          | N/A          |
| FLETCHER      | 2007 | SPRING | 0                           | 0                               | 16.42                  |               | 15           | 9            |
| FLETCHER      | 2007 | FALL   | 0                           | 0                               | 16.42                  |               | N/A          | N/A          |
| FLETCHER      | 2008 | SPRING | 0                           | 0                               | 16.42                  |               | N/A          | N/A          |
| FLETCHER      | 2008 | FALL   | 1                           | 1                               | 16.42                  |               | N/A          | N/A          |
| FLETCHER      | 2009 | SPRING | 0                           | 1                               | 16.42                  |               | 8            | 5            |
| FLETCHER      | 2009 | FALL   | 0                           | 1                               | 16.42                  |               | 5            | 2            |
| FLETCHER      | 2010 | SPRING | 0                           | 1                               | 16.42                  |               | 9            | 5            |
| FLETCHER      | 2010 | FALL   | 1                           | 1                               | 16.42                  | 71.50         | 11           | 5            |
| WARRIOR CREEK | 2005 | SPRING | 1                           | 0                               | 0.05                   |               | 12           | 3            |
| WARRIOR CREEK | 2005 | FALL   | 1                           | 0                               | 0.05                   |               | 16           | 8            |
| WARRIOR CREEK | 2006 | SPRING | 1                           | 0                               | 0.05                   |               | 9            | 3            |
| WARRIOR CREEK | 2006 | FALL   | 1                           | 0                               | 0.05                   |               | 10           | 5            |
| WARRIOR CREEK | 2007 | SPRING | 1                           | 0                               | 0.05                   |               | N/A          | N/A          |
| WARRIOR CREEK | 2007 | FALL   | 1                           | 0                               | 0.05                   |               | N/A          | N/A          |
| WARRIOR CREEK | 2008 | SPRING | 1                           | 0                               | 0.05                   |               | N/A          | N/A          |
| WARRIOR CREEK | 2008 | FALL   | 1                           | 1                               | 0.05                   |               | 14           | 7            |
| WARRIOR CREEK | 2009 | SPRING | 1                           | 1                               | 0.05                   |               | 18           | 9            |
| WARRIOR CREEK | 2009 | FALL   | 1                           | 1                               | 0.05                   |               | 11           | 7            |
| WARRIOR CREEK | 2010 | SPRING | 1                           | 1                               | 0.05                   |               | 12           | 8            |
| WARRIOR CREEK | 2010 | FALL   | 1                           | 1                               | 0.05                   | 63.50         | 6            | 2            |
| SHIELD RD     | 2005 | SPRING | 0                           | 0                               | 2.14                   |               | 10           | 5            |
| SHIELD RD     | 2005 | FALL   | 0                           | 0                               | 2.14                   |               | 24           | 4            |
| SHIELD RD     | 2006 | SPRING | 0                           | 0                               | 2.14                   |               | 22           | 8            |
| SHIELD RD     | 2006 | FALL   | 0                           | 0                               | 2.14                   |               | 15           | 6            |
| SHIELD RD     | 2007 | SPRING | 0                           | 0                               | 2.14                   |               | N/A          | N/A          |
| SHIELD RD     | 2007 | FALL   | 0                           | 0                               | 2.14                   | 45.50         | 4            | 2            |
| SHIELD RD     | 2008 | SPRING | 0                           | 1                               | 2.14                   |               | 2            | 1            |
| SHIELD RD     | 2008 | FALL   | 0                           | 1                               | 2.14                   |               | 12           | 5            |
| SHIELD RD     | 2009 | SPRING | 0                           | 1                               | 2.14                   |               | N/A          | N/A          |
| SHIELD RD     | 2009 | FALL   | 0                           | 1                               | 2.14                   |               | 20           | 6            |
| SHIELD RD     | 2010 | SPRING | 0                           | 1                               | 2.14                   |               | N/A          | N/A          |
| SHIELD RD     | 2010 | FALL   | 0                           | 1                               | 2.14                   |               | 15           | 7            |
| JACKSON RD    | 2006 | SPRING | 0                           | 0                               | 7.41                   |               | 13           | 4            |
| JACKSON RD    | 2006 | FALL   | 0                           | 0                               | 7.41                   |               | 6            | 6            |
| JACKSON RD    | 2007 | SPRING | 0                           | 0                               | 7.41                   | 78.50         | N/A          | N/A          |
| JACKSON RD    | 2007 | FALL   | 0                           | 0                               | 7.41                   |               | 21           | 9            |
| JACKSON RD    | 2008 | SPRING | 0                           | 1                               | 7.41                   |               | 19           | 7            |
| JACKSON RD    | 2008 | FALL   | 0                           | 1                               | 7.41                   |               | 12           | 5            |
| JACKSON RD    | 2009 | SPRING | 0                           | 1                               | 7.41                   |               | N/A          | N/A          |
| JACKSON RD    | 2009 | FALL   | 0                           | 1                               | 7.41                   |               | 20           | 6            |
| JACKSON RD    | 2010 | SPRING | 0                           | 1                               | 7.41                   |               | N/A          | N/A          |
| JACKSON RD    | 2010 | FALL   | 0                           | 1                               | 7.41                   |               | 15           | 7            |
| JACKSON RD    | 2006 | SPRING | 0                           | 0                               | 7.41                   |               | 13           | 4            |
| JACKSON RD    | 2006 | FALL   | 0                           | 0                               | 7.41                   |               | 6            | 6            |
| JACKSON RD    | 2007 | SPRING | 0                           | 0                               | 7.41                   | 78.50         | N/A          | N/A          |
| JACKSON RD    | 2007 | FALL   | 0                           | 0                               | 7.41                   |               | 21           | 9            |
| JACKSON RD    | 2008 | SPRING | 0                           | 1                               | 7.41                   |               | 19           | 7            |
| JACKSON RD    | 2008 | FALL   | 0                           | 1                               | 7.41                   |               | 12           | 5            |
| JACKSON RD    | 2009 | SPRING | 0                           | 1                               | 7.41                   |               | N/A          | N/A          |
| JACKSON RD    | 2009 | FALL   | 0                           | 1                               | 7.41                   |               | 20           | 6            |
| JACKSON RD    | 2010 | SPRING | 0                           | 1                               | 7.41                   |               | N/A          | N/A          |
| JACKSON RD    | 2010 | FALL   | 0                           | 1                               | 7.41                   |               | 15           | 7            |



Appendix A  
cont. -  
Data Metrics

| ROAD          | PCT EPT SPP | HILSINOFF INDEX - FAMILY | NUM SPP SHREDDERS | NUM SPP FILTERERS | NUM SPP GATHERERS | NUM SPP PREDATORS | NUM SPP SCRAPPERS | NUM SPP PIERCERS |
|---------------|-------------|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|
| FLETCHER      | 0.27        | 5.42                     | 2                 | 2                 | 5                 | 1                 | 0                 | 0                |
| FLETCHER      | 0.18        | 5.92                     | 1                 | 3                 | 3                 | 9                 | 0                 | 0                |
| FLETCHER      | 0.28        | 5.39                     | 0                 | 3                 | 7                 | 5                 | 3                 | 0                |
| FLETCHER      | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| FLETCHER      | 0.60        | 4.87                     | 3                 | 3                 | 5                 | 3                 | 1                 | 0                |
| FLETCHER      | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| FLETCHER      | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| FLETCHER      | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| FLETCHER      | 0.63        | 5.48                     | 2                 | 2                 | 2                 | 1                 | 1                 | 0                |
| FLETCHER      | 0.40        | 5.88                     | 0                 | 1                 | 1                 | 3                 | 0                 | 0                |
| FLETCHER      | 0.40        | 5.21                     | 4                 | 1                 | 2                 | 1                 | 0                 | 0                |
| FLETCHER      | 0.45        | 5.49                     | 1                 | 3                 | 4                 | 2                 | 1                 | 0                |
| WARRIOR CREEK | 0.25        | 5.33                     | 0                 | 2                 | 3                 | 5                 | 2                 | 0                |
| WARRIOR CREEK | 0.50        | 5.51                     | 2                 | 4                 | 6                 | 2                 | 2                 | 0                |
| WARRIOR CREEK | 0.33        | 5.90                     | 0                 | 1                 | 4                 | 3                 | 1                 | 0                |
| WARRIOR CREEK | 0.50        | 5.51                     | 1                 | 3                 | 4                 | 2                 | 0                 | 0                |
| WARRIOR CREEK | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| WARRIOR CREEK | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| WARRIOR CREEK | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| WARRIOR CREEK | 0.50        | 5.40                     | 4                 | 2                 | 6                 | 1                 | 1                 | 0                |
| WARRIOR CREEK | 0.50        | 4.37                     | 3                 | 6                 | 4                 | 3                 | 2                 | 0                |
| WARRIOR CREEK | 0.64        | 3.46                     | 3                 | 5                 | 2                 | 0                 | 1                 | 0                |
| WARRIOR CREEK | 0.67        | 5.00                     | 2                 | 4                 | 3                 | 0                 | 1                 | 0                |
| SHIELD RD     | 0.33        | 4.83                     | 0                 | 1                 | 2                 | 3                 | 0                 | 0                |
| SHIELD RD     | 0.50        | 5.33                     | 0                 | 2                 | 3                 | 4                 | 1                 | 0                |
| SHIELD RD     | 0.17        | 4.98                     | 1                 | 3                 | 8                 | 9                 | 2                 | 1                |
| SHIELD RD     | 0.50        | 4.77                     | 1                 | 1                 | 4                 | 3                 | 2                 | 0                |
| SHIELD RD     | 0.36        | 4.69                     | 2                 | 1                 | 4                 | 3                 | 2                 | 0                |
| SHIELD RD     | 0.40        | 5.06                     | 0                 | 5                 | 6                 | 9                 | 1                 | 0                |
| SHIELD RD     | 0.37        | 4.52                     | 0                 | 4                 | 4                 | 4                 | 1                 | 0                |
| SHIELD RD     | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| SHIELD RD     | 0.50        | 4.00                     | 0                 | 0                 | 2                 | 1                 | 1                 | 0                |
| SHIELD RD     | 0.50        | 3.50                     | 1                 | 0                 | 0                 | 0                 | 0                 | 0                |
| SHIELD RD     | 0.42        | 4.56                     | 1                 | 3                 | 2                 | 3                 | 3                 | 0                |
| JACKSON RD    | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| JACKSON RD    | 0.30        | 5.16                     | 5                 | 1                 | 3                 | 4                 | 5                 | 1                |
| JACKSON RD    | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| JACKSON RD    | 0.47        | 4.21                     | 2                 | 3                 | 2                 | 5                 | 3                 | 0                |
| JACKSON RD    | 0.31        | 4.48                     | 0                 | 4                 | 2                 | 4                 | 2                 | 1                |
| JACKSON RD    | 1.00        | 3.75                     | 3                 | 0                 | 1                 | 1                 | 1                 | 0                |
| JACKSON RD    | N/A         | N/A                      | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              |
| JACKSON RD    | 0.44        | 4.28                     | 2                 | 3                 | 1                 | 3                 | 0                 | 0                |
| JACKSON RD    | 0.43        | 4.54                     | 0                 | 7                 | 4                 | 6                 | 4                 | 0                |
| JACKSON RD    | 0.74        | 3.35                     | 5                 | 4                 | 4                 | 2                 | 3                 | 0                |

Appendix A  
cont. -  
Data Metrics

| ROAD          | NUM SPP UNKNOWN | PCT SPP SHREDDERS | PCT SPP FILTERERS | PCT SPP GATHERERS | PCT SPP PREDATORS | PCT SPP SCRAPPERS | PCT SPP PIERCERS | PCT SPP UNKNOWN |
|---------------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-----------------|
| FLETCHER      | 1               | 0.18              | 0.18              | 0.45              | 0.09              | 0.00              | 0.00             | 0.09            |
| FLETCHER      | 1               | 0.06              | 0.18              | 0.18              | 0.53              | 0.00              | 0.00             | 0.06            |
| FLETCHER      | 0               | 0.00              | 0.17              | 0.39              | 0.28              | 0.00              | 0.00             | 0.00            |
| FLETCHER      | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| FLETCHER      | 0               | 0.20              | 0.20              | 0.33              | 0.20              | 0.07              | 0.00             | 0.00            |
| FLETCHER      | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| FLETCHER      | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| FLETCHER      | 0               | 0.25              | 0.25              | 0.25              | 0.13              | 0.13              | 0.00             | 0.00            |
| FLETCHER      | 0               | 0.00              | 0.20              | 0.20              | 0.60              | 0.00              | 0.00             | 0.00            |
| FLETCHER      | 0               | 0.44              | 0.11              | 0.22              | 0.11              | 0.11              | 0.00             | 0.00            |
| FLETCHER      | 0               | 0.09              | 0.27              | 0.56              | 0.18              | 0.09              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.00              | 0.17              | 0.44              | 0.33              | 0.00              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.13              | 0.25              | 0.38              | 0.13              | 0.13              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.00              | 0.11              | 0.44              | 0.33              | 0.11              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.10              | 0.30              | 0.40              | 0.20              | 0.00              | 0.00             | 0.00            |
| WARRIOR CREEK | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| WARRIOR CREEK | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| WARRIOR CREEK | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| WARRIOR CREEK | 0               | 0.29              | 0.14              | 0.43              | 0.07              | 0.07              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.17              | 0.33              | 0.22              | 0.17              | 0.11              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.27              | 0.45              | 0.18              | 0.00              | 0.09              | 0.00             | 0.00            |
| WARRIOR CREEK | 0               | 0.17              | 0.33              | 0.25              | 0.17              | 0.08              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.00              | 0.17              | 0.33              | 0.50              | 0.00              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.00              | 0.20              | 0.30              | 0.40              | 0.10              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.04              | 0.13              | 0.33              | 0.38              | 0.08              | 0.04             | 0.00            |
| SHIELD RD     | 0               | 0.07              | 0.29              | 0.29              | 0.21              | 0.14              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.09              | 0.18              | 0.27              | 0.41              | 0.05              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.00              | 0.33              | 0.27              | 0.27              | 0.07              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.00              | 0.26              | 0.26              | 0.32              | 0.11              | 0.05             | 0.00            |
| SHIELD RD     | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| SHIELD RD     | 0               | 0.00              | 0.00              | 0.50              | 0.25              | 0.25              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.50              | 0.00              | 0.50              | 0.00              | 0.00              | 0.00             | 0.00            |
| SHIELD RD     | 0               | 0.08              | 0.25              | 0.17              | 0.25              | 0.25              | 0.00             | 0.00            |
| JACKSON RD    | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| JACKSON RD    | 1               | 0.25              | 0.05              | 0.15              | 0.20              | 0.25              | 0.05             | 0.05            |
| JACKSON RD    | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| JACKSON RD    | 0               | 0.13              | 0.20              | 0.13              | 0.33              | 0.20              | 0.00             | 0.00            |
| JACKSON RD    | 0               | 0.00              | 0.31              | 0.15              | 0.31              | 0.15              | 0.08             | 0.00            |
| JACKSON RD    | 0               | 0.50              | 0.00              | 0.17              | 0.17              | 0.17              | 0.00             | 0.00            |
| JACKSON RD    | N/A             | N/A               | N/A               | N/A               | N/A               | N/A               | N/A              | N/A             |
| JACKSON RD    | 0               | 0.22              | 0.33              | 0.11              | 0.33              | 0.00              | 0.00             | 0.00            |
| JACKSON RD    | 0               | 0.00              | 0.33              | 0.19              | 0.29              | 0.19              | 0.00             | 0.00            |
| JACKSON RD    | 1               | 0.26              | 0.21              | 0.21              | 0.11              | 0.16              | 0.00             | 0.05            |

