This document was prepared in conjunction with work accomplished under Contract No. DE-AC09-96SR18500 with the U.S. Department of Energy.

Aquatic Macroinvertebrate Surveys in Upper Three Runs Creek and Pen Branch (Task Order 181)

By

Clemson University
J.C. Morse, Principal Investigator

For
Westinghouse Savannah River Company
W.L. Specht, Technical Representative

FINAL REPORT
16 Feb 1999

INTRODUCTION

The importance of freshwater aquatic macroinvertebrates has become increasingly apparent in recent decades. Anglers have had an interest in aquatic insects for centuries because freshwater fish use them for food, facilitating the capture of fish on hooks (or "angles") by the direct use of these insects or by their artificial imitations. Today, these insects play an invaluable role in water quality assessment (Bartsch and Ingram 1966; Wilhm and Dorris 1968; Warren 1971; Hart and Fuller 1974), are essential components of all functioning aquatic ecosystems, and continue to be of great interest to anglers and naturalists. Also, many aquatic species are pest species or have been recognized as vectors of disease and must be understood in order to address related issues of human health and well-being (Merritt and Newson 1978).

Using aquatic insect communities to evaluate water quality has many advantages over more traditional, single-point, single-parameter techniques. First, insects inhabit aquatic ecosystems continuously. For this reason, they are exposed to every pollution event that occurs within a system, contrary to single-point testing which evaluates only immediate conditions in time. Secondly, as adults and larvae, the many species of aquatic insects inhabit the entire spectrum of aquatic habitats; they are susceptible to contamination ranging from surface pollution to sedimentation of the benthos. Thirdly, insects are useful for testing all parameters within an aquatic ecosystem. Tolerance ranges for specific pollutants vary among particular species or groups of species and are quantifiable (Lenat 1993). As disturbance increases, aquatic systems generally become less speciose, with the more pollution-tolerant species becoming dominant in a reciprocal manner (Rounsefell and Everhart 1953). Finally, insects suffer from the synergistic effects of pollutants whose significance may be otherwise unrealized in single-parameter testing.

The Savannah River Site (SRS), a nuclear materials production and reprocessing facility 15 miles south of Aiken, South Carolina, is an area that has undergone intensive aquatic macroinvertebrate research over the last two decades. It was the first designated National Environmental Research Park. Beginning in 1980, and continuing to the present, a number of surveys (Morse et al. 1980, Morse et al. 1983, Morse 1990, Floyd et al. 1993; unpublished data) have shown the Savannah River Site to be home to a very speciose aquatic macroinvertebrate community.

Upper Three Runs Creek on the Savannah Rivers site is a fourth order stream that was for many years designated a United States Geological Survey National Hydrologic Benchmark Stream. Aquatic insect studies have been conducted by Clemson University in Upper Three Runs Creek since 1976, with results publicized in at least 11 theses and dissertations, 34 presentations for scientific meetings, and 36 publications in referreed scienctific journals (Table I). The results of many Clemson-University-managed studies have not yet been publicized. The fauna reported in all these studies has never been compiled into a single document until now (Tables II, III, and IV).

Two studies that consitute parts of this final report are included in the accompanying thesis by Moore (1998). These studies were entitled, "Trichoptera fauna of Pen Branch Creek" and "Dolania americana population survey."

A third investigation reported here in detail concerns "Aquatic insects other than Trichoptera that inhabit Pen Branch above Indian Grave Branch." Indian Grave Branch is a tributary of Pen Branch that historically received heated effluent from the SRS K Reactor which then flowed into Pen Branch and ultimately into the riparian swamp along the Savannah River, killing essentially all freshwater biota between the K Reactor and the swamp. A companion work regarding the recovery status of Pen Branch downstream of this tributary is nearing completion (R.B. Parker, personal communication).

AQUATIC INSECTS OTHER THAN TRICHOPTERA THAT INHABIT PEN BRANCH ABOVE INDIAN GRAVE BRANCH

Pen Branch is a 2nd order stream approximately 8 km from Upper Three Runs Creek. Benthic sampling by SRS biologists in 1993 indicated that the species diversity of the macroinvertebrate in this stream is perhaps equal to, or greater than, that of Upper Three Runs Creek (Specht 1994). This study is intended to determine if 1) Pen Branch and Upper Three Runs Creek possess similar levels of aquatic macroinvertebrate species diversity, 2) there are any rare, endemic, or endangered species occurring in Pen Branch, and 3) the stream contains a suitable aquatic macroinvertebrate diversity to establish Pen Branch as a stream of reference for other streams of similar size in the region.

MATERIALS AND METHODS

Three sites, Pen Branch I, Pen Branch II and Pen Branch III (PB I, PB II, and PB III, respectively), were sampled on Pen Branch, a second order stream at SRS, South Carolina. The stream drains approximately 55 km^2 (Wike et al. 1994) and lies entirely within SRS property, flowing approximately 14 km from its headwaters to the southwestern border of SRS, where it empties into the swampy riparian zone of the Savannah River. All collection sites on the stream have shifting sand substrates characteristic of the Upper Coastal Plain and Sandhills physiographic regions of South Carolina. Riparian vegetation of Pen Branch Creek is composed of species typical of mesic hardwood bottomlands. Dominant species include tag alder [Alnus serrulata, (Aiton) Willdenow], wax myrtle (Myrica cerifera L.), willow (Salix spp.), buttonbush (Cephalanthus occidentalis L.), and sweetgum (Liquidambar styraciflua L.) (Gladden et al., 1985a). Plant species composition varies with frequency and duration of seasonal flooding and with relief (Workman and McLeod 1990).

Site PB I is located at the intersection of the stream and SRS Road B. The stream at this site is about 3 m wide in normal flow periods. The site has about 20 bowling-ball-sized rocks just upstream of the Road B overpass. These rocks were most likely placed by human activity, since the stream is in the Coastal Plain and is otherwise devoid of rocks. The rocks are lodged in the substrate with approximately 20% of their surfaces exposed. Otherwise, the bottom consists of shifting sand. The riparian vegetation is mixed brush and typical bottomland hardwood deciduous forest. Stream banks are steep and flooding is uncommon.

Site PB II, located approximately 1.3 km upstream of Site I, is at the end of a dirt service road leading to the stream from Reactor L. The stream widens at this site to about 5 m in normal flow periods, forming a small pool. The area is subject to seasonal flooding due to the shallow relief of the stream banks. In addition to the swampy condition created by floodwaters, receding floodwaters often leave temporary pools on either side of the stream at this site.

Site PB III is approximately 2.5 km upstream from Site PB II at the intersection of Road C and Pen Branch. The stream at this site is about 2 m wide in normal flow periods. Stream banks are steep,

similar to those at Site PB I. Riparian vegetation is mixed brush and typical bottomland hardwood deciduous forest, though the density of the understory is less than that of Site PB I.

At each site and on each collection date, with the exceptions of 22 March and 10 May, 1995, the following parameters were recorded: water temperature, ambient temperature, stream velocity, width, depth, and canopy cover (Table V). Collections were made using Malaise and light traps. The H-shaped Malaise traps were six feet high with white polyester netting ("Malaise Trap 2875D," BioQuip®, Gardena, CA). One end of the trap was approximately 0.5 m higher than the opposite end and was equipped with a plastic killing jar at its apex. The killing agent was cyanide; when serviced, specimens were transferred into 80% ethanol. If possible, Malaise traps were placed in elbows of the stream, perpendicular to the general direction of the stream (Figure 1). They were positioned this way in order to maximize the number of adult aquatic insects taken by being as nearly in the primary insect flyway of the stream as possible. Malaise traps sample continuously and need to be serviced only frequently enough to prevent filling of the killing jar or decay of the specimens. Traps were in place from spring 1995 until spring 1997. Malaise traps were originally placed in 1995. In February of 1996, old traps, which had been severely weathered, were replaced with new traps. They were generally serviced once a month in the colder months (Oct. - Mar.) and weekly in the warmer months (Apr - Sep.) as dictated by rates of decay and numbers of specimens. SRS biological technicians serviced these Malaise traps.

Qualitative light trap collections were performed using a trap with a 15-watt BL ultraviolet (UV) fluorescent tube. The trap consists of 4 aluminum sheets projecting outward from the tube light suspended vertically in the center and funneling below into a quart jar half-filled with 80% ethanol (EtOH). The system was powered with a standard 12-volt car battery. Traps were set on the stream bank 0.5 hr before sunset and removed 3 to 4 hr after sundown. Sampling was performed at least once a month, sometimes more frequently, during the 1995 flight season (Mar - Nov) (Table VI). M.C. Womble performed all light trap collections.

For both Malaise and light traps, all taxa were sorted to the order or family level and sent to experts of the respective taxa for further identification. Sorting was accomplished in a white pan with a light source directly above to aid vision. Specimens were stored in 80% EtOH. Labels were printed on

100% rag paper, with indelible liquid ink for machine-printed information and India ink for hand-written information.

Identifications were accomplished by J.C. Morse or S.B. Moore, unless otherwise indicated. Voucher specimens have been deposited in the Clemson University Arthropod Collection.

RESULTS

At least 281 species (excluding Trichoptera; Moore 1998), of aquatic insects were discovered to inhabit Pen Branch at the localities sampled. Among the identified species, there was one new record for the United States, 33 new records for South Carolina, and at least 11 species new to science. In addition, many of the species identified were either rare or endemic to SRS, South Carolina, or the Southeast Region.

EPHEMEROPTERA
By S.E. Spichiger
Department of Entomology
Clemson University
Clemson, South Carolina 29634

Most of the specimens of mayflies captured in this study were females or subimagoes, unidentifiable to the species level. The six spieces that were identifiable represent new records for the Savannah River Site, having not been reported from Upper Three Runs Creek (Morse et al. 1980). Caenis anceps is a new record for South Carolina.

EPHEMEROPTERA	Male, Female	Collection Methods	Site	Date
Baetidae				
Baetis sp.	1,5	Light	PBII	22 Mar 1995
	0,3	Light	PBI	22 Mar 1995
Callibaetis pretiosus Banks	0,3	Light	PBII	23 May 1995
	0,2	Light	PBII	12 Jun 1995
Centroptilum sp.	0,1	Light	PBII	12 Jun 1995
Procloeon sp.	0,4	Light	PBII	30 Jul 1995
	0,2	Light	PBI	21 Sep 1995
Caenidae				
Caenis anceps Traver	0,3	Light	PBII	12 Jun 1995
Caenis diminuta Walker	0,3	Light	PBII	12 Jun 1995
	3,0	Light	PBII	27 Jun 1995
	3,1	Light	PBII	30 Jul 1995
	32,3	Light	PBII	21 Sep 1995
	0,1	Light	PBII	24 Sep 1995
Ephemerellidae				
Ephemerella invaria Walker	4,0	Light	PBI	22 Mar 1995

Ephemerella sp.	1,0	Light	PBII	22 Mar 1995
Heptageniidae				
Stenonema modestum Banks	1,0	Light	PBI	30 Jul 1995
	4.0	Light	PBII	22 Mar 1995
	30,31	Light	PBII	23 May 1995
	13,11	Light	PBII	27 Jun 1995
	1.0	Light	PBII	24 Sep 1995
Stenonema sp.	0,1	Malaise	PBI	10 Apr 1997
	0,1	Light	PBI	12 Jun 1995
	1,3	Light	PBI	30 Jul 1995
	0,1	Light	PBI	21 Sep 1995
	4,1	Light	PBI	2 Nov 1995
	0,1	Light	PBII	27 Jun 1995
	0,6	Light	PBII	30 Jul 1995
	1,2	Light	PBII	21 Sep 1995
	1,0	Light	PBII	2 Nov 1995
Isonychiidae				
Isonychia sp.	0,2	Light	PBI	30 Jul 1995
	0.1	Light	PBII	10 May 1995
	0.6	Light	PBII	27 Jun 1995
	0.6	Light	PBII	30 Jul 1995
	0.1	Light	PBII	21 Sep 1995
	0,3	Light	PBIII	30 Jul 1995
Leptohyphidae				
Tricorythodes albilineatus Berner	12,7	Light	PBI	12 Jun 1995
	59,5	Light	PBI	30 Jul 1995
	8,4	Light	PBI	2 Nov 1995
	0.1	Light	PBII	30 Jul 1995
Leptophlebiidae				
Leptophlebia sp.	1,0	Malaise	PBI	4 Mar 1997
	0.1	Light	PBII	22 Mar 1995
	0,1	Malaise	PBII	29 Apr 1997

ODONATA

The Odonata typically are not captured in Malaise traps and, because of their day-flying habits, are rarely taken in light traps. All five of these species are common in at least the Piedmont region of South Carolina.

ODONATA	Male, Female	Collection Methods	Site	Date
Calopterygidae				
Calopteryx maculata (Beauvois)	1,0	Light	PBII	23 May 1995
	1,1	Light	PBIII	30 Jul 1995
Libellulidae				
Erythemis simplicicollis (Say)	0,1	Light	PBI	30 Jul 1995
	0,1	Light	PBII	30 Jul 1995
Erythrodiplax connata minuscula (Rambur)	0,1	Light	PBI	30 Jul 1995
Libellula vibrans Fabricius	0,1	Light	PBI	30 Jul 1995
Pachydiplax longipennis (Burmeister)	2,2	Light	PBII	30 Jul 1995

PLECOPTERA

by B.P. Stark
Dept. of Biology
Mississippi College
Clinton, MS 39058

Four hundred seventy- nine stonefly specimens representing 13 species placed in five families were collected in this survey. All species encountered are known from the Gulf or Atlantic Coastal Plain, but two were not previously reported from South Carolina. Perlesta shubuta Stark is common in similar habitat in Mississippi and was previously collected in South Carolina but misidentified as Perlesta placida (Hagen), a species also widespread in the Southeast (Stark 1980). Isoperla davisi James is also widely distributed in the Southeast but it remains a poorly known and often misidentified species.

Taeniopteryx robinae Kondratieff and Kirchner is a rare species previously known only from Meyers Branch on the SRP. This collection from Pen Branch is the first report of the species since it was described and is particularly important because it was not found at "... any other suitable stream sampled on the SRP site" (Kondratieff & Kirchner 1984). The specimens listed as "Isoperla sp." may represent I. Dicala Frison, but in the absence of males they were not determined beyond genus.

PLECOPTERA	Male. Female	Collection Methods	Site	Date
Capniidae				
Allocapnia virginiana Frison	1.3	Malaise	PBI	23 Dec1996
Allocapnia wrayi Ross	0.3	Malaise	PBI	31 Dec 1996
	0.4	Malaise	PBI	18 Feb 1997
	6.13	Malaise	PBIII	23 Dec 1996
	1.3	Malaise	PBIII	31 Dec 1996
	1.9	Malaise	PBIII	15 Jan 1996
Leuctridae				
Leuctra ferruginea (Walker)	1.2	Malaise	PBIII	31 Dec 1996
Leuctra triloba Claassen	0.1	Malaise	PBI	23 Dec 1996
	2.1	Malaise	PBI	1 Feb 1996
	1.1	Malaise	PBI	15 Jan 1996
	0.5	Malaise	PBIII	23 Dec 1996
	0.3	Malaise	PBIII	15 Jan 1996
	2.0	Malaise	PBIII	1 Feb 1996
Taeniopterygidae				
Taeniopteryx lonicera Ricker & Ross	0.1	Malaise	PBI	23 Dec 1996
	0.1	Malaise	PBI	15 Jan 1996

	0.2	Malaise	PBI	1 Feb 1996
	1.0	Malaise	PBIII	1 Feb 1996
	1.1	Malaise	PBIII	15 Feb 1996
Taeniopteryx robinae Kondratieff & Kirchner	0.1	Malaise	PBI	23 Dec 1996
	0.1	Malaise	PBI	15 Jan 1996
	2.1	Malaise	PBIII	1 Feb 1996
Perlidae				
Neoperla clymene (Newman)	2.1	Light	PBII	23 May 1995
Paragnetina kansensis (Banks)	0.1	Light	PBI	30 Dec 1995
Perlesta shubuta Stark	36.65	Light	PBII	10 May 1995
	80.104	Light	PBII	23 May 1995
	1.2	Light	PBII	12 Jun 1995
	2.6	Light	PBII	27 Jun 1995
Perlinella drymo (Newman)	0.1	Malaise	PBI	10 Apr 1997
	1.0	Light	PBII	22 Mar 1995
Perlodidae				
Clioperla clio (Newman)	0.4	Malaise	PBI	4 Mar 1997
	0.2	Malaise	PBIII	21 Mar 1997
	13.2	Light	PBII	22 Mar 1995
Isoperla davisi (James)	12.18	Light	PBII	22 Mar 1995
	0.1	Light	PBII	10 May 1995
	39.10	Light	PBI	22 Mar 1995
Isoperla sp.	0.1	Malaise	PBIII	10 Apr 1997
	0.2	Light	PBII	10 May 1995
	0.1	Light	PBII	23 May 1995

HETEROPTERA

by J.T. Polhemus
Colorado Entomological Museum
3115 S. York St.
Englewood, CO, 80110

The aquatic Heteroptera fauna of the Upper Pen Branch, Savannah River Site, as indicated by light trap samples collected during 1995, is represented by two families, the Corixidae and Notonectidae.

One sample of Notonectidae was obtained, containing a single species, Buenoa confusa Truxal. This species is widespread in the southeastern United States. However, according to the Catalog of North American Heteroptera (Henry and Froeschner 1988), it was not previously known from the Carolinas. It was previously recorded from Florida, Georgia and Virginia, so its presence in South Carolina was not unexpected, and Sanderson (1982) indicated its presence in the Carolinas, with no definite record given because such data were not given in his work.

The Corixidae are represented by four species in three genera, all of which are representative of the corixid fauna of the southeastern United States. Ramphocorixa acuminata (Uhler), represented by a

single male, was not listed for the Carolinas by Henry and Froeschner (1988; listed for Georgia), but was listed by Sanderson (1982). Sigara sigmoidea (Abbott), represented by a single female, was listed from North Carolina by Henry and Froeschner (1988) and the Carolinas by Sanderson (1982). Trichocorixa sexcincta (Champion), represented by many samples, was listed from Florida, Georgia, and Virginia by Henry and Froeschner (1988) and the Carolinas by Sanderson (1982). Trichocorixa calva (Say), the most abundant insect in the material examined, is very common and widespread throughout the region.

In summary, the aquatic Heteroptera species of the Savannah River Site are typical members of the southeastern United States fauna, however several of the definite locality records are the first published for South Carolina. Several of the species represented in these samples are not common in collections, suggesting that the Pen Branch may have specific ecological characteristics providing a favorable habitat for these species, and further suggesting that these ecological characteristics are probably not generally found in other aquatic sites of the region.

HETEROPTERA	Male, Female	Collection Methods	Site	Date
Corixidae				
Trichocorixa calva Say	6,3	Light	PBII	27 Jun 1995
	1,3	Light	PBII	30 Jul 1995
	1,1	Light	PBI	12 Jun 1995
	1,0	Light	PBII	2 Nov 1995
	5,0	Light	PBII	12 Jun 1995
Trichocorixa sexcincta Champion	0,1	Light	PBII	27 Jun 1995
	1,0	Light	PBII	30 Jul 1995
	3,6	Light	PBII	12 Jun 1995
	1,2	Light	PBI	2 Nov 1995
Rhamphocorixa acuminata Uhler	1,0	Light	PBII	12 Jun 1995
Sigara sigmoidea Abbot	0,1	Light	PBII	22 Mar 1995
Notonectidae				
Buenoa confusa Truxal	3,2	Light	PBII	24 Sep 1995

MEGALOPTERA

Corydalus cornutus L. was the only species of Megaloptera captured in this study. The species is widespread throughout the Southeast.

MEGALOPTERA	Male, Female	Collection Methods	Site	Date
Corydalidae				
Corydalus cornutus (L.)	0,1	Light	PBII	30 Jul 1995

COLEOPTERA

by J.F. Matta
Rt. 2 Box 600
Honeypot Farm
Milton, PA 17847

The aquatic beetle population reflected that this series of light trap collections is typical of Upper Coastal Plain communities in the Southeast. The series of collections contained no range extensions for South Carolina.

The series of collections contained over 1100 specimens of non-Dryopoidea aquatic Coleoptera representing six families. The collections were dominated by two Hydrophilidae species, Enochrus ochraceous Melsheimer and *Berosus aculeatus* LeConte. Many species that one would normally expect to find in a stream collection were missing from this series. This is possibly because of the selective nature of light trap collections.

The collection from PB II of Pen Branch was interesting in that it was far more diverse than the collections from the other two sites. Further, the population structure was similar to that found in marshy pools rather than in streams.

The single specimen of *Derallus altus* LeConte is of interest. This species is not frequently collected and appears to prefer the eroded roots of grasses at the margins of large rivers and lakes as an adult habitat. The collection is probably adventitious.

COLEOPTERA	Male, Female	Collection Method	Site	Date
Dytiscidae				
Agabus aeruginosus Aube	5,0	Light	PBII	10 May 1995
	1,1	Light	PBII	23 May 1995
Bidessus granarius (Aube)	0,2	Light	PBII	12 Jun 1995
	1,2	Light	PBII	30 Jul 1995
	0,1	Light	PBIII	21 Sep 1995
Bidessus lacustrus (Say)	2,7	Light	PBI	12 Jun 1995
	0,1	Light	PBI	2 Nov 1995
	11,59	Light	PBII	10 May 1995
	1,1	Light	PBII	27 Jun 1995
	0,1	Light	PBII	30 Jul 1995
	1,0	Light	PBII	21 Sep 1995

	0.2	Light	PBIII	21 Sep 1995
Celina angustata Abube	0.1	Light	PBII	30 Jul 1995
Celina slossoni Mutchler	1.0	Light	PBII	12 Jun 1995
	3.1	Light	PBII	27 Jun 1995
Copelatus caelatipennis Aube	1.0	Light	PBII	10 May 1995
	1.1	Light	PBII	23 May 1995
	1.0	Light	PBII	27 May 1995
Copelatus chevrolati Aube	1.0	Light	PBII	30 Jul 1995
	0.1	Light	PBII	21 Sep 1995
Copelatus glyphicus (Say)	5.11	Light	PBII	10 May 1995
Coptotomus interrogatus (Fabricius)	3.3	Light	PBII	10 May 1995
	0.1	Light	PBII	30 Jul 1995
Desmopachria grana (LeConte)	0.1	Light	PBII	27 Jun 1995
	0.1	Light	PBII	30 Jul 1995
	0.1	Light	PBII	24 Sep 1995
	0.3	Light	PBIII	21 Sep 1995
Hydaticus bimarginatus (Say)	0.1	Light	PBII	23 May 1995
	0.1	Light	PBII	12 Jun 1995
	1.0	Light	PBIII	21 Sep 1995
Hydroporus cimicoides Sharp	0.1	Light	PBI	30 Jul 1995
	1.1	Light	PBI	21 Sep 1995
	0.1	Light	PBI	2 Nov 1995
	1.2	Light	PBII	27 Jun 1995
	0.2	Light	PBII	21 Sep 1995
Hydroporus clypealis Sharp	5.10	Light	PBII	10 May 1995
	1.1	Light	PBII	23 May 1995
	0.3	Light	PBII	27 Jun 1995
	1.0	Light	PBII	30 Jul 1995
Hydroporus hybridus Aube	0.2	Light	PBII	22 Mar 1995
Hydroporus lobatus Sharp	0.1	Light	PBII	12 Jun 1995
	0.1	Light	PBII	2 Nov 1995
Hydroporus vittatipennis Gemminger & Harold	0.1	Light	PBII	21 Sep 1995
Liodessus affinis (Say)	0.1	Light	PBII	27 Jun 1995
	0.2	Light	PBII	30 Jul 1995
Liodessus fuscatus (Crotch)	0.1	Light	PBII	27 Jun 1995
	1.0	Light	PBIII	21 Sep 1995
Rhantus calidus (Fabricius)	0.1	Light	PBII	12 Jun 1995
Thermonectes basillaris (Harris)	0.1	Light	PBI	30 Jul 1995
	0.1	Light	PBII	30 Jul 1995
Gyrinidae				
Dineutus carolinus LeConte	1.3	Light	PBI	22 Mar 1995
	0.1	Light	PBII	12 Jun 1995
(*Dineutus horni* Roberts	1.0	Light	PBII	22 Mar 1995
Gyrinus gibber LeConte (=*G.* frosti Fall)	0.1	Light	PBII	22 Mar 1995
	0.1	Light	PBII	27 Jun 1995
Gyrinus pernitidus LeConte	0.1	Light	PBII	12 Jun 1995
	1.1	Light	PBII	2 Nov 1995
Haliplidae				
Haliplus punctatus Aube	0.1	Light	PBII	23 May 1995
	0.1	Light	PBII	27 Jun 1995
Peltodytes dunavani Young	2.1	Light	PBII	27 Jun 1995
Peltodytes sexmaculatus Roberts	0.1	Light	PBI	30 Jul 1995
	0.1	Light	PBII	12 Jun 1995
	1.2	Light	PBII	30 Jul 1995
Hydrochidae				

Hydrochus inaequalis LeConte	0.1	Light	PBII	10 May 1995
Hydrophilidae				
Berosus aculeatus LeConte	1.2	Light	PBI	12 Jun 1995
	7.13	Light	PBII	10 May 1995
	46.69	Light	PBII	23 May 1995
	146.143	Light	PBII	12 Jun 1995
	49.196	Light	PBII	27 Jun 1995
	4.7	Light	PBII	30 Jul 1995
	0.4	Light	PBII	24 Sep 1995
Berosus exiguus (Say)	0.1	Light	PBII	27 Jun 1995
Berosus fraternus (LeConte)	1.1	Light	PBII	30 Jul 1995
	0.2	Light	PBII	24 Sep 1995
Berosus striatus (Say)	2.1	Light	PBI	30 Jul 1995
	3.2	Light	PBII	27 Jun 1995
	0.1	Light	PBII	21 Sep 1995
Cymbiodyta vindicata Fall	0.2	Light	PBII	10 May 1995
	1.0	Light	PBII	23 May 1995
Derallus altus (LeConte)	0.1	Light	PBII	27 Jun 1995
Enochrus blatchleyi (Fall)	0.2	Light	PBII	10 May 1995
	0.1	Light	PBII	23 May 1995
Enochrus cinctus (Say)	3.1	Light	PBII	27 Jun 1995
Enochrus consors (LeConte)	0.1	Light	PBII	23 May 1995
Enochrus consortus Green	1.0	Light	PBII	10 May 1995
	1.5	Light	PBII	23 May 1995
Enochrus ochraceus (Melsheimer)	22.100	Light	PBII	10 May 1995
	8.8	Light	PBII	23 May 1995
	3.6	Light	PBII	12 Jun 1995
	3.2	Light	PBII	30 Jul 1995
	1.0	Light	PBII	21 Sep 1995
	0.1	Light	PBII	24 Sep 1995
Enochrus sayi Gunderson	0.2	Light	PBII	10 May 1995
Enochrus sublongus (Fall)	0.1	Light	PBI	22 Mar 1995
	0.2	Light	PBI	30 Jul 1995
	0.1	Light	PBI	2 Nov 1995
	12.10	Light	PBII	27 Jun 1995
	0.1	Light	PBII	2 Nov 1995
Helocombus bifidus (LeConte)	3.6	Light	PBII	10 May 1995
	3.3	Light	PBII	23 May 1995
	0.1	Light	PBII	27 Jun 1995
Hydrochara soror Smetana	10.10	Light	PBII	27 Jun 1995
	0.1	Light	PBII	2 Nov 1995
Hydrochara spangleri Smetana	1.0	Light	PBI	22 Mar 1995
	0.1	Light	PBII	10 May 1995
Tropisternus collaris (LeConte)	1.1	Light	PBI	30 Jul 1995
	8.11	Light	PBII	27 Jun 1995
	2.4	Light	PBII	30 Jul 1995
Tropisternus mixtus (LeConte)	0.2	Light	PBI	30 Jul 1995
	1.0	Light	PBII	27 Jun 1995
Noteridae				
Hydrocanthus iricolor Say	0.1	Light	PBII	21 Sep 1995

DIPTERA: Tipulidae

by G.W. Byers
Biological Sciences
University of Kansas
Lawrence, Kansas 66045

Most of the crane flies collected by light traps and Malaise traps set near Pen Branch belong to species that have wide distributions in the eastern United States. A few (e.g., Tipula Aprina) have a northern distribution and reach the southern limit of their known range in South Carolina. Others (e.g., Orimarga mirabilis, Limonia domestica) are largely southern in distribution, occurring widely in the Neotropical region. One species, Tipula stenorhabda, had previously been recorded only from North Carolina. None of the flies found in the traps was surprising, although one, Ormosia palpalis, provides a new regional record if correctly identified from a single female. This species was previously reported only from Pennsylvania, but in a key to the genus (Alexander 1942), the readily observable characters led clearly to O. palpalis.

A minor observation on the Pen Branch collections (some forty in number, as far as crane flies are concerned) is that one of the largest species in eastern North America (Longurio testaceus) as well as one of the smallest (Tasiocera ursina) were trapped. Wing length of L. testaceus is more than ten times that of the T. ursina, and body length varies even more, the ratio being approximately 15 to 1.

A few generalizations can be offered, based on the flies trapped. For example, most of the species collected belong to the tipulid subfamily Limoniinae and are characterized by small size. A notable exception, with reference to size, is the large number of Limnophila marchandi taken on 22 March, the trap date apparently coinciding with a major emergence of this species. This is an unusually large Limnophila species. Most of the large Tipulidae (e.g., Tipula spp.) were found in Malaise traps. Another general observation, also made by others collecting with traps, is that the catch includes a preponderance of female flies. I am not aware of the reason for this. A peculiar exception to this phenomenon is Teucholabis complexa; this species was found in six collections, and nearly all the flies captured (6 of 7) were males.

Some of the most common tipulids in the light trap samples were small Erioptera species of subgenus Mesocyphona: E. caliptera, E. needhami, and E. parva. That they occur in almost all seasons during which traps were operated suggests that there is almost continuous emergence of adults and probably implies that these species have a short life cycle.

One rather frustrating problem encountered in identifying many small eriopterine Tipulidae is that available keys are sometimes based on characters that can be seen in males only, such as characters of the genitalia (hypopygium), and less often of the antennae. As a result, when only females are present in a trap collection (and in light traps, even these are often legless or are damaged in other ways), only a generic or subgeneric identification is possible. This applies especially to small flies in the genera Molophilus and Ormosia, less often in Erioptera.

TIPULIDAE	Male, Female	Collection Methods	Site	Date
Antocha opalizans Osten Sacken	0,2	Light	PBI	22 Mar 1995
	2,9	Light	PBII	22 Mar 1995
	3,1	Light	PBII	23 May 1995
	0,2	Light	PBII	21 Sep 1995
	0,1	Light	PBII	2 Nov 1995
Antocha saxicola (Osten Sacken)	1,0	Light	PBII	23 May 1995
Epiphragma solatrix Osten Sacken	1.0	Malaise	PBIII	29 Apr 1997
Erioptera caliptera Say	1,0	Malaise	PBI	29 Apr 1997
	0,3	Light	PBI	12 Jun 1995
	0,1	Light	PBI	2 Nov 1995
	0,1	Light	PBII	22 Mar 1995
	0,1	Light	PBII	10 May 1995
	0,2	Light	PBII	27 Jun 1995
	0,2	Light	PBII	30 Jul 1995
	1,4	Light	PBII	21 Sep 1995
	0,3	Light	PBII	2 Nov 1995
	1,1	Malaise	PBIII	29 Apr 1997
	0,6	Light	PBIII	30 Jul 1995
	0,3	Light	PBIII	21 Sep 1995
Erioptera chrysocoma Osten Sacken	1,0	Malaise	PBI	29 Apr 1995
	1,0	Malaise	PBI	29 Apr 1997
	0,1	Light	PBII	23 May 1995
	0,1	Malaise	PBIII	29 Apr 1995
Erioptera needhami Alexander	0,1	Light	PBI	12 Jun 1995
	1,3	Light	PBI	30 Jul 1995

	2.3	Light	PBII	23 May 1995
	0.1	Light	PBII	12 Jun 1995
	0,1	Light	PBII	30 Jul 1995
	0.2	Light	PBII	21 Sep 1995
	2.3	Light	PBII	24 Sep 1995
	0.4	Light	PBIII	21 Sep 1995
Erioptera parva Osten Sacken	2.10	Light	PBI	30 Jul 1995
	9.1	Light	PBII	12 Jun 1995
	0.2	Light	PBII	27 Jun 1995
	1.3	Light	PBII	30 Jul 1995
	0.4	Light	PBII	21 Sep 1995
	2.2	Light	PBII	24 Sep 1995
	0.2	Light	PBII	2 Nov 1995
	1.1	Light	PBIII	30 Jul 1995
	0.1	Light	PBIII	21 Sep 1995
Erioptera septemtrionis Osten Sacken	0.1	Light	PBI	12 Jun 1995
	3.0	Light	PBII	10 May 1995
	4.1	Light	PBII	27 Jun 1995
Erioptera nr. *straminea* Osten Sacken	0.1	Light	PBII	22 Mar 1995
	1.1	Malaise	PBIII	29 Apr 1997
Erioptera villosa Osten Sacken	0.1	Malaise	PBI	29 Apr 1997
Gnophomyia luctuosa Osten Sacken	0.1	Malaise	PBIII	29 Apr 1995
Gonomyia florens Alexander	1.0	Light	PBI	21 Sep 1995
Gonomyia puer Alexander	0.2	Light	PBIII	21 Sep 1995
Gonomyia sulphurella Osten Sacken	1.1	Light	PBI	12 Jun 1995
	0.3	Light	PBI	30 Jul 1995
	0.1	Light	PBII	12 Jun 1995
Limnophila angustula Alexander	0.1	Light	PBII	30 Jul 1995
	0,8	Light	PBIII	21 Sep 1995
Limnophila fuscovaria Osten Sacken	1.2	Light	PBII	21 Sep 1995
Limnophila lutea Doane	0,1	Malaise	PBI	23 Dec 1996
Limnophila marchandi Alexander	0,2	Light	PBI	22 Mar 1995
	33,54	Light	PBII	22 Mar 1995
Limnophila munda Osten Sacken	0,1	Malaise	PBI	10 Apr 1997
	0,1	Malaise	PBIII	21 Mar 1997
Limonia domestica (Osten Sacken)	0,2	Malaise	PBI	21 Mar 1997
	0,1	Light	PBI	30 Jul 1995
	0,1	Light	PBI	2 Nov 1995
	0,1	Malaise	PBI	23 Dec 1996
	0,1	Malaise	PBIII	29 Apr 1997
Limonia rara (Osten Sacken)	1,0	Malaise	PBIII	29 Apr 1997
Limonia rostrata (Say)	0,1	Light	PBII	10 May 1995
	0.1	Light	PBII	12 Jun 1995
Limonia shannoni (Alexander)	1,0	Light	PBII	24 Sep 1995
	0,1	Malaise	PBIII	29 Apr 1997
Limonia stulta (Osten Sacken)	0,1	Malaise	PBIII	1 Mar 1996
Longurio testaceus Loew	1,0	Light	PBIII	30 Jul 1995
Molophilus sp.	0,1	Malaise	PBI	29 Apr 1997
Molophilus forcipulus (Osten Sacken)	0,1	Light	PBI	21 Sep 1995
	0,1	Light	PBII	21 Sep 1995
	0,1	Light	PBII	24 Sep 1995
Orimarga mirabilis (Osten Sacken)	1,0	Light	PBI	30 Jul 1995
	0,1	Malaise	PBIII	29 Apr 1997
Ormosia nigripila (Osten Sacken)	0,1	Light	PBI	2 Nov 1995
	0,1	Light	PBII	2 Nov 1995

Ormosia palpalis Dietz	0.1	Malaise	PBIII	29 Apr 1997
Pedicia inconstans (Osten Sacken)	0.1	Malaise	PBI	10 Apr 1997
	0.2	Malaise	PBIII	29 Apr 1997
Pilaria stanwoodae (Alexander)	0.1	Malaise	PBIII	21 Mar 1995
Pilaria recondita (Osten Sacken)	0,3	Light	PBI	2 Nov 1995
	1.0	Light	PBII	10 May 1995
	1.1	Light	PBII	23 May 1995
Pseudolimnophila australina Alexander	0.1	Malaise	PBI	29 Apr 1997
	0.1	Light	PBI	12 Jun 1995
	0,2	Light	PBII	23 May 1995
	1.0	Malaise	PBIII	29 Apr 1997
	0.1	Light	PBIII	21 Sep 1995
Pseudolimnophila luteipennis (Osten Sacken)	0.1	Malaise	PBI	21 Mar 1997
	0.2	Malaise	PBI	10 Apr 1997
	0.2	Malaise	PBI	29 Apr 1997
	0.1	Light	PBI	30 Jul 1995
	0.1	Malaise	PBI	23 Dec 1996
	1.0	Light	PBII	10 May 1995
	0.1	Light	PBII	21 Sep 1995
	1.0	Malaise	PBIII	21 Mar 1997
	0.2	Malaise	PBIII	10 Apr 1997
Tasiocera ursina (Osten Sacken)	2.0	Malaise	PBI	29 Apr 1995
	0.1	Malaise	PBI	29 Apr 1997
	1,0	Malaise	PBIII	29 Apr 1997
Teucholabis complexa Osten Sacken	2.0	Malaise	PBI	29 Apr 1997
	1,0	Light	PBI	30 Jul 1995
	1,0	Light	PBII	12 Jun 1995
	0.1	Light	PBII	27 Jun 1995
	1,0	Light	PBII	24 Sep 1995
	1,0	Light	PBIII	30 Jul 1995
Tipula aprilina Alexander	25,2	Malaise	PBI	21 Mar 1997
	0,4	Malaise	PBI	10 Apr 1997
	1,1	Light	PBII	22 Mar 1995
	19,4	Malaise	PBIII	21 Mar 1997
	3,4	Malaise	PBIII	10 Apr 1997
Tipula furca Walker	1.0	Malaise	PBI	21 Mar 1997
Tipula manahatta Alexander	0,1	Light	PBIII	21 Sep 1995
Tipula sayi Alexander	0,1	Malaise	PBIII	4 Mar 1997
Tipula stenorhabda Alexander	0,1	Malaise	PBI	10 Apr 1997
	1,1	Light	PBIII	21 Sep 1995
Toxorhina magna Osten Sacken	1.0	Light	PBII	23 May 1995
	0,1	Light	PBIII	30 Jul 1995
Ulomorpha rogersella Alexander	0,1	Malaise	PBIII	29 Apr 1997

DIPTERA: Culicidae

by W. Reeves
Dept. of Entomology
Clemson University
Clemson, SC 29634

The mosquitoes identified from Pen Branch, SRS, are typical species for the state of South Carolina.

CULICIDAE	Male, Female	Collection Methods	Site	Date
Aedes vexans (Meigen)	0,2	Light	PBII	22 Mar 1995
	2,2	Light	PBII	10 May 1995
	3,0	Light	PBII	27 Jun 1995
	2,0	Light	PBII	12 Jun 1995
	0,1	Light	PBII	23 Sep 1995
Anopheles punctipennis (Say)	1,2	Light	PBII	23 May 1995
	1,0	Light	PBII	23 Sep 1995
	0,1	Light	PBII	2 Nov 1995
	0,2	Light	PBII	29 Apr 1995
Culex pipiens quinquefasciatus Say	0,1	Light	PBII	22 Mar 1995
	2,0	Light	PBII	23 May 1995
	2,5	Light	PBII	10 May 1995
	0,1	Light	PBII	2 Nov 1995
Culex nigripalpus Theobald	0,1	Light	PBII	23 Sep 1995
Culex territans Walker	0,1	Light	PBII	23 May 1995
Culiseta melanura (Coquillett)	1,0	Light	PBII	2 Nov 1995

DIPTERA: Simuliidae

By P.H. Adler
Department of Entomology
Clemson University
Clemson, South Carolina 29634

The species of Simuliidae identified from Pen Branch, SRS, are typical for the state of South Carolina.

SIMULIIDAE	Male, Female	Collection Methods	Site	Date
Simulium decorum Walker	0,1	Light	PBI	22 Mar 1995
	1,0	Light	PBII	22 Mar 1995
Simulium jenningsi Malloch Group	1,0	Light	PBI	22 Mar 1995
Simulium tuberosum (Lundström)	1,5	Light	PBI	22 Mar 1995
cytospecies F	1 Intersex			
	3,1	Light	PBII	21 Sep 1995
	1,3	Light	PBII	22 Mar 1995
Simulium verecundum Stone & Jamnback	8,4	Light	PBI	22 Mar 1995
	2,0	Light	PBII	22 Mar 1995
	2,0	Light	PBII	21 Sep 1995

DIPTERA: Chironomidae

by J.H. Epler
461 Tiger Hammock Road
Crawfordville, FL 32327

It is obvious from the following list of species that Pen Branch harbors a very diverse chironomid fauna. The samples showed a typical (for the Southeast U.S.) emergence pattern in that a greater number of Orthocladiinae species were collected during the cooler spring months, compared to the greater number of Chironominae species collected later in the year.

Many new records were derived from these samples. One species, *Cladopelma spