FINAL REPORT
BENTHIC MACROINVERTEBRATE SURVEY
OLD HICKORY PROJECT
SUMMER/FALL 2004

FOR
US ARMY CORPS OF ENGINEERS
NASHVILLE DISTRICT

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SUMMARY

On August 13, 16 and 18 and October 28, 2004, personnel from the Nashville District, Corps of Engineers Water Management Section (Hydrology and Hydraulics Branch, Engineering-Construction Division) collected water quality and benthic macroinvertebrate samples from nine locations (Drakes Creek Mile 1.9 and 4.9, Bledsoe Creek Mile 10.3, Barton's Creek Mile 7.1, Cedar Creek Mile 7.0, Spring Creek Mile 5.8, Round Lick Creek Mile 8.3 and Cumberland River Miles (CRM) 216.9 and 245.0) in the Old Hickory Project area.

Benthic macroinvertebrate community structure at each location and comparison of the sites were assessed using: taxa richness, EPT taxa richness, Biotic Index, % EPT individuals, Modified % EPT, % mayflies, % Chironomids and Oligochaetes, % dominant species, % clingers, Shannon Diversity Index, Jaccard's Coefficient and percent similarity. Cluster analyses were accomplished using 1-Jaccard's Coefficient and percent dissimilarity. The clusters were interpreted graphically to relate similar communities.

A minimum of 119 species of benthic macroinvertebrates was taken from the nine sites within the Old Hickory Project area. Bledsoe Creek Mile 10.3 had 63, Round Lick Creek Mile 8.3 had 55, Spring Creek Mile 5.8 had 50, Drakes Creek Mile 4.9 had 42 species, Cedar Creek Mile 7.0 had 51, Barton's Creek Mile 7.1 had 37, Cumberland River Mile 216.9 had 19, Cumberland River Mile 245.0 had 31, and Drake's Creek Mile 1.9 had 14 species. In terms of density, the inflow locations had the higher densities. Bledsoe Creek Mile 10.3 had the highest with ~15,679/m^2 followed by Barton's Creek Mile 7.1 (~9,449/m^2), Drake's Creek Mile 4.9 (~6,594/m^2), Cedar Creek Mile 7.0 (~6,511/m^2), Spring Creek Mile 5.8 (~6,338/m^2) and Round Lick Creek Mile 8.3 (~4,067/m^2). For the three impounded sites, the location at Cumberland River Mile 245.0 had the highest population densities with an average of 1,935/m^2 (1,121-2,749/m^2), Drakes Creek Mile 1.9 had and average of 1,878/m^2 (957-2,756/m^2) and Cumberland River Mile 216.9 had an average of 1,611/m^2 (1,192-2,242/m^2).

The six inflow (wadable) sites (Barton's Creek Mile 7.1, Drakes Creek Mile 4.9, Cedar Creek Mile 7.0, Bledsoe Creek Mile 10.3, Round Lick Creek Mile 8.3 and Spring Creek Mile 5.8) were fairly species rich with high density and diverse with an abundance of sensitive species. The six inflow locations supported benthic communities representative of "Good" to

"Very good", water quality conditions. When scored against the Tennessee bioregion reference data, the wadable sites Drakes Creek, Bledsoe Creek, Spring Creek and Round Lick Creek scored as non-impaired or supporting. Cedar Creek and Barton's Creek were both considered as slightly impaired. When scored against the Kentucky reference stream data base all sites were considered as existing under "Fair" water quality conditions. Conversely, the three main-stem/embayment reservoir sites (Cumberland River Miles 216.9 and 245.0 and Drakes Creek Mile 1.9) supported fewer species and benthic communities dominated by tubificid worms and other species tolerant of degraded conditions. The benthic communities at the three main stem/embayment locations are indicative of "Fairly Poor" to "Fair" water conditions and/or habitat conditions.

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INTRODUCTION

On August 13, 16 and 18 and October 28, 2004, personnel from the Nashville District, Corps of Engineers Water Management Section (Hydrology and Hydraulics Branch, Engineering-Construction Division) collected water quality and benthic macroinvertebrate samples from nine locations in the Old Hickory Reservoir Project area. The Water Management Section maintains a baseline, water quality data collection and monitoring program. A wide range of physical, chemical and biological data is collected, analyzed and reported from various locations representing tailwaters, impounded sites and reservoir inflows for the ten Nashville District reservoirs in the Cumberland River Basin. During 2004, biological data collections included extensive quantitative sampling for benthic macroinvertebrates at six of the Cumberland River Basin projects.

SAMPLING LOCATIONS

Sampling locations in the Old Hickory Project area in the Cumberland River Basin are shown in Figure 1. The following is a brief description of the nine benthic macroinvertebrate sampling sites.

3OLD10050 - Drakes Creek Mile 4.9, Latitude $36^0$19'00", Longitude $86^0$23'10", inflow location

3OLD10054 – Bledsoe Creek Mile 10.3, Latitude $36^0$26'45", Longitude $86^0$19'57", inflow location

3OLD10055 – Cedar Creek Mile 7.0, Latitude $36^0$13'53", Longitude $86^0$20'22, inflow location

3**OLD10056** - Barton's Creek Mile 7.1, Latitude $36^0$15'12", Longitude $86^0$19'54", inflow location

3OLD10057 – Spring Creek Mile 5.8, Latitude $36^0$16'50.0", Longitude $86^0$16'30.0", inflow location.

3OLD10058 – Round Lick Creek Mile 8.3, Latitude $36^0$12'06.6", Longitude $86^0$05'6.9", inflow location.

3OLD20002 - Cumberland River Mile 216.9, Latitude $36^0$17'26", Longitude $86^0$39'48", main channel location

3OLD20006 - Cumberland River Mile 245.0, Latitude $36^0$19'46", longitude $86^0$23'52", main channel location

3OLD20013 - Drake's Creek Mile 1.9, Latitude $36^0$16'16", Longitude $86^0$36'04", embayment location.

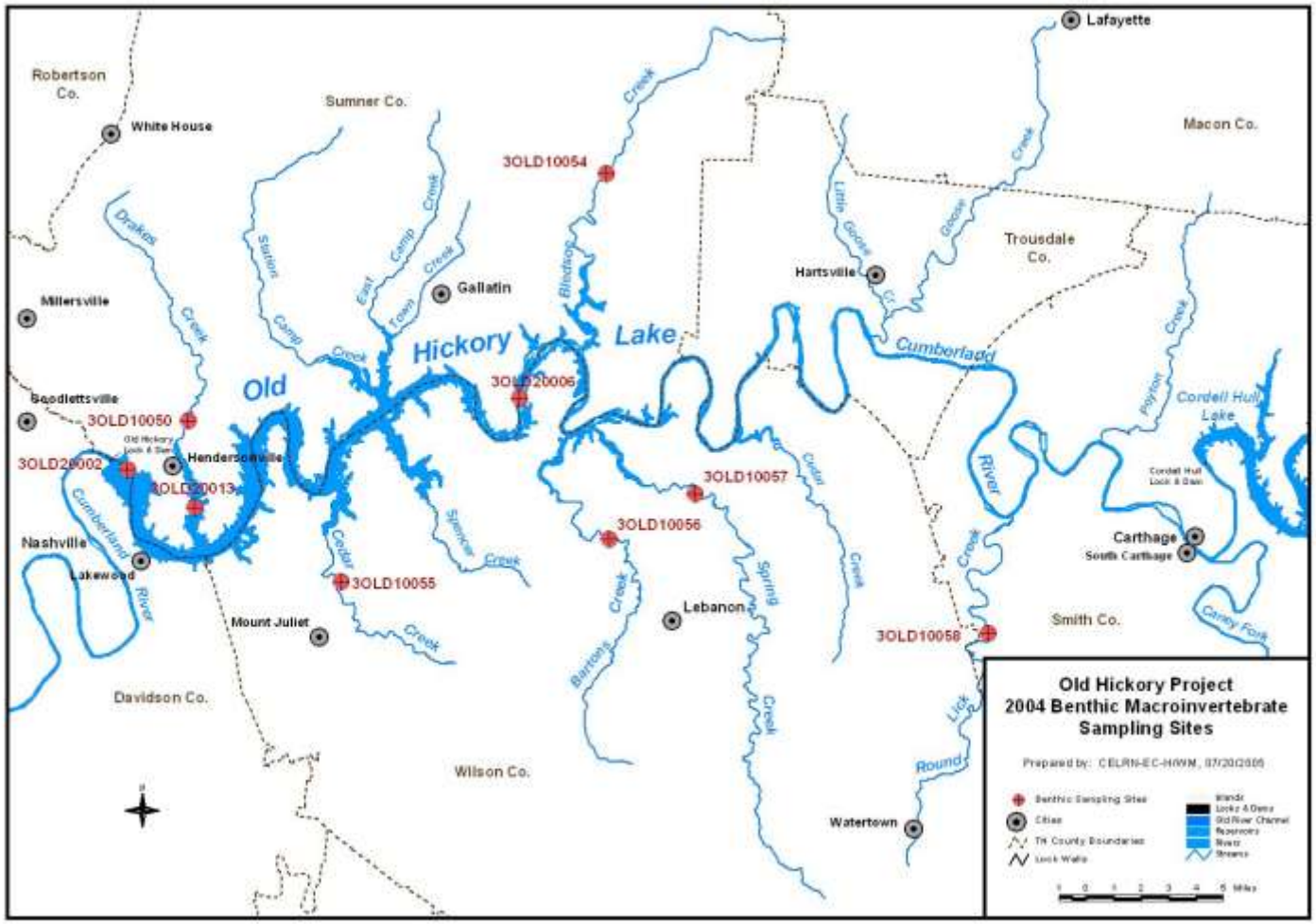

Figure 1. Site map.

BACKGROUND

As found in other similar studies, the alteration of the physical or chemical norms of an aquatic environment has the potential to influence nearly all organisms residing in that environment (Goodnight 1973). A community represented by numerous species with no particular numerical domination evident in the population is usually indicative of an unstressed environment (Weber 1973, Klemm etal. 1990). Conversely, a benthic community composed of a few species with large numbers of individuals typifies a stressed community from which intolerant species have been reduced or eliminated by a pollutant or substrate change. The populations of tolerant species expand due to reduced competition or increased resources, or both. The often dramatic benthic community shifts, which can occur in stressed ecosystems, are due to the varying sensitivities of the different macroinvertebrate species. Mayflies (Ephemeroptera), stoneflies (Plecoptera), and caddisflies (Trichoptera) or EPT species, which spend most of their lives in an aquatic environment, are generally less tolerant of most types of pollution, whereas many flies (Diptera) and worms (Oligochaeta) are more tolerant of stressful environmental conditions (Brinkhurst 1962, Beck 1977, and Merritt and Cummins 1996). Stream reaches may be divided into several ecological categories depending upon whether or not they are subject to stressful agents and, if they are, to what extent or type. They can also be divided into these categories on the basis of the benthic fauna that is supported in that reach.

Attention is usually focused on the macroinvertebrate species because they are more indicative of the relative health of a stream. In addition, macroinvertebrates are found in all habitats, less mobile than other groups of aquatic organisms, easily collected, and most have relatively long periods of development in the aquatic environment. Thus, macroinvertebrate species can be used to indicate deleterious events that have occurred in an aquatic system during any stage of their development.

Clean water streams with variable habitat features often have a high diversity of species with each species represented by a few individuals. Streams receiving organic pollution generally show a decrease in diversity and an increase in density (Gaufin and Tarzwell 1956), while streams receiving toxic products frequently show a decrease in both diversity and density (Cairns et al. 1971).

Increased sedimentation in streams is a problem most often the result of poor agriculture practices, mining and/or construction activities in the watershed (Waters 1995). The effects of increased sedimentation vary, but the primary effect is habitat loss caused by the filling of cracks and crevices with sand and silt and general decrease in habitat diversity.

MATERIALS AND METHODS

At each wadable stream location, four replicate quantitative samples were taken with a 500-micron mesh Hess sampler ($0.09m^2$) from the riffle/run habitat of the stream. Organisms within each area encompassed by the Hess were collected by physically detaching them from the substrate (usually by hand picking or gently sweeping substrate materials with a brush) and/or agitating the substrate and allowing the current to carry dislodged organisms into the net. No sorting of organisms and debris was attempted in the field. Organisms and debris were carefully transferred into a storage jar and the entire contents preserved with formalin. Labels bearing unique numbers were applied to the exterior of the jars. These numbers and associated information were then recorded on a chain of custody form. All samples were returned to the Nashville District's Water Management Support Center for storage before delivery to Pennington and Associates, Inc. Storage times for the samples ranged from a maximum of six months to a minimum of three months. No deterioration of sample quality was observed during this holding time.

At stations Cumberland River Miles 216.9 and 245.0 and Drakes Creek Mile 1.9, samples were collected by use of a Standard Ponar grab ($0.047m^2$) lowered from a boat. Reservoir sites were sampled on a transect at multiple locations. Sampling sites on the transect always represented the old main channel (thalweg) and both of the following locations: right over bank and left overbank. Typically the sampling process involved anchoring and then lowering the Ponar grab to the bottom, taking care to allow the Ponar grab to gently contact the bottom. This was done to minimize "blow out" of the topmost sediments and associated organisms. The Ponar was then retrieved and the contents brought to the surface, dumped into a plastic tub, and processed through a sieve bucket with a 583-micron stainless steel mesh screen. Retained debris and organisms were then placed in a container. The normal procedure was to collect three grab samples at each site along the transect. Grab samples at each transect site were then composited into one sample for laboratory analysis. The samples were preserved with formalin, labeled with a unique number, and recorded on a chain of custody form. All samples were returned to the Nashville District's Water Management Support Center for storage prior to delivery to the

analytical laboratory. Storage times for samples taken at reservoir sites were approximately three months.

In the laboratory, all benthic samples were washed in a 120-micron mesh screen. After washing, the macroinvertebrates were removed from the detritus under 5x magnification and preserved in 85% ethanol. The organisms were identified to the lowest practical taxonomic level using available keys (Pennington and Associates, Inc. 1994) and counted. Identifications were made with a stereomicroscope (7X to 60X). Slide mounts were made of the chironomids, simuliids, oligochaetes and small crustaceans, and identifications were made with a compound microscope. The chironomids, simuliids, and oligochaetes were cleared for 24 hours in cold 10% KOH. Temporary mounts were made in glycerine and the animals returned to 80% ethanol after identification. When permanent mounts were desired, the organisms were transferred to 95% ethanol for 30 minutes and mounted in euperol.

COMMUNITY STRUCTURE MEASURES

Core benthic macroinvertebrate community metrics were calculated for each station for comparison to Tennessee and Kentucky ecoregion reference data (TDEC 2002 and KDOW 2002). Nine core metrics were calculated and include:

1. **Taxa Richness** – Total number of distinct taxa (genera for comparison to Tennessee and Kentucky ecoregion data). In general, increasing taxa richness reflects increasing water quality, habitat diversity and habitat suitability (KDOW 2002).

2. **Ephemeroptera, Plecoptera, and Trichoptera Richness** (EPT) – Total number of distinct taxa (genera) within the generally pollution sensitive insect orders of EPT. This index value will usually increase with increasing water quality, habitat diversity and habitat stability. (Plafkin et al. 1989).

3. **North Carolina Biotic Index** (NCBI) – The Biotic Index was originally developed by Hilsenhoff (1982) as a rapid method for evaluating water quality in Wisconsin streams by summarizing the overall pollution tolerance of a benthic arthropod community with a single value from 0-5. Hilsenhoff (1987) later refined the index and expanded the scale

from 0-10. The biotic index is an average of tolerance values, and measures saprobity (pertaining to tolerance of organic enrichment) and to some extent trophism. Range of the index ranges from 0 (no apparent organic pollution) to 10 (severe organic pollution). Tennessee and KDOW use tolerance values developed by North Carolina Division of Environmental Management (NCDEM) (NCDENR 2001) and these values were used in this study. An increasing Biotic Index value indicates decreasing water quality. The formula for the Biotic Index is as follows:

$$\text{NCBI} = \sum \frac{x_i t_i}{n}$$

Where: x_i = number of individuals within a taxon
t_i = tolerance value of a taxon
n = total number of individuals in the sample

According to Hilsenhoff (1987) the calculated Biotic Index values for Wisconsin streams reflect the following:

Biotic Index	**Water Quality**	**Degree of Organic Pollution**
0.00 - 3.50	Excellent	No apparent organic pollution
3.51 - 4.50	Very Good	Possibly slight organic pollution
4.51 - 5.50	Good	Some Organic Pollution
5.51 - 6.50	Fair	Fairly significant organic pollution
6.51 - 7.50	Fairly Poor	Significant organic pollution
7.51 - 8.50	Poor	Very significant organic pollution
8.51 - 10.00	Very Poor	Severe organic pollution

Historically, NCDEM used the following modified Hilsenhoff Biotic Index scale to assign water quality condition in North Carolina streams of three ecoregions.

Condition	**Mountain**	**Piedmont**	**Coastal Plain**
Excellent	<4.05	<5.19	<5.47
Good	4.06-4.88	5.19-5.78	5.47-6.05
Good to Fair	4.89-5.74	5.79-6.48	6.06-6.72
Fair	5.75-7.00	6.49-7.48	6.73-7.73
Poor	>7.00	>7.48	>7.73

The state of Tennessee uses a four tier scoring criteria which is based of Hilsenhoff's values calibrated for each Tennessee ecoregion. TDEC's scoring criteria for biotic index values for streams of the interior plateau ecoregions are as follows.

Ecoregion	**Non-impaired**	**Slightly Impaired**	**Moderately Impaired**	**Severely Impaired**
Western Pennyroyal Karst (71e)	<5.05	5.05-6.69	6.70-8.34	>8.34
Western Highland Rim (71g)	<4.74	4.74-6.49	6.50-8.25	>8.25
Eastern Highland Rim (71f)	"	"	"	"
Outer Nashville Basin (71h)	"	"	"	"
Inner Nashville Basin (71i)	<5.54	5.54-7.02	7.03-8.51	>8.51

4. **Percent Ephemeroptera, Plecoptera and Trichoptera** (EPT Abundance):

$$\% \text{ EPT} = \frac{\text{Number of EPT individuals}}{\text{Total Number of individuals}} \text{ X } 100$$

5. **Modified Percent EPT abundance** (m% EPT) – Calculate as % EPT abundance with the relatively tolerant and ubiquitous caddisfly *Cheumatopsyche sp.* excluded from the calculation. As with %EPT, increasing values indicate increasing water quality and habitat conditions.

6. **Percent Ephemeroptera** (%E) – The abundance of mayflies (Ephemeroptera) is calculated by KDOW (2002) to show impacts of metals and high conductivity associated with mining and oil well impacts. Mayfly abundances normally declines in the presence of brine, metal and other toxic contaminants.

7. **Percent Oligochaeta and Chironomidae** (%OC) – This metric measures the relative abundance of these generally pollution tolerant organisms. Increasing abundances of

oligochaetes and chironomids suggests decreasing water quality and/or habitat conditions.

8. **Percent Dominant** (Percent contribution of the most dominant taxon) –

$$\% \text{ Dominant} = \frac{\text{Total number of individuals of most dominant taxon}}{\text{Total individuals in sample}} \text{ X100}$$

9. **Percent Clingers** (Percent contribution of organisms that build fixed retreats or have adaptations to attach to surfaces in flowing water)-

$$\% \text{ Clingers} = \frac{\text{Total number of clinger individuals}}{\text{Total individuals in sample}} \text{ X100}$$

The seven metrics; **1**. Taxa richness, **2**. EPT taxa, **3**. NCBI, **4**. % EPT, **7**. %OC, **8**. % Dominant and **9**. % Clingers calculated for the six stream locations in the Old Hickory Project area were compared to the Tennessee ecoregion reference streams. The data for the inflow stream sites were equalized by assigning a score of 6 (non-impaired), 4 (slightly impaired), 2 (moderately impaired), or 0 (severely impaired) based on comparison to the Tennessee Ecoregion reference data base (TDEC 2002). The scores were summed to determine biological condition of each of the six streams. No ecoregion reference database exists for comparison to the non-wadable locations.

The metrics 1. Taxa Richness 2. EPT taxa 3. NCBI 4. M %EPT 5. %OC and 6. % Clingers derived from the six stream locations in Old Hickory Project drainage were compared to Kentucky's reference streams for the Interior Plateau bioregion Pennyroyal ecoregion (Pond etal. 2003). The data for the six wadable streams was scored as Excellent, Good, Fair, Poor or Very poor when compared to the reference data.

Brower and Zar (1984) provide a detailed discussion of a variety of techniques for measuring community structure. The use of diversity indices is based upon the observation that normally undisturbed environments support communities with large numbers of species having no individuals present in overwhelming abundance. If the species of a disturbed community are ranked by numerical abundance, there may be relatively few species with large numbers of individuals. Mean diversity is affected by both "richness" of species (or abundance of different

species) and by the distribution of individuals among the species. High species diversity indicates a highly complex community.

Species diversity was estimated using Shannon's Index of Diversity (H):

$$H = -\sum p_i \log p_i$$

where p_i is the proportion of the total number of individuals occurring in species i ($p_i=n_i/N$), N is the total number of individuals in all species.

Diversity indices take into account both the species richness and the evenness of the individuals' distribution among the species. Separate measures of these two components of diversity are often desirable. Species richness can be expressed simply as the number of species in the community. Evenness may be expressed by considering how close a set of observed species abundance are to those from an aggregation of species having maximum possible diversity for a given N and s (Brower and Zar 1984).

Evenness is calculated as follows:

$$\text{Pielou } J' = H/H_{max}$$

where H is calculated diversity and H_{max} is maximum possible diversity.

Community similarity between sites is measured by Jaccards Coefficient and Percent Similarity.

$$\text{Jaccards Coefficient} = \frac{C}{S_1 + S_2 - C}$$

where S = Species in each community (S_1 is reference Community in Community loss Index)

C = Species common to both communities

Percent Similarity, for a two-community comparison, is calculated as follows: The number of individuals in each species is calculated as a fractional portion of the total community. The value for species i in community 1 is compared to the value for species i in community 2. The lower of the two is tabulated. This procedure is followed for each species. The tabulated

list (of the lower of each pair of values) is summed. The sum is defined as the Percent Similarity of the two communities.

The software package Number Cruncher Statistical Systems version 5.03 was used to evaluate community similarity (Hintze 1992). Cluster analysis sorts sampling units into groups based on the overall resemblance to each other (Lundwig and Reynolds 1988). By using 1-Jaccards Coefficient and Percent Dissimilarity, sampling units are sorted to permit grouping. The cluster analysis combines the distances between sampling units into a matrix table, and two strategies of clustering are used to calculate a distance for N-1 cycles (N=number of sampling units). The cluster analysis is interpreted graphically on a dendrogram to relate the similar communities (Hintze 1992, Ludwig and Reynolds 1988).

STATISTICAL EVALUATION

Sampling efficiency of the field techniques was calculated via a statistical analysis of the quantitative samples. The mean number of organisms per sample, the standard deviation, the standard error, and the sampling precision of the mean were calculated for the benthic samples from each station (Elliot 1977). The sampling precision is the primary parameter evaluated and represents the percentage of the actual mean of the population within which the sample mean lies and indicates how accurately the macroinvertebrate community was sampled. According to Elliot (1977), a sampling precision of 20% (80% confidence) or less is usually acceptable in biological studies. The sampling precision (D) is the ratio of the standard error to the arithmetic mean:

$$D = (S.E./Mean)\ 100$$

Since four quantitative samples were taken in each area, some of the population estimates may not be sampled with 80% or greater confidence. As stated by Elliot (1977), the simplest solution to this problem is to take many samples (over 50 samples), but this is not usually an acceptable allocation of resources.

An analysis of variance (F test) was used to compare the stations using the number of organisms and species per sample. According to Sokal and Rohlf (1981), analysis of variance is a technique in statistics where the total variation in a set of data is partitioned into components

associated with possible sources of variability. The relative importance of the different sources is then assessed by F-tests between each component of variation and the "error" variation. If the calculated F-value is greater than the tabular F-value at the 0.05 level of significance, then a difference between data sets is greater than the variation within a data set. Following the approach of Chew (1977), mean separation tests are applied to separate and rank the mean values of each data set developed from benthic enumeration

RESULTS AND DISCUSSION

A list of all aquatic benthic macroinvertebrate species, assigned tolerance values, functional feeding groups, list of clingers and numbers of individuals of each species collected from each stream location are presented in Table 1. A summary of benthic community measures is presented in Table 2. Table 3 contains determination of biological condition based on scores for the State of Tennessee. A similar determination is presented in Table 4 using the subecoregion in Kentucky. A statistical analysis of sampling efficiency and a comparison of the stations using mean number of organisms per Hess sampler is presented in Table 5. A similar comparison using mean number of species per Hess sampler is found in Table 6. A comparison of the stations using Percent Dissimilarity is found in Figure 2. A similar comparison using species shared between locations (Jaccard's Coefficient) are clustered in Figure 3.

A minimum of 119 species of benthic macroinvertebrates was taken from the nine locations in the Old Hickory Project area (Table 1). The fauna represented 5 phyla, 19 orders and 53 families with 32 families being aquatic insects. As expected from other surveys, the inflow or wadable locations had the highest numbers of species while the reservoir sites had the least. Bledsoe Creek Mile 10.3 had the most with 63 followed by Round Lick Creek Mile 8.3 with 55, Cedar Creek Mile 7.0 (51), Spring Creek Mile 5.8 (50), Drakes Creek Mile 4.9 (42), Barton's Creek Mile 7.1 (37), Cumberland River Mile (CRM) 245.0 (31), CRM 216.9 (19) and Drakes Creek Mile 1.9 (14).

In terms of density, the inflow locations had the higher densities. Bledsoe Creek Mile 10.3 had the highest with ~15,679/m^2 followed by Barton's Creek Mile 7.1 (~9,449/m^2), Drakes Creek Mile 4.9 (~6,594/m^2), Cedar Creek Mile 7.0 (~6,511/m^2), Spring Creek Mile 5.8 (~6,338/m^2), and Round Lick Creek Mile 8.3 (~4,067/m^2). For the three impounded sites, the location at Cumberland River Mile 245.0 had the highest population densities with an average of 1,935/m^2 (1,121-2,749/m^2). Drakes Creek Mile 1.9 had an average of 1,878/m^2 (957-2,756/m^2) and Cumberland River Mile 216.9 had an average of ~1,611/m^2 (1,192-2,241/m^2).

Bledsoe Creek Mile 10.3 (OLD10054), an inflow site draining mostly undeveloped rural land, had a minimum of 63 benthic macroinvertebrate species present in the Hess samples which was the highest of any station (Table 1). Population densities at this site were also the highest at~15,679/m^2. The riffle beetle *Stenelmis sp*. (21.5%), the caddisfly *Cheumatopsyche sp*.

(18.4%) and the mayfly *Tricorythodes sp*. (17.5%) were the most abundant with the mayfly *Baetis intercalaris* also common in the fauna. This location had 25 EPT species and a Biotic Index value (5.50) representative of "Good" water quality with some organic pollution and/or fairly diverse habitat present. This location scored as supporting and non-impaired when compared to the Tennessee bioregion reference streams. A comparison to the Kentucky ecoregion database scored this location as "Fair to Good".

Round Lick Creek Mile 8.3 (3OLD10058) had the second highest number of species with 55. Population densities at this site were half that found in 2002 with ~4,067/m^2. The riffle beetle *Stenelmis sp.* (40.9%) was the most abundant species followed by the mayfly *Baetis intercalaris* (14.7%). There were 21 EPT species present. The Biotic Index value (5.20) for this site is representative of "Good" water quality with some organic pollution. When compared to the Tennessee bioregion database, this site scored as non-impaired or supporting. This location rated a score of "Fair" when compared to Kentucky's database.

Spring Creek Mile 5.8 (3OLD10057) had a minimum of 50 benthic macroinvertebrates present in the Hess samples (Tables 1 and 2). Population densities of the benthic fauna was estimated at ~6,338/m^2. The riffle beetles *Stenelmis sp*. (36.0%) and *Psephenus herricki* (10.2%) and the caddisfly *Cheumatopsyche sp*. (11.6%) were the most represented in the benthic fauna. There were 21 EPT species found at this location. The Biotic Index value (4.64) is indicative of "Good" water quality conditions. A comparison to the Tennessee reference database for this bioregion scores Spring Creek as non-impaired or supporting. This location was considered as existing under "Fair" water quality conditions when compared to Kentucky's reference stream database.

Drakes Creek Mile 4.9 (3OLD10050), an inflow location in the lower reservoir, supports 42 species, similar to the 49 found in the 2000 survey, and much more than the 29 species found in 2002. The population density for this location (~6,954/m^2) was also similar to the 2000 survey. The riffle beetle *Stenelmis* sp. (35.3%) was abundant at this site with *Baetis intercalaris* (19.2%) and *Cheumatopsyche sp*. (10.7%) also very common. This site had 16 EPT species. The Biotic Index value (5.42) is considered to represent a benthic fauna existing under "Good" water quality conditions. This location also scored as non-impaired when compared to Tennessee's reference stream data and as "Fair" when compared against Kentucky's stream database.

Cedar Creek Mile 7.0 (3OLD10055) had a minimum of 50 species, similar to the 48 benthic species found in 2000 at this site and twice that found in 2002. The density value~6,511/m^2 is similar to the~6,500/m^2 found in 2002 and reduced when compared to the 2000 survey (~13,894/m^2). The beetle *Stenelmis* sp. (26.3%) and the snail *Elimia laqueata* (39.4%) were dominant in the benthic community. The benthic fauna at this location had 13 EPT species. The Biotic Index value for this site (4.21) is representative of "Very Good" water quality. This site was considered "Excellent" in the 2000 survey and "Good" in 2002, but is still improved over the 1998 study when the site scored "Fair". This location was considered as slightly impaired when compared against the Tennessee reference data (Table 3) and "Fair" when compared to the Kentucky reference stream data (Table 4).

Barton's Creek Mile 7.1 (3OLD10056) had 37 species, which was still reduced when compared to the 2000 (46) and 1997 (55) surveys but similar to that found in 1998 (37) and greater than the 22 found in 2002. This site had the second highest density (~9,449/m^2) during the 2004 period which was much higher than the ~2,875/m^2 found in 2002. Barton's Creek as in previous studies, had and abundance of the pleurocerid snail *Elimia* sp. (37.8%), and the riffle beetles *Psephenus herricki* (8.8%) and *Stenelmis sp*. (38.7%). There were 13 EPT species present and the biotic index value (3.88) for this location is considered representative of "Very Good" water quality conditions that are similar to that seen in the 2000 survey. The site was considered slightly impaired when compared to the Tennessee reference database and "Fair" when compared against the Kentucky reference stream database.

Cumberland River Mile 245.0 (3OLD20006), the most upstream main channel reservoir location, had 31 benthic species present and an overall population density of ~1,935 individuals/m^2 (Table 1). Tubificid worms were dominant at the left over bank (52.2%), while the right over bank had an abundance of *Hydropsyche orris* (47.8%). The mayfly *Hexagenia* sp. was the only EPT species taken at the site. The fauna according to Biotic Index scores for the transect sites (5.86-7.42) is considered to exist under "Fairly Poor" to "Fair" water quality conditions.

Cumberland River Mile 216.9 (3OLD20002), just upstream of Old Hickory Lock and Dam, had a total of 19 species of benthic macroinvertebrates present in the Ponar grab samples (Table 1). Tubificid worms were again abundant throughout the site (33.5% at LOB, 70.9% at ROB and 35.7% at MC) with the midge *Coelotanypus* sp., also as in past studies, abundant

(23.9% at MC). The midge *Chironomus sp*. was abundant at the right overbank (20.9%) while *Lipiniella sp*. was abundant at the left overbank (61.7%). There were no EPT species found in the Ponar grab samples during this survey. The Biotic Index values (7.62-7.91) for CRM 216.9 are indicative of "Poor" water quality conditions with very significant organic pollution and/or poor habitat conditions.

The embayment location near the mouth of Drakes Creek at Mile 1.9 (3OLD20013), as in pervious studies had a low number of species present with 14. Population densities ranged from ~957 individuals/m^2 at the mid channel location to ~2,756/m^2 in the left overbank (Table 1). Tubificid worms were again abundant at all locations including the right over bank (55.0%), left over bank (88.1%), and the main channel (9.7%). The midge *Chironomus* sp. (9.8% LOB, 25.7% ROB and 54.5% MC) was also abundant at all locations. There were again no EPT species found at this site and the Biotic Index values (7.63-8.86) indicated "Poor" water quality conditions with very significant organic pollution and/or poor habitat conditions.

A comparison of the locations using Percent Dissimilarity (Figure 2) and Jaccard's Coefficient (Figure 3) groups the locations as inflow (wadable, upper reservoir and lower tributaries) or main stem/embayment sites. As stated in previous studies, this is a function of two distinct habitat types, high velocity riffle/run hard substrates at the wadable sites, as opposed to low velocities and soft sediments of the reservoir locations. The secondary clusters between locations of the main channel/embayment sites are a reflection of similarity of species and habitat type between the various locations.

A statistical comparison of the six sites using mean number of organisms/Hess sample presented in Table 5 has all wadable locations comparable and not significantly different at the 0.05 confidence level. When number of species/Hess sample were compared the Round Lick Creek Mile 8.3 site had significantly more species than the Cedar Creek Mile 7.0 and Barton's Creek Mile 7.1 location. The Bledsoe Creek Mile 10.3 site also had significantly more species than the Barton's Creek Mile 7.1 site. All others were comparable.

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050		BLEDSOE CREEK 3OLD10054		CEDAR CREEK 3OLD10055	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**			12	33.36				
Dugesia tigrina	**7.2**					23	63.94	5	13.9
NEMATODA									
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		24	66.72	59	164.02	41	113.98
Sphaeriidae	***8**	**FC**		2	5.56	4	11.12		
Musculium transversum	***8**	**FC**						3	8.34
Pisidium sp.	**6.5**	**FC**				1	2.78	8	22.24
Sphaerium sp.	**7.6**	**FC**						3	8.34
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**		67	186.26				
Elimia laqueata	**2.5**	**SC**		32	88.96	79	219.62	922	2563.16
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**						2	5.56
Planorbidae	***6**	**SC**				1	2.78		
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**		9	25.02			1	2.78
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**		4	11.12				
Branchiura sowerbyi	**8.3**	**CG**		1	2.78				
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050		BLEDSOE CREEK 3OLD10054		CEDAR CREEK 3OLD10055	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Lumbriculidae	**7.03**	**CG**							
Hirudinea		**P**		1	2.78				
Erpobdellidae		**P**							
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**							
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**					2	5.56		
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**					1	2.78	2	5.56
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**		103	286.34	10	27.8	12	33.36
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**		6	16.68				
Gammaridae									
Gammarus sp.	**9.1**	**SH**							
Talitridae									
Hyalella azteca	**7.8**	**CG**							
Decapoda									
Cambaridae	**7.5**					1	2.78	1	2.78
Orconectes sp.	**2.6**	**SH**		4	11.12	6	16.68	4	11.12
Insecta									
Ephemeroptera									
Baetidae		**CG**				20	55.6		
Baetis c.f. flavistriga	**7**	**CG**							
Baetis intercalaris	**7**	**CG**		456	1267.68	479	1331.62	107	297.46
Baetis sp.		**CG**				10	27.8	4	11.12
Centroptilum sp.	**6.6**	**CG**				2	5.56		
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**		21	58.38	31	86.18	41	113.98
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**							
Heptageniidae	***4**	**SC**	**CL**	12	33.36	32	88.96		
Leucrocuta sp.	**2.4**	**SC**				16	44.48		
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**			25	69.5		
Stenacron interpunctatum	**6.9**	**SC**	**CL**			30	83.4	2	5.56

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050		BLEDSOE CREEK 3OLD10054		CEDAR CREEK 3OLD10055	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**	71	197.38	2	5.56		
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**	4	11.12				
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**	4	11.12	53	147.34	1	2.78
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**		1	2.78	12	33.36	1	2.78
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**		96	266.88	988	2746.64		
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**						1	2.78
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**	13	36.14	13	36.14	25	69.5
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**			1	2.78		
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**	1	2.78				
Acroneuria sp.	**1.47**	**P**	**CL**			1	2.78		
Neoperla sp.	**1.5**	**P**	**CL**						
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**		1	2.78				
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**			2	5.56		
Nigronia serricornis	**5**	**P**	**CL**			2	5.56		
Sialidae		**P**							
Sialis sp.	**7.2**	**P**				1	2.78		
Trichoptera						10	27.8		
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**	13	36.14	1	2.78		
Hydropsychidae		**FC**	**CL**	24	66.72	18	50.04	2	5.56
Ceratopsyche morosa	**2.6**	**FC**	**CL**						
Ceratopsyche sp.		**FC**	**CL**			1	2.78		
Cheumatopsyche sp.	**6.2**	**FC**	**CL**	253	703.34	1038	2885.64	65	180.7
Hydropsyche sp.		**FC**	**CL**			110	305.8	6	16.68
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**	2	5.56	172	478.16	5	13.9
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050		BLEDSOE CREEK 3OLD10054		CEDAR CREEK 3OLD10055	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Hydroptila sp.	**6.2**	**PI**	**CL**					2	5.56
Leptoceridae	**2.7**	**CG**							
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**	2	5.56				
Chimarra obscurus	**2.8**	**FC**	**CL**	47	130.66	293	814.54	14	38.92
Chimarra sp.	**2.8**	**FC**	**CL**					1	2.78
Polycentropodidae		**FC**	**CL**						
Cernotina sp.						1	2.78		
Cyrnellus fraternus	**7.3**	**FC**	**CL**	2	5.56				
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**			4	11.12		
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**					1	2.78
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**			2	5.56		
Stenelmis sp.	**5.1**	**SC**	**CL**	724	2012.72	1161	3227.58	561	1559.58
Stenelmis sexlineatus				114	316.92	51	141.78	55	152.9
Hydrophilidae		**P**						2	5.56
Berosus sp.	**8.4**	**CG**				1	2.78		
Limnichidae									
Lutrochus sp.								10	27.8
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**					4	11.12
Psephenus herricki	**2.4**	**SC**	**CL**	146	405.88	31	86.18	155	430.9
Staphylinidae		**P**						1	2.78
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae				1	2.78	31	86.18	15	41.7
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**				1	2.78		
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**				8	22.24		
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		29	80.62	145	403.1	23	63.94
Corynoneura sp.	**6**	**CG**		1	2.78				
Cricotopus sp.		**CG**	**CL**			13	36.14	1	2.78

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050		BLEDSOE CREEK 3OLD10054		CEDAR CREEK 3OLD10055	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Cricotopus bicinctus	**8.5**	**CG**	**CL**					2	5.56
Cricotopus (Isocladius) sp.				1	2.78	1	2.78		
Cryptochironomus sp.	**6.4**	**P**				1	2.78	1	2.78
Dicrotendipes sp.	**8.1**	**CG**				8	22.24	1	2.78
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**			3	8.34	4	11.12
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**				2	5.56		
Polypedilum fallax	**6.4**	**SH**						5	13.9
Polypedilum flavum	**4.9**	**SH**		34	94.52	397	1103.66	40	111.2
Polypedilum halterale	**7.3**	**SH**		7	19.46	22	61.16	47	130.66
Polypedilum illinoense	**9**	**SH**						2	5.56
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**						1	2.78
Rheotanytarsus sp.	**5.9**	**FC**	**CL**	7	19.46	124	344.72	62	172.36
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**		1	2.78	26	72.28	3	8.34
Thienemanniella xena	**5.9**	**CG**				2	5.56		
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		19	52.82	15	41.7	64	177.92
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**				10	27.8	1	2.78
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**			30	83.4		
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes				1	2.78				
Percidae									
Etheostoma sp.				1	2.78				
TOTAL NO. OF ORGANISMS				**2372**	**6594**	**5640**	**15679**	**2342**	**6511**
TOTAL NO. OF TAXA				**42**	**42**	**63**	**63**	**51**	**51**

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058		SPRING CREEK 30LD10057		BARTONS CREEK 30LD10056	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**							15	41.7
Dugesia tigrina	**7.2**								
NEMATODA						1	2.78		
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		11	30.58	24	66.72	47	130.66
Sphaeriidae	***8**	**FC**						3	8.34
Musculium transversum	***8**	**FC**		1	2.78			1	2.78
Pisidium sp.	**6.5**	**FC**						3	8.34
Sphaerium sp.	**7.6**	**FC**		6	16.68			10	27.8
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**		58	161.24	103	286.34	1284	3569.52
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**		1	2.78				
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**		18	50.04				

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058		SPRING CREEK 30LD10057		BARTONS CREEK 30LD10056	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									
Lumbriculidae	**7.03**	**CG**							
Hirudinea		**P**						5	13.9
Erpobdellidae		**P**							
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**		1	2.78				
Helobdella stagnalis	**9.1**	**P**							
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**					1	2.78		
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**								
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**		10	27.8	9	25.02	3	8.34
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**							
Gammaridae									
Gammarus sp.	**9.1**	**SH**							
Talitridae									
Hyalella azteca	**7.8**	**CG**						1	2.78
Decapoda									
Cambaridae	**7.5**								
Orconectes sp.	**2.6**	**SH**		3	8.34	8	22.24	11	30.58
Insecta									
Ephemeroptera									
Baetidae		**CG**							
Baetis c.f. flavistriga	**7**	**CG**				1	2.78	1	2.78
Baetis intercalaris	**7**	**CG**		215	597.7	179	497.62	102	283.56
Baetis sp.		**CG**		18	50.04	25	69.5	11	30.58
Centroptilum sp.	**6.6**	**CG**							
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**		20	55.6	2	5.56		
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**		1	2.78				

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058		SPRING CREEK 30LD10057		BARTONS CREEK 30LD10056	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Hexagenia sp.	**4.9**	**CG**							
Heptageniidae	***4**	**SC**	**CL**	10	27.8	9	25.02	10	27.8
Leucrocuta sp.	**2.4**	**SC**		19	52.82	183	508.74		
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**	16	44.48	1	2.78		
Stenacron interpunctatum	**6.9**	**SC**	**CL**	2	5.56	6	16.68	2	5.56
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**	90	250.2	1	2.78	2	5.56
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**	17	47.26			4	11.12
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**	17	47.26	3	8.34		
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**		1	2.78	50	139	5	13.9
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**		96	266.88	24	66.72		
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**			5	13.9	67	186.26
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**	4	11.12	2	5.56		
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**			1	2.78		
Neoperla sp.	**1.5**	**P**	**CL**	17	47.26	5	13.9		
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**				1	2.78		
Megaloptera									
Corydalidae		**P**		1	2.78				
Corydalus cornutus	**5.2**	**P**	**CL**	6	16.68	2	5.56		
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**		3	8.34				
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**	14	38.92	14	38.92	7	19.46
Hydropsychidae		**FC**	**CL**	2	5.56	1	2.78	1	2.78

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058		SPRING CREEK 30LD10057		BARTONS CREEK 30LD10056	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Ceratopsyche morosa	**2.6**	**FC**	**CL**	2	5.56			12	33.36
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**	23	63.94	264	733.92	54	150.12
Hydropsyche sp.		**FC**	**CL**			9	25.02		
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**			1	2.78		
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**						
Leptoceridae	**2.7**	**CG**							
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**	1	2.78	85	236.3	39	108.42
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.				2	5.56				
Cyrnellus fraternus	**7.3**	**FC**	**CL**						
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**	1	2.78				
Dubiraphia vittata	**4.1**	**SC**	**CL**			5	13.9		
Microcylloepus pusillus	**2.1**	**SC**	**CL**			13	36.14		
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**	573	1592.94	761	2115.58	928	2579.84
Stenelmis sexlineatus				26	72.28	60	166.8	387	1075.86
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**				1	2.78	2	5.56
Limnichidae									
Lutrochus sp.								1	2.78
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**	2	5.56	2	5.56	3	8.34
Psephenus herricki	**2.4**	**SC**	**CL**	8	22.24	232	644.96	298	828.44
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae				15	41.7	11	30.58	11	30.58

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058		SPRING CREEK 30LD10057		BARTONS CREEK 30LD10056	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**		2	5.56				
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		23	63.94	8	22.24	44	122.32
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**	4	11.12				
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.				3	8.34				
Cryptochironomus sp.	**6.4**	**P**		1	2.78	1	2.78		
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**				1	2.78		
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**	1	2.78	1	2.78		
Nanocladius distinctus	**7.1**	**CG**		1	2.78				
Nilotanypus sp.	**3.9**	**P**				1	2.78		
Paratendipes sp.	**5.1**	**CG**		2	5.56			1	2.78
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**		14	38.92	26	72.28	14	38.92
Polypedilum halterale	**7.3**	**SH**		6	16.68	45	125.1	1	2.78
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**		3	8.34				
Rheotanytarsus sp.	**5.9**	**FC**	**CL**	3	8.34	31	86.18		
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**		12	33.36	2	5.56		
Thienemanniella xena	**5.9**	**CG**		3	8.34				
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		52	144.56	27	75.06	9	25.02
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**			3	8.34		
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**		2	5.56	29	80.62		

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058		SPRING CREEK 30LD10057		BARTONS CREEK 30LD10056	
				TOTAL	No./m2	TOTAL	No./m2	TOTAL	No./m2
CHORDATA****									
Osteichthyes								1	2.78
Percidae									
Etheostoma sp.						1	2.78		
TOTAL NO. OF ORGANISMS				**1463**	**4067**	**2280**	**6338**	**3399**	**9449**
TOTAL NO. OF TAXA				**55**	**55**	**50**	**50**	**37**	**37**

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002							
				MC		LOB		ROB		TOTAL	NO/M2
				No./m2		No./m2		No./m2			
PLATYHELMINTHES											
Turbellaria											
Tricladida											
Planariidae											
Cura foremanii	**5**										
Dugesia tigrina	**7.2**										
NEMATODA											
MOLLUSCA											
Bivalvia											
Unionoida											
Unionidae											
Potamilus alatus											
Veneroida											
Corbiculidae											
Corbicula fluminea	**6.1**	**FC**		8	57.12	1	7.14			9	21.42
Sphaeriidae	***8**	**FC**									
Musculium transversum	***8**	**FC**		72	514.1	2	14.28	4	28.56	78	185.6
Pisidium sp.	**6.5**	**FC**									
Sphaerium sp.	**7.6**	**FC**									
Gastropoda											
Mesogastropoda											
Pleuroceridae											
Elimia sp.	**2.5**	**SC**									
Elimia laqueata	**2.5**	**SC**									
Viviparidae											
Viviparus sp.		**SC**									
Basommatophora											
Physidae											
Physella sp.	**8.8**	**CG**									
Planorbidae	***6**	**SC**									
Menetus dilatatus	**8.23**	**SC**		1	7.14					1	2.38
ANNELIDA											
Oligochaeta	***10**	**CG**									
Tubificida											
Lumbricidae		**CG**									
Naididae	***8**	**CG**									
Tubificidae w.h.c.				6	42.84			49	349.9	55	130.9
Tubificidae w.o.h.c.	**7.1**	**CG**		67	478.4	36	257	76	542.6	179	426
Branchiura sowerbyi	**8.3**	**CG**				14	99.96			14	33.32
Limnodrilus hoffmeisteri	**9.5**	**CG**		39	278.5	6	42.84	14	99.96	59	140.4
Lumbriculida											
Lumbriculidae	**7.03**	**CG**									
Hirudinea		**P**									
Erpobdellidae		**P**									
Rhynchobdellida											
Glossiphoniidae		**P**									
Helobdella sp.		**P**									
Helobdella stagnalis	**9.1**	**P**						4	28.56	4	9.52

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002 MC No./m2	LOB No./m2	ROB No./m2	TOTAL	NO/M2
ARTHROPODA								
Arachnoidea								
Acariformes	**5.5**							
Lebertiidae	**5.5**							
Lebertia sp.	**5.5**							
Crustacea								
Isopoda								
Asellidae		**SH**						
Lirceus sp.	**7.9**	**CG**						
Amphipoda								
Crangonyctidae								
Crangonyx sp.	**7.9**	**CG**						
Gammaridae								
Gammarus sp.	**9.1**	**SH**						
Talitridae								
Hyalella azteca	**7.8**	**CG**						
Decapoda								
Cambaridae	**7.5**							
Orconectes sp.	**2.6**	**SH**						
Insecta								
Ephemeroptera								
Baetidae		**CG**						
Baetis c.f. flavistriga	**7**	**CG**						
Baetis intercalaris	**7**	**CG**						
Baetis sp.		**CG**						
Centroptilum sp.	**6.6**	**CG**						
Caenidae		**CG**						
Caenis sp.	**7.4**	**CG**						
Ephemeridae		**CG**						
Ephemera sp.	**2**	**CG**						
Hexagenia sp.	**4.9**	**CG**		10	71.4		10	23.8
Heptageniidae	***4**	**SC**	**CL**					
Leucrocuta sp.	**2.4**	**SC**						
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**					
Stenacron interpunctatum	**6.9**	**SC**	**CL**					
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**					
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**					
Leptophlebiidae		**CG**						
Choroterpes sp.	***2**	**CG**	**CL**					
Isonychiidae		**FC**						
Isonychia sp.	**3.5**	**FC**						
Tricorythidae		**CG**						
Tricorythodes sp.	**5.1**	**CG**						
Odonata								
Calopterygidae		**P**						
Hetaerina sp.	**5.6**	**P**						
Coenagrionidae		**P**						
Argia sp.	**8.2**	**P**	**CL**					
Plecoptera								

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002 MC No./m2	LOB No./m2	ROB No./m2	TOTAL NO/M2
Leuctridae		SH					
Leuctra sp.	2.5	SH	CL				
Perlidae		P	CL				
Acroneuria evoluta	1.47	P	CL				
Acroneuria sp.	1.47	P	CL				
Neoperla sp.	1.5	P	CL				
Hemiptera							
Gerridae		P					
Rheumatobates sp.		P					
Veliidae		P					
Rhagovelia sp.		P					
Megaloptera							
Corydalidae		P					
Corydalus cornutus	5.2	P	CL				
Nigronia serricornis	5	P	CL				
Sialidae		P					
Sialis sp.	7.2	P					
Trichoptera							
Helicopsychidae		SC					
Helicopsyche borealis	0	SC	CL				
Hydropsychidae		FC	CL				
Ceratopsyche morosa	2.6	FC	CL				
Ceratopsyche sp.		FC	CL				
Cheumatopsyche sp.	6.2	FC	CL				
Hydropsyche sp.		FC	CL				
Hydropsyche betteni gp.	7.8	FC	CL				
Hydropsyche orris	4.3	FC					
Hydroptilidae		PI					
Hydroptila sp.	6.2	PI	CL				
Leptoceridae	2.7	CG					
Oecetis sp.	4.7	P					
Philopotamidae		FC	CL				
Chimarra obscurus	2.8	FC	CL				
Chimarra sp.	2.8	FC	CL				
Polycentropodidae		FC	CL				
Cernotina sp.							
Cyrnellus fraternus	7.3	FC	CL				
Neureclipsis sp.	4.19	FC					
Polycentropus sp.	3.5	FC	CL				
Coleoptera							
Elmidae		CG					
Dubiraphia sp.	5.9	SC	CL				
Dubiraphia vittata	4.1	SC	CL				
Microcylloepus pusillus	2.1	SC	CL				
Optioservus sp.	2.4	SC	CL				
Stenelmis sp.	5.1	SC	CL				
Stenelmis sexlineatus							
Hydrophilidae		P					
Berosus sp.	8.4	CG					
Limnichidae							

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002							
				MC		LOB		ROB		TOTAL	NO/M2
				No./m2		No./m2		No./m2			
Lutrochus sp.											
Psephenidae		SC									
Ectopria sp.		SC	CL								
Psephenus herricki	2.4	SC	CL								
Staphylinidae		P									
Diptera											
Ceratopogonidae	5.9	P									
Bezzia/Palpomyia gp.	6	P						1	7.14	1	2.38
Chaoboridae											
Chaoborus punctipennis		P						1	7.14	1	2.38
Chironomidae				8	57.12			1	7.14	9	21.42
Ablabesmyia annulata	7.2			4	28.56					4	9.52
Ablabesmyia mallochi	7.2	P									
Axarus sp.											
Chironomus sp.	9.63	CG		14	99.96	1	7.14	41	292.7	56	133.3
Cladotanytarsus sp.	4.1	FC									
Coelotanypus sp.	8	P		75	535.5	1	7.14	5	35.7	81	192.8
Conchapelopia sp.	8.4	P									
Corynoneura sp.	6	CG									
Cricotopus sp.		CG	CL								
Cricotopus bicinctus	8.5	CG	CL								
Cricotopus (Isocladius) sp.											
Cryptochironomus sp.	6.4	P		1	7.14	3	21.42			4	9.52
Dicrotendipes sp.	8.1	CG									
Dicrotendipes simpsoni	8.1										
Epoicocladius sp.		CG									
Glyptotendipes sp.	9.47	FC									
Larsia sp.	9.3	P									
Lipiniella sp.						103	735.4			103	245.1
Microtendipes pedellus gp.	5.5	CG	CL								
Nanocladius distinctus	7.1	CG									
Nilotanypus sp.	3.9	P									
Paratendipes sp.	5.1	CG									
Polypedilum fallax	6.4	SH									
Polypedilum flavum	4.9	SH									
Polypedilum halterale	7.3	SH									
Polypedilum illinoense	9	SH									
Procladius sp.	9.1	P		8	57.12					8	19.04
Pseudochironomus sp.	5.4	CG									
Rheotanytarsus sp.	5.9	FC	CL								
Stenochironomus sp.	6.45	SH									
Tanytarsus sp.	6.8	FC		1	7.14					1	2.38
Thienemanniella xena	5.9	CG									
Tribelos sp.	6.31	CG									
Zavrelia sp.	5.3	CG									
Empididae	7.6	P									
Hemerodromia sp.		P									
Simuliidae		FC	CL								
Simulium sp.	6	FC	CL								
Tipulidae		SH									

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002 MC No./m2		LOB No./m2		ROB No./m2		TOTAL	NO/M2
Hexatoma sp.	**4.3**	**P**									
CHORDATA****											
Osteichthyes											
Percidae											
Etheostoma sp.											
TOTAL NO. OF ORGANISMS				**314**	**2242**	**167**	**1192**	**196**	**1399**	**677**	**1611**
TOTAL NO. OF TAXA				**14**	**14**	**9**	**9**	**10**	**10**	**19**	**19**

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Drakes Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
PLATYHELMINTHES											
Turbellaria											
Tricladida											
Planariidae											
Cura foremanii	**5**										
Dugesia tigrina	**7.2**										
NEMATODA				1	7.14			1	7.14	2	4.76
MOLLUSCA											
Bivalvia											
Unionoida											
Unionidae											
Potamilus alatus											
Veneroida											
Corbiculidae											
Corbicula fluminea	**6.1**	**FC**									
Sphaeriidae	***8**	**FC**									
Musculium transversum	***8**	**FC**						5	35.7	5	11.9
Pisidium sp.	**6.5**	**FC**						2	14.28	2	4.76
Sphaerium sp.	**7.6**	**FC**									
Gastropoda											
Mesogastropoda											
Pleuroceridae											
Elimia sp.	**2.5**	**SC**									
Elimia laqueata	**2.5**	**SC**									
Viviparidae											
Viviparus sp.		**SC**									
Basommatophora											
Physidae											
Physella sp.	**8.8**	**CG**									
Planorbidae	***6**	**SC**									
Menetus dilatatus	**8.23**	**SC**									
ANNELIDA											
Oligochaeta	***10**	**CG**									
Tubificida											
Lumbricidae		**CG**									
Naididae	***8**	**CG**									
Tubificidae w.h.c.						16	114.2	15	107.1	31	73.78
Tubificidae w.o.h.c.	**7.1**	**CG**		10	71.4	256	1828	118	842.5	384	913.92
Branchiura sowerbyi	**8.3**	**CG**		1	7.14	52	371.3			53	126.14

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Drakes Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
Limnodrilus hoffmeisteri	**9.5**	**CG**		2	14.28	16	114.2	15	107.1	33	78.54
Lumbriculida											
Lumbriculidae	**7.03**	**CG**									
Hirudinea		**P**									
Erpobdellidae		**P**									
Rhynchobdellida											
Glossiphoniidae		**P**									
Helobdella sp.		**P**									
Helobdella stagnalis	**9.1**	**P**									
ARTHROPODA											
Arachnoidea											
Acariformes	**5.5**										
Lebertiidae	**5.5**										
Lebertia sp.	**5.5**										
Crustacea											
Isopoda											
Asellidae		**SH**									
Lirceus sp.	**7.9**	**CG**									
Amphipoda											
Crangonyctidae											
Crangonyx sp.	**7.9**	**CG**									
Gammaridae											
Gammarus sp.	**9.1**	**SH**									
Talitridae											
Hyalella azteca	**7.8**	**CG**									
Decapoda											
Cambaridae	**7.5**										
Orconectes sp.	**2.6**	**SH**									
Insecta											
Ephemeroptera											
Baetidae		**CG**									
Baetis c.f. flavistriga	**7**	**CG**									
Baetis intercalaris	**7**	**CG**									
Baetis sp.		**CG**									
Centroptilum sp.	**6.6**	**CG**									
Caenidae		**CG**									
Caenis sp.	**7.4**	**CG**									
Ephemeridae		**CG**									
Ephemera sp.	**2**	**CG**									
Hexagenia sp.	**4.9**	**CG**									
Heptageniidae	***4**	**SC**	**CL**								

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Drakes Creek Mile 1.9 3OLD20013				
				MC	LOB	ROB	TOTAL	NO/M2
				No./m2	No./m2	No./m2		
Leucrocuta sp.	**2.4**	**SC**						
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**					
Stenacron interpunctatum	**6.9**	**SC**	**CL**					
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**					
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**					
Leptophlebiidae		**CG**						
Choroterpes sp.	***2**	**CG**	**CL**					
Isonychiidae		**FC**						
Isonychia sp.	**3.5**	**FC**						
Tricorythidae		**CG**						
Tricorythodes sp.	**5.1**	**CG**						
Odonata								
Calopterygidae		**P**						
Hetaerina sp.	**5.6**	**P**						
Coenagrionidae		**P**						
Argia sp.	**8.2**	**P**	**CL**					
Plecoptera								
Leuctridae		**SH**						
Leuctra sp.	**2.5**	**SH**	**CL**					
Perlidae		**P**	**CL**					
Acroneuria evoluta	**1.47**	**P**	**CL**					
Acroneuria sp.	**1.47**	**P**	**CL**					
Neoperla sp.	**1.5**	**P**	**CL**					
Hemiptera								
Gerridae		**P**						
Rheumatobates sp.		**P**						
Veliidae		**P**						
Rhagovelia sp.		**P**						
Megaloptera								
Corydalidae		**P**						
Corydalus cornutus	**5.2**	**P**	**CL**					
Nigronia serricornis	**5**	**P**	**CL**					
Sialidae		**P**						
Sialis sp.	**7.2**	**P**						
Trichoptera								
Helicopsychidae		**SC**						
Helicopsyche borealis	**0**	**SC**	**CL**					
Hydropsychidae		**FC**	**CL**					
Ceratopsyche morosa	**2.6**	**FC**	**CL**					
Ceratopsyche sp.		**FC**	**CL**					
Cheumatopsyche sp.	**6.2**	**FC**	**CL**					

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Drakes Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
Hydropsyche sp.		**FC**	**CL**								
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**								
Hydropsyche orris	**4.3**	**FC**									
Hydroptilidae		**PI**									
Hydroptila sp.	**6.2**	**PI**	**CL**								
Leptoceridae	**2.7**	**CG**									
Oecetis sp.	**4.7**	**P**									
Philopotamidae		**FC**	**CL**								
Chimarra obscurus	**2.8**	**FC**	**CL**								
Chimarra sp.	**2.8**	**FC**	**CL**								
Polycentropodidae		**FC**	**CL**								
Cernotina sp.											
Cyrnellus fraternus	**7.3**	**FC**	**CL**								
Neureclipsis sp.	**4.19**	**FC**									
Polycentropus sp.	**3.5**	**FC**	**CL**								
Coleoptera											
Elmidae		**CG**									
Dubiraphia sp.	**5.9**	**SC**	**CL**								
Dubiraphia vittata	**4.1**	**SC**	**CL**								
Microcylloepus pusillus	**2.1**	**SC**	**CL**								
Optioservus sp.	**2.4**	**SC**	**CL**								
Stenelmis sp.	**5.1**	**SC**	**CL**								
Stenelmis sexlineatus											
Hydrophilidae		**P**									
Berosus sp.	**8.4**	**CG**									
Limnichidae											
Lutrochus sp.											
Psephenidae		**SC**									
Ectopria sp.		**SC**	**CL**								
Psephenus herricki	**2.4**	**SC**	**CL**								
Staphylinidae		**P**									
Diptera											
Ceratopogonidae	**5.9**	**P**									
Bezzia/Palpomyia gp.	**6**	**P**									
Chaoboridae											
Chaoborus punctipennis		**P**		7	49.98	2	14.28	19	135.7	28	66.64
Chironomidae				4	28.56			3	21.42	7	16.66
Ablabesmyia annulata	**7.2**			1	7.14			1	7.14	2	4.76
Ablabesmyia mallochi	**7.2**	**P**									
Axarus sp.											
Chironomus sp.	**9.63**	**CG**		73	521.2	38	271.3	69	492.7	180	428.4

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Drakes Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
Cladotanytarsus sp.	**4.1**	**FC**									
Coelotanypus sp.	**8**	**P**		32	228.5	3	21.42	21	149.9	56	133.28
Conchapelopia sp.	**8.4**	**P**									
Corynoneura sp.	**6**	**CG**									
Cricotopus sp.		**CG**	**CL**								
Cricotopus bicinctus	**8.5**	**CG**	**CL**								
Cricotopus (Isocladius) sp.											
Cryptochironomus sp.	**6.4**	**P**		3	21.42	2	14.28			5	11.9
Dicrotendipes sp.	**8.1**	**CG**									
Dicrotendipes simpsoni	**8.1**										
Epoicocladius sp.		**CG**									
Glyptotendipes sp.	**9.47**	**FC**									
Larsia sp.	**9.3**	**P**									
Lipiniella sp.											
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**								
Nanocladius distinctus	**7.1**	**CG**									
Nilotanypus sp.	**3.9**	**P**									
Paratendipes sp.	**5.1**	**CG**									
Polypedilum fallax	**6.4**	**SH**									
Polypedilum flavum	**4.9**	**SH**									
Polypedilum halterale	**7.3**	**SH**									
Polypedilum illinoense	**9**	**SH**									
Procladius sp.	**9.1**	**P**				1	7.14			1	2.38
Pseudochironomus sp.	**5.4**	**CG**									
Rheotanytarsus sp.	**5.9**	**FC**	**CL**								
Stenochironomus sp.	**6.45**	**SH**									
Tanytarsus sp.	**6.8**	**FC**									
Thienemanniella xena	**5.9**	**CG**									
Tribelos sp.	**6.31**	**CG**									
Zavrelia sp.	**5.3**	**CG**									
Empididae	**7.6**	**P**									
Hemerodromia sp.		**P**									
Simuliidae		**FC**	**CL**								
Simulium sp.	**6**	**FC**	**CL**								
Tipulidae		**SH**									
Hexatoma sp.	**4.3**	**P**									
CHORDATA****											
Osteichthyes											
Percidae											
Etheostoma sp.											

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Drakes Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
TOTAL NO. OF ORGANISMS				**134**	**957**	**386**	**2756**	**269**	**1921**	**789**	**1878**
TOTAL NO. OF TAXA				**10**	**10**	**9**	**9**	**11**	**11**	**14**	**14**

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 245.0 3OLD20006					
				LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**								
Dugesia tigrina	**7.2**								
NEMATODA						1	7.14	1	3.57
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus				1	7.14			1	3.57
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**							
Sphaeriidae	***8**	**FC**							
Musculium transversum	***8**	**FC**		64	457	9	64.26	73	260.61
Pisidium sp.	**6.5**	**FC**							
Sphaerium sp.	**7.6**	**FC**							
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**							
Viviparidae									
Viviparus sp.		**SC**		1	7.14			1	3.57
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**							
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**		151	1078	6	42.84	157	560.49
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**		50	357			50	178.5

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 245.0 3OLD20006					
				LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		
Lumbriculida									
Lumbriculidae	**7.03**	**CG**		50	357	19	135.7	69	246.33
Hirudinea		**P**		2	14.28			2	7.14
Erpobdellidae		**P**		2	14.28			2	7.14
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**		2	14.28			2	7.14
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**								
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**								
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**							
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**							
Gammaridae									
Gammarus sp.	**9.1**	**SH**				1	7.14	1	3.57
Talitridae									
Hyalella azteca	**7.8**	**CG**							
Decapoda									
Cambaridae	**7.5**								
Orconectes sp.	**2.6**	**SH**							
Insecta									
Ephemeroptera									
Baetidae		**CG**							
Baetis c.f. flavistriga	**7**	**CG**							
Baetis intercalaris	**7**	**CG**							
Baetis sp.		**CG**							
Centroptilum sp.	**6.6**	**CG**							
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**							
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**		34	242.8			34	121.38
Heptageniidae	***4**	**SC**	**CL**						
Leucrocuta sp.	**2.4**	**SC**							
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**						

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 245.0 3OLD20006					
				LOB		ROB		TOTAL	NO/M2
				No./m2		No./m2			
Stenacron interpunctatum	**6.9**	**SC**	**CL**						
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**						
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**						
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**						
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**							
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**							
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**						
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**						
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**						
Neoperla sp.	**1.5**	**P**	**CL**						
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**						
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**		2	14.28			2	7.14
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**						
Hydropsychidae		**FC**	**CL**						
Ceratopsyche morosa	**2.6**	**FC**	**CL**						
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**						
Hydropsyche sp.		**FC**	**CL**						
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**						
Hydropsyche orris	**4.3**	**FC**		2	14.28	75	535.5	77	274.89

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 245.0 3OLD20006					
				LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		
Hydroptilidae		PI							
Hydroptila sp.	6.2	PI	CL						
Leptoceridae	2.7	CG							
Oecetis sp.	4.7	P				5	35.7	5	17.85
Philopotamidae		FC	CL						
Chimarra obscurus	2.8	FC	CL						
Chimarra sp.	2.8	FC	CL						
Polycentropodidae		FC	CL						
Cernotina sp.									
Cyrnellus fraternus	7.3	FC	CL			1	7.14	1	3.57
Neureclipsis sp.	4.19	FC				3	21.42	3	10.71
Polycentropus sp.	3.5	FC	CL						
Coleoptera									
Elmidae		CG							
Dubiraphia sp.	5.9	SC	CL						
Dubiraphia vittata	4.1	SC	CL						
Microcylloepus pusillus	2.1	SC	CL						
Optioservus sp.	2.4	SC	CL						
Stenelmis sp.	5.1	SC	CL						
Stenelmis sexlineatus									
Hydrophilidae		P							
Berosus sp.	8.4	CG							
Limnichidae									
Lutrochus sp.									
Psephenidae		SC							
Ectopria sp.		SC	CL						
Psephenus herricki	2.4	SC	CL						
Staphylinidae		P							
Diptera									
Ceratopogonidae	5.9	P							
Bezzia/Palpomyia gp.	6	P				1	7.14	1	3.57
Chaoboridae									
Chaoborus punctipennis		P							
Chironomidae									
Ablabesmyia annulata	7.2			4	28.56			4	14.28
Ablabesmyia mallochi	7.2	P							
Axarus sp.						11	78.54	11	39.27
Chironomus sp.	9.63	CG		10	71.4	10	71.4	20	71.4
Cladotanytarsus sp.	4.1	FC							
Coelotanypus sp.	8	P				2	14.28	2	7.14
Conchapelopia sp.	8.4	P							
Corynoneura sp.	6	CG							

Table 1. Benthic Macroinvertebrates Collected from Old Hickory Reservoir, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 245.0 3OLD20006					
				LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		
Cricotopus sp.		**CG**	**CL**						
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.									
Cryptochironomus sp.	**6.4**	**P**		3	21.42	1	7.14	4	14.28
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**					4	28.56	4	14.28
Epoicocladius sp.		**CG**		1	7.14			1	3.57
Glyptotendipes sp.	**9.47**	**FC**				3	21.42	3	10.71
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**						
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**							
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**							
Polypedilum halterale	**7.3**	**SH**				1	7.14	1	3.57
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**		4	28.56	3	21.42	7	24.99
Pseudochironomus sp.	**5.4**	**CG**							
Rheotanytarsus sp.	**5.9**	**FC**	**CL**						
Stenochironomus sp.	**6.45**	**SH**				1	7.14	1	3.57
Tanytarsus sp.	**6.8**	**FC**		1	7.14			1	3.57
Thienemanniella xena	**5.9**	**CG**							
Tribelos sp.	**6.31**	**CG**		1	7.14			1	3.57
Zavrelia sp.	**5.3**	**CG**							
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**						
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes									
Percidae									
Etheostoma sp.									
TOTAL NO. OF ORGANISMS				**385**	**2749**	**157**	**1121**	**542**	**1935**
TOTAL NO. OF TAXA				**19**	**19**	**19**	**19**	**31**	**31**

Table 2. Summary of Benthic Macroinvertebrates Collected From Old Hickory Project Drainage, 2004

	Drakes Creek Mile 4.9 30LD10050	Bledsoe Creek Mile 10.3 3OLD10054	Cedar Creek Mile 7.0 3OLD10055	Round Lick Creek Mile 8.3 30LD10058	Spring Creek Mile 5.8 30LD10057	Barton's Creek Mile 7.1 30LD10056	Cumberland River Mile 216.9 3OLD20002 MC	3OLD20002 LOB	3OLD20002 ROB	3OLD20002 Total
Number/m^2	6594	15679	6511	4067	6338	9449	2242	1192	1399	1611
Taxa richness (Genera)	42 (38)	63 (56)	51 (42)	55 (48)	50 (43)	37 (31)	14 (13)	9 (9)	10 (9)	19 (18)
EPT Taxa (Genera)	16 (15)	25 (21)	13 (9)	21 (17)	21 (16)	13 (9)	1 (1)	0 (0)	0(0)	1 (1)
NCBI	5.42	5.50	4.21	5.20	4.64	3.88	7.91	7.62	7.89	7.87
%EPT	42.54%	59.40%	10.72%	40.12%	37.98%	7.36%	3.18%	0.00%	0.00%	1.48%
M %EPT (minus Cheumatopsyche)	31.87%	40.99%	7.94%	38.55%	26.40%	5.77%	3.18%	0.00%	0.00%	1.48%
% Ephemeroptera	28.04%	30.14%	6.66%	35.68%	21.23%	4.03%	3.18%	0.00%	0.00%	1.48%
%OC	4.81%	14.17%	11.61%	11.21%	6.75%	2.35%	71.02%	98.20%	94.90%	84.64%
% Dominant	30.52%	20.59%	39.37%	39.17%	33.38%	37.78%	23.89%	61.68%	38.78%	26.44%
% Clingers	55.86%	56.06%	38.98%	55.57%	63.90%	41.98%	0.00%	0.00%	0.00%	0.00%
Diversity Index (Shannon base 2)	3.475	3.68	3.092	3.589	3.573	2.96	2.862	1.693	2.255	3.179
Pielou's Index	0.644	0.618	0.545	0.621	0.633	0.516	0.752	0.534	0.679	0.748

	Drake's Creek Mile 1.9				Cumberland River Mile 245.0		
	3OLD20013 MC	3OLD20013 LOB	3OLD20013 ROB	3OLD20013 Total	3OLD20006 LOB	3OLD20006 ROB	3OLD20006 Total
Number/m^2	957	2756	1921	1878	2749	1121	1935
Taxa richness (Genera)	10 (10)	9 (8)	11 (10)	14 (13)	19 (19)	19 (19)	31 (31)
EPT Taxa (Genera)	0 (0)	0 (0)	0 (0)	0 (0)	2 (2)	4 (4)	5 (5)
NCBI	8.86	7.63	8.08	7.98	7.42	5.86	7.00
%EPT	0.00%	0.00%	0.00%	0.00%	9.35%	53.50%	22.14%
M %EPT (minus Cheumatopsyche)	0.00%	0.00%	0.00%	0.00%	9.35%	53.50%	22.14%
% Ephemeroptera	0.00%	0.00%	0.00%	0.00%	8.83%	0.00%	6.27%
%OC	94.03%	99.48%	89.96%	95.31%	58.44%	26.75%	49.26%
% Dominant	54.48%	66.32%	43.87%	48.67%	39.22%	47.77%	28.97%
% Clingers	0.00%	0.00%	0.00%	0.00%	0.00%	0.64%	0.18%
Diversity Index (Shannon base 2)	1.995	1.648	2.339	2.301	2.671	2.842	3.26
Pielou's Index	0.601	0.52	0.676	0.604	0.629	0.669	0.658

Table 3. Determination of Biological Condition Based on Index Scores for Tennessee Bioregion (TDEC 2002).

Metric	Drakes Ck. Mile 4.9 3OLD10050		Bledsoe Ck. Mile 10.3 3OLD10054		Cedar Ck. Mile 7.0 3OLD10055		Barton's CK. Mile 7.1 3OLD10056		Spring Ck. Mile 5.8 3OLD10057		Round Lick Mile 8.3 3OLD10058	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Taxa Richness (genera)	38	6	56	6	42	6	31	6	43	6	48	6
EPT Taxa (genera)	15	6	21	6	9	4	9	4	16	6	17	6
% EPT	42.5	4	59.4	6	10.7	0	7.4	0	38	4	40.1	4
%OC	4.8	6	14.2	6	11.6	6	2.4	6	6.8	6	11.2	6
NCBI	5.42	4	5.5	4	4.21	6	3.88	6	4.64	4	5.2	4
% Dominant	30.5	6	20.6	6	39.4	4	37.8	4	33.4	6	39.2	4
% Clingers	55.9	6	56.1	6	39	4	42	4	63.9	6	55.6	6
Total Score	38		40		30		30		38		36	
Index Rating	Non-impaired Supporting		Non-impaired Supporting		Slightly Impaired Partially Supporting		Slightly Impaired Partially Supporting		Non-impaired Supporting		Non-impaired Supporting	

Ecoregion = 71h Outer Nashville Basin- Target Index Score (January-December) = 32

Table 4. Determination of Biological Condition Based on Index Scores for Kentucky Bioregions (Pond etal. 2003)

	Drakes Creek Miles 4.9 3OLD10050		Bledsoe Creek Mile 10.3 3OLD10054		Cedar Creek Mile 7.0 3OLD10055		Barton's Creek Mile 7.1 3OLD10056		Spring Creek Mile 5.8 3OLD10057		Round Lick Ck. Mile 8.3 3OLD10058	
	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score	Value	Score
Taxa Richness (genera)	38	51.4	56	75.7	42	56.8	31	41.9	43	58.1	48	64.9
Reference	74		74		74		74		74		74	
EPT Taxa (genera)	15	50	21	70	9	30	9	30	16	53.3	17	56.7
Reference	30		30		30		30		30		30	
NCBI	5.42	66.5	5.5	65.3	4.21	84	3.88	88.8	4.64	77.8	5.2	69.7
Reference	3.11		3.11		3.11		3.11		3.11		3.11	
M% EPT	31.9	43.1	41	55.4	7.9	10.7	5.8	7.8	26.4	35.7	38.6	52.2
Reference	74		74		74		74		74		74	
% OC	4.8	96.2	14.2	86.7	11.6	89.3	2.4	98.6	6.8	94.1	11.2	89.7
Reference	1		1		1		1		1		1	
% Clingers	55.9	75.5	56.1	75.8	39	52.7	42	56.8	63.9	86.4	55.6	75.1
Reference	74		74		74		74		74		74	
AVERAGE SCORE	63.8		71.5		53.9		54		67.6		68.1	
INDEX RATING	Fair		Fair-Good		Fair		Fair		Fair		Fair	

Kentucky Pennyroyal Bioregion

Table 5. Statistical Analyses of Sampling Efficiency and Comparison of the Stations Using Mean Number of Organisms [a], Old Hickory Project Drainage, 2004.					
Station	No. of Samples	Mean No. of Organisms	Standard Deviation	Standard Error of the mean	Precision of Sampling Mean
Drakes Creek Mile 4.9 3OLD10050	4	593	96.18	48.09	8.1%
Bledsoe Creek Mile 10.3 3OLD10054	4	1,410	1640.41	820.20	58.2%
Cedar Creek Mile 7.0 3OLD10055	4	585.5	220.88	110.44	18.9%
Barton's Creek Mile 7.1 3OLD10056	4	849.75	395.94	198.0	23.3%
Spring Creek Mile 5.8 3OLD10057	4	570.0	274.06	137.03	24.0%
Round Lick Creek Mile 8.3 3OLD10058	4	365.75	176.80	88.40	24.2%

F 1 Ratio = 1.08

Bledsoe Ck. Mile 10.3	Barton's Ck. Mile 7.1	Drakes Ck. Mile 4.9	Cedar Ck. Mile 7.0	Spring Ck. Mile 5.8	Round Lick Ck. 8.3
1,410	849.75	593	585.5	570.0	365.75

[a] Stations underlined are statistically comparable at the 0.05 confidence level.

Table 6. Statistical Analyses of Sampling Efficiency and Comparison of the Stations Using Mean Number of species [a], Old Hickory Project Drainage, 2004.					
Station	No. of Samples	Mean No. of Species	Standard Deviation	Standard Error of the mean	Precision of Sampling Mean
Drakes Creek Mile 4.9 3OLD10050	4	27	3.75	1.87	6.9%
Bledsoe Creek Mile 10.3 3OLD10054	4	32.75	6.65	3.33	10.2%
Cedar Creek Mile 7.0 3OLD10055	4	24.25	10.24	5.12	21.12%
Barton's Creek Mile 7.1 3OLD10056	4	21.75	2.06	1.03	4.7%
Spring Creek Mile 5.8 3OLD10057	4	27.75	3.95	1.97	7.1%
Round Lick Creek Mile 8.3 3OLD10058	4	33.5	6.03	3.01	9.0%

F 1 Ratio = 2.34

Round Lick Ck. 8.3	Bledsoe Ck. Mile 10.3	Spring Ck. Mile 5.8	Drakes Ck. Mile 4.9	Cedar Ck. Mile 7.0	Barton's Ck. Mile 7.1
33.5	32.75	27.75	27	24.25	21.75

[a] Stations underlined are statistically comparable at the 0.05 confidence level.

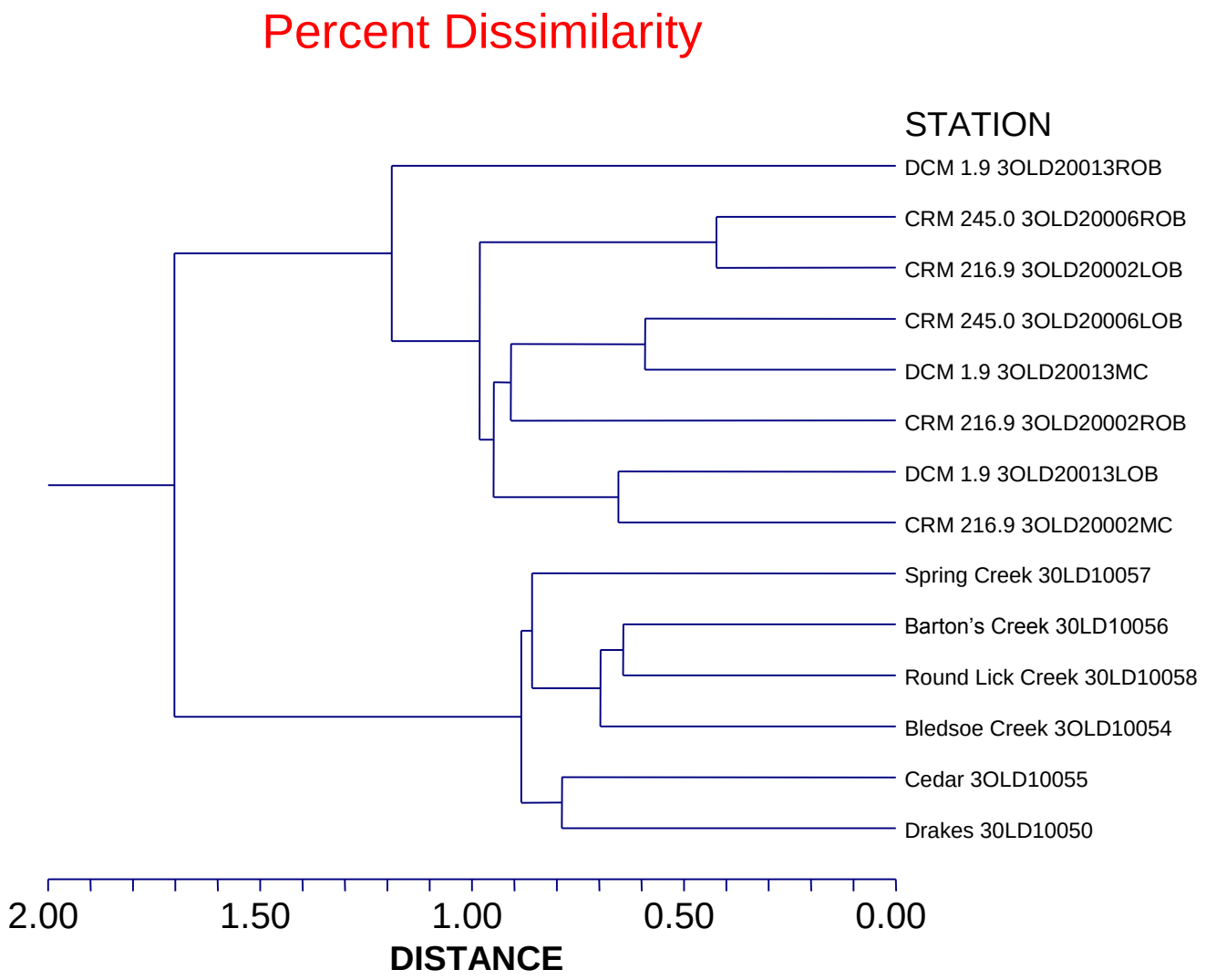

Figure2. Percent Dissimilarity (Bray-Curtis) Cluster Analyses, Old Hickory Drainage, Summer/Fall 2004.

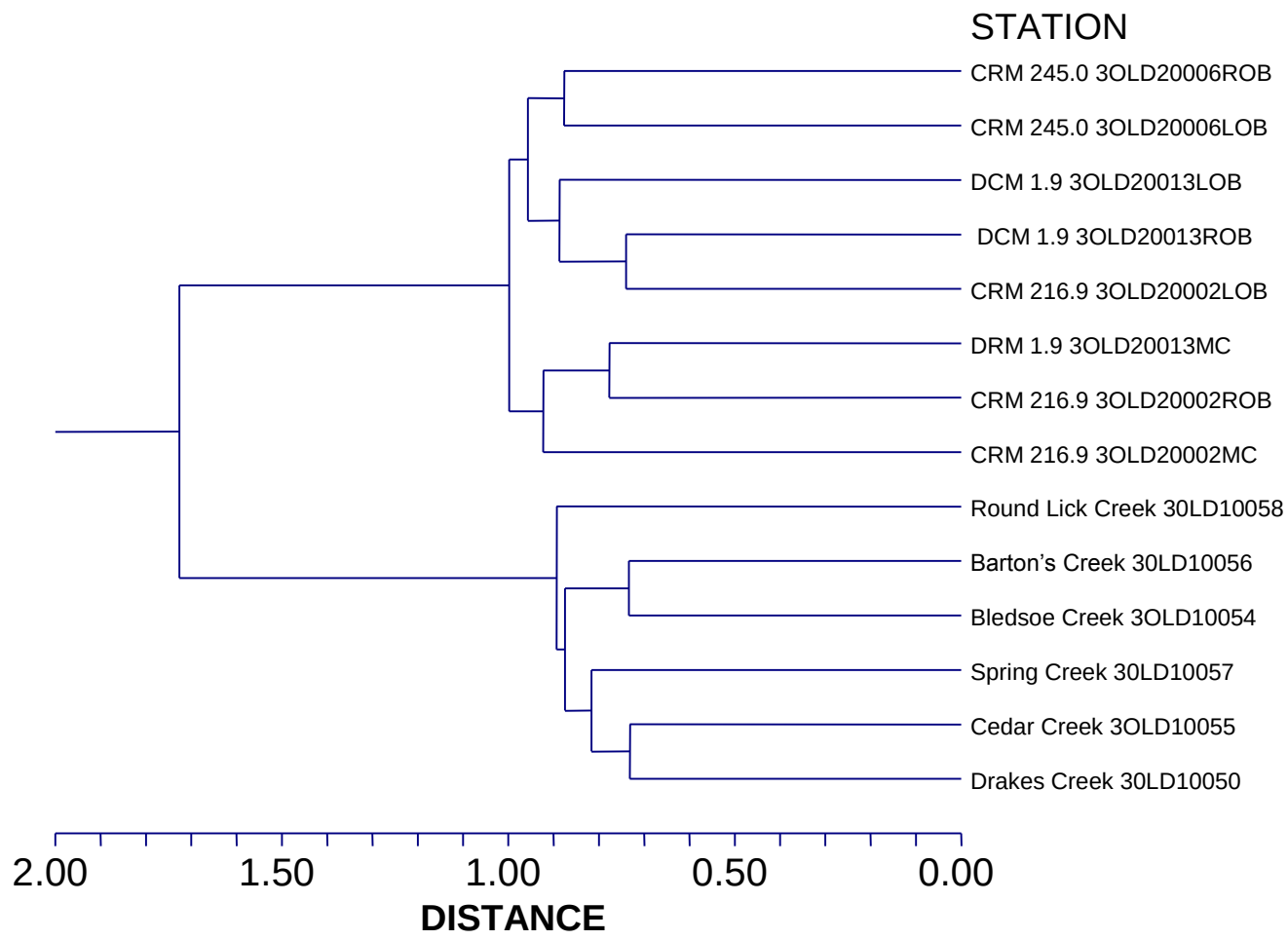

Figure 3. 1-Jaccard's Coefficient Analysis, Old Hickory Drainage, Summer/Fall 2004.

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Appendix

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050					
				H1	H2	H3	H4	TOTAL	No./m2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**			1	1	3	7	12	33.36
Dugesia tigrina	**7.2**								
NEMATODA									
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		8	5	9	2	24	66.72
Sphaeriidae	***8**	**FC**				2		2	5.56
Musculium transversum	***8**	**FC**							
Pisidium sp.	**6.5**	**FC**							
Sphaerium sp.	**7.6**	**FC**							
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**			28	22	17	67	186.3
Elimia laqueata	**2.5**	**SC**		22	4		6	32	88.96
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**		1	3	5		9	25.02
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**		3			1	4	11.12
Branchiura sowerbyi	**8.3**	**CG**		1				1	2.78
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									
Lumbriculidae	**7.03**	**CG**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050					
				H1	H2	H3	H4	TOTAL	No./m2
Hirudinea		**P**				1		1	2.78
Erpobdellidae		**P**							
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**							
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**								
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**								
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**		64	7	22	10	103	286.3
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**		3	2	1		6	16.68
Gammaridae									
Gammarus sp.	**9.1**	**SH**							
Talitridae									
Hyalella azteca	**7.8**	**CG**							
Decapoda									
Cambaridae	**7.5**								
Orconectes sp.	**2.6**	**SH**		1	1	1	1	4	11.12
Insecta									
Ephemeroptera									
Baetidae		**CG**							
Baetis c.f. flavistriga	**7**	**CG**							
Baetis intercalaris	**7**	**CG**		173	128	38	117	456	1268
Baetis sp.		**CG**							
Centroptilum sp.	**6.6**	**CG**							
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**		8		9	4	21	58.38
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**							
Heptageniidae	***4**	**SC**	**CL**	1			11	12	33.36
Leucrocuta sp.	**2.4**	**SC**							
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**						
Stenacron interpunctatum	**6.9**	**SC**	**CL**						
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**	11	19	8	33	71	197.4
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**	3		1		4	11.12
Leptophlebiidae		**CG**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050					
				H1	H2	H3	H4	TOTAL	No./m2
Choroterpes sp.	*2	CG	CL	3		1		4	11.12
Isonychiidae		FC							
Isonychia sp.	3.5	FC		1				1	2.78
Tricorythidae		CG							
Tricorythodes sp.	5.1	CG		30	18	43	5	96	266.9
Odonata									
Calopterygidae		P							
Hetaerina sp.	5.6	P							
Coenagrionidae		P							
Argia sp.	8.2	P	CL	4	2	3	4	13	36.14
Plecoptera									
Leuctridae		SH							
Leuctra sp.	2.5	SH	CL						
Perlidae		P	CL						
Acroneuria evoluta	1.47	P	CL		1			1	2.78
Acroneuria sp.	1.47	P	CL						
Neoperla sp.	1.5	P	CL						
Hemiptera									
Gerridae		P							
Rheumatobates sp.		P		1				1	2.78
Veliidae		P							
Rhagovelia sp.		P							
Megaloptera									
Corydalidae		P							
Corydalus cornutus	5.2	P	CL						
Nigronia serricornis	5	P	CL						
Sialidae		P							
Sialis sp.	7.2	P							
Trichoptera									
Helicopsychidae		SC							
Helicopsyche borealis	0	SC	CL	3	8	1	1	13	36.14
Hydropsychidae		FC	CL	1			23	24	66.72
Ceratopsyche morosa	2.6	FC	CL						
Ceratopsyche sp.		FC	CL						
Cheumatopsyche sp.	6.2	FC	CL	37	66	35	115	253	703.3
Hydropsyche sp.		FC	CL						
Hydropsyche betteni gp.	7.8	FC	CL	2				2	5.56
Hydropsyche orris	4.3	FC							
Hydroptilidae		PI							
Hydroptila sp.	6.2	PI	CL						
Leptoceridae	2.7	CG							
Oecetis sp.	4.7	P							
Philopotamidae		FC	CL			2		2	5.56
Chimarra obscurus	2.8	FC	CL	6	10	4	27	47	130.7

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050					
				H1	H2	H3	H4	TOTAL	No./m2
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.									
Cyrnellus fraternus	**7.3**	**FC**	**CL**				2	2	5.56
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**						
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**	124	230	225	145	724	2013
Stenelmis sexlineatus							114	114	316.9
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**							
Limnichidae									
Lutrochus sp.									
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**						
Psephenus herricki	**2.4**	**SC**	**CL**	35	52	27	32	146	405.9
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae				1				1	2.78
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**							
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		3	15	6	5	29	80.62
Corynoneura sp.	**6**	**CG**			1			1	2.78
Cricotopus sp.		**CG**	**CL**						
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.				1				1	2.78
Cryptochironomus sp.	**6.4**	**P**							
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	DRAKES CREEK 30LD10050					
				H1	H2	H3	H4	TOTAL	No./m2
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**						
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**							
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**		5	15	1	13	34	94.52
Polypedilum halterale	**7.3**	**SH**				3	4	7	19.46
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**							
Rheotanytarsus sp.	**5.9**	**FC**	**CL**	4	2	1		7	19.46
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**					1	1	2.78
Thienemanniella xena	**5.9**	**CG**							
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		1	7	5	6	19	52.82
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**						
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes						1		1	2.78
Percidae									
Etheostoma sp.					1			1	2.78
TOTAL NO. OF ORGANISMS				**562**	**625**	**479**	**706**	**2372**	**6594**
TOTAL NO. OF TAXA				**32**	**23**	**27**	**26**	**42**	**42**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BLEDSOE CREEK 3OLD10054					
				H1	H2	H3	H4	TOTAL	No./m 2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**								
Dugesia tigrina	**7.2**				2		21	23	63.94
NEMATODA									
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		12	3	3	41	59	164
Sphaeriidae	***8**	**FC**		4				4	11.12
Musculium transversum	***8**	**FC**							
Pisidium sp.	**6.5**	**FC**			1			1	2.78
Sphaerium sp.	**7.6**	**FC**							
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**		59	7	3	10	79	219.6
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**		1				1	2.78
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**							
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**							
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BLEDSOE CREEK 3OLD10054					
				H1	H2	H3	H4	TOTAL	No./m 2
Lumbriculidae	**7.03**	**CG**							
Hirudinea		**P**							
Erpobdellidae		**P**							
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**							
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**						2	2	5.56
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**					1		1	2.78
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**		3	1	6		10	27.8
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**							
Gammaridae									
Gammarus sp.	**9.1**	**SH**							
Talitridae									
Hyalella azteca	**7.8**	**CG**							
Decapoda									
Cambaridae	**7.5**				1			1	2.78
Orconectes sp.	**2.6**	**SH**		3	2		1	6	16.68
Insecta									
Ephemeroptera									
Baetidae		**CG**					20	20	55.6
Baetis c.f. flavistriga	**7**	**CG**							
Baetis intercalaris	**7**	**CG**		41	36	48	354	479	1332
Baetis sp.		**CG**		10				10	27.8
Centroptilum sp.	**6.6**	**CG**				2		2	5.56
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**		8	16	7		31	86.18
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**							
Heptageniidae	***4**	**SC**	**CL**	5	7		20	32	88.96
Leucrocuta sp.	**2.4**	**SC**		3	7	6		16	44.48
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**	19	4	2		25	69.5
Stenacron interpunctatum	**6.9**	**SC**	**CL**	28	2			30	83.4
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**		1	1		2	5.56

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BLEDSOE CREEK 3OLD10054					
				H1	H2	H3	H4	TOTAL	No./m 2
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**						
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**	20	22	11		53	147.3
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**					12	12	33.36
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**		303	404	240	41	988	2747
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**	8	5			13	36.14
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**	1				1	2.78
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**	1				1	2.78
Neoperla sp.	**1.5**	**P**	**CL**						
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**		1		1	2	5.56
Nigronia serricornis	**5**	**P**	**CL**	2				2	5.56
Sialidae		**P**							
Sialis sp.	**7.2**	**P**		1				1	2.78
Trichoptera							10	10	27.8
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**	1				1	2.78
Hydropsychidae		**FC**	**CL**		1		17	18	50.04
Ceratopsyche morosa	**2.6**	**FC**	**CL**						
Ceratopsyche sp.		**FC**	**CL**			1		1	2.78
Cheumatopsyche sp.	**6.2**	**FC**	**CL**	2	3		1033	1038	2886
Hydropsyche sp.		**FC**	**CL**				110	110	305.8
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**				172	172	478.2
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**						
Leptoceridae	**2.7**	**CG**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BLEDSOE CREEK 3OLD10054					
				H1	H2	H3	H4	TOTAL	No./m 2
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**				293	293	814.5
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.						1		1	2.78
Cyrnellus fraternus	**7.3**	**FC**	**CL**						
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**	2	2			4	11.12
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**						
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**	1	1			2	5.56
Stenelmis sp.	**5.1**	**SC**	**CL**	71	41	23	1026	1161	3228
Stenelmis sexlineatus				14	4	3	30	51	141.8
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**			1			1	2.78
Limnichidae									
Lutrochus sp.									
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**						
Psephenus herricki	**2.4**	**SC**	**CL**	15	9	7		31	86.18
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae					8	3	20	31	86.18
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**			1			1	2.78
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**		4		4		8	22.24
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		40	28	7	70	145	403.1
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**	1	1	1	10	13	36.14
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.					1			1	2.78
Cryptochironomus sp.	**6.4**	**P**		1				1	2.78

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BLEDSOE CREEK 3OLD10054					
				H1	H2	H3	H4	TOTAL	No./m 2
Dicrotendipes sp.	**8.1**	**CG**		3	3	2		8	22.24
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**		1	2		3	8.34
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**		2				2	5.56
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**		2	5	5	385	397	1104
Polypedilum halterale	**7.3**	**SH**		18	4			22	61.16
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**							
Rheotanytarsus sp.	**5.9**	**FC**	**CL**	1	2		121	124	344.7
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**		18	2	5	1	26	72.28
Thienemanniella xena	**5.9**	**CG**		1		1		2	5.56
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		11	3	1		15	41.7
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**					10	10	27.8
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**				30	30	83.4
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes									
Percidae									
Etheostoma sp.									
TOTAL NO. OF ORGANISMS				**740**	**643**	**396**	**3861**	**5640**	**15679**
TOTAL NO. OF TAXA				**39**	**38**	**27**	**27**	**63**	**63**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	CEDAR CREEK 3OLD10055					
				H1	H2	H3	H4	TOTAL	No./m 2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**								
Dugesia tigrina	**7.2**				5			5	13.9
NEMATODA									
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**			12	19	10	41	114
Sphaeriidae	***8**	**FC**							
Musculium transversum	***8**	**FC**				3		3	8.34
Pisidium sp.	**6.5**	**FC**			8			8	22.24
Sphaerium sp.	**7.6**	**FC**		1			2	3	8.34
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**		314	103	193	312	922	2563
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**		1		1		2	5.56
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**			1			1	2.78
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**							
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	CEDAR CREEK 3OLD10055					
				H1	H2	H3	H4	TOTAL	No./m 2
Lumbriculidae	**7.03**	**CG**							
Hirudinea		**P**							
Erpobdellidae		**P**							
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**							
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**								
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**						2	2	5.56
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**			12			12	33.36
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**							
Gammaridae									
Gammarus sp.	**9.1**	**SH**							
Talitridae									
Hyalella azteca	**7.8**	**CG**							
Decapoda									
Cambaridae	**7.5**				1			1	2.78
Orconectes sp.	**2.6**	**SH**					4	4	11.12
Insecta									
Ephemeroptera									
Baetidae		**CG**							
Baetis c.f. flavistriga	**7**	**CG**							
Baetis intercalaris	**7**	**CG**			46	14	47	107	297.5
Baetis sp.		**CG**					4	4	11.12
Centroptilum sp.	**6.6**	**CG**							
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**		1	5	30	5	41	114
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**							
Heptageniidae	***4**	**SC**	**CL**						
Leucrocuta sp.	**2.4**	**SC**							
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**						
Stenacron interpunctatum	**6.9**	**SC**	**CL**		1		1	2	5.56
Maccaffertium (Stenonema)	**3.8**	**SC**	**CL**						

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	CEDAR CREEK 3OLD10055					
				H1	H2	H3	H4	TOTAL	No./m 2
mediopunctatum									
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**						
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**			1		1	2.78
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**					1	1	2.78
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**							
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**			1			1	2.78
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**		9	3	13	25	69.5
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**						
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**						
Neoperla sp.	**1.5**	**P**	**CL**						
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**						
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**							
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**						
Hydropsychidae		**FC**	**CL**		2			2	5.56
Ceratopsyche morosa	**2.6**	**FC**	**CL**						
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**		56	3	6	65	180.7
Hydropsyche sp.		**FC**	**CL**	2	4			6	16.68
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**		4	1		5	13.9
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**		2			2	5.56

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	CEDAR CREEK 3OLD10055					
				H1	H2	H3	H4	TOTAL	No./m 2
Leptoceridae	**2.7**	**CG**							
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**		11		3	14	38.92
Chimarra sp.	**2.8**	**FC**	**CL**		1			1	2.78
Polycentropodidae		**FC**	**CL**						
Cernotina sp.									
Cyrnellus fraternus	**7.3**	**FC**	**CL**						
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**			1		1	2.78
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**	1	184	105	271	561	1560
Stenelmis sexlineatus					16	11	28	55	152.9
Hydrophilidae		**P**			2			2	5.56
Berosus sp.	**8.4**	**CG**							
Limnichidae									
Lutrochus sp.					7		3	10	27.8
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**		1	1	2	4	11.12
Psephenus herricki	**2.4**	**SC**	**CL**		25	53	77	155	430.9
Staphylinidae		**P**				1		1	2.78
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae					3	11	1	15	41.7
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**							
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		4	10	2	7	23	63.94
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**		1			1	2.78
Cricotopus bicinctus	**8.5**	**CG**	**CL**		2			2	5.56
Cricotopus (Isocladius) sp.									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	CEDAR CREEK 3OLD10055					
				H1	H2	H3	H4	TOTAL	No./m 2
Cryptochironomus sp.	**6.4**	**P**				1		1	2.78
Dicrotendipes sp.	**8.1**	**CG**		1				1	2.78
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**		1	1	2	4	11.12
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**							
Polypedilum fallax	**6.4**	**SH**		4		1		5	13.9
Polypedilum flavum	**4.9**	**SH**		3	29	2	6	40	111.2
Polypedilum halterale	**7.3**	**SH**				40	7	47	130.7
Polypedilum illinoense	**9**	**SH**			2			2	5.56
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**		1				1	2.78
Rheotanytarsus sp.	**5.9**	**FC**	**CL**		46	1	15	62	172.4
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**			3			3	8.34
Thienemanniella xena	**5.9**	**CG**							
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**			25	11	28	64	177.9
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**			1			1	2.78
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**						
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes									
Percidae									
Etheostoma sp.									
TOTAL NO. OF ORGANISMS				**333**	**642**	**510**	**857**	**2342**	**6511**
TOTAL NO. OF TAXA				**11**	**36**	**25**	**25**	**51**	**51**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058					
				H1	H2	H3	H4	TOTAL	No./m 2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**								
Dugesia tigrina	**7.2**								
NEMATODA									
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		7		2	2	11	30.6
Sphaeriidae	***8**	**FC**							
Musculium transversum	***8**	**FC**			1			1	2.78
Pisidium sp.	**6.5**	**FC**							
Sphaerium sp.	**7.6**	**FC**		2			4	6	16.7
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**		27	17	5	9	58	161
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**			1			1	2.78
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**		9	7		2	18	50
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058					
				H1	H2	H3	H4	TOTAL	No./m 2
Lumbriculidae	7.03	CG							
Hirudinea		P							
Erpobdellidae		P							
Rhynchobdellida									
Glossiphoniidae		P							
Helobdella sp.		P		1				1	2.78
Helobdella stagnalis	9.1	P							
ARTHROPODA									
Arachnoidea									
Acariformes	5.5								
Lebertiidae	5.5								
Lebertia sp.	5.5								
Crustacea									
Isopoda									
Asellidae		SH							
Lirceus sp.	7.9	CG			3	2	5	10	27.8
Amphipoda									
Crangonyctidae									
Crangonyx sp.	7.9	CG							
Gammaridae									
Gammarus sp.	9.1	SH							
Talitridae									
Hyalella azteca	7.8	CG							
Decapoda									
Cambaridae	7.5								
Orconectes sp.	2.6	SH			1	2		3	8.34
Insecta									
Ephemeroptera									
Baetidae		CG							
Baetis c.f. flavistriga	7	CG							
Baetis intercalaris	7	CG		50	62	13	90	215	598
Baetis sp.		CG		9	7	2		18	50
Centroptilum sp.	6.6	CG							
Caenidae		CG							
Caenis sp.	7.4	CG		7	5	8		20	55.6
Ephemeridae		CG							
Ephemera sp.	2	CG			1			1	2.78
Hexagenia sp.	4.9	CG							
Heptageniidae	*4	SC	CL				10	10	27.8
Leucrocuta sp.	2.4	SC		6	1		12	19	52.8
Maccaffertium (Stenonema) femoratum	7.2	SC	CL	6	4	5	1	16	44.5
Stenacron interpunctatum	6.9	SC	CL	1			1	2	5.56
Maccaffertium (Stenonema)	3.8	SC	CL	14	49	8	19	90	250

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058					
				H1	H2	H3	H4	TOTAL	No./m 2
mediopunctatum									
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**	5			12	17	47.3
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**	6	9		2	17	47.3
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**			1			1	2.78
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**		30	22	18	26	96	267
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**						
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**	1		1	2	4	11.1
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**						
Neoperla sp.	**1.5**	**P**	**CL**	3	8	1	5	17	47.3
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**			1			1	2.78
Corydalus cornutus	**5.2**	**P**	**CL**	1	3	1	1	6	16.7
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**			1	1	1	3	8.34
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**	8	3	3		14	38.9
Hydropsychidae		**FC**	**CL**		1	1		2	5.56
Ceratopsyche morosa	**2.6**	**FC**	**CL**		1		1	2	5.56
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**	2	15	2	4	23	63.9
Hydropsyche sp.		**FC**	**CL**						
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**						
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**						

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058					
				H1	H2	H3	H4	TOTAL	No./m 2
Leptoceridae	**2.7**	**CG**							
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**		1			1	2.78
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.				1		1		2	5.56
Cyrnellus fraternus	**7.3**	**FC**	**CL**						
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**	1				1	2.78
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**	150	298	48	77	573	1593
Stenelmis sexlineatus				11		3	12	26	72.3
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**							
Limnichidae									
Lutrochus sp.									
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**		1		1	2	5.56
Psephenus herricki	**2.4**	**SC**	**CL**	3	2	2	1	8	22.2
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae				7	2		6	15	41.7
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**		2				2	5.56
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		6	11	1	5	23	63.9
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**	4				4	11.1
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.					2	1		3	8.34

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	ROUNDLICK CREEK 30LD10058					
				H1	H2	H3	H4	TOTAL	No./m 2
Cryptochironomus sp.	**6.4**	**P**		1				1	2.78
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**	1				1	2.78
Nanocladius distinctus	**7.1**	**CG**		1				1	2.78
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**					2	2	5.56
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**		7	3	1	3	14	38.9
Polypedilum halterale	**7.3**	**SH**		4	2			6	16.7
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**		1	2			3	8.34
Rheotanytarsus sp.	**5.9**	**FC**	**CL**	1	1	1		3	8.34
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**		6	1		5	12	33.4
Thienemanniella xena	**5.9**	**CG**		3				3	8.34
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		19	10	4	19	52	145
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**						
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**		1		1		2	5.56
CHORDATA****									
Osteichthyes									
Percidae									
Etheostoma sp.									
TOTAL NO. OF ORGANISMS				**425**	**560**	**138**	**340**	**1463**	**4067**
TOTAL NO. OF TAXA				**40**	**37**	**27**	**30**	**55**	**55**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	SPRING CREEK 30LD10057					
				H1	H2	H3	H4	TOTAL	No./m 2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**								
Dugesia tigrina	**7.2**								
NEMATODA				1				1	2.78
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		1	1	4	18	24	66.72
Sphaeriidae	***8**	**FC**							
Musculium transversum	***8**	**FC**							
Pisidium sp.	**6.5**	**FC**							
Sphaerium sp.	**7.6**	**FC**							
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**		26	28	25	24	103	286.3
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**							
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**							
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	SPRING CREEK 30LD10057					
				H1	H2	H3	H4	TOTAL	No./m 2
Lumbriculidae	7.03	CG							
Hirudinea		P							
Erpobdellidae		P							
Rhynchobdellida									
Glossiphoniidae		P							
Helobdella sp.		P							
Helobdella stagnalis	9.1	P							
ARTHROPODA									
Arachnoidea									
Acariformes	5.5			1				1	2.78
Lebertiidae	5.5								
Lebertia sp.	5.5								
Crustacea									
Isopoda									
Asellidae		SH							
Lirceus sp.	7.9	CG		1	6		2	9	25.02
Amphipoda									
Crangonyctidae									
Crangonyx sp.	7.9	CG							
Gammaridae									
Gammarus sp.	9.1	SH							
Talitridae									
Hyalella azteca	7.8	CG							
Decapoda									
Cambaridae	7.5								
Orconectes sp.	2.6	SH				6	2	8	22.24
Insecta									
Ephemeroptera									
Baetidae		CG							
Baetis c.f. flavistriga	7	CG		1				1	2.78
Baetis intercalaris	7	CG		66	57	50	6	179	497.6
Baetis sp.		CG			16	9		25	69.5
Centroptilum sp.	6.6	CG							
Caenidae		CG							
Caenis sp.	7.4	CG			1		1	2	5.56
Ephemeridae		CG							
Ephemera sp.	2	CG							
Hexagenia sp.	4.9	CG							
Heptageniidae	*4	SC	CL		7		2	9	25.02
Leucrocuta sp.	2.4	SC		90	15	69	9	183	508.7
Maccaffertium (Stenonema) femoratum	7.2	SC	CL				1	1	2.78
Stenacron interpunctatum	6.9	SC	CL	4			2	6	16.68
Maccaffertium (Stenonema) mediopunctatum	3.8	SC	CL		1			1	2.78

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	SPRING CREEK 30LD10057					
				H1	H2	H3	H4	TOTAL	No./m 2
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**						
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**			2	1	3	8.34
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**		17	29	4		50	139
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**		1	5	18		24	66.72
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**	2			3	5	13.9
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**	2				2	5.56
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**				1	1	2.78
Neoperla sp.	**1.5**	**P**	**CL**	1	1	1	2	5	13.9
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**			1			1	2.78
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**	1	1			2	5.56
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**							
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**		10	3	1	14	38.92
Hydropsychidae		**FC**	**CL**		1			1	2.78
Ceratopsyche morosa	**2.6**	**FC**	**CL**						
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**	46	195	20	3	264	733.9
Hydropsyche sp.		**FC**	**CL**		9			9	25.02
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**	1				1	2.78
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**						
Leptoceridae	**2.7**	**CG**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	SPRING CREEK 30LD10057					
				H1	H2	H3	H4	TOTAL	No./m 2
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**	24	58	3		85	236.3
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.									
Cyrnellus fraternus	**7.3**	**FC**	**CL**						
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**						
Dubiraphia vittata	**4.1**	**SC**	**CL**			5		5	13.9
Microcylloepus pusillus	**2.1**	**SC**	**CL**		13			13	36.14
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**	253	186	286	36	761	2116
Stenelmis sexlineatus				28		24	8	60	166.8
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**				1		1	2.78
Limnichidae									
Lutrochus sp.									
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**			2		2	5.56
Psephenus herricki	**2.4**	**SC**	**CL**	46	42	114	30	232	645
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae				7	3	1		11	30.58
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**							
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		3	3	2		8	22.24
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**						
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.									
Cryptochironomus sp.	**6.4**	**P**					1	1	2.78

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	SPRING CREEK 30LD10057					
				H1	H2	H3	H4	TOTAL	No./m 2
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**			1			1	2.78
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**	1				1	2.78
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**		1				1	2.78
Paratendipes sp.	**5.1**	**CG**							
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**		3	18	4	1	26	72.28
Polypedilum halterale	**7.3**	**SH**		15		30		45	125.1
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**							
Rheotanytarsus sp.	**5.9**	**FC**	**CL**	3	15	13		31	86.18
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**		1	1			2	5.56
Thienemanniella xena	**5.9**	**CG**							
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		16	8	1	2	27	75.06
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**		3			3	8.34
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**		7	2	15	5	29	80.62
CHORDATA****									
Osteichthyes									
Percidae									
Etheostoma sp.						1		1	2.78
TOTAL NO. OF ORGANISMS				**670**	**737**	**712**	**161**	**2280**	**6338**
TOTAL NO. OF TAXA				**31**	**31**	**26**	**23**	**50**	**50**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BARTONS CREEK 30LD10056					
				H1	H2	H3	H4	TOTAL	No./m 2
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**			1	10	3	1	15	41.7
Dugesia tigrina	**7.2**								
NEMATODA									
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus									
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**		10	11	8	18	47	130.7
Sphaeriidae	***8**	**FC**				3		3	8.34
Musculium transversum	***8**	**FC**					1	1	2.78
Pisidium sp.	**6.5**	**FC**					3	3	8.34
Sphaerium sp.	**7.6**	**FC**			10			10	27.8
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**		556	437	158	133	1284	3570
Viviparidae									
Viviparus sp.		**SC**							
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**							
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**							
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**							
Lumbriculida									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BARTONS CREEK 30LD10056					
				H1	H2	H3	H4	TOTAL	No./m 2
Lumbriculidae	**7.03**	**CG**							
Hirudinea		**P**			5			5	13.9
Erpobdellidae		**P**							
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**							
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**								
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**								
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**		3				3	8.34
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**							
Gammaridae									
Gammarus sp.	**9.1**	**SH**							
Talitridae									
Hyalella azteca	**7.8**	**CG**		1				1	2.78
Decapoda									
Cambaridae	**7.5**								
Orconectes sp.	**2.6**	**SH**		4	2	1	4	11	30.58
Insecta									
Ephemeroptera									
Baetidae		**CG**							
Baetis c.f. flavistriga	**7**	**CG**					1	1	2.78
Baetis intercalaris	**7**	**CG**		10	50	22	20	102	283.6
Baetis sp.		**CG**		1	10			11	30.58
Centroptilum sp.	**6.6**	**CG**							
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**							
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**							
Heptageniidae	***4**	**SC**	**CL**		10			10	27.8
Leucrocuta sp.	**2.4**	**SC**							
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**						
Stenacron interpunctatum	**6.9**	**SC**	**CL**	1			1	2	5.56
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**			1	1	2	5.56

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BARTONS CREEK 30LD10056					
				H1	H2	H3	H4	TOTAL	No./m 2
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**		1	2	1	4	11.12
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**						
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**			1	4		5	13.9
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**							
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**	29	7	13	18	67	186.3
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**						
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**						
Neoperla sp.	**1.5**	**P**	**CL**						
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**						
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**							
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**	5		1	1	7	19.46
Hydropsychidae		**FC**	**CL**	1				1	2.78
Ceratopsyche morosa	**2.6**	**FC**	**CL**		12			12	33.36
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**	9	12	31	2	54	150.1
Hydropsyche sp.		**FC**	**CL**						
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**						
Hydropsyche orris	**4.3**	**FC**							
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**						
Leptoceridae	**2.7**	**CG**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BARTONS CREEK 30LD10056					
				H1	H2	H3	H4	TOTAL	No./m 2
Oecetis sp.	**4.7**	**P**							
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**	2	26	9	2	39	108.4
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.									
Cyrnellus fraternus	**7.3**	**FC**	**CL**						
Neureclipsis sp.	**4.19**	**FC**							
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**						
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**	203	370	243	112	928	2580
Stenelmis sexlineatus				137	126	66	58	387	1076
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**		2				2	5.56
Limnichidae									
Lutrochus sp.							1	1	2.78
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**			1	2	3	8.34
Psephenus herricki	**2.4**	**SC**	**CL**	70	170	36	22	298	828.4
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							
Bezzia/Palpomyia gp.	**6**	**P**							
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae					5		6	11	30.58
Ablabesmyia annulata	**7.2**								
Ablabesmyia mallochi	**7.2**	**P**							
Axarus sp.									
Chironomus sp.	**9.63**	**CG**							
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**							
Conchapelopia sp.	**8.4**	**P**		19		16	9	44	122.3
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**						
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.									
Cryptochironomus sp.	**6.4**	**P**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	BARTONS CREEK 30LD10056					
				H1	H2	H3	H4	TOTAL	No./m 2
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**								
Epoicocladius sp.		**CG**							
Glyptotendipes sp.	**9.47**	**FC**							
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**						
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**		1				1	2.78
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**		7	5	1	1	14	38.92
Polypedilum halterale	**7.3**	**SH**		1				1	2.78
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**							
Pseudochironomus sp.	**5.4**	**CG**							
Rheotanytarsus sp.	**5.9**	**FC**	**CL**						
Stenochironomus sp.	**6.45**	**SH**							
Tanytarsus sp.	**6.8**	**FC**							
Thienemanniella xena	**5.9**	**CG**							
Tribelos sp.	**6.31**	**CG**							
Zavrelia sp.	**5.3**	**CG**		2		2	5	9	25.02
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**						
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes				1				1	2.78
Percidae									
Etheostoma sp.									
TOTAL NO. OF ORGANISMS				**1075**	**1280**	**621**	**423**	**3399**	**9449**
TOTAL NO. OF TAXA				**23**	**20**	**20**	**24**	**37**	**37**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
PLATYHELMINTHES											
Turbellaria											
Tricladida											
Planariidae											
Cura foremanii	**5**										
Dugesia tigrina	**7.2**										
NEMATODA											
MOLLUSCA											
Bivalvia											
Unionoida											
Unionidae											
Potamilus alatus											
Veneroida											
Corbiculidae											
Corbicula fluminea	**6.1**	**FC**		8	57.1	1	7.14			9	21.4
Sphaeriidae	***8**	**FC**									
Musculium transversum	***8**	**FC**		72	514	2	14.3	4	28.6	78	186
Pisidium sp.	**6.5**	**FC**									
Sphaerium sp.	**7.6**	**FC**									
Gastropoda											
Mesogastropoda											
Pleuroceridae											
Elimia sp.	**2.5**	**SC**									
Elimia laqueata	**2.5**	**SC**									
Viviparidae											
Viviparus sp.		**SC**									
Basommatophora											
Physidae											
Physella sp.	**8.8**	**CG**									
Planorbidae	***6**	**SC**									
Menetus dilatatus	**8.23**	**SC**		1	7.14					1	2.38
ANNELIDA											
Oligochaeta	***10**	**CG**									
Tubificida											
Lumbricidae		**CG**									
Naididae	***8**	**CG**									
Tubificidae w.h.c.				6	42.8			49	350	55	131
Tubificidae w.o.h.c.	**7.1**	**CG**		67	478	36	257	76	543	179	426
Branchiura sowerbyi	**8.3**	**CG**				14	100			14	33.3
Limnodrilus hoffmeisteri	**9.5**	**CG**		39	278	6	42.8	14	100	59	140
Lumbriculida											

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002					
				MC		LOB	ROB	TOTAL	NO/M2
					No./m2		No./m2		
Lumbriculidae	7.03	CG							
Hirudinea		P							
Erpobdellidae		P							
Rhynchobdellida									
Glossiphoniidae		P							
Helobdella sp.		P							
Helobdella stagnalis	9.1	P					4 28.6	4	9.52
ARTHROPODA									
Arachnoidea									
Acariformes	5.5								
Lebertiidae	5.5								
Lebertia sp.	5.5								
Crustacea									
Isopoda									
Asellidae		SH							
Lirceus sp.	7.9	CG							
Amphipoda									
Crangonyctidae									
Crangonyx sp.	7.9	CG							
Gammaridae									
Gammarus sp.	9.1	SH							
Talitridae									
Hyalella azteca	7.8	CG							
Decapoda									
Cambaridae	7.5								
Orconectes sp.	2.6	SH							
Insecta									
Ephemeroptera									
Baetidae		CG							
Baetis c.f. flavistriga	7	CG							
Baetis intercalaris	7	CG							
Baetis sp.		CG							
Centroptilum sp.	6.6	CG							
Caenidae		CG							
Caenis sp.	7.4	CG							
Ephemeridae		CG							
Ephemera sp.	2	CG							
Hexagenia sp.	4.9	CG		10	71.4			10	23.8
Heptageniidae	*4	SC	CL						
Leucrocuta sp.	2.4	SC							
Maccaffertium (Stenonema) femoratum	7.2	SC	CL						
Stenacron interpunctatum	6.9	SC	CL						

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002				
				MC	LOB	ROB	TOTAL	NO/M2
				No./m2	No./m2	No./m2		
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**					
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**					
Leptophlebiidae		**CG**						
Choroterpes sp.	***2**	**CG**	**CL**					
Isonychiidae		**FC**						
Isonychia sp.	**3.5**	**FC**						
Tricorythidae		**CG**						
Tricorythodes sp.	**5.1**	**CG**						
Odonata								
Calopterygidae		**P**						
Hetaerina sp.	**5.6**	**P**						
Coenagrionidae		**P**						
Argia sp.	**8.2**	**P**	**CL**					
Plecoptera								
Leuctridae		**SH**						
Leuctra sp.	**2.5**	**SH**	**CL**					
Perlidae		**P**	**CL**					
Acroneuria evoluta	**1.47**	**P**	**CL**					
Acroneuria sp.	**1.47**	**P**	**CL**					
Neoperla sp.	**1.5**	**P**	**CL**					
Hemiptera								
Gerridae		**P**						
Rheumatobates sp.		**P**						
Veliidae		**P**						
Rhagovelia sp.		**P**						
Megaloptera								
Corydalidae		**P**						
Corydalus cornutus	**5.2**	**P**	**CL**					
Nigronia serricornis	**5**	**P**	**CL**					
Sialidae		**P**						
Sialis sp.	**7.2**	**P**						
Trichoptera								
Helicopsychidae		**SC**						
Helicopsyche borealis	**0**	**SC**	**CL**					
Hydropsychidae		**FC**	**CL**					
Ceratopsyche morosa	**2.6**	**FC**	**CL**					
Ceratopsyche sp.		**FC**	**CL**					
Cheumatopsyche sp.	**6.2**	**FC**	**CL**					
Hydropsyche sp.		**FC**	**CL**					
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**					
Hydropsyche orris	**4.3**	**FC**						

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002							
				MC		LOB		ROB		TOTAL	NO/M2
					No./m2		No./m2		No./m2		
Hydroptilidae		PI									
Hydroptila sp.	6.2	PI	CL								
Leptoceridae	2.7	CG									
Oecetis sp.	4.7	P									
Philopotamidae		FC	CL								
Chimarra obscurus	2.8	FC	CL								
Chimarra sp.	2.8	FC	CL								
Polycentropodidae		FC	CL								
Cernotina sp.											
Cyrnellus fraternus	7.3	FC	CL								
Neureclipsis sp.	4.19	FC									
Polycentropus sp.	3.5	FC	CL								
Coleoptera											
Elmidae		CG									
Dubiraphia sp.	5.9	SC	CL								
Dubiraphia vittata	4.1	SC	CL								
Microcylloepus pusillus	2.1	SC	CL								
Optioservus sp.	2.4	SC	CL								
Stenelmis sp.	5.1	SC	CL								
Stenelmis sexlineatus											
Hydrophilidae		P									
Berosus sp.	8.4	CG									
Limnichidae											
Lutrochus sp.											
Psephenidae		SC									
Ectopria sp.		SC	CL								
Psephenus herricki	2.4	SC	CL								
Staphylinidae		P									
Diptera											
Ceratopogonidae	5.9	P									
Bezzia/Palpomyia gp.	6	P						1	7.14	1	2.38
Chaoboridae											
Chaoborus punctipennis		P						1	7.14	1	2.38
Chironomidae				8	57.1			1	7.14	9	21.4
Ablabesmyia annulata	7.2			4	28.6					4	9.52
Ablabesmyia mallochi	7.2	P									
Axarus sp.											
Chironomus sp.	9.63	CG		14	100	1	7.14	41	293	56	133
Cladotanytarsus sp.	4.1	FC									
Coelotanypus sp.	8	P		75	536	1	7.14	5	35.7	81	193
Conchapelopia sp.	8.4	P									
Corynoneura sp.	6	CG									

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Cumberland River Mile 216.9 3OLD20002							
				MC	No./m2	LOB	No./m2	ROB	No./m2	TOTAL	NO/M2
Cricotopus sp.		CG	CL								
Cricotopus bicinctus	8.5	CG	CL								
Cricotopus (Isocladius) sp.											
Cryptochironomus sp.	6.4	P		1	7.14	3	21.4			4	9.52
Dicrotendipes sp.	8.1	CG									
Dicrotendipes simpsoni	8.1										
Epoicocladius sp.		CG									
Glyptotendipes sp.	9.47	FC									
Larsia sp.	9.3	P									
Lipiniella sp.						103	735			103	245
Microtendipes pedellus gp.	5.5	CG	CL								
Nanocladius distinctus	7.1	CG									
Nilotanypus sp.	3.9	P									
Paratendipes sp.	5.1	CG									
Polypedilum fallax	6.4	SH									
Polypedilum flavum	4.9	SH									
Polypedilum halterale	7.3	SH									
Polypedilum illinoense	9	SH									
Procladius sp.	9.1	P		8	57.1					8	19
Pseudochironomus sp.	5.4	CG									
Rheotanytarsus sp.	5.9	FC	CL								
Stenochironomus sp.	6.45	SH									
Tanytarsus sp.	6.8	FC		1	7.14					1	2.38
Thienemanniella xena	5.9	CG									
Tribelos sp.	6.31	CG									
Zavrelia sp.	5.3	CG									
Empididae	7.6	P									
Hemerodromia sp.		P									
Simuliidae		FC	CL								
Simulium sp.	6	FC	CL								
Tipulidae		SH									
Hexatoma sp.	4.3	P									
CHORDATA****											
Osteichthyes											
Percidae											
Etheostoma sp.											
TOTAL NO. OF ORGANISMS				**314**	**2242**	**167**	**1192**	**196**	**1399**	**677**	**1611**
TOTAL NO. OF TAXA				**14**	**14**	**9**	**9**	**10**	**10**	**19**	**19**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Drake's Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M^2
					No./m2		No./m2		No./m2		
PLATYHELMINTHES											
Turbellaria											
Tricladida											
Planariidae											
Cura foremanii	**5**										
Dugesia tigrina	**7.2**										
NEMATODA				1	7.14			1	7.14	2	4.76
MOLLUSCA											
Bivalvia											
Unionoida											
Unionidae											
Potamilus alatus											
Veneroida											
Corbiculidae											
Corbicula fluminea	**6.1**	**FC**									
Sphaeriidae	***8**	**FC**									
Musculium transversum	***8**	**FC**						5	35.7	5	11.9
Pisidium sp.	**6.5**	**FC**						2	14.28	2	4.76
Sphaerium sp.	**7.6**	**FC**									
Gastropoda											
Mesogastropoda											
Pleuroceridae											
Elimia sp.	**2.5**	**SC**									
Elimia laqueata	**2.5**	**SC**									
Viviparidae											
Viviparus sp.		**SC**									
Basommatophora											
Physidae											
Physella sp.	**8.8**	**CG**									
Planorbidae	***6**	**SC**									
Menetus dilatatus	**8.23**	**SC**									
ANNELIDA											
Oligochaeta	***10**	**CG**									
Tubificida											
Lumbricidae		**CG**									
Naididae	***8**	**CG**									
Tubificidae w.h.c.						16	114.2	15	107.1	31	73.78
Tubificidae w.o.h.c.	**7.1**	**CG**		10	71.4	256	1828	118	842.5	384	913.9
Branchiura sowerbyi	**8.3**	**CG**		1	7.14	52	371.3			53	126.1
Limnodrilus hoffmeisteri	**9.5**	**CG**		2	14.28	16	114.2	15	107.1	33	78.54
Lumbriculida											

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Drake's Creek Mile 1.9 3OLD20013				
				MC	LOB	ROB	TOTAL	NO/M^2
				No./m2	No./m2	No./m2		
Lumbriculidae	7.03	CG						
Hirudinea		P						
Erpobdellidae		P						
Rhynchobdellida								
Glossiphoniidae		P						
Helobdella sp.		P						
Helobdella stagnalis	9.1	P						
ARTHROPODA								
Arachnoidea								
Acariformes	5.5							
Lebertiidae	5.5							
Lebertia sp.	5.5							
Crustacea								
Isopoda								
Asellidae		SH						
Lirceus sp.	7.9	CG						
Amphipoda								
Crangonyctidae								
Crangonyx sp.	7.9	CG						
Gammaridae								
Gammarus sp.	9.1	SH						
Talitridae								
Hyalella azteca	7.8	CG						
Decapoda								
Cambaridae	7.5							
Orconectes sp.	2.6	SH						
Insecta								
Ephemeroptera								
Baetidae		CG						
Baetis c.f. flavistriga	7	CG						
Baetis intercalaris	7	CG						
Baetis sp.		CG						
Centroptilum sp.	6.6	CG						
Caenidae		CG						
Caenis sp.	7.4	CG						
Ephemeridae		CG						
Ephemera sp.	2	CG						
Hexagenia sp.	4.9	CG						
Heptageniidae	*4	SC	CL					
Leucrocuta sp.	2.4	SC						
Maccaffertium (Stenonema) femoratum	7.2	SC	CL					
Stenacron interpunctatum	6.9	SC	CL					

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Drake's Creek Mile 1.9 3OLD20013				
				MC	LOB	ROB	TOTAL	NO/M^2
				No./m2	No./m2	No./m2		
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**					
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**					
Leptophlebiidae		**CG**						
Choroterpes sp.	***2**	**CG**	**CL**					
Isonychiidae		**FC**						
Isonychia sp.	**3.5**	**FC**						
Tricorythidae		**CG**						
Tricorythodes sp.	**5.1**	**CG**						
Odonata								
Calopterygidae		**P**						
Hetaerina sp.	**5.6**	**P**						
Coenagrionidae		**P**						
Argia sp.	**8.2**	**P**	**CL**					
Plecoptera								
Leuctridae		**SH**						
Leuctra sp.	**2.5**	**SH**	**CL**					
Perlidae		**P**	**CL**					
Acroneuria evoluta	**1.47**	**P**	**CL**					
Acroneuria sp.	**1.47**	**P**	**CL**					
Neoperla sp.	**1.5**	**P**	**CL**					
Hemiptera								
Gerridae		**P**						
Rheumatobates sp.		**P**						
Veliidae		**P**						
Rhagovelia sp.		**P**						
Megaloptera								
Corydalidae		**P**						
Corydalus cornutus	**5.2**	**P**	**CL**					
Nigronia serricornis	**5**	**P**	**CL**					
Sialidae		**P**						
Sialis sp.	**7.2**	**P**						
Trichoptera								
Helicopsychidae		**SC**						
Helicopsyche borealis	**0**	**SC**	**CL**					
Hydropsychidae		**FC**	**CL**					
Ceratopsyche morosa	**2.6**	**FC**	**CL**					
Ceratopsyche sp.		**FC**	**CL**					
Cheumatopsyche sp.	**6.2**	**FC**	**CL**					
Hydropsyche sp.		**FC**	**CL**					
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**					
Hydropsyche orris	**4.3**	**FC**						
Hydroptilidae		**PI**						

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Drake's Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M^2
					No./m2		No./m2		No./m2		
Hydroptila sp.	**6.2**	**PI**	**CL**								
Leptoceridae	**2.7**	**CG**									
Oecetis sp.	**4.7**	**P**									
Philopotamidae		**FC**	**CL**								
Chimarra obscurus	**2.8**	**FC**	**CL**								
Chimarra sp.	**2.8**	**FC**	**CL**								
Polycentropodidae		**FC**	**CL**								
Cernotina sp.											
Cyrnellus fraternus	**7.3**	**FC**	**CL**								
Neureclipsis sp.	**4.19**	**FC**									
Polycentropus sp.	**3.5**	**FC**	**CL**								
Coleoptera											
Elmidae		**CG**									
Dubiraphia sp.	**5.9**	**SC**	**CL**								
Dubiraphia vittata	**4.1**	**SC**	**CL**								
Microcylloepus pusillus	**2.1**	**SC**	**CL**								
Optioservus sp.	**2.4**	**SC**	**CL**								
Stenelmis sp.	**5.1**	**SC**	**CL**								
Stenelmis sexlineatus											
Hydrophilidae		**P**									
Berosus sp.	**8.4**	**CG**									
Limnichidae											
Lutrochus sp.											
Psephenidae		**SC**									
Ectopria sp.		**SC**	**CL**								
Psephenus herricki	**2.4**	**SC**	**CL**								
Staphylinidae		**P**									
Diptera											
Ceratopogonidae	**5.9**	**P**									
Bezzia/Palpomyia gp.	**6**	**P**									
Chaoboridae											
Chaoborus punctipennis		**P**		7	49.98	2	14.28	19	135.7	28	66.64
Chironomidae				4	28.56			3	21.42	7	16.66
Ablabesmyia annulata	**7.2**			1	7.14			1	7.14	2	4.76
Ablabesmyia mallochi	**7.2**	**P**									
Axarus sp.											
Chironomus sp.	**9.63**	**CG**		73	521.2	38	271.3	69	492.7	180	428.4
Cladotanytarsus sp.	**4.1**	**FC**									
Coelotanypus sp.	**8**	**P**		32	228.5	3	21.42	21	149.9	56	133.3
Conchapelopia sp.	**8.4**	**P**									
Corynoneura sp.	**6**	**CG**									
Cricotopus sp.		**CG**	**CL**								

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	Drake's Creek Mile 1.9 3OLD20013							
				MC		LOB		ROB		TOTAL	NO/M^2
					No./m2		No./m2		No./m2		
Cricotopus bicinctus	**8.5**	**CG**	**CL**								
Cricotopus (Isocladius) sp.											
Cryptochironomus sp.	**6.4**	**P**		3	21.42	2	14.28			5	11.9
Dicrotendipes sp.	**8.1**	**CG**									
Dicrotendipes simpsoni	**8.1**										
Epoicocladius sp.		**CG**									
Glyptotendipes sp.	**9.47**	**FC**									
Larsia sp.	**9.3**	**P**									
Lipiniella sp.											
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**								
Nanocladius distinctus	**7.1**	**CG**									
Nilotanypus sp.	**3.9**	**P**									
Paratendipes sp.	**5.1**	**CG**									
Polypedilum fallax	**6.4**	**SH**									
Polypedilum flavum	**4.9**	**SH**									
Polypedilum halterale	**7.3**	**SH**									
Polypedilum illinoense	**9**	**SH**									
Procladius sp.	**9.1**	**P**				1	7.14			1	2.38
Pseudochironomus sp.	**5.4**	**CG**									
Rheotanytarsus sp.	**5.9**	**FC**	**CL**								
Stenochironomus sp.	**6.45**	**SH**									
Tanytarsus sp.	**6.8**	**FC**									
Thienemanniella xena	**5.9**	**CG**									
Tribelos sp.	**6.31**	**CG**									
Zavrelia sp.	**5.3**	**CG**									
Empididae	**7.6**	**P**									
Hemerodromia sp.		**P**									
Simuliidae		**FC**	**CL**								
Simulium sp.	**6**	**FC**	**CL**								
Tipulidae		**SH**									
Hexatoma sp.	**4.3**	**P**									
CHORDATA****											
Osteichthyes											
Percidae											
Etheostoma sp.											
TOTAL NO. OF ORGANISMS				**134**	**956.8**	**386**	**2756**	**269**	**1921**	**789**	**1878**
TOTAL NO. OF TAXA				**10**	**10**	**9**	**9**	**11**	**11**	**14**	**14**

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	3OLD20006					
				LOB		ROB		TOTAL	NO/M2
				No./m2		No./m2			
PLATYHELMINTHES									
Turbellaria									
Tricladida									
Planariidae									
Cura foremanii	**5**								
Dugesia tigrina	**7.2**								
NEMATODA						1	7.14	1	3.57
MOLLUSCA									
Bivalvia									
Unionoida									
Unionidae									
Potamilus alatus				1	7.14			1	3.57
Veneroida									
Corbiculidae									
Corbicula fluminea	**6.1**	**FC**							
Sphaeriidae	***8**	**FC**							
Musculium transversum	***8**	**FC**		64	457	9	64.26	73	260.6
Pisidium sp.	**6.5**	**FC**							
Sphaerium sp.	**7.6**	**FC**							
Gastropoda									
Mesogastropoda									
Pleuroceridae									
Elimia sp.	**2.5**	**SC**							
Elimia laqueata	**2.5**	**SC**							
Viviparidae									
Viviparus sp.		**SC**		1	7.14			1	3.57
Basommatophora									
Physidae									
Physella sp.	**8.8**	**CG**							
Planorbidae	***6**	**SC**							
Menetus dilatatus	**8.23**	**SC**							
ANNELIDA									
Oligochaeta	***10**	**CG**							
Tubificida									
Lumbricidae		**CG**							
Naididae	***8**	**CG**							
Tubificidae w.h.c.									
Tubificidae w.o.h.c.	**7.1**	**CG**		151	1078	6	42.84	157	560.5
Branchiura sowerbyi	**8.3**	**CG**							
Limnodrilus hoffmeisteri	**9.5**	**CG**		50	357			50	178.5
Lumbriculida									
Lumbriculidae	**7.03**	**CG**		50	357	19	135.7	69	246.3
Hirudinea		**P**		2	14.28			2	7.14
Erpobdellidae		**P**		2	14.28			2	7.14
Rhynchobdellida									
Glossiphoniidae		**P**							
Helobdella sp.		**P**							
Helobdella stagnalis	**9.1**	**P**		2	14.28			2	7.14
ARTHROPODA									
Arachnoidea									
Acariformes	**5.5**								

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	3OLD20006 LOB		3OLD20006 ROB		TOTAL	NO/M2
				No./m2		No./m2			
Lebertiidae	**5.5**								
Lebertia sp.	**5.5**								
Crustacea									
Isopoda									
Asellidae		**SH**							
Lirceus sp.	**7.9**	**CG**							
Amphipoda									
Crangonyctidae									
Crangonyx sp.	**7.9**	**CG**							
Gammaridae									
Gammarus sp.	**9.1**	**SH**				1	7.14	1	3.57
Talitridae									
Hyalella azteca	**7.8**	**CG**							
Decapoda									
Cambaridae	**7.5**								
Orconectes sp.	**2.6**	**SH**							
Insecta									
Ephemeroptera									
Baetidae		**CG**							
Baetis c.f. flavistriga	**7**	**CG**							
Baetis intercalaris	**7**	**CG**							
Baetis sp.		**CG**							
Centroptilum sp.	**6.6**	**CG**							
Caenidae		**CG**							
Caenis sp.	**7.4**	**CG**							
Ephemeridae		**CG**							
Ephemera sp.	**2**	**CG**							
Hexagenia sp.	**4.9**	**CG**		34	242.8			34	121.4
Heptageniidae	***4**	**SC**	**CL**						
Leucrocuta sp.	**2.4**	**SC**							
Maccaffertium (Stenonema) femoratum	**7.2**	**SC**	**CL**						
Stenacron interpunctatum	**6.9**	**SC**	**CL**						
Maccaffertium (Stenonema) mediopunctatum	**3.8**	**SC**	**CL**						
Maccaffertium (Stenonema) sp.	**4**	**SC**	**CL**						
Leptophlebiidae		**CG**							
Choroterpes sp.	***2**	**CG**	**CL**						
Isonychiidae		**FC**							
Isonychia sp.	**3.5**	**FC**							
Tricorythidae		**CG**							
Tricorythodes sp.	**5.1**	**CG**							
Odonata									
Calopterygidae		**P**							
Hetaerina sp.	**5.6**	**P**							
Coenagrionidae		**P**							
Argia sp.	**8.2**	**P**	**CL**						
Plecoptera									
Leuctridae		**SH**							
Leuctra sp.	**2.5**	**SH**	**CL**						
Perlidae		**P**	**CL**						
Acroneuria evoluta	**1.47**	**P**	**CL**						
Acroneuria sp.	**1.47**	**P**	**CL**						

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	3OLD20006					
				LOB		ROB		TOTAL	NO/M2
				No./m2		No./m2			
Neoperla sp.	**1.5**	**P**	**CL**						
Hemiptera									
Gerridae		**P**							
Rheumatobates sp.		**P**							
Veliidae		**P**							
Rhagovelia sp.		**P**							
Megaloptera									
Corydalidae		**P**							
Corydalus cornutus	**5.2**	**P**	**CL**						
Nigronia serricornis	**5**	**P**	**CL**						
Sialidae		**P**							
Sialis sp.	**7.2**	**P**		2	14.28			2	7.14
Trichoptera									
Helicopsychidae		**SC**							
Helicopsyche borealis	**0**	**SC**	**CL**						
Hydropsychidae		**FC**	**CL**						
Ceratopsyche morosa	**2.6**	**FC**	**CL**						
Ceratopsyche sp.		**FC**	**CL**						
Cheumatopsyche sp.	**6.2**	**FC**	**CL**						
Hydropsyche sp.		**FC**	**CL**						
Hydropsyche betteni gp.	**7.8**	**FC**	**CL**						
Hydropsyche orris	**4.3**	**FC**		2	14.28	75	535.5	77	274.9
Hydroptilidae		**PI**							
Hydroptila sp.	**6.2**	**PI**	**CL**						
Leptoceridae	**2.7**	**CG**							
Oecetis sp.	**4.7**	**P**				5	35.7	5	17.85
Philopotamidae		**FC**	**CL**						
Chimarra obscurus	**2.8**	**FC**	**CL**						
Chimarra sp.	**2.8**	**FC**	**CL**						
Polycentropodidae		**FC**	**CL**						
Cernotina sp.									
Cyrnellus fraternus	**7.3**	**FC**	**CL**			1	7.14	1	3.57
Neureclipsis sp.	**4.19**	**FC**				3	21.42	3	10.71
Polycentropus sp.	**3.5**	**FC**	**CL**						
Coleoptera									
Elmidae		**CG**							
Dubiraphia sp.	**5.9**	**SC**	**CL**						
Dubiraphia vittata	**4.1**	**SC**	**CL**						
Microcylloepus pusillus	**2.1**	**SC**	**CL**						
Optioservus sp.	**2.4**	**SC**	**CL**						
Stenelmis sp.	**5.1**	**SC**	**CL**						
Stenelmis sexlineatus									
Hydrophilidae		**P**							
Berosus sp.	**8.4**	**CG**							
Limnichidae									
Lutrochus sp.									
Psephenidae		**SC**							
Ectopria sp.		**SC**	**CL**						
Psephenus herricki	**2.4**	**SC**	**CL**						
Staphylinidae		**P**							
Diptera									
Ceratopogonidae	**5.9**	**P**							

Table 1A. Benthic Macroinvertebrates, Old Hickory Reservoir, Summer/Fall, 2004.

SPECIES	T.V.	F.F.G.	CL	3OLD20006 LOB		ROB		TOTAL	NO/M2
				No./m2		No./m2			
Bezzia/Palpomyia gp.	**6**	**P**				1	7.14	1	3.57
Chaoboridae									
Chaoborus punctipennis		**P**							
Chironomidae									
Ablabesmyia annulata	**7.2**			4	28.56			4	14.28
Ablabesmyia mallochi	**7.2**	**P**							
Axarus sp.						11	78.54	11	39.27
Chironomus sp.	**9.63**	**CG**		10	71.4	10	71.4	20	71.4
Cladotanytarsus sp.	**4.1**	**FC**							
Coelotanypus sp.	**8**	**P**				2	14.28	2	7.14
Conchapelopia sp.	**8.4**	**P**							
Corynoneura sp.	**6**	**CG**							
Cricotopus sp.		**CG**	**CL**						
Cricotopus bicinctus	**8.5**	**CG**	**CL**						
Cricotopus (Isocladius) sp.									
Cryptochironomus sp.	**6.4**	**P**		3	21.42	1	7.14	4	14.28
Dicrotendipes sp.	**8.1**	**CG**							
Dicrotendipes simpsoni	**8.1**					4	28.56	4	14.28
Epoicocladius sp.		**CG**		1	7.14			1	3.57
Glyptotendipes sp.	**9.47**	**FC**				3	21.42	3	10.71
Larsia sp.	**9.3**	**P**							
Lipiniella sp.									
Microtendipes pedellus gp.	**5.5**	**CG**	**CL**						
Nanocladius distinctus	**7.1**	**CG**							
Nilotanypus sp.	**3.9**	**P**							
Paratendipes sp.	**5.1**	**CG**							
Polypedilum fallax	**6.4**	**SH**							
Polypedilum flavum	**4.9**	**SH**							
Polypedilum halterale	**7.3**	**SH**				1	7.14	1	3.57
Polypedilum illinoense	**9**	**SH**							
Procladius sp.	**9.1**	**P**		4	28.56	3	21.42	7	24.99
Pseudochironomus sp.	**5.4**	**CG**							
Rheotanytarsus sp.	**5.9**	**FC**	**CL**						
Stenochironomus sp.	**6.45**	**SH**				1	7.14	1	3.57
Tanytarsus sp.	**6.8**	**FC**		1	7.14			1	3.57
Thienemanniella xena	**5.9**	**CG**							
Tribelos sp.	**6.31**	**CG**		1	7.14			1	3.57
Zavrelia sp.	**5.3**	**CG**							
Empididae	**7.6**	**P**							
Hemerodromia sp.		**P**							
Simuliidae		**FC**	**CL**						
Simulium sp.	**6**	**FC**	**CL**						
Tipulidae		**SH**							
Hexatoma sp.	**4.3**	**P**							
CHORDATA****									
Osteichthyes									
Percidae									
Etheostoma sp.									
TOTAL NO. OF ORGANISMS				**385**	**2749**	**157**	**1121**	**542**	**1935**
TOTAL NO. OF TAXA				**19**	**19**	**19**	**19**	**31**	**31**

Location	Sample Date	Sample Type	Relative Position	Organism (Scientific Name)	Count	Density (#/m²)
3OLD20002		Ponar	mid channel	*Corbicula fluminea*	8	57.12
3OLD20002		Ponar	mid channel	*Musculium transversum*	72	514.08
3OLD20002		Ponar	mid channel	*Menetus dilatatus*	1	7.14
3OLD20002		Ponar	mid channel	Tubificidae w.h.c.	6	42.84
3OLD20002		Ponar	mid channel	Tubificidae w.o.h.c.	67	478.38
3OLD20002		Ponar	mid channel	*Limnodrilus hoffmeisteri*	39	278.46
3OLD20002		Ponar	mid channel	*Hexagenia sp.*	10	71.4
3OLD20002		Ponar	mid channel	Chironomidae	8	57.12
3OLD20002		Ponar	mid channel	*Ablabesmyia annulata*	4	28.56
3OLD20002		Ponar	mid channel	*Chironomus sp.*	14	99.96
3OLD20002		Ponar	mid channel	*Coelotanypus sp.*	75	535.5
3OLD20002		Ponar	mid channel	*Cryptochironomus sp.*	1	7.14
3OLD20002		Ponar	mid channel	*Procladius sp.*	8	57.12
3OLD20002		Ponar	mid channel	*Tanytarsus sp.*	1	7.14
3OLD20002		Ponar	Left Over bank	*Corbicula fluminea*	1	7.14
3OLD20002		Ponar	Left Over bank	*Musculium transversum*	2	14.28
3OLD20002		Ponar	Left Over bank	Tubificidae w.o.h.c.	36	257.04
3OLD20002		Ponar	Left Over bank	*Branchiura sowerbyi*	14	99.96
3OLD20002		Ponar	Left Over bank	*Limnodrilus hoffmeisteri*	6	42.84
3OLD20002		Ponar	Left Over bank	*Chironomus sp.*	1	7.14
3OLD20002		Ponar	Left Over bank	*Coelotanypus sp.*	1	7.14
3OLD20002		Ponar	Left Over bank	*Cryptochironomus sp.*	3	21.42
3OLD20002		Ponar	Left Over bank	*Lipiniella sp.*	103	735.42
3OLD20002		Ponar	Right Overbank	*Musculium transversum*	4	28.56
3OLD20002		Ponar	Right Overbank	Tubificidae w.h.c.	49	349.86
3OLD20002		Ponar	Right Overbank	Tubificidae w.o.h.c.	76	542.64
3OLD20002		Ponar	Right Overbank	*Limnodrilus hoffmeisteri*	14	99.96
3OLD20002		Ponar	Right Overbank	*Helobdella stagnalis*	4	28.56
3OLD20002		Ponar	Right Overbank	*Bezzia/Palpomyia gp.*	1	7.14
3OLD20002		Ponar	Right Overbank	*Chaoborus punctipennis*	1	7.14
3OLD20002		Ponar	Right Overbank	Chironomidae	1	7.14
3OLD20002		Ponar	Right Overbank	*Chironomus sp.*	41	292.74
3OLD20002		Ponar	Right Overbank	*Coelotanypus sp.*	5	35.7
3Old20013		Ponar	mid channel	**NEMATODA**	1	7.14
3Old20013		Ponar	mid channel	Tubificidae w.o.h.c.	10	71.4
3Old20013		Ponar	mid channel	*Branchiura sowerbyi*	1	7.14
3Old20013		Ponar	mid channel	*Limnodrilus hoffmeisteri*	2	14.28
3Old20013		Ponar	mid channel	*Chaoborus punctipennis*	7	49.98
3Old20013		Ponar	mid channel	Chironomidae	4	28.56
3Old20013		Ponar	mid channel	*Ablabesmyia annulata*	1	7.14
3Old20013		Ponar	mid channel	*Chironomus sp.*	73	521.22
3Old20013		Ponar	mid channel	*Coelotanypus sp.*	32	228.48
3Old20013		Ponar	mid channel	*Cryptochironomus sp.*	3	21.42
3Old20013		Ponar	Left Overbank	Tubificidae w.h.c.	16	114.24
3Old20013		Ponar	Left Overbank	Tubificidae w.o.h.c.	256	1827.84
3Old20013		Ponar	Left Overbank	*Branchiura sowerbyi*	52	371.28

Location	Sample Date	Sample Type	Relative Position	Organism (Scientific Name)	Count	Density (#/m^2)
3Old20013		Ponar	Left Overbank	*Limnodrilus hoffmeisteri*	16	114.24
3Old20013		Ponar	Left Overbank	*Chaoborus punctipennis*	2	14.28
3Old20013		Ponar	Left Overbank	*Chironomus sp.*	38	271.32
3Old20013		Ponar	Left Overbank	*Coelotanypus sp.*	3	21.42
3Old20013		Ponar	Left Overbank	*Cryptochironomus sp.*	2	14.28
3Old20013		Ponar	Left Overbank	*Procladius sp.*	1	7.14
3Old20013		Ponar	Right Overbank	**NEMATODA**	1	7.14
3Old20013		Ponar	Right Overbank	*Musculium transversum*	5	35.7
3Old20013		Ponar	Right Overbank	*Pisidium sp.*	2	14.28
3Old20013		Ponar	Right Overbank	Tubificidae w.h.c.	15	107.1
3Old20013		Ponar	Right Overbank	Tubificidae w.o.h.c.	118	842.52
3Old20013		Ponar	Right Overbank	*Limnodrilus hoffmeisteri*	15	107.1
3Old20013		Ponar	Right Overbank	*Chaoborus punctipennis*	19	135.66
3Old20013		Ponar	Right Overbank	Chironomidae	3	21.42
3Old20013		Ponar	Right Overbank	*Ablabesmyia annulata*	1	7.14
3Old20013		Ponar	Right Overbank	*Chironomus sp.*	69	492.66
3Old20013		Ponar	Right Overbank	*Coelotanypus sp.*	21	149.94
3OLD20006		Ponar	Left Overbank	*Potamilus alatus*	1	7.14
3OLD20006		Ponar	Left Overbank	*Musculium transversum*	64	456.96
3OLD20006		Ponar	Left Overbank	*Viviparus sp.*	1	7.14
3OLD20006		Ponar	Left Overbank	Tubificidae w.o.h.c.	151	1078.14
3OLD20006		Ponar	Left Overbank	*Limnodrilus hoffmeisteri*	50	357
3OLD20006		Ponar	Left Overbank	Lumbriculidae	50	357
3OLD20006		Ponar	Left Overbank	**Hirudinea**	2	14.28
3OLD20006		Ponar	Left Overbank	Erpobdellidae	2	14.28
3OLD20006		Ponar	Left Overbank	*Helobdella stagnalis*	2	14.28
3OLD20006		Ponar	Left Overbank	*Hexagenia sp.*	34	242.76
3OLD20006		Ponar	Left Overbank	*Sialis sp.*	2	14.28
3OLD20006		Ponar	Left Overbank	*Hydropsyche orris*	2	14.28
3OLD20006		Ponar	Left Overbank	*Ablabesmyia annulata*	4	28.56
3OLD20006		Ponar	Left Overbank	*Chironomus sp.*	10	71.4
3OLD20006		Ponar	Left Overbank	*Cryptochironomus sp.*	3	21.42
3OLD20006		Ponar	Left Overbank	*Epoicocladius sp.*	1	7.14
3OLD20006		Ponar	Left Overbank	*Procladius sp.*	4	28.56
3OLD20006		Ponar	Left Overbank	*Tanytarsus sp.*	1	7.14
3OLD20006		Ponar	Left Overbank	*Tribelos sp.*	1	7.14
3OLD20006		Ponar	Right Overbank	**NEMATODA**	1	7.14
3OLD20006		Ponar	Right Overbank	*Musculium transversum*	9	64.26
3OLD20006		Ponar	Right Overbank	Tubificidae w.o.h.c.	6	42.84
3OLD20006		Ponar	Right Overbank	Lumbriculidae	19	135.66
3OLD20006		Ponar	Right Overbank	*Gammarus sp.*	1	7.14
3OLD20006		Ponar	Right Overbank	*Hydropsyche orris*	75	535.5
3OLD20006		Ponar	Right Overbank	*Oecetis sp.*	5	35.7
3OLD20006		Ponar	Right Overbank	*Cyrnellus fraternus*	1	7.14
3OLD20006		Ponar	Right Overbank	*Neureclipsis sp.*	3	21.42
3OLD20006		Ponar	Right Overbank	*Bezzia/Palpomyia gp.*	1	7.14
3OLD20006		Ponar	Right Overbank	*Axarus sp.*	11	78.54

Location	Sample Date	Sample Type	Relative Position	Organism (Scientific Name)	Count	Density (#/m^2)
3OLD20006		Ponar	Right Overbank	*Chironomus sp.*	10	71.4
3OLD20006		Ponar	Right Overbank	*Coelotanypus sp.*	2	14.28
3OLD20006		Ponar	Right Overbank	*Cryptochironomus sp.*	1	7.14
3OLD20006		Ponar	Right Overbank	*Dicrotendipes simpsoni*	4	28.56
3OLD20006		Ponar	Right Overbank	*Glyptotendipes sp.*	3	21.42
3OLD20006		Ponar	Right Overbank	*Polypedilum halterale*	1	7.14
3OLD20006		Ponar	Right Overbank	*Procladius sp.*	3	21.42
3OLD20006		Ponar	Right Overbank	*Stenochironomus sp.*	1	7.14