## Appendix B – Species List. Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 4/16/05 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               |         | 0            | 0                  | 0          | 0           |
| Baetidae <i>Procladius</i>           |         | 0            | 0                  | 0          | 0           |
| Heptageniidae <i>Stenocranus</i>     |         | 0            | 0                  | 0          | 0           |
| Heptageniidae <i>Stenonema</i>       |         | 0            | 3                  | 18         | 8           |
| Caenidae <i>Caenis</i>               |         | 13           | 0                  | 0          | 0           |
| Baetiscidae <i>Baetisca</i>          |         | 0            | 1                  | 1          | 0           |
| Isonychiidae <i>Isonychia</i>        |         | 0            | 0                  | 4          | 0           |
| Leptohyphidae <i>Tricothodes</i>     |         | 0            | 0                  | 0          | 0           |
| Leptohyphidae <i>Leptophlebia</i>    |         | 0            | 0                  | 0          | 0           |
| Leptohyphidae <i>Habrophlebiodes</i> |         | 0            | 0                  | 0          | 0           |
| Ephemeridae <i>Hexagenia</i>         |         | 0            | 0                  | 0          | 0           |
| Ephemeridae <i>Ephemera</i>          |         | 0            | 0                  | 0          | 0           |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> |         | 0            | 0                  | 0          | 0           |
| Capniidae <i>Allocapnia</i>          |         | 0            | 0                  | 0          | 0           |
| Perlidae <i>Isoperla</i>             |         | 0            | 0                  | 0          | 0           |
| Perlidae <i>Neoperla</i>             |         | 0            | 0                  | 0          | 0           |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Macrostemum</i>    |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> |         | 5            | 1                  | 3          | 4           |
| Hydropsychidae <i>Potamyia</i>       |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Hydropsyche</i>    |         | 12           | 8                  | 1          | 21          |
| Brachycentridae                      |         | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Brachycentrus</i> |         | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Micrasema</i>     |         | 0            | 0                  | 0          | 0           |
| Philopotamidae                       |         | 0            | 0                  | 0          | 0           |
| Uenoidae <i>Necophylax</i>           |         | 0            | 0                  | 0          | 2           |
| Glossosomatidae <i>Agapetus</i>      |         | 0            | 0                  | 0          | 0           |
| Glossosomatidae <i>Protopila</i>     |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Apatania</i>        |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Freslia</i>         |         | 3            | 0                  | 0          | 0           |
| Limnephilidae <i>Hydatophylax</i>    |         | 0            | 0                  | 2          | 0           |
| Limnephilidae <i>Asynarchus</i>      |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Pycnopsyche</i>     |         | 0            | 1                  | 1          | 0           |
| Limnephilidae <i>Isonychia</i>       |         | 0            | 0                  | 0          | 0           |
| Phryganeidae <i>Ptilostomis</i>      |         | 0            | 0                  | 0          | 0           |
| Hydrophilidae <i>Tropisternus</i>    |         | 0            | 0                  | 0          | 0           |
| Polycentropidae <i>Ceratomyia</i>    |         | 0            | 0                  | 8          | 0           |
| Psychomyiidae <i>Lype</i>            |         | 0            | 0                  | 0          | 1           |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Prosimulium</i>        |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Simulium</i>           |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Cnephia</i>            |         | 0            | 4                  | 5          | 9           |
| Chironomidae                         |         | 20           | 18                 | 13         | 10          |
| Tipulidae <i>Tipula</i>              |         | 1            | 0                  | 0          | 1           |
| Tipulidae <i>Hesperoconopa</i>       |         | 1            | 0                  | 0          | 0           |
| Tipulidae <i>Hexatoma</i>            |         | 0            | 0                  | 0          | 3           |
| Ceratopogonidae                      |         | 0            | 0                  | 0          | 0           |
| Nematocera <i>Dicranota</i>          |         | 0            | 0                  | 0          | 0           |
| Tabanidae <i>Chrysops</i>            |         | 0            | 0                  | 0          | 0           |
| Culicidae                            |         | 0            | 0                  | 0          | 0           |
| Dixidae <i>Dixa</i>                  |         | 0            | 0                  | 0          | 0           |
| Empididae <i>Cheliffera</i>          |         | 0            | 0                  | 0          | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                   | 4/16/05 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|-----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>                |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>            |         | 0            | 0                  | 0          | 0           |
| Belostomatidae <i>Belostoma</i>   |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Aquarius</i>          |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Rheumatobates</i>     |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Metrobates</i>        |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Limnoporus</i>        |         | 0            | 0                  | 0          | 0           |
| Cortidae                          |         | 1            |                    |            |             |
| Notonectidae <i>Buena</i>         |         | 0            | 0                  | 0          | 0           |
| Pleidae <i>Neoplea</i>            |         | 0            | 0                  | 0          | 0           |
| Velidae <i>Rhagovelia</i>         |         | 0            | 0                  | 0          | 0           |
| Velidae <i>Microvelia</i>         |         | 0            | 0                  | 0          | 0           |
| <b>Coleoptera</b>                 |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)      |         | 2            | 0                  | 0          | 0           |
| Elmidae <i>Stenelmis</i> (L)      |         | 0            | 1                  | 0          | 0           |
| Elmidae <i>Dubirophia</i> (A)     |         | 0            | 0                  | 0          | 0           |
| Elmidae <i>Dubirophia</i> (L)     |         | 0            | 0                  | 0          | 0           |
| Elmidae <i>Macronychus</i> (A)    |         | 1            | 0                  | 1          | 3           |
| Elmidae <i>Macronychus</i> (L)    |         | 0            | 0                  | 0          | 0           |
| Elmidae <i>Ancyronyx</i>          |         | 0            | 0                  | 0          | 0           |
| Hydrophilidae <i>Hydrochora</i>   |         | 0            | 0                  | 0          | 0           |
| Hydrochidae <i>Hydrochus</i>      |         | 0            | 0                  | 0          | 0           |
| Haliplidae <i>Peltodytes</i>      |         | 0            | 0                  | 0          | 0           |
| Haliplidae <i>Brychius</i>        |         | 0            | 0                  | 0          | 0           |
| Haliplidae <i>Brychius</i> (L)    |         | 0            | 0                  | 0          | 0           |
| Psephenidae <i>Ectopria</i>       |         | 0            | 0                  | 0          | 0           |
| Gyrinidae <i>Dineutus</i>         |         | 0            | 0                  | 0          | 0           |
| <b>Megaloptera</b>                |         |              |                    |            |             |
| Sialidae <i>Sialis</i>            |         | 0            | 0                  | 0          | 0           |
| Corydalidae <i>Nigronia</i>       |         | 0            | 0                  | 0          | 0           |
| Corydalidae <i>Chauliodes</i>     |         | 0            | 1                  | 0          | 0           |
| <b>Odonata</b>                    |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>  |         | 0            | 0                  | 0          | 0           |
| Coenagrionidae <i>Amphiagrion</i> |         | 0            | 0                  | 1          | 0           |
| Gomphidae <i>Argomphus</i>        |         | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Hagenius</i>         |         | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Ophiogomphus</i>     |         | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Gomphus</i>          |         | 0            | 0                  | 0          | 0           |
| Calopterygidae <i>Calopteryx</i>  |         | 0            | 1                  | 0          | 1           |
| Aeshnidae <i>Boyeria</i>          |         | 0            | 0                  | 2          | 1           |
| <b>Amphipoda</b>                  |         | 9            | 21                 | 0          | 0           |
| <b>Isopoda</b>                    |         | 0            | 0                  | 0          | 0           |
| <b>Hirudinea</b>                  |         | 0            | 0                  | 0          | 0           |
| <b>Oligochaeta</b>                |         | 0            | 0                  | 0          | 0           |
| <b>Lepidoptera</b>                |         | 0            | 0                  | 0          | 0           |
| Parapoynx                         |         | 0            | 0                  | 0          | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 9/24/05 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               |         | 2            | 0                  | 0          | N/A         |
| Baetidae <i>Procladius</i>           |         | 0            | 0                  | 2          | N/A         |
| Heptageniidae <i>Stenocranus</i>     |         | 0            | 5                  | 0          | N/A         |
| Heptageniidae <i>Stenonema</i>       |         | 0            | 8                  | 0          | N/A         |
| Caenidae <i>Caenis</i>               |         | 0            | 0                  | 0          | N/A         |
| Baetiscidae <i>Baetisca</i>          |         | 0            | 0                  | 2          | N/A         |
| Isonychiidae <i>Isonychia</i>        |         | 0            | 1                  | 0          | N/A         |
| Leptohyphidae <i>Tricothodes</i>     |         | 0            | 0                  | 0          | N/A         |
| Leptohyphidae <i>Leptophlebia</i>    |         | 0            | 0                  | 0          | N/A         |
| Ephemeridae <i>Hexagenia</i>         |         | 0            | 0                  | 0          | N/A         |
| Ephemeridae <i>Ephemera</i>          |         | 0            | 0                  | 0          | N/A         |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> |         | 0            | 0                  | 0          | N/A         |
| Capniidae <i>Allocapnia</i>          |         | 0            | 0                  | 0          | N/A         |
| Perlidae <i>Isoperla</i>             |         | 0            | 0                  | 0          | N/A         |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       |         | 0            | 0                  | 0          | N/A         |
| Hydropsychidae <i>Macrostemum</i>    |         | 0            | 0                  | 0          | N/A         |
| Hydropsychidae <i>Ceratopsyche</i>   |         | 0            | 0                  | 0          | N/A         |
| Hydropsychidae <i>Cheumatopsyche</i> |         | 2            | 0                  | 0          | N/A         |
| Hydropsychidae <i>Potamyla</i>       |         | 0            | 0                  | 0          | N/A         |
| Hydropsychidae <i>Hydropsyche</i>    |         | 3            | 0                  | 0          | N/A         |
| Brachycentridae                      |         | 0            | 0                  | 0          | N/A         |
| Brachycentridae <i>Brachycentrus</i> |         | 0            | 0                  | 0          | N/A         |
| Brachycentridae <i>Micrasema</i>     |         | 0            | 0                  | 0          | N/A         |
| Philopotamidae <i>Chimarra</i>       |         | 0            | 2                  | 0          | N/A         |
| Uenoidae <i>Neophylax</i>            |         | 0            | 0                  | 0          | N/A         |
| Glossosomatidae <i>Agapetus</i>      |         | 0            | 0                  | 0          | N/A         |
| Limnephilidae <i>Apatania</i>        |         | 0            | 0                  | 0          | N/A         |
| Limnephilidae <i>Fresnia</i>         |         | 0            | 0                  | 0          | N/A         |
| Limnephilidae <i>Hydatophylax</i>    |         | 0            | 0                  | 0          | N/A         |
| Limnephilidae <i>Asynarchus</i>      |         | 0            | 0                  | 0          | N/A         |
| Limnephilidae <i>Pycnopsyche</i>     |         | 0            | 0                  | 0          | N/A         |
| Limnephilidae <i>Ironoquia</i>       |         | 0            | 0                  | 0          | N/A         |
| Phryganeidae <i>Ptilostomis</i>      |         | 0            | 0                  | 0          | N/A         |
| Hydrophillidae <i>Tropisternus</i>   |         | 0            | 0                  | 0          | N/A         |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           |         | 0            | 0                  | 0          | N/A         |
| Simuliidae <i>Prosimulium</i>        |         | 0            | 0                  | 0          | N/A         |
| Simuliidae <i>Simulium</i>           |         | 0            | 0                  | 0          | N/A         |
| Simuliidae <i>Cnephia</i>            |         | 2            | 5                  | 1          | N/A         |
| Chironomidae                         |         | 6            | 0                  | 0          | N/A         |
| Tipulidae <i>Tipula</i>              |         | 1            | 0                  | 0          | N/A         |
| Tipulidae <i>Hesperoconopa</i>       |         | 2            | 0                  | 0          | N/A         |
| Ceratopogonidae                      |         | 0            | 0                  | 0          | N/A         |
| Nematocera <i>Dicranota</i>          |         | 0            | 0                  | 0          | N/A         |
| Tabanidae <i>Chrysops</i>            |         | 0            | 0                  | 2          | N/A         |
| Culicidae                            |         | 0            | 0                  | 0          | N/A         |
| Dixidae <i>Dixa</i>                  |         | 0            | 0                  | 0          | N/A         |
| Empididae <i>Chelifera</i>           |         | 0            | 0                  | 0          | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                  | 9/24/05 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>               |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>           |         | 1            | 2                  | 0          | N/A         |
| Belostomatidae <i>Belostoma</i>  |         | 1            | 0                  | 0          | N/A         |
| Gerridae <i>Aquarius</i>         |         | 0            | 0                  | 0          | N/A         |
| Gerridae <i>Rheumatobates</i>    |         | 0            | 0                  | 0          | N/A         |
| Gerridae <i>Metrobates</i>       |         | 0            | 0                  | 0          | N/A         |
| Gerridae <i>Limnoporus</i>       |         | 0            | 0                  | 0          | N/A         |
| Corixidae                        |         | 4            | 1                  | 10         | N/A         |
| Notonectidae <i>Buena</i>        |         | 1            | 0                  | 0          | N/A         |
| Pleidae <i>Neoplea</i>           |         | 0            | 0                  | 0          | N/A         |
| Velidae <i>Rhagovella</i>        |         | 0            | 0                  | 0          | N/A         |
| Velidae <i>Microvelia</i>        |         | 0            | 0                  | 0          | N/A         |
| <b>Coleoptera</b>                |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)     |         | 0            | 0                  | 0          | N/A         |
| Elmidae <i>Stenelmis</i> (L)     |         | 0            | 0                  | 0          | N/A         |
| Elmidae <i>Dubirophia</i> (A)    |         | 0            | 1                  | 0          | N/A         |
| Elmidae <i>Dubirophia</i> (L)    |         | 0            | 0                  | 0          | N/A         |
| Elmidae <i>Macronychus</i>       |         | 0            | 0                  | 0          | N/A         |
| Elmidae <i>Ancyronyx</i>         |         | 0            | 0                  | 0          | N/A         |
| Hydrophilidae <i>Hydrochorra</i> |         | 0            | 0                  | 0          | N/A         |
| Haliplidae <i>Peltodytes</i>     |         | 0            | 2                  | 0          | N/A         |
| Haliplidae <i>Brychius</i>       |         | 0            | 0                  | 0          | N/A         |
| Haliplidae <i>Brychius</i> (L)   |         | 0            | 0                  | 0          | N/A         |
| Psephenidae <i>Ectopria</i>      |         | 0            | 0                  | 0          | N/A         |
| Gyrinidae <i>Dineutus</i>        |         | 0            | 1                  | 0          | N/A         |
| <b>Megaloptera</b>               |         |              |                    |            |             |
| Sialidae <i>Sialis</i>           |         | 0            | 0                  | 0          | N/A         |
| Corydalidae <i>Nigronia</i>      |         | 0            | 0                  | 0          | N/A         |
| <b>Odonata</b>                   |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i> |         | 11           | 2                  | 0          | N/A         |
| Gomphidae <i>Argomphus</i>       |         | 0            | 0                  | 0          | N/A         |
| Gomphidae <i>Hagenius</i>        |         | 0            | 0                  | 0          | N/A         |
| Gomphidae <i>Gomphus</i>         |         | 1            | 0                  | 0          | N/A         |
| Calopterygidae <i>Calopteryx</i> |         | 2            | 5                  | 1          | N/A         |
| Calopterygidae <i>Hetaerina</i>  |         | 1            | 9                  | 0          | N/A         |
| Aeshnidae <i>Boyeria</i>         |         | 2            |                    |            | N/A         |
| <b>Amphipoda</b>                 |         |              |                    |            |             |
|                                  |         | 16           | 10                 | 0          | N/A         |
| <b>Isopoda</b>                   |         |              |                    |            |             |
|                                  |         | 0            | 4                  | 0          | N/A         |
| <b>Hirudinea</b>                 |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | N/A         |
| <b>Oligochaeta</b>               |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | N/A         |
| <b>Lepidoptera</b>               |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | N/A         |
| <b>Paraponyx</b>                 |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | N/A         |



## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 4/22/06 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               |         | 0            | 0                  | 0          | 0           |
| Heptageniidae <i>Stenocran</i>       |         | 0            | 1                  | 0          | 0           |
| Heptageniidae <i>Stenoma</i>         |         | 1            | 6                  | 4          | 6           |
| Caenidae <i>Caenis</i>               |         | 4            | 2                  | 1          | 1           |
| Baetiscidae <i>Baetisca</i>          |         | 0            | 1                  | 7          | 0           |
| Isonychiidae <i>Isonychia</i>        |         | 0            | 1                  | 0          | 0           |
| Leptohyphidae <i>Tricothodes</i>     |         | 0            | 0                  | 0          | 0           |
| Leptohyphidae <i>Leptophlebia</i>    |         | 0            | 0                  | 0          | 0           |
| Epheriidae <i>Hexagenia</i>          |         | 0            | 0                  | 0          | 0           |
| Epheriidae <i>Ephemera</i>           |         | 0            | 0                  | 0          | 0           |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> |         | 0            | 0                  | 0          | 0           |
| Capniidae <i>Allocapnia</i>          |         | 0            | 0                  | 0          | 0           |
| Perlidae <i>Isoperla</i>             |         | 4            | 0                  | 1          | 8           |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Macrostemum</i>    |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   |         | 0            | 0                  | 7          | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> |         | 20           | 2                  | 0          | 0           |
| Hydropsychidae <i>Potamyla</i>       |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Hydropsyche</i>    |         | 5            | 1                  | 0          | 0           |
| Brachycentridae                      |         | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Brachycentrus</i> |         | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Micrasema</i>     |         | 0            | 0                  | 0          | 0           |
| Philopotamidae                       |         | 0            | 0                  | 0          | 0           |
| Uenoidae <i>Neophylax</i>            |         | 0            | 0                  | 0          | 0           |
| Glossosomatidae <i>Agapetus</i>      |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Apatania</i>        |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Fresnia</i>         |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Hydatophylax</i>    |         | 0            | 1                  |            | 1           |
| Limnephilidae <i>Asynarchus</i>      |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Pycnopsyche</i>     |         | 0            | 0                  | 0          | 2           |
| Phryganeidae <i>Ptilistomis</i>      |         | 0            | 0                  | 0          | 1           |
| Hydrophillidae <i>Trapisternus</i>   |         | 0            | 0                  | 0          | 0           |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Prosimulium</i>        |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Simulium</i>           |         | 0            | 0                  | 12         | 0           |
| Simuliidae <i>Cnephia</i>            |         | 26           | 2                  |            | 18          |
| Chironomidae                         |         | 31           | 11                 | 3          | 28          |
| Tipulidae <i>Tipula</i>              |         | 0            | 0                  | 0          | 1           |
| Tipulidae <i>Hesperoconopa</i>       |         | 0            | 0                  | 0          | 2           |
| Ceratopogonidae                      |         | 0            | 0                  | 0          | 0           |
| Nematocera <i>Dicranota</i>          |         | 0            | 0                  | 0          | 0           |
| Tabanidae                            |         | 0            | 0                  | 0          | 0           |
| Culicidae                            |         | 0            | 0                  | 0          | 2           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                  | 4/22/06 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>               |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>           |         | 0            | 0                  | 0          | 0           |
| Belostomatidae <i>Belostoma</i>  |         | 0            | 0                  | 0          | 1           |
| Gerridae <i>Aquarius</i>         |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Rheumatobates</i>    |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Metrobates</i>       |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Limnoporus</i>       |         | 2            | 0                  | 0          | 0           |
| Corixidae                        |         | 0            | 2                  | 4          | 0           |
| Notonectidae <i>Buena</i>        |         | 0            | 0                  | 0          | 0           |
| Pleidae <i>Neoplea</i>           |         | 0            | 0                  | 0          | 0           |
| Velidae <i>Rhagovelia</i>        |         | 0            | 0                  | 0          | 0           |
| Velidae <i>Microvelia</i>        |         | 2            | 0                  | 0          | 0           |
| <b>Coleoptera</b>                |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)     |         | 2            | 0                  | 0          | 1           |
| Elmidae <i>Stenelmis</i> (L)     |         | 0            | 0                  | 0          | 1           |
| Elmidae <i>Dubirapha</i> (A)     |         | 0            | 1                  | 0          | 0           |
| Elmidae <i>Dubirapha</i> (L)     |         | 0            | 2                  | 0          | 0           |
| Elmidae <i>Macronychus</i>       |         | 3            | 0                  | 0          | 1           |
| Elmidae <i>Ancyronyx</i>         |         | 5            | 0                  | 0          | 0           |
| Hydrophilidae <i>Hydrochara</i>  |         | 0            | 0                  | 0          | 0           |
| Haliplidae <i>Peltodytes</i>     |         | 0            | 0                  | 0          | 2           |
| Haliplidae <i>Brychius</i>       |         | 2            | 0                  | 0          | 1           |
| Haliplidae <i>Brychius</i> (L)   |         | 1            | 0                  | 0          | 0           |
| Psephenidae <i>Ectopria</i>      |         | 0            | 0                  | 0          | 1           |
| <b>Megaloptera</b>               |         |              |                    |            |             |
| Sialidae <i>Sialis</i>           |         | 0            | 0                  | 0          | 0           |
| Corydalidae <i>Nigronia</i>      |         | 0            |                    | 0          | 0           |
| <b>Odonata</b>                   |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i> |         | 4            | 1                  | 2          |             |
| Gomphidae <i>Argomphila</i>      |         | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Hagenius</i>        |         | 0            | 0                  | 0          | 0           |
| Calopterygidae <i>Calopteryx</i> |         | 1            |                    | 3          | 1           |
| Aeshnidae <i>Boyeria</i>         |         | 0            | 0                  | 0          | 0           |
| <b>Amphipoda</b>                 |         |              |                    |            |             |
|                                  |         | 6            | 17                 | 0          | 0           |
| <b>Isopoda</b>                   |         |              |                    |            |             |
|                                  |         | 2            | 0                  | 0          | 0           |
| <b>Hirudinea</b>                 |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | 0           |
| <b>Oligochea</b>                 |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | 2           |
| <b>Lepidoptera</b>               |         |              |                    |            |             |
|                                  |         | 0            | 0                  | 0          | 0           |
| Parapoynx                        |         | 0            | 1                  | 0          | 0           |



## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 9/16/06 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A     |              | 0                  | 1          | N/A         |
| Baetidae <i>Procladius</i>           | N/A     |              | 0                  | 0          | N/A         |
| Heptageniidae <i>Stenocranus</i>     | N/A     |              | 2                  | 0          | N/A         |
| Heptageniidae <i>Stenonema</i>       | N/A     |              | 0                  | 5          | N/A         |
| Caenidae <i>Caenis</i>               | N/A     |              | 0                  | 0          | N/A         |
| Baetiscidae <i>Baetisca</i>          | N/A     |              | 0                  | 0          | N/A         |
| Isonychiidae <i>Isonychia</i>        | N/A     |              | 0                  | 3          | N/A         |
| Leptohyphidae <i>Tricothodes</i>     | N/A     |              | 0                  | 0          | N/A         |
| Leptohyphidae <i>Leptophlebia</i>    | N/A     |              | 0                  | 0          | N/A         |
| Leptohyphidae <i>Habrophlebiodes</i> | N/A     |              | 0                  | 0          | N/A         |
| Ephemeridae <i>Hexagenia</i>         | N/A     |              | 0                  | 0          | N/A         |
| Ephemeridae <i>Ephemera</i>          | N/A     |              | 2                  | 0          | N/A         |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | N/A     |              | 0                  | 0          | N/A         |
| Capniidae <i>Allocapnia</i>          | N/A     |              | 0                  | 0          | N/A         |
| Perlidae <i>Isoperla</i>             | N/A     |              | 0                  | 0          | N/A         |
| Perlidae <i>Neoperla</i>             | N/A     |              | 0                  | 0          | N/A         |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       | N/A     |              | 0                  | 0          | N/A         |
| Hydropsychidae <i>Macrostemum</i>    | N/A     |              | 0                  | 0          | N/A         |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A     |              | 0                  | 0          | N/A         |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A     |              | 0                  | 9          | N/A         |
| Hydropsychidae <i>Potamyia</i>       | N/A     |              | 0                  | 0          | N/A         |
| Hydropsychidae <i>Hydropsyche</i>    | N/A     |              | 4                  | 0          | N/A         |
| Brachycentridae                      | N/A     |              | 0                  | 0          | N/A         |
| Brachycentridae <i>Brachycentrus</i> | N/A     |              | 0                  | 0          | N/A         |
| Brachycentridae <i>Micrasema</i>     | N/A     |              | 0                  | 0          | N/A         |
| Philopotamidae                       | N/A     |              | 0                  | 0          | N/A         |
| Uenoidae <i>Neophylax</i>            | N/A     |              | 0                  | 0          | N/A         |
| Glossosomatidae <i>Agapetus</i>      | N/A     |              | 0                  | 0          | N/A         |
| Glossosomatidae <i>Protopila</i>     | N/A     |              | 0                  | 0          | N/A         |
| Limnephilidae <i>Apatania</i>        | N/A     |              | 0                  | 0          | N/A         |
| Limnephilidae <i>Freslia</i>         | N/A     |              | 0                  | 0          | N/A         |
| Limnephilidae <i>Hydatophylax</i>    | N/A     |              | 0                  | 0          | N/A         |
| Limnephilidae <i>Asynarchus</i>      | N/A     |              | 0                  | 0          | N/A         |
| Limnephilidae <i>Pycnopsyche</i>     | N/A     |              | 0                  | 0          | N/A         |
| Limnephilidae <i>Ironoquia</i>       | N/A     |              | 0                  | 0          | N/A         |
| Phryganellidae <i>Ptilostomis</i>    | N/A     |              | 0                  | 0          | N/A         |
| Hydrophilidae <i>Tropisternus</i>    | N/A     |              | 0                  | 0          | N/A         |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           | N/A     |              | 0                  | 0          | N/A         |
| Simuliidae <i>Prosimulium</i>        | N/A     |              | 0                  | 0          | N/A         |
| Simuliidae <i>Simulium</i>           | N/A     |              | 0                  | 0          | N/A         |
| Simuliidae <i>Cnephia</i>            | N/A     |              | 0                  | 3          | N/A         |
| Chironomidae                         | N/A     |              | 0                  | 3          | N/A         |
| Tipulidae <i>Tipula</i>              | N/A     |              | 0                  | 0          | N/A         |
| Tipulidae <i>Hesperoconopa</i>       | N/A     |              | 0                  | 0          | N/A         |
| Tipulidae <i>Hexatoma</i>            | N/A     |              | 0                  | 0          | N/A         |
| Ceratopogonidae                      | N/A     |              | 0                  | 0          | N/A         |
| Nematocera <i>Dicranota</i>          | N/A     |              | 0                  | 0          | N/A         |
| Tabanidae <i>Chrysops</i>            | N/A     |              | 0                  | 6          | N/A         |
| Culicidae                            | N/A     |              | 0                  | 2          | N/A         |
| Dixidae <i>Dixa</i>                  | N/A     |              | 0                  | 0          | N/A         |
| Empididae <i>Chelifera</i>           | N/A     |              | 0                  | 0          | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

| 9/16/06                          | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|----------------------------------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>               |              |                    |            |             |
| Nepidae <i>Ranatra</i>           | N/A          |                    |            | N/A         |
| Belostomatidae <i>Belostoma</i>  | N/A          | 0                  | 2          | N/A         |
| Gerridae <i>Aquarius</i>         | N/A          | 0                  | 0          | N/A         |
| Gerridae <i>Rheumatobates</i>    | N/A          | 0                  | 0          | N/A         |
| Gerridae <i>Metrobates</i>       | N/A          | 0                  | 0          | N/A         |
| Gerridae <i>Limnoporus</i>       | N/A          | 0                  | 0          | N/A         |
| Corixidae                        | N/A          | 1                  | 16         | N/A         |
| Notonectidae <i>Buena</i>        | N/A          | 0                  | 0          | N/A         |
| Pleidae <i>Neoplea</i>           | N/A          | 0                  | 4          | N/A         |
| Velidae <i>Rhagovelia</i>        | N/A          | 0                  | 4          | N/A         |
| Velidae <i>Microvelia</i>        | N/A          | 0                  | 0          | N/A         |
| <b>Coleoptera</b>                |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)     | N/A          | 0                  | 2          | N/A         |
| Elmidae <i>Stenelmis</i> (L)     | N/A          | 0                  | 0          | N/A         |
| Elmidae <i>Dubirophia</i> (A)    | N/A          | 0                  | 0          | N/A         |
| Elmidae <i>Dubirophia</i> (L)    | N/A          | 0                  | 0          | N/A         |
| Elmidae <i>Macronychus</i> (A)   | N/A          | 1                  | 7          | N/A         |
| Elmidae <i>Macronychus</i> (L)   | N/A          | 0                  | 3          | N/A         |
| Elmidae <i>Ancyronyx</i>         | N/A          | 0                  | 2          | N/A         |
| Hydrophilidae <i>Hydrochora</i>  | N/A          | 0                  | 0          | N/A         |
| Hydrochidae <i>Hydrochus</i>     | N/A          | 0                  | 0          | N/A         |
| Haliplidae <i>Peltodytes</i>     | N/A          | 0                  | 1          | N/A         |
| Haliplidae <i>Brychius</i>       | N/A          | 0                  | 0          | N/A         |
| Haliplidae <i>Brychius</i> (L)   | N/A          | 0                  | 0          | N/A         |
| Psephenidae <i>Ectopria</i>      | N/A          | 0                  | 0          | N/A         |
| Gyrinidae <i>Dineutus</i>        | N/A          | 0                  | 3          | N/A         |
| <b>Megaloptera</b>               |              |                    |            |             |
| Sialidae <i>Sialis</i>           | N/A          | 1                  | 2          | N/A         |
| Corydalidae <i>Nigronia</i>      | N/A          | 0                  | 0          | N/A         |
| <b>Odonata</b>                   |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i> | N/A          | 4                  | 0          | N/A         |
| Gomphidae <i>Argomphus</i>       | N/A          | 0                  | 0          | N/A         |
| Gomphidae <i>Hagenius</i>        | N/A          | 0                  | 0          | N/A         |
| Gomphidae <i>Ophiogomphus</i>    | N/A          | 0                  | 1          | N/A         |
| Gomphidae <i>Gomphus</i>         | N/A          | 0                  | 0          | N/A         |
| Calopterygidae <i>Calopteryx</i> | N/A          | 0                  | 0          | N/A         |
| Aeshnidae <i>Boyeria</i>         | N/A          | 0                  | 1          | N/A         |
| <b>Amphipoda</b>                 |              |                    |            |             |
|                                  | N/A          | 3                  | 15         | N/A         |
| <b>Isopoda</b>                   |              |                    |            |             |
|                                  | N/A          | 3                  | 4          | N/A         |
| <b>Hirudinea</b>                 |              |                    |            |             |
|                                  | N/A          | 0                  | 0          | N/A         |
| <b>Oligochaeta</b>               |              |                    |            |             |
|                                  | N/A          | 0                  | 1          | N/A         |
| <b>Lepidoptera</b>               |              |                    |            |             |
|                                  | N/A          | 0                  | 0          | N/A         |
| Parapoynx                        | N/A          | 0                  | 0          | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 4/21/07 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               |         | 2            | 0                  | 0          | 0           |
| Baetidae <i>Procladius</i>           |         | 0            | 0                  | 0          | 0           |
| Heptageniidae <i>Stenocranus</i>     |         | 0            | 0                  | 0          | 0           |
| Heptageniidae <i>Stenonema</i>       |         | 1            | 6                  | 6          | 7           |
| Caenidae <i>Caenis</i>               |         | 1            | 0                  | 0          | 0           |
| Baetiscidae <i>Baetisca</i>          |         | 0            | 0                  | 5          | 0           |
| Isonychiidae <i>Isonychia</i>        |         | 0            | 0                  | 1          | 0           |
| Leptohyphidae <i>Tricothodes</i>     |         | 0            | 0                  | 0          | 0           |
| Leptohyphidae <i>Leptophlebia</i>    |         | 0            | 0                  | 1          | 0           |
| Leptohyphidae <i>Habrophlebiodes</i> |         | 0            | 0                  | 1          | 0           |
| Ephemeridae <i>Hexagenia</i>         |         | 0            | 0                  | 0          | 0           |
| Ephemeridae <i>Ephemera</i>          |         | 0            | 0                  | 0          | 0           |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> |         | 0            | 0                  | 0          | 0           |
| Capniidae <i>Allocapnia</i>          |         | 0            | 1                  |            | 0           |
| Perlidae <i>Isoperla</i>             |         | 5            | 0                  | 0          | 11          |
| Perlidae <i>Neoperla</i>             |         | 0            | 2                  | 0          | 0           |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Macrostemum</i>    |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> |         | 6            | 3                  | 1          | 7           |
| Hydropsychidae <i>Potamyia</i>       |         | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Hydropsyche</i>    |         | 2            | 6                  | 1          | 8           |
| Brachycentridae                      |         | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Brachycentrus</i> |         | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Micrasema</i>     |         | 0            | 0                  | 0          | 0           |
| Philopotamidae                       |         | 0            | 0                  | 0          | 0           |
| Uenoidae <i>Neophylax</i>            |         | 0            | 0                  | 0          | 0           |
| Glossosomatidae <i>Agapetus</i>      |         | 0            | 0                  | 0          | 0           |
| Glossosomatidae <i>Protopila</i>     |         | 0            | 0                  | 0          | 1           |
| Limnephilidae <i>Apatania</i>        |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Freslia</i>         |         | 1            | 0                  | 0          | 0           |
| Limnephilidae <i>Hydatophylax</i>    |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Asynarchus</i>      |         | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Pycnopsyche</i>     |         | 2            | 0                  | 0          | 2           |
| Limnephilidae <i>Isonyquia</i>       |         | 1            | 0                  | 0          | 1           |
| Phryganeidae <i>Ptilostomis</i>      |         | 0            | 0                  | 0          | 0           |
| Hydrophilidae <i>Tropisternus</i>    |         | 0            | 0                  | 0          | 0           |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Prosimulium</i>        |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Simulium</i>           |         | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Cnephia</i>            |         | 3            | 17                 | 3          | 4           |
| Chironomidae                         |         | 9            | 3                  | 11         | 16          |
| Tipulidae <i>Tipula</i>              |         | 0            | 0                  | 0          | 0           |
| Tipulidae <i>Hesperoconopa</i>       |         | 0            | 0                  | 0          | 0           |
| Tipulidae <i>Hexatoma</i>            |         | 0            |                    |            | 3           |
| Ceratopogonidae                      |         | 0            | 0                  | 0          | 0           |
| Nematocera <i>Dicranota</i>          |         | 0            | 0                  | 0          | 0           |
| Tabanidae <i>Chrysops</i>            |         | 0            |                    | 1          |             |
| Culicidae                            |         | 0            | 0                  | 0          | 0           |
| Dixidae <i>Dixa</i>                  |         | 0            | 0                  | 0          | 0           |
| Empididae <i>Chelifera</i>           |         | 0            | 0                  | 0          | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                  | 4/21/07 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>               |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>           |         | 0            | 0                  | 0          | 0           |
| Belostomatidae <i>Belostoma</i>  |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Aquarius</i>         |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Rheumatobates</i>    |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Metrobates</i>       |         | 0            | 0                  | 0          | 0           |
| Gerridae <i>Limnoporus</i>       |         | 0            | 0                  | 0          | 0           |
| Cortidae                         |         | 0            | 2                  | 0          | 1           |
| Notonectidae <i>Buena</i>        |         | 0            | 0                  | 0          | 0           |
| Pleidae <i>Neoplea</i>           |         | 0            | 0                  | 0          | 0           |
| Velidae <i>Rhagovella</i>        |         | 0            | 0                  | 0          | 0           |
| Velidae <i>Microvelia</i>        |         | 1            | 0                  | 0          | 0           |
| <b>Coleoptera</b>                |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)     |         | 0            | 0                  | 0          | 1           |
| Elmidae <i>Stenelmis</i> (L)     |         | 0            | 0                  | 0          | 0           |
| Elmidae <i>Dubirophia</i> (A)    |         | 0            | 0                  | 0          | 0           |
| Elmidae <i>Dubirophia</i> (L)    |         | 0            | 0                  | 0          | 0           |
| Elmidae <i>Macronychus</i>       |         | 0            | 0                  | 0          | 1           |
| Elmidae <i>Ancyronyx</i>         |         | 0            | 0                  | 0          | 0           |
| Hydrophilidae <i>Hydrochora</i>  |         | 0            | 0                  | 0          | 0           |
| Hydrochidae <i>Hydrochus</i>     |         | 0            | 0                  | 1          | 0           |
| Haliplidae <i>Peltodytes</i>     |         | 0            | 0                  | 0          | 0           |
| Haliplidae <i>Brychius</i>       |         | 0            | 0                  | 0          | 0           |
| Haliplidae <i>Brychius</i> (L)   |         | 0            | 0                  | 0          | 0           |
| Psephenidae <i>Ectopria</i>      |         | 0            | 0                  | 0          | 0           |
| <b>Megaloptera</b>               |         |              |                    |            |             |
| Sialidae <i>Sialis</i>           |         | 0            | 0                  | 0          | 0           |
| Corydalidae <i>Nigronia</i>      |         | 0            | 0                  | 0          | 0           |
| <b>Odonata</b>                   |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i> |         | 3            | 0                  | 0          | 0           |
| Gomphidae <i>Argomphus</i>       |         | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Hagenius</i>        |         | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Ophiogomphus</i>    |         | 0            | 0                  | 1          | 0           |
| Gomphidae <i>Gomphus</i>         |         | 0            | 0                  | 0          | 0           |
| Calopterygidae <i>Calopteryx</i> |         | 0            | 0                  | 0          | 0           |
| Aeshnidae <i>Boyeria</i>         |         | 0            | 0                  | 0          | 0           |
| <b>Amphipoda</b>                 |         | 4            | 8                  | 3          | 0           |
| <b>Isopoda</b>                   |         | 1            | 1                  | 0          | 0           |
| <b>Hirudinea</b>                 |         | 0            | 0                  | 0          | 0           |
| <b>Oligochea</b>                 |         | 0            | 0                  | 1          | 0           |
| <b>Lepidoptera</b>               |         | 0            | 0                  | 0          | 0           |
| Parapoynx                        |         | 0            | 0                  | 0          | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 9/16/07 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A     | N/A          |                    | 8          | 5           |
| Heptageniidae                        | N/A     | N/A          |                    | 0          | 0           |
| Heptageniidae <i>Stenoma</i>         | N/A     | N/A          |                    | 2          | 3           |
| Caenidae <i>Caenis</i>               | N/A     | N/A          |                    | 0          | 0           |
| Baetiscidae <i>Baetisca</i>          | N/A     | N/A          |                    | 1          | 0           |
| Isonychiidae <i>Isonychia</i>        | N/A     | N/A          |                    | 1          | 0           |
| Leptohyphidae <i>Tricothodes</i>     | N/A     | N/A          |                    | 0          | 0           |
| Leptohyphidae <i>Leptophlebia</i>    | N/A     | N/A          |                    | 0          | 0           |
| Ephemridae <i>Hexagenia</i>          | N/A     | N/A          |                    | 0          | 0           |
| Ephemridae <i>Ephemera</i>           | N/A     | N/A          |                    | 1          | 0           |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | N/A     | N/A          |                    | 0          | 0           |
| Capniidae <i>Allocapnia</i>          | N/A     | N/A          |                    | 4          | 0           |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       | N/A     | N/A          |                    | 0          | 0           |
| Hydropsychidae <i>Macrostemum</i>    | N/A     | N/A          |                    | 0          | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A     | N/A          |                    | 0          | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A     | N/A          |                    | 11         | 6           |
| Hydropsychidae <i>Potamyia</i>       | N/A     | N/A          |                    | 0          | 0           |
| Hydropsychidae <i>Hydropsyche</i>    | N/A     | N/A          |                    | 2          | 20          |
| Brachycentridae                      | N/A     | N/A          |                    | 0          | 0           |
| Brachycentridae <i>Brachycentrus</i> | N/A     | N/A          |                    | 0          | 0           |
| Brachycentridae <i>Micrasema</i>     | N/A     | N/A          |                    | 0          | 0           |
| Phlopotamidae                        | N/A     | N/A          |                    | 0          | 0           |
| Uenoidae <i>Neophylax</i>            | N/A     | N/A          |                    | 0          | 0           |
| Glossosomatidae <i>Agapetus</i>      | N/A     | N/A          |                    | 0          | 0           |
| Limnephilidae <i>Apatania</i>        | N/A     | N/A          |                    | 0          | 0           |
| Limnephilidae <i>Fresnia</i>         | N/A     | N/A          |                    | 0          | 0           |
| Limnephilidae <i>Hydatophylax</i>    | N/A     | N/A          |                    | 0          | 0           |
| Limnephilidae <i>Asynarchus</i>      | N/A     | N/A          |                    | 0          | 0           |
| Phryganeidae <i>Ptilostomis</i>      | N/A     | N/A          |                    | 0          | 0           |
| Hydrophillidae <i>Tropisternus</i>   | N/A     | N/A          |                    | 0          | 0           |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           | N/A     | N/A          |                    | 0          | 0           |
| Simuliidae <i>Prosimulium</i>        | N/A     | N/A          |                    | 0          | 0           |
| Simuliidae <i>Simulium</i>           | N/A     | N/A          |                    | 0          | 0           |
| Simuliidae <i>Cnephia</i>            | N/A     | N/A          |                    | 11         | 5           |
| Chironomidae                         | N/A     | N/A          |                    | 6          | 5           |
| Tipulidae <i>Tipula</i>              | N/A     | N/A          |                    | 0          | 0           |
| Ceratopogonidae                      | N/A     | N/A          |                    | 0          | 0           |
| Nematocera <i>Dicranota</i>          | N/A     | N/A          |                    | 0          | 0           |
| Tabanidae                            | N/A     | N/A          |                    | 0          | 2           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                  | 9/16/07 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>               |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>           | N/A     | N/A          |                    | 0          | 0           |
| Belostomatidae <i>Belostoma</i>  | N/A     | N/A          |                    | 1          | 0           |
| Gerridae <i>Aquarius</i>         | N/A     | N/A          |                    | 2          | 0           |
| Gerridae <i>Rheumatobates</i>    | N/A     | N/A          |                    | 0          | 0           |
| Gerridae <i>Metrobates</i>       | N/A     | N/A          |                    | 0          | 0           |
| Corixidae                        | N/A     | N/A          |                    | 4          | 1           |
| Notonectidae <i>Buena</i>        | N/A     | N/A          |                    | 0          | 0           |
| Pleidae <i>Neoplea</i>           | N/A     | N/A          |                    | 3          | 0           |
| Velidae <i>Rhagovelia</i>        | N/A     | N/A          |                    | 2          | 0           |
| <b>Coleoptera</b>                |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)     | N/A     | N/A          |                    | 0          | 2           |
| Elmidae (L)                      | N/A     | N/A          |                    | 0          | 0           |
| Hydrophilidae <i>Hydrochora</i>  | N/A     | N/A          |                    | 0          | 1           |
| Haliplidae <i>Peltodytes</i>     | N/A     | N/A          |                    | 0          | 1           |
| <b>Megaloptera</b>               |         |              |                    |            |             |
| Sialidae <i>Sialis</i>           | N/A     | N/A          |                    | 0          | 0           |
| Corydalidae <i>Nigronia</i>      | N/A     | N/A          |                    | 0          | 0           |
| <b>Odonata</b>                   |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i> | N/A     | N/A          |                    | 0          | 0           |
| Gomphidae <i>Argomphila</i>      | N/A     | N/A          |                    | 4          | 0           |
| Gomphidae <i>Hagenius</i>        | N/A     | N/A          |                    | 0          | 0           |
| Calopterygidae <i>Calopteryx</i> | N/A     | N/A          |                    | 11         | 5           |
| Aeshnidae <i>Boyeria</i>         | N/A     | N/A          |                    | 1          | 1           |
| <b>Amphipoda</b>                 |         |              |                    |            |             |
|                                  | N/A     | N/A          |                    | 5          | 0           |
| <b>Isopoda</b>                   |         |              |                    |            |             |
|                                  | N/A     | N/A          |                    | 1          | 0           |
| <b>Hirudinea</b>                 |         |              |                    |            |             |
|                                  | N/A     | N/A          |                    | 1          | 0           |
| <b>Oligochea</b>                 |         |              |                    |            |             |
|                                  | N/A     | N/A          |                    | 2          | 0           |



## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

| 4/22/06                              | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A          | N/A                | 0          | 0           |
| Baetidae <i>Procladius</i>           | N/A          | N/A                | 0          | 0           |
| Heptageniidae <i>Stenocranus</i>     | N/A          | N/A                | 0          | 0           |
| Heptageniidae <i>Stenonema</i>       | N/A          | N/A                | 10         | 6           |
| Caenidae <i>Caenis</i>               | N/A          | N/A                | 0          | 0           |
| Baetiscidae <i>Baetisca</i>          | N/A          | N/A                | 1          | 1           |
| Isonychiidae <i>Isonychia</i>        | N/A          | N/A                | 3          | 1           |
| Leptohyphidae <i>Tricothodes</i>     | N/A          | N/A                | 0          | 0           |
| Leptohyphidae <i>Leptophlebia</i>    | N/A          | N/A                | 0          | 0           |
| Ephemeridae <i>Hexagenia</i>         | N/A          | N/A                | 0          | 0           |
| Ephemeridae <i>Ephemera</i>          | N/A          | N/A                | 0          | 0           |
| <b>Plecoptera</b>                    |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | N/A          | N/A                | 0          | 0           |
| Capniidae <i>Allocapnia</i>          | N/A          | N/A                | 0          | 0           |
| Perlidae <i>Isoperla</i>             | N/A          | N/A                | 2          | 3           |
| <b>Tricoptera</b>                    |              |                    |            |             |
| Hydropsychidae                       | N/A          | N/A                | 0          | 0           |
| Hydropsychidae <i>Macrostemum</i>    | N/A          | N/A                | 0          | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A          | N/A                | 0          | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A          | N/A                | 5          | 2           |
| Hydropsychidae <i>Potamyia</i>       | N/A          | N/A                | 0          | 0           |
| Hydropsychidae <i>Hydropsyche</i>    | N/A          | N/A                | 11         | 13          |
| Brachycentridae                      | N/A          | N/A                | 0          | 0           |
| Brachycentridae <i>Brachycentrus</i> | N/A          | N/A                | 0          | 0           |
| Brachycentridae <i>Micrasema</i>     | N/A          | N/A                | 0          | 0           |
| Philopotamidae                       | N/A          | N/A                | 0          | 0           |
| Uenoidae <i>Neophylax</i>            | N/A          | N/A                | 0          | 0           |
| Glossosomatidae <i>Agapetus</i>      | N/A          | N/A                | 0          | 0           |
| Limnephilidae <i>Apatania</i>        | N/A          | N/A                | 0          | 0           |
| Limnephilidae <i>Freslia</i>         | N/A          | N/A                | 0          | 0           |
| Limnephilidae <i>Hydatophylax</i>    | N/A          | N/A                | 0          | 0           |
| Limnephilidae <i>Asynarchus</i>      | N/A          | N/A                | 0          | 0           |
| Limnephilidae <i>Pycnopsyche</i>     | N/A          | N/A                | 0          | 1           |
| Limnephilidae <i>Isonaqua</i>        | N/A          | N/A                | 0          | 4           |
| Phryganellidae <i>Ptilostomis</i>    | N/A          | N/A                | 0          | 1           |
| Hydrophillidae <i>Tropisternus</i>   | N/A          | N/A                | 0          | 0           |
| <b>Diptera</b>                       |              |                    |            |             |
| Simuliidae                           | N/A          | N/A                | 0          | 0           |
| Simuliidae <i>Prosimulium</i>        | N/A          | N/A                | 0          | 0           |
| Simuliidae <i>Simulium</i>           | N/A          | N/A                | 0          | 0           |
| Simuliidae <i>Cnephia</i>            | N/A          | N/A                | 9          | 14          |
| Chironomidae                         | N/A          | N/A                | 21         | 31          |
| Tipulidae <i>Tipula</i>              | N/A          | N/A                | 0          | 0           |
| Tipulidae <i>Hesperoconopa</i>       | N/A          | N/A                | 0          | 0           |
| Ceratopogonidae                      | N/A          | N/A                | 0          | 0           |
| Nematocera <i>Dicranota</i>          | N/A          | N/A                | 0          | 0           |
| Tabanidae                            | N/A          | N/A                | 0          | 0           |
| Culicidae                            | N/A          | N/A                | 0          | 0           |
| Dixidae <i>Dixa</i>                  | N/A          | N/A                | 1          | 0           |
| Empididae <i>Chelifera</i>           | N/A          | N/A                | 1          | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

| 4/22/06                          | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|----------------------------------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>               |              |                    |            |             |
| Nepidae <i>Ranatra</i>           | N/A          | N/A                | 0          | 0           |
| Belostomatidae <i>Belostoma</i>  | N/A          | N/A                | 0          | 0           |
| Gerridae <i>Aquarius</i>         | N/A          | N/A                | 0          | 0           |
| Gerridae <i>Rheumatobates</i>    | N/A          | N/A                | 0          | 0           |
| Gerridae <i>Metrobates</i>       | N/A          | N/A                | 0          | 0           |
| Gerridae <i>Limnoporus</i>       | N/A          | N/A                | 0          | 0           |
| Cortixidae                       | N/A          | N/A                | 0          | 0           |
| Notonectidae <i>Buena</i>        | N/A          | N/A                | 0          | 0           |
| Pleidae <i>Neoplea</i>           | N/A          | N/A                | 0          | 0           |
| Velidae <i>Rhagovelia</i>        | N/A          | N/A                | 0          | 0           |
| Velidae <i>Microvelia</i>        | N/A          | N/A                | 0          | 2           |
| <b>Coleoptera</b>                |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)     | N/A          | N/A                | 0          | 1           |
| Elmidae <i>Stenelmis</i> (L)     | N/A          | N/A                | 0          | 0           |
| Elmidae <i>Dubirophia</i> (A)    | N/A          | N/A                | 6          | 0           |
| Elmidae <i>Dubirophia</i> (L)    | N/A          | N/A                | 0          | 0           |
| Elmidae <i>Macronychus</i>       | N/A          | N/A                | 0          | 0           |
| Elmidae <i>Ancyronyx</i>         | N/A          | N/A                | 0          | 0           |
| Hydrophilidae <i>Hydrochora</i>  | N/A          | N/A                | 0          | 0           |
| Haliplidae <i>Peltodytes</i>     | N/A          | N/A                | 1          | 0           |
| Haliplidae <i>Brychius</i>       | N/A          | N/A                | 0          | 0           |
| Haliplidae <i>Brychius</i> (L)   | N/A          | N/A                | 0          | 0           |
| Psephenidae <i>Ectopria</i>      | N/A          | N/A                | 0          | 0           |
| <b>Megaloptera</b>               |              |                    |            |             |
| Sialidae <i>Sialis</i>           | N/A          | N/A                | 0          | 0           |
| Corydalidae <i>Nigronia</i>      | N/A          | N/A                | 0          | 0           |
| <b>Odonata</b>                   |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i> | N/A          | N/A                | 1          | 1           |
| Gomphidae <i>Arigomphus</i>      | N/A          | N/A                | 0          | 0           |
| Gomphidae <i>Hagenius</i>        | N/A          | N/A                | 0          | 0           |
| Calopterygidae <i>Calopteryx</i> | N/A          | N/A                | 3          | 5           |
| Aeshnidae <i>Boyeria</i>         | N/A          | N/A                | 0          | 0           |
| <b>Amphipoda</b>                 | N/A          | N/A                | 7          | 8           |
| <b>Isopoda</b>                   | N/A          | N/A                | 1          | 0           |
| <b>Hirudinea</b>                 | N/A          | N/A                | 0          | 0           |
| <b>Oligochea</b>                 | N/A          | N/A                | 1          | 0           |
| <b>Lepidoptera</b>               | N/A          | N/A                | 0          | 0           |
| Parapoynx                        | N/A          | N/A                | 0          | 0           |



## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 9/10/08 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A     | N/A          |                    | 24         | N/A         |
| Baetidae <i>Procladius</i>           | N/A     | N/A          |                    | 0          | N/A         |
| Heptageniidae <i>Stenocranus</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Heptageniidae <i>Stenonema</i>       | N/A     | N/A          |                    | 12         | N/A         |
| Caenidae <i>Caenis</i>               | N/A     | N/A          |                    | 0          | N/A         |
| Baetiscidae <i>Baetisca</i>          | N/A     | N/A          |                    | 0          | N/A         |
| Isonychidae <i>Isonychia</i>         | N/A     | N/A          |                    | 3          | N/A         |
| Leptohyphidae <i>Tricothodes</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Leptohyphidae <i>Leptophlebia</i>    | N/A     | N/A          |                    | 0          | N/A         |
| Leptohyphidae <i>Habrophlebiodes</i> | N/A     | N/A          |                    | 0          | N/A         |
| Ephemeridae <i>Hexagenia</i>         | N/A     | N/A          |                    | 0          | N/A         |
| Ephemeridae <i>Ephemera</i>          | N/A     | N/A          |                    | 0          | N/A         |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Tenopterygidae <i>Tenopteryx</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Capniidae <i>Allocapnia</i>          | N/A     | N/A          |                    | 0          | N/A         |
| Perlidae <i>Isoperla</i>             | N/A     | N/A          |                    | 0          | N/A         |
| Perlidae <i>Neoperla</i>             | N/A     | N/A          |                    | 0          | N/A         |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       | N/A     | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Macrostemum</i>    | N/A     | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A     | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A     | N/A          |                    | 8          | N/A         |
| Hydropsychidae <i>Potamyla</i>       | N/A     | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Hydropsyche</i>    | N/A     | N/A          |                    | 52         | N/A         |
| Brachycentridae                      | N/A     | N/A          |                    | 0          | N/A         |
| Brachycentridae <i>Brachycentrus</i> | N/A     | N/A          |                    | 0          | N/A         |
| Brachycentridae <i>Micrasema</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Philopotamidae <i>Chimarra</i>       | N/A     | N/A          |                    | 1          | N/A         |
| Uenidae <i>Neophylax</i>             | N/A     | N/A          |                    | 0          | N/A         |
| Glossosomatidae <i>Agapetus</i>      | N/A     | N/A          |                    | 0          | N/A         |
| Glossosomatidae <i>Protopila</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Apatania</i>        | N/A     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Freslia</i>         | N/A     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Hydatophylax</i>    | N/A     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Asynarchus</i>      | N/A     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Pycnopsyche</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Isonychia</i>       | N/A     | N/A          |                    | 0          | N/A         |
| Phryganeidae <i>Ptilostomis</i>      | N/A     | N/A          |                    | 0          | N/A         |
| Hydrophilidae <i>Tropisternus</i>    | N/A     | N/A          |                    | 0          | N/A         |
| Polycentropidae <i>Ceratonia</i>     | N/A     | N/A          |                    | 3          | N/A         |
| Psychomyiidae <i>Lype</i>            | N/A     | N/A          |                    | 0          | N/A         |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           | N/A     | N/A          |                    | 0          | N/A         |
| Simuliidae <i>Prosimulium</i>        | N/A     | N/A          |                    | 0          | N/A         |
| Simuliidae <i>Simulium</i>           | N/A     | N/A          |                    | 0          | N/A         |
| Simuliidae <i>Cnephia</i>            | N/A     | N/A          |                    | 7          | N/A         |
| Chironomidae                         | N/A     | N/A          |                    | 11         | N/A         |
| Tipulidae <i>Tipula</i>              | N/A     | N/A          |                    | 0          | N/A         |
| Tipulidae <i>Hesperoconopa</i>       | N/A     | N/A          |                    | 0          | N/A         |
| Tipulidae <i>Hexatoma</i>            | N/A     | N/A          |                    | 0          | N/A         |
| Ceratopogonidae                      | N/A     | N/A          |                    | 0          | N/A         |
| Nematocera <i>Dicranota</i>          | N/A     | N/A          |                    | 0          | N/A         |
| Tabanidae <i>Chrysops</i>            | N/A     | N/A          |                    | 0          | N/A         |
| Culicidae                            | N/A     | N/A          |                    | 0          | N/A         |
| Dixidae <i>Dixa</i>                  | N/A     | N/A          |                    | 0          | N/A         |
| Empididae <i>Chelifera</i>           | N/A     | N/A          |                    | 0          | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                   | 9/10/08 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|-----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>                |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>            | N/A     | N/A          |                    | 0          | N/A         |
| Belostomatidae <i>Belostoma</i>   | N/A     | N/A          |                    | 0          | N/A         |
| Gerridae <i>Aquarius</i>          | N/A     | N/A          |                    | 0          | N/A         |
| Gerridae <i>Rheumatobates</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Gerridae <i>Metrobates</i>        | N/A     | N/A          |                    | 0          | N/A         |
| Gerridae <i>Limnoporus</i>        | N/A     | N/A          |                    | 0          | N/A         |
| Corixidae                         | N/A     | N/A          |                    | 44         | N/A         |
| Notonectidae <i>Buena</i>         | N/A     | N/A          |                    | 0          | N/A         |
| Notonectidae <i>Notonecta</i>     | N/A     | N/A          |                    | 1          | N/A         |
| Pleidae <i>Neoplea</i>            | N/A     | N/A          |                    | 1          | N/A         |
| Velidae <i>Rhagovella</i>         | N/A     | N/A          |                    | 0          | N/A         |
| Velidae <i>Microvelia</i>         | N/A     | N/A          |                    | 0          | N/A         |
| <b>Coleoptera</b>                 |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)      | N/A     | N/A          |                    | 9          | N/A         |
| Elmidae <i>Stenelmis</i> (L)      | N/A     | N/A          |                    | 0          | N/A         |
| Elmidae <i>Dubiraphia</i> (A)     | N/A     | N/A          |                    | 0          | N/A         |
| Elmidae <i>Dubiraphia</i> (L)     | N/A     | N/A          |                    | 0          | N/A         |
| Elmidae <i>Macronychus</i> (A)    | N/A     | N/A          |                    | 6          | N/A         |
| Elmidae <i>Macronychus</i> (L)    | N/A     | N/A          |                    | 0          | N/A         |
| Elmidae <i>Ancyronyx</i>          | N/A     | N/A          |                    | 0          | N/A         |
| Hydrophilidae <i>Hydrochora</i>   | N/A     | N/A          |                    | 0          | N/A         |
| Hydrophilidae <i>Enochrus</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Hydrochilidae <i>Hydrochus</i>    | N/A     | N/A          |                    | 0          | N/A         |
| Haliplidae <i>Peltodytes</i>      | N/A     | N/A          |                    | 1          | N/A         |
| Haliplidae <i>Brychius</i>        | N/A     | N/A          |                    | 0          | N/A         |
| Haliplidae <i>Brychius</i> (L)    | N/A     | N/A          |                    | 0          | N/A         |
| Psephenidae <i>Ectopria</i>       | N/A     | N/A          |                    | 0          | N/A         |
| Gyrinidae <i>Dineutus</i>         | N/A     | N/A          |                    | 0          | N/A         |
| <b>Megaloptera</b>                |         |              |                    |            |             |
| Sialidae <i>Sialis</i>            | N/A     | N/A          |                    | 0          | N/A         |
| Corydalidae <i>Nigronia</i>       | N/A     | N/A          |                    | 0          | N/A         |
| Corydalidae <i>Chauliodes</i>     | N/A     | N/A          |                    | 0          | N/A         |
| <b>Odonata</b>                    |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>  | N/A     | N/A          |                    | 1          | N/A         |
| Coenagrionidae <i>Amphiagrion</i> | N/A     | N/A          |                    | 0          | N/A         |
| Gomphidae <i>Argomphus</i>        | N/A     | N/A          |                    | 0          | N/A         |
| Gomphidae <i>Hagenius</i>         | N/A     | N/A          |                    | 0          | N/A         |
| Gomphidae <i>Ophiogomphus</i>     | N/A     | N/A          |                    | 0          | N/A         |
| Gomphidae <i>Gomphus</i>          | N/A     | N/A          |                    | 0          | N/A         |
| Calopterygidae <i>Calopteryx</i>  | N/A     | N/A          |                    | 24         | N/A         |
| Aeshnidae <i>Boyeria</i>          | N/A     | N/A          |                    | 0          | N/A         |
| <b>Amphipoda</b>                  |         |              |                    |            |             |
|                                   | N/A     | N/A          |                    | 6          | N/A         |
| <b>Isopoda</b>                    |         |              |                    |            |             |
|                                   | N/A     | N/A          |                    | 1          | N/A         |
| <b>Hirudinea</b>                  |         |              |                    |            |             |
|                                   | N/A     | N/A          |                    | 0          | N/A         |
| <b>Oligochaeta</b>                |         |              |                    |            |             |
|                                   | N/A     | N/A          |                    | 0          | N/A         |
| <b>Lepidoptera</b>                |         |              |                    |            |             |
| Parapoynx                         | N/A     | N/A          |                    | 0          | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

| 4/25/09                              | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A          |                    | 3          | N/A         |
| Baetidae <i>Procladius</i>           | N/A          |                    | 0          | N/A         |
| Heptageniidae <i>Stenocranus</i>     | N/A          |                    | 0          | N/A         |
| Heptageniidae <i>Stenonema</i>       | N/A          |                    | 1          | N/A         |
| Caenidae <i>Caenis</i>               | N/A          |                    | 0          | N/A         |
| Baetiscidae <i>Baetisca</i>          | N/A          |                    | 1          | N/A         |
| Isonychiidae <i>Isonychia</i>        | N/A          |                    | 0          | N/A         |
| Leptohyphidae <i>Tricothodes</i>     | N/A          |                    | 0          | N/A         |
| Leptohyphidae <i>Leptophlebia</i>    | N/A          |                    | 0          | N/A         |
| Leptohyphidae <i>Habrophlebiodes</i> | N/A          |                    | 0          | N/A         |
| Ephemeridae <i>Hexagenia</i>         | N/A          |                    | 0          | N/A         |
| Ephemeridae <i>Ephemera</i>          | N/A          |                    | 0          | N/A         |
| <b>Plecoptera</b>                    |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | N/A          |                    | 0          | N/A         |
| Capniidae <i>Allocapnia</i>          | N/A          |                    | 0          | N/A         |
| Capniidae <i>Capnia</i>              | N/A          |                    | 1          | N/A         |
| Perlidae <i>Isoperla</i>             | N/A          |                    | 0          | N/A         |
| Perlidae <i>Neoperla</i>             | N/A          |                    | 0          | N/A         |
| <b>Tricoptera</b>                    |              |                    |            |             |
| Hydropsychidae                       | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Macrostemum</i>    | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Potamyia</i>       | N/A          |                    | 0          | N/A         |
| Hydropsychidae <i>Hydropsyche</i>    | N/A          |                    | 3          | N/A         |
| Brachycentridae                      | N/A          |                    | 0          | N/A         |
| Brachycentridae <i>Brachycentrus</i> | N/A          |                    | 0          | N/A         |
| Brachycentridae <i>Micrasema</i>     | N/A          |                    | 0          | N/A         |
| Philopotamidae <i>Chimarra</i>       | N/A          |                    | 0          | N/A         |
| Uenoidae <i>Neophylax</i>            | N/A          |                    | 0          | N/A         |
| Glossosomatidae <i>Agapetus</i>      | N/A          |                    | 0          | N/A         |
| Glossosomatidae <i>Protophila</i>    | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Apatania</i>        | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Freslia</i>         | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Hydatophylax</i>    | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Asynarchus</i>      | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Pycnopsyche</i>     | N/A          |                    | 0          | N/A         |
| Limnephilidae <i>Isonychia</i>       | N/A          |                    | 1          | N/A         |
| Phryganeidae <i>Ptilostomis</i>      | N/A          |                    | 0          | N/A         |
| Hydrophillidae <i>Tropisternus</i>   | N/A          |                    | 0          | N/A         |
| Polycentropidae <i>Ceratomyia</i>    | N/A          |                    | 0          | N/A         |
| Psychomyiidae <i>Lype</i>            | N/A          |                    | 0          | N/A         |
| <b>Diptera</b>                       |              |                    |            |             |
| Simuliidae                           | N/A          |                    | 0          | N/A         |
| Simuliidae <i>Prosimulium</i>        | N/A          |                    | 0          | N/A         |
| Simuliidae <i>Simulium</i>           | N/A          |                    | 0          | N/A         |
| Simuliidae <i>Cnephia</i>            | N/A          |                    | 14         | N/A         |
| Chironomidae                         | N/A          |                    | 24         | N/A         |
| Tipulidae <i>Tipula</i>              | N/A          |                    | 0          | N/A         |
| Tipulidae <i>Hesperoconopa</i>       | N/A          |                    | 0          | N/A         |
| Tipulidae <i>Hexatoma</i>            | N/A          |                    | 0          | N/A         |
| Ceratopogonidae                      | N/A          |                    | 0          | N/A         |
| Nematocera <i>Dicranota</i>          | N/A          |                    | 0          | N/A         |
| Tabanidae <i>Chrysops</i>            | N/A          |                    | 0          | N/A         |
| Culicidae                            | N/A          |                    | 0          | N/A         |
| Dixidae <i>Dixa</i>                  | N/A          |                    | 0          | N/A         |
| Empididae <i>Chelifera</i>           | N/A          |                    | 0          | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                   | 4/25/09 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|-----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>                |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>            | N/A     |              |                    | 0 N/A      | N/A         |
| Belostomatidae <i>Belostoma</i>   | N/A     |              |                    | 0 N/A      | N/A         |
| Gerridae <i>Aquarius</i>          | N/A     |              |                    | 0 N/A      | N/A         |
| Gerridae <i>Rheumatobates</i>     | N/A     |              |                    | 0 N/A      | N/A         |
| Gerridae <i>Metrobates</i>        | N/A     |              |                    | 0 N/A      | N/A         |
| Gerridae <i>Limnoporus</i>        | N/A     |              |                    | 0 N/A      | N/A         |
| Gerromorpha <i>Mesovellidae</i>   | N/A     |              |                    | 0 N/A      | N/A         |
| Corixidae                         | N/A     |              |                    | 0 N/A      | N/A         |
| Notonectidae <i>Buena</i>         | N/A     |              |                    | 0 N/A      | N/A         |
| Notonectidae <i>Notonecta</i>     | N/A     |              |                    | 0 N/A      | N/A         |
| Pleidae <i>Neoplea</i>            | N/A     |              |                    | 0 N/A      | N/A         |
| Velidae <i>Rhagovella</i>         | N/A     |              |                    | 0 N/A      | N/A         |
| Velidae <i>Microvelia</i>         | N/A     |              |                    | 0 N/A      | N/A         |
| <b>Coleoptera</b>                 |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)      | N/A     |              |                    | 1 N/A      | N/A         |
| Elmidae <i>Stenelmis</i> (L)      | N/A     |              |                    | 0 N/A      | N/A         |
| Elmidae <i>Dubirophia</i> (A)     | N/A     |              |                    | 0 N/A      | N/A         |
| Elmidae <i>Dubirophia</i> (L)     | N/A     |              |                    | 0 N/A      | N/A         |
| Elmidae <i>Macronychus</i> (A)    | N/A     |              |                    | 1 N/A      | N/A         |
| Elmidae <i>Macronychus</i> (L)    | N/A     |              |                    | 0 N/A      | N/A         |
| Elmidae <i>Ancyronyx</i>          | N/A     |              |                    | 0 N/A      | N/A         |
| Hydrophilidae <i>Hydrochora</i>   | N/A     |              |                    | 0 N/A      | N/A         |
| Hydrophilidae <i>Enochrus</i>     | N/A     |              |                    | 0 N/A      | N/A         |
| Hydrochilidae <i>Hydrochus</i>    | N/A     |              |                    | 0 N/A      | N/A         |
| Haliplidae <i>Peltodytes</i>      | N/A     |              |                    | 0 N/A      | N/A         |
| Haliplidae <i>Brychius</i>        | N/A     |              |                    | 0 N/A      | N/A         |
| Haliplidae <i>Brychius</i> (L)    | N/A     |              |                    | 0 N/A      | N/A         |
| Psephenidae <i>Ectopria</i>       | N/A     |              |                    | 0 N/A      | N/A         |
| Gyrinidae <i>Dineutus</i>         | N/A     |              |                    | 0 N/A      | N/A         |
| <b>Megaloptera</b>                |         |              |                    |            |             |
| Sialidae <i>Sialis</i>            | N/A     |              |                    | 0 N/A      | N/A         |
| Corydalidae <i>Nigronia</i>       | N/A     |              |                    | 0 N/A      | N/A         |
| Corydalidae <i>Chauliodes</i>     | N/A     |              |                    | 0 N/A      | N/A         |
| <b>Odonata</b>                    |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>  | N/A     |              |                    | 0 N/A      | N/A         |
| Coenagrionidae <i>Amphiagrion</i> | N/A     |              |                    | 0 N/A      | N/A         |
| Gomphidae <i>Argomphus</i>        | N/A     |              |                    | 0 N/A      | N/A         |
| Gomphidae <i>Hagenius</i>         | N/A     |              |                    | 0 N/A      | N/A         |
| Gomphidae <i>Ophiogomphus</i>     | N/A     |              |                    | 0 N/A      | N/A         |
| Gomphidae <i>Gomphus</i>          | N/A     |              |                    | 0 N/A      | N/A         |
| Calopterygidae <i>Calopteryx</i>  | N/A     |              |                    | 1 N/A      | N/A         |
| Aeshnidae <i>Boyeria</i>          | N/A     |              |                    | 0 N/A      | N/A         |
| Aeshnidae <i>Aeshna</i>           | N/A     |              |                    | 0 N/A      | N/A         |
| <b>Amphipoda</b>                  | N/A     |              |                    | 3 N/A      | N/A         |
| <b>Isopoda</b>                    | N/A     |              |                    | 0 N/A      | N/A         |
| <b>Hirudinea</b>                  | N/A     |              |                    | 0 N/A      | N/A         |
| <b>Oligochaeta</b>                | N/A     |              |                    | 1 N/A      | N/A         |
| <b>Lepidoptera</b>                | N/A     |              |                    | 0 N/A      | N/A         |
| Parapoynx                         | N/A     |              |                    | 0 N/A      | N/A         |



## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

| 4/25/09                              | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |              |                    |            |             |
| Baetidae <i>Baetis</i>               | 0            | 0                  | N/A        | 0           |
| Baetidae <i>Procladius</i>           | 0            | 0                  | N/A        | 0           |
| Heptageniidae <i>Stenocranus</i>     | 0            | 0                  | N/A        | 0           |
| Heptageniidae <i>Stenonema</i>       | 1            | 0                  | N/A        | 0           |
| Caenidae <i>Caenis</i>               | 4            | 0                  | N/A        | 0           |
| Baetiscidae <i>Baetisca</i>          | 0            | 0                  | N/A        | 1           |
| Isonychiidae <i>Isonychia</i>        | 0            | 0                  | N/A        | 0           |
| Leptohyphidae <i>Tricothodes</i>     | 0            | 0                  | N/A        | 0           |
| Leptohyphidae <i>Leptophlebia</i>    | 0            | 0                  | N/A        | 0           |
| Leptohyphidae <i>Habrophlebiodes</i> | 0            | 0                  | N/A        | 0           |
| Ephemeridae <i>Hexagenia</i>         | 0            | 0                  | N/A        | 0           |
| Ephemeridae <i>Ephemera</i>          | 0            | 0                  | N/A        | 0           |
| <b>Plecoptera</b>                    |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | 0            | 0                  | N/A        | 0           |
| Capniidae <i>Allocapnia</i>          | 0            | 2                  | N/A        | 0           |
| Perlidae <i>Isoperla</i>             | 5            | 0                  | N/A        | 0           |
| Perlidae <i>Neoperla</i>             | 0            | 0                  | N/A        | 0           |
| <b>Tricoptera</b>                    |              |                    |            |             |
| Hydropsychidae                       | 0            | 0                  | N/A        | 0           |
| Hydropsychidae <i>Macrostemum</i>    | 0            | 0                  | N/A        | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   | 0            | 0                  | N/A        | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> | 0            | 0                  | N/A        | 2           |
| Hydropsychidae <i>Potamyia</i>       | 0            | 0                  | N/A        | 0           |
| Hydropsychidae <i>Hydropsyche</i>    | 1            | 2                  | N/A        | 11          |
| Brachycentridae                      | 0            | 0                  | N/A        | 0           |
| Brachycentridae <i>Brachycentrus</i> | 0            | 0                  | N/A        | 0           |
| Brachycentridae <i>Micrasema</i>     | 0            | 0                  | N/A        | 0           |
| Philopotamidae <i>Chimarra</i>       | 0            | 0                  | N/A        | 0           |
| Uenoidae <i>Neophylax</i>            | 0            | 0                  | N/A        | 0           |
| Glossosomatidae <i>Agapetus</i>      | 0            | 0                  | N/A        | 0           |
| Glossosomatidae <i>Protopila</i>     | 0            | 0                  | N/A        | 0           |
| Limnephilidae <i>Apatania</i>        | 0            | 0                  | N/A        | 0           |
| Limnephilidae <i>Freslia</i>         | 0            | 0                  | N/A        | 0           |
| Limnephilidae <i>Hydatophylax</i>    | 0            | 0                  | N/A        | 0           |
| Limnephilidae <i>Asynarchus</i>      | 0            | 0                  | N/A        | 0           |
| Limnephilidae <i>Pycnopsyche</i>     | 0            | 0                  | N/A        | 0           |
| Limnephilidae <i>Isonyquia</i>       | 1            | 0                  | N/A        | 1           |
| Phryganeidae <i>Ptilostomis</i>      | 0            | 0                  | N/A        | 0           |
| Hydrophilidae <i>Tropisternus</i>    | 0            | 0                  | N/A        | 0           |
| Polycentropidae <i>Ceratomyia</i>    | 0            | 0                  | N/A        | 0           |
| Psychomyiidae <i>Lype</i>            | 0            | 0                  | N/A        | 0           |
| <b>Diptera</b>                       |              |                    |            |             |
| Simuliidae                           | 0            | 0                  | N/A        | 0           |
| Simuliidae <i>Prosimulium</i>        | 0            | 0                  | N/A        | 0           |
| Simuliidae <i>Simulium</i>           | 0            | 0                  | N/A        | 0           |
| Simuliidae <i>Cnephia</i>            | 17           | 7                  | N/A        | 3           |
| Chironomidae                         | 18           | 2                  | N/A        | 0           |
| Tipulidae <i>Tipula</i>              | 1            | 0                  | N/A        | 0           |
| Tipulidae <i>Hesperoconopa</i>       | 0            | 0                  | N/A        | 0           |
| Tipulidae <i>Hexatoma</i>            | 0            | 0                  | N/A        | 0           |
| Ceratopogonidae                      | 0            | 0                  | N/A        | 0           |
| Nematocera <i>Dicranota</i>          | 0            | 0                  | N/A        | 0           |
| Tabanidae <i>Chrysops</i>            | 0            | 0                  | N/A        | 0           |
| Culicidae                            | 0            | 0                  | N/A        | 0           |
| Dixidae <i>Dixa</i>                  | 0            | 0                  | N/A        | 0           |
| Empididae <i>Chelifera</i>           | 0            | 0                  | N/A        | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                   | 4/25/09 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|-----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>                |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>            |         | 0            | 0                  | N/A        | 0           |
| Belostomatidae <i>Belostoma</i>   |         | 0            | 0                  | N/A        | 1           |
| Gerridae <i>Aquarius</i>          |         | 0            | 0                  | N/A        | 1           |
| Gerridae <i>Rheumatobates</i>     |         | 0            | 0                  | N/A        | 0           |
| Gerridae <i>Metrobates</i>        |         | 0            | 0                  | N/A        | 0           |
| Gerridae <i>Limnoporus</i>        |         | 0            | 0                  | N/A        | 0           |
| Gerromorpha <i>Mesovellidae</i>   |         | 0            | 0                  | N/A        | 0           |
| Coridae                           |         | 0            | 0                  | N/A        | 0           |
| Notonectidae <i>Buena</i>         |         | 0            | 0                  | N/A        | 0           |
| Notonectidae <i>Notonecta</i>     |         | 0            | 0                  | N/A        | 0           |
| Pleidae <i>Neoplea</i>            |         | 0            | 0                  | N/A        | 0           |
| Velidae <i>Rhagovella</i>         |         | 0            | 0                  | N/A        | 0           |
| Velidae <i>Microvelia</i>         |         | 0            | 0                  | N/A        | 0           |
| <b>Coleoptera</b>                 |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)      |         | 0            | 2                  | N/A        | 0           |
| Elmidae <i>Stenelmis</i> (L)      |         | 0            | 0                  | N/A        | 0           |
| Elmidae <i>Dubirophia</i> (A)     |         | 0            | 0                  | N/A        | 0           |
| Elmidae <i>Dubirophia</i> (L)     |         | 0            | 0                  | N/A        | 0           |
| Elmidae <i>Macronychus</i> (A)    |         | 0            | 0                  | N/A        | 0           |
| Elmidae <i>Macronychus</i> (L)    |         | 0            | 0                  | N/A        | 0           |
| Elmidae <i>Ancyronyx</i>          |         | 0            | 0                  | N/A        | 0           |
| Hydrophilidae <i>Hydrochora</i>   |         | 0            | 0                  | N/A        | 0           |
| Hydrophilidae <i>Enochrus</i>     |         | 0            | 0                  | N/A        | 0           |
| Hydrochidae <i>Hydrochus</i>      |         | 0            | 0                  | N/A        | 0           |
| Haliplidae <i>Peltodytes</i>      |         | 0            | 0                  | N/A        | 0           |
| Haliplidae <i>Brychius</i>        |         | 0            | 0                  | N/A        | 0           |
| Haliplidae <i>Brychius</i> (L)    |         | 0            | 0                  | N/A        | 0           |
| Psephenidae <i>Ectopria</i>       |         | 0            | 0                  | N/A        | 0           |
| Gyrinidae <i>Dineutus</i>         |         | 0            | 0                  | N/A        | 0           |
| <b>Megaloptera</b>                |         |              |                    |            |             |
| Sialidae <i>Sialis</i>            |         | 0            | 0                  | N/A        | 0           |
| Corydalidae <i>Nigronia</i>       |         | 0            | 0                  | N/A        | 0           |
| Corydalidae <i>Chauliodes</i>     |         | 0            | 0                  | N/A        | 0           |
| <b>Odonata</b>                    |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>  |         | 0            | 0                  | N/A        | 0           |
| Coenagrionidae <i>Amphiagrion</i> |         | 0            | 0                  | N/A        | 0           |
| Gomphidae <i>Argomphus</i>        |         | 0            | 0                  | N/A        | 0           |
| Gomphidae <i>Hagenius</i>         |         | 0            | 0                  | N/A        | 0           |
| Gomphidae <i>Ophiogomphus</i>     |         | 0            | 0                  | N/A        | 0           |
| Gomphidae <i>Gomphus</i>          |         | 0            | 0                  | N/A        | 0           |
| Calopterygidae <i>Calopteryx</i>  |         | 0            | 0                  | N/A        | 0           |
| Aeshnidae <i>Boyeria</i>          |         | 0            | 0                  | N/A        | 1           |
| Aeshnidae <i>Aeshna</i>           |         | 1            | 0                  | N/A        | 0           |
| <b>Amphipoda</b>                  |         |              |                    |            |             |
|                                   |         | 0            | 1                  | N/A        | 0           |
| <b>Isopoda</b>                    |         |              |                    |            |             |
|                                   |         | 0            | 0                  | N/A        | 0           |
| <b>Hirudinea</b>                  |         |              |                    |            |             |
|                                   |         | 0            | 0                  | N/A        | 0           |
| <b>Oligochaeta</b>                |         |              |                    |            |             |
|                                   |         | 0            | 0                  | N/A        | 0           |
| <b>Lepidoptera</b>                |         |              |                    |            |             |
| Parapoynx                         |         | 0            | 0                  | N/A        | 1           |

Appendix B continued – Species List Collector: Matthew Knittel Taxonomist: Matthew Knittel

|                                      | 9/6/09 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|--------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |        |              |                    |            |             |
| Baetidae <i>Baetis</i>               |        | 0            | 12                 | 2          | 9           |
| Heptageniidae <i>Stenoma</i>         |        | 0            | 8                  | 0          | 8           |
| Caenidae <i>Caenis</i>               |        | 1            | 0                  | 0          | 0           |
| Baetiscidae <i>Baetisca</i>          |        | 0            | 0                  | 1          | 0           |
| Isonychiidae <i>Isonychia</i>        |        | 0            | 1                  | 0          | 2           |
| Leptohyphidae <i>Tricothodes</i>     |        | 0            | 0                  | 0          | 1           |
| <b>Tricoptera</b>                    |        |              |                    |            |             |
| Hydropsychidae <i>Hydropsyche</i>    |        | 2            | 19                 | 0          | 18          |
| Hydropsychidae <i>Cheumatopsyche</i> |        | 0            | 6                  | 0          | 6           |
| Brachycentridae <i>Brachycentrus</i> |        | 0            | 7                  | 0          | 2           |
| Philopotamidae <i>Chimarra</i>       |        | 0            | 1                  | 0          | 0           |
| <b>Diptera</b>                       |        |              |                    |            |             |
| Simuliidae <i>Cnephia</i>            |        | 0            | 3                  | 0          | 8           |
| Chironomidae                         |        | 0            | 3                  | 0          | 1           |
| Tipulidae <i>Tipula</i>              |        | 0            | 0                  | 0          | 0           |
| Ceratopogonidae                      |        | 0            | 0                  | 0          | 0           |
| <b>Heteroptera</b>                   |        |              |                    |            |             |
| Nepidae <i>Ranatra</i>               |        | 0            | 0                  | 0          | 1           |
| Belostomatidae <i>Belostoma</i>      |        | 0            | 0                  | 0          | 0           |
| Gerridae <i>Rheumatobates</i>        |        | 0            | 0                  | 0          | 0           |
| Gerridae <i>Metrobates</i>           |        | 0            | 0                  | 3          | 0           |
| Cortixidae                           |        | 0            | 2                  |            |             |
| <b>Coleoptera</b>                    |        |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)         |        | 0            | 0                  | 1          | 7           |
| Elmidae <i>Stenelmis</i> (L)         |        | 0            | 3                  | 0          | 2           |
| <b>Megaloptera</b>                   |        |              |                    |            |             |
| Sialidae <i>Sialis</i>               |        | 1            | 0                  | 0          | 0           |
| Corydalidae <i>Nigronia</i>          |        | 0            | 0                  | 0          | 3           |
| <b>Odonata</b>                       |        |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>     |        | 3            | 0                  | 0          | 0           |
| Gomphidae <i>Hagenius</i>            |        | 1            | 1                  | 0          | 0           |
| Calopterygidae <i>Calopteryx</i>     |        | 0            | 0                  | 0          | 1           |
| <b>Amphipoda</b>                     |        |              |                    |            |             |
|                                      |        | 0            | 0                  | 0          | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 9/27/09 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |         |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A     |              | 4                  | N/A        | N/A         |
| Baetidae <i>Procladius</i>           | N/A     |              | 0                  | N/A        | N/A         |
| Heptageniidae <i>Stenocranus</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Heptageniidae <i>Stenonema</i>       | N/A     |              | 3                  | N/A        | N/A         |
| Caenidae <i>Caenis</i>               | N/A     |              | 1                  | N/A        | N/A         |
| Baetiscidae <i>Baetisca</i>          | N/A     |              | 0                  | N/A        | N/A         |
| Isonychiidae <i>Isonychia</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Leptohyphidae <i>Tricothodes</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Leptohyphidae <i>Leptophlebia</i>    | N/A     |              | 0                  | N/A        | N/A         |
| Leptohyphidae <i>Habrophlebiodes</i> | N/A     |              | 0                  | N/A        | N/A         |
| Ephemeridae <i>Hexagenia</i>         | N/A     |              | 0                  | N/A        | N/A         |
| Ephemeridae <i>Ephemera</i>          | N/A     |              | 0                  | N/A        | N/A         |
| <b>Plecoptera</b>                    |         |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | N/A     |              | 0                  | N/A        | N/A         |
| Capniidae <i>Allocapnia</i>          | N/A     |              | 0                  | N/A        | N/A         |
| Perlidae <i>Isoperla</i>             | N/A     |              | 0                  | N/A        | N/A         |
| Perlidae <i>Neoperla</i>             | N/A     |              | 0                  | N/A        | N/A         |
| <b>Tricoptera</b>                    |         |              |                    |            |             |
| Hydropsychidae                       | N/A     |              | 0                  | N/A        | N/A         |
| Hydropsychidae <i>Macrostemum</i>    | N/A     |              | 0                  | N/A        | N/A         |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A     |              | 0                  | N/A        | N/A         |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A     |              | 17                 | N/A        | N/A         |
| Hydropsychidae <i>Potamyia</i>       | N/A     |              | 0                  | N/A        | N/A         |
| Hydropsychidae <i>Hydropsyche</i>    | N/A     |              | 14                 | N/A        | N/A         |
| Brachycentridae                      | N/A     |              | 0                  | N/A        | N/A         |
| Brachycentridae <i>Brachycentrus</i> | N/A     |              | 0                  | N/A        | N/A         |
| Brachycentridae <i>Micrasema</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Philopotamidae <i>Chimarra</i>       | N/A     |              | 1                  | N/A        | N/A         |
| Uenoidae <i>Neophylax</i>            | N/A     |              | 0                  | N/A        | N/A         |
| Glossosomatidae <i>Agapetus</i>      | N/A     |              | 0                  | N/A        | N/A         |
| Glossosomatidae <i>Protoplla</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Limnephilidae <i>Apatania</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Limnephilidae <i>Freslia</i>         | N/A     |              | 0                  | N/A        | N/A         |
| Limnephilidae <i>Hydatophylax</i>    | N/A     |              | 1                  | N/A        | N/A         |
| Limnephilidae <i>Asynarchus</i>      | N/A     |              | 0                  | N/A        | N/A         |
| Limnephilidae <i>Pycnopsyche</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Limnephilidae <i>Isonyquia</i>       | N/A     |              | 0                  | N/A        | N/A         |
| Phryganeidae <i>Ptilostomis</i>      | N/A     |              | 0                  | N/A        | N/A         |
| Hydrophilidae <i>Tropisternus</i>    | N/A     |              | 0                  | N/A        | N/A         |
| Polycentropidae <i>Ceratomyia</i>    | N/A     |              | 0                  | N/A        | N/A         |
| Psychomyiidae <i>Lype</i>            | N/A     |              | 0                  | N/A        | N/A         |
| <b>Diptera</b>                       |         |              |                    |            |             |
| Simuliidae                           | N/A     |              | 0                  | N/A        | N/A         |
| Simuliidae <i>Prosimulium</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Simuliidae <i>Simulium</i>           | N/A     |              | 0                  | N/A        | N/A         |
| Simuliidae <i>Cnephia</i>            | N/A     |              | 12                 | N/A        | N/A         |
| Chironomidae                         | N/A     |              | 13                 | N/A        | N/A         |
| Tipulidae <i>Tipula</i>              | N/A     |              | 0                  | N/A        | N/A         |
| Tipulidae <i>Hesperoconopa</i>       | N/A     |              | 0                  | N/A        | N/A         |
| Tipulidae <i>Hexatoma</i>            | N/A     |              | 0                  | N/A        | N/A         |
| Ceratopogonidae                      | N/A     |              | 0                  | N/A        | N/A         |
| Nematocera <i>Dicranota</i>          | N/A     |              | 0                  | N/A        | N/A         |
| Tabanidae <i>Chrysops</i>            | N/A     |              | 0                  | N/A        | N/A         |
| Culicidae                            | N/A     |              | 0                  | N/A        | N/A         |
| Dixidae <i>Dixa</i>                  | N/A     |              | 0                  | N/A        | N/A         |
| Empididae <i>Cheliffera</i>          | N/A     |              | 0                  | N/A        | N/A         |



## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                   | 9/27/09 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|-----------------------------------|---------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>                |         |              |                    |            |             |
| Nepidae <i>Ranatra</i>            | N/A     |              | 0                  | N/A        | N/A         |
| Belostomatidae <i>Belostoma</i>   | N/A     |              | 0                  | N/A        | N/A         |
| Gerridae <i>Aquarius</i>          | N/A     |              | 0                  | N/A        | N/A         |
| Gerridae <i>Rheumatobates</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Gerridae <i>Metrobates</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Gerridae <i>Limnoporus</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Gerromorpha <i>Mesovellidae</i>   | N/A     |              | 0                  | N/A        | N/A         |
| Coridae                           | N/A     |              | 1                  | N/A        | N/A         |
| Notonectidae <i>Buena</i>         | N/A     |              | 0                  | N/A        | N/A         |
| Notonectidae <i>Notonecta</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Pleidae <i>Neoplea</i>            | N/A     |              | 0                  | N/A        | N/A         |
| Velidae <i>Rhagovelia</i>         | N/A     |              | 0                  | N/A        | N/A         |
| Velidae <i>Microvelia</i>         | N/A     |              | 0                  | N/A        | N/A         |
| <b>Coleoptera</b>                 |         |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)      | N/A     |              | 0                  | N/A        | N/A         |
| Elmidae <i>Stenelmis</i> (L)      | N/A     |              | 0                  | N/A        | N/A         |
| Elmidae <i>Dubirophia</i> (A)     | N/A     |              | 2                  | N/A        | N/A         |
| Elmidae <i>Dubirophia</i> (L)     | N/A     |              | 1                  | N/A        | N/A         |
| Elmidae <i>Macronychus</i> (A)    | N/A     |              | 0                  | N/A        | N/A         |
| Elmidae <i>Macronychus</i> (L)    | N/A     |              | 0                  | N/A        | N/A         |
| Elmidae <i>Ancyronyx</i>          | N/A     |              | 0                  | N/A        | N/A         |
| Hydrophilidae <i>Hydrochora</i>   | N/A     |              | 0                  | N/A        | N/A         |
| Hydrophilidae <i>Enochrus</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Hydrochidae <i>Hydrochus</i>      | N/A     |              | 0                  | N/A        | N/A         |
| Haliplidae <i>Peltodytes</i>      | N/A     |              | 0                  | N/A        | N/A         |
| Haliplidae <i>Brychius</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Haliplidae <i>Brychius</i> (L)    | N/A     |              | 0                  | N/A        | N/A         |
| Psephenidae <i>Ectopria</i>       | N/A     |              | 0                  | N/A        | N/A         |
| Gyrinidae <i>Dineutus</i>         | N/A     |              | 0                  | N/A        | N/A         |
| <b>Megaloptera</b>                |         |              |                    |            |             |
| Sialidae <i>Sialis</i>            | N/A     |              | 0                  | N/A        | N/A         |
| Corydalidae <i>Nigronia</i>       | N/A     |              | 0                  | N/A        | N/A         |
| Corydalidae <i>Chauliodes</i>     | N/A     |              | 1                  | N/A        | N/A         |
| <b>Odonata</b>                    |         |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>  | N/A     |              | 6                  | N/A        | N/A         |
| Coenagrionidae <i>Amphiagrion</i> | N/A     |              | 0                  | N/A        | N/A         |
| Gomphidae <i>Argomphus</i>        | N/A     |              | 0                  | N/A        | N/A         |
| Gomphidae <i>Hagenius</i>         | N/A     |              | 0                  | N/A        | N/A         |
| Gomphidae <i>Ophiogomphus</i>     | N/A     |              | 0                  | N/A        | N/A         |
| Gomphidae <i>Gomphus</i>          | N/A     |              | 0                  | N/A        | N/A         |
| Calopterygidae <i>Calopteryx</i>  | N/A     |              | 2                  | N/A        | N/A         |
| Aeshnidae <i>Boyeria</i>          | N/A     |              | 0                  | N/A        | N/A         |
| <b>Amphipoda</b>                  | N/A     |              | 18                 | N/A        | N/A         |
| <b>Isopoda</b>                    | N/A     |              | 3                  | N/A        | N/A         |
| <b>Hirudinea</b>                  | N/A     |              | 0                  | N/A        | N/A         |
| <b>Oligochea</b>                  | N/A     |              | 0                  | N/A        | N/A         |
| <b>Lepidoptera</b>                | N/A     |              | 0                  | N/A        | N/A         |
| Parapoynx                         | N/A     |              | 0                  | N/A        | N/A         |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

|                                      | 10/10/09 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|----------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |          |              |                    |            |             |
| Baetidae <i>Baetis</i>               | N/A      |              | 4                  | N/A        | 1           |
| Baetidae <i>Procladius</i>           | N/A      |              | 0                  | N/A        | 0           |
| Heptageniidae <i>Stenocranus</i>     | N/A      |              | 0                  | N/A        | 0           |
| Heptageniidae <i>Stenonema</i>       | N/A      |              | 2                  | N/A        | 5           |
| Caenidae <i>Caenis</i>               | N/A      |              | 0                  | N/A        | 0           |
| Baetiscidae <i>Baetisca</i>          | N/A      |              | 1                  | N/A        | 0           |
| Isonychiidae <i>Isonychia</i>        | N/A      |              | 1                  | N/A        | 0           |
| Leptohyphidae <i>Tricothodes</i>     | N/A      |              | 0                  | N/A        | 0           |
| Leptohyphidae <i>Leptophlebia</i>    | N/A      |              | 0                  | N/A        | 0           |
| Leptohyphidae <i>Habrophlebiodes</i> | N/A      |              | 0                  | N/A        | 0           |
| Ephemeridae <i>Hexagenia</i>         | N/A      |              | 0                  | N/A        | 0           |
| Ephemeridae <i>Ephemera</i>          | N/A      |              | 0                  | N/A        | 0           |
| <b>Plecoptera</b>                    |          |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> | N/A      |              | 0                  | N/A        | 0           |
| Capniidae <i>Allocapnia</i>          | N/A      |              | 0                  | N/A        | 0           |
| Perlidae <i>Isoperla</i>             | N/A      |              | 0                  | N/A        | 0           |
| Perlidae <i>Neoperla</i>             | N/A      |              | 0                  | N/A        | 0           |
| <b>Tricoptera</b>                    |          |              |                    |            |             |
| Hydropsychidae                       | N/A      |              | 0                  | N/A        | 0           |
| Hydropsychidae <i>Macrostemum</i>    | N/A      |              | 0                  | N/A        | 0           |
| Hydropsychidae <i>Ceratopsyche</i>   | N/A      |              | 0                  | N/A        | 0           |
| Hydropsychidae <i>Cheumatopsyche</i> | N/A      |              | 0                  | N/A        | 2           |
| Hydropsychidae <i>Potamyia</i>       | N/A      |              | 0                  | N/A        | 0           |
| Hydropsychidae <i>Hydropsyche</i>    | N/A      |              | 1                  | N/A        | 10          |
| Brachycentridae                      | N/A      |              | 0                  | N/A        | 0           |
| Brachycentridae <i>Brachycentrus</i> | N/A      |              | 1                  | N/A        | 1           |
| Brachycentridae <i>Micrasema</i>     | N/A      |              | 0                  | N/A        | 0           |
| Philopotamidae <i>Chimarra</i>       | N/A      |              | 0                  | N/A        | 0           |
| Uenoidae <i>Neophylax</i>            | N/A      |              | 0                  | N/A        | 0           |
| Glossosomatidae <i>Agapetus</i>      | N/A      |              | 0                  | N/A        | 1           |
| Glossosomatidae <i>Protoplla</i>     | N/A      |              | 0                  | N/A        | 0           |
| Limnephilidae <i>Apatania</i>        | N/A      |              | 0                  | N/A        | 0           |
| Limnephilidae <i>Freslia</i>         | N/A      |              | 0                  | N/A        | 0           |
| Limnephilidae <i>Hydatophylax</i>    | N/A      |              | 1                  | N/A        | 0           |
| Limnephilidae <i>Asynarchus</i>      | N/A      |              | 0                  | N/A        | 0           |
| Limnephilidae <i>Pycnopsyche</i>     | N/A      |              | 0                  | N/A        | 0           |
| Limnephilidae <i>Isonyquia</i>       | N/A      |              | 0                  | N/A        | 0           |
| Phryganeidae <i>Ptilostomis</i>      | N/A      |              | 0                  | N/A        | 0           |
| Hydrophilidae <i>Tropisternus</i>    | N/A      |              | 0                  | N/A        | 0           |
| Polycentropidae <i>Ceratomyia</i>    | N/A      |              | 0                  | N/A        | 0           |
| Psychomyiidae <i>Lype</i>            | N/A      |              | 0                  | N/A        | 0           |
| <b>Diptera</b>                       |          |              |                    |            |             |
| Simuliidae                           | N/A      |              | 0                  | N/A        | 0           |
| Simuliidae <i>Prosimulium</i>        | N/A      |              | 0                  | N/A        | 0           |
| Simuliidae <i>Simulium</i>           | N/A      |              | 0                  | N/A        | 0           |
| Simuliidae <i>Cnephia</i>            | N/A      |              | 1                  | N/A        | 1           |
| Chironomidae                         | N/A      |              | 6                  | N/A        | 6           |
| Tipulidae <i>Tipula</i>              | N/A      |              | 1                  | N/A        | 0           |
| Tipulidae <i>Hesperoconopa</i>       | N/A      |              | 0                  | N/A        | 0           |
| Tipulidae <i>Hexatoma</i>            | N/A      |              | 0                  | N/A        | 0           |
| Ceratopogonidae                      | N/A      |              | 0                  | N/A        | 0           |
| Nematocera <i>Dicranota</i>          | N/A      |              | 0                  | N/A        | 0           |
| Tabanidae <i>Chrysops</i>            | N/A      |              | 0                  | N/A        | 0           |
| Culicidae                            | N/A      |              | 0                  | N/A        | 3           |
| Dixidae <i>Dixa</i>                  | N/A      |              | 0                  | N/A        | 0           |
| Empididae <i>Cheliffera</i>          | N/A      |              | 0                  | N/A        | 0           |

## Appendix B continued – Species List Collector: HRWC Taxonomist: Matthew Knittel

| 10/10/09                          | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|-----------------------------------|--------------|--------------------|------------|-------------|
| <b>Heteroptera</b>                |              |                    |            |             |
| Nepidae <i>Ranatra</i>            | N/A          |                    | 0 N/A      | 0           |
| Belostomatidae <i>Belostoma</i>   | N/A          |                    | 0 N/A      | 0           |
| Gerridae <i>Aquarius</i>          | N/A          |                    | 0 N/A      | 0           |
| Gerridae <i>Rheumatobates</i>     | N/A          |                    | 0 N/A      | 0           |
| Gerridae <i>Metrobates</i>        | N/A          |                    | 0 N/A      | 0           |
| Gerridae <i>Limnoporus</i>        | N/A          |                    | 0 N/A      | 0           |
| Gerromorpha <i>Mesovellidae</i>   | N/A          |                    | 0 N/A      | 2           |
| Coridae                           | N/A          | 10                 | N/A        | 4           |
| Notonectidae <i>Buena</i>         | N/A          | 0                  | N/A        | 0           |
| Notonectidae <i>Notonecta</i>     | N/A          | 0                  | N/A        | 0           |
| Pleidae <i>Neoplea</i>            | N/A          | 0                  | N/A        | 0           |
| Velidae <i>Rhagovelia</i>         | N/A          | 3                  | N/A        | 0           |
| Velidae <i>Microvelia</i>         | N/A          | 0                  | N/A        | 0           |
| <b>Coleoptera</b>                 |              |                    |            |             |
| Elmidae <i>Stenelmis</i> (A)      | N/A          | 0                  | N/A        | 0           |
| Elmidae <i>Stenelmis</i> (L)      | N/A          | 0                  | N/A        | 0           |
| Elmidae <i>Dubirophia</i> (A)     | N/A          | 0                  | N/A        | 0           |
| Elmidae <i>Dubirophia</i> (L)     | N/A          | 0                  | N/A        | 0           |
| Elmidae <i>Macronychus</i> (A)    | N/A          | 0                  | N/A        | 0           |
| Elmidae <i>Macronychus</i> (L)    | N/A          | 0                  | N/A        | 0           |
| Elmidae <i>Ancyronyx</i>          | N/A          | 0                  | N/A        | 0           |
| Hydrophilidae <i>Hydrochora</i>   | N/A          | 0                  | N/A        | 2           |
| Hydrophilidae <i>Enochrus</i>     | N/A          | 0                  | N/A        | 0           |
| Hydrochidae <i>Hydrochus</i>      | N/A          | 0                  | N/A        | 0           |
| Haliplidae <i>Peltodytes</i>      | N/A          | 0                  | N/A        | 0           |
| Haliplidae <i>Brychius</i>        | N/A          | 0                  | N/A        | 0           |
| Haliplidae <i>Brychius</i> (L)    | N/A          | 0                  | N/A        | 0           |
| Psephenidae <i>Ectopria</i>       | N/A          | 0                  | N/A        | 0           |
| Gyrinidae <i>Dineutus</i>         | N/A          | 0                  | N/A        | 0           |
| <b>Megaloptera</b>                |              |                    |            |             |
| Sialidae <i>Sialis</i>            | N/A          | 0                  | N/A        | 0           |
| Corydalidae <i>Nigronia</i>       | N/A          | 0                  | N/A        | 0           |
| Corydalidae <i>Chauliodes</i>     | N/A          | 0                  | N/A        | 0           |
| <b>Odonata</b>                    |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>  | N/A          | 0                  | N/A        | 0           |
| Coenagrionidae <i>Amphiagrion</i> | N/A          | 0                  | N/A        | 0           |
| Gomphidae <i>Argomphus</i>        | N/A          | 0                  | N/A        | 0           |
| Gomphidae <i>Hagenius</i>         | N/A          | 0                  | N/A        | 0           |
| Gomphidae <i>Ophlogomphus</i>     | N/A          | 0                  | N/A        | 0           |
| Gomphidae <i>Gomphus</i>          | N/A          | 0                  | N/A        | 0           |
| Calopterygidae <i>Calopteryx</i>  | N/A          | 0                  | N/A        | 0           |
| Aeshnidae <i>Boyeria</i>          | N/A          | 0                  | N/A        | 1           |
| <b>Amphipoda</b>                  |              |                    |            |             |
|                                   | N/A          | 3                  | N/A        | 0           |
| <b>Isopoda</b>                    |              |                    |            |             |
|                                   | N/A          | 0                  | N/A        | 0           |
| <b>Hirudinea</b>                  |              |                    |            |             |
|                                   | N/A          | 0                  | N/A        | 0           |
| <b>Oligochea</b>                  |              |                    |            |             |
|                                   | N/A          | 1                  | N/A        | 0           |
| <b>Lepidoptera</b>                |              |                    |            |             |
| Parapoynx                         | N/A          | 0                  | N/A        | 0           |

## Appendix B continued – Species List Collector: Matthew Knittel Taxonomist: Matthew Knittel

|                                      | 3/3/10 | FLETCHER RD. | WARRIOR CREEK PARK | SHIELD RD. | JACKSON RD. |
|--------------------------------------|--------|--------------|--------------------|------------|-------------|
| <b>Ephemeroptera</b>                 |        |              |                    |            |             |
| Baetidae                             |        | 0            | 0                  | 0          | 0           |
| Heptageniidae                        |        | 0            | 0                  | 0          | 0           |
| Heptageniidae <i>Stenoma</i>         |        | 1            | 11                 | 0          | 10          |
| Caenidae <i>Caenis</i>               |        | 0            | 0                  | 0          | 0           |
| Baetiscidae <i>Baetisca</i>          |        | 0            | 0                  | 0          | 1           |
| Isonychiidae <i>Isonychia</i>        |        | 0            | 1                  | 0          | 3           |
| Leptohyphidae <i>Tricothodes</i>     |        | 0            | 0                  | 0          | 0           |
| Leptohyphidae <i>Leptophlebia</i>    |        | 0            | 0                  | 0          | 12          |
| Ephemridae <i>Hexagenia</i>          |        | 0            | 0                  | 0          | 0           |
| <b>Plecoptera</b>                    |        |              |                    |            |             |
| Taeniopterygidae <i>Taeniopteryx</i> |        | 2            | 13                 | 0          | 7           |
| Capniidae <i>Allocapnia</i>          |        | 1            | 17                 | 1          | 14          |
| <b>Tricoptera</b>                    |        |              |                    |            |             |
| Hydropsychidae                       |        | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Macrostemum</i>    |        | 0            | 0                  | 0          | 0           |
| Hydropsychidae <i>Hydropsyche</i>    |        | 0            | 40                 | 0          | 28          |
| Hydropsychidae <i>Cheumatopsyche</i> |        | 0            | 9                  | 0          | 0           |
| Hydropsychidae <i>Potamyla</i>       |        | 0            | 0                  | 0          | 4           |
| Brachycentridae                      |        | 0            | 0                  | 0          | 0           |
| Brachycentridae <i>Brachycentrus</i> |        | 0            | 1                  | 0          | 5           |
| Brachycentridae <i>Micrasema</i>     |        | 0            | 0                  | 0          | 1           |
| Philopotamidae                       |        | 0            | 0                  | 0          | 0           |
| Uenoidae <i>Neophylax</i>            |        | 0            | 0                  | 0          | 19          |
| Glossosomatidae <i>Agapetus</i>      |        | 0            | 0                  | 0          | 3           |
| Limnephilidae <i>Apatania</i>        |        | 0            | 0                  | 0          | 10          |
| Limnephilidae <i>Fresnia</i>         |        | 0            | 0                  | 0          | 0           |
| Limnephilidae <i>Hydatophylax</i>    |        | 3            | 0                  | 0          | 0           |
| Limnephilidae <i>Asynarchus</i>      |        | 1            | 0                  | 0          | 0           |
| Phryganellidae <i>Ptilostomis</i>    |        | 0            | 0                  | 0          | 1           |
| Hydrophilidae <i>Tropisternus</i>    |        | 0            | 0                  | 0          | 0           |
| <b>Diptera</b>                       |        |              |                    |            |             |
| Simuliidae                           |        | 0            | 0                  | 0          | 0           |
| Simuliidae <i>Cnephia</i>            |        | 2            | 1                  | 0          | 10          |
| Chironomidae                         |        | 12           | 8                  | 1          | 4           |
| Tipulidae <i>Tipula</i>              |        | 0            | 2                  | 0          | 0           |
| Ceratopogonidae                      |        | 0            | 0                  | 0          | 0           |
| Nematocera <i>Dicranota</i>          |        | 0            | 0                  | 0          | 2           |
| <b>Heteroptera</b>                   |        |              |                    |            |             |
| Nepidae <i>Ranatra</i>               |        | 0            | 0                  | 0          | 0           |
| Belostomatidae <i>Belostoma</i>      |        | 3            | 0                  | 0          | 0           |
| Gerridae <i>Rheumatobates</i>        |        | 0            | 0                  | 0          | 0           |
| Gerridae <i>Metrobates</i>           |        | 0            | 0                  | 0          | 0           |
| Corixidae                            |        | 0            | 0                  | 0          | 1           |
| Notonectidae <i>Buena</i>            |        | 0            | 0                  | 0          | 0           |
| <b>Coleoptera</b>                    |        |              |                    |            |             |
| Elmidae (A)                          |        | 0            | 0                  | 0          | 0           |
| Elmidae (L)                          |        | 0            | 0                  | 0          | 0           |
| <b>Megaloptera</b>                   |        |              |                    |            |             |
| Sialidae <i>Sialis</i>               |        | 0            | 0                  | 0          | 0           |
| Corydalidae <i>Nigronia</i>          |        | 0            | 0                  | 0          | 0           |
| <b>Odonata</b>                       |        |              |                    |            |             |
| Coenagrionidae <i>Nehalennia</i>     |        | 0            | 0                  | 0          | 0           |
| Gomphidae <i>Hagenius</i>            |        | 0            | 0                  | 0          | 0           |
| Calopterygidae <i>Calopteryx</i>     |        | 0            | 0                  | 0          | 1           |
| <b>Amphipoda</b>                     |        |              |                    |            |             |
|                                      |        | 0            | 0                  | 0          | 0           |
| <b>Isopoda</b>                       |        |              |                    |            |             |
|                                      |        | 2            | 2                  | 0          | 0           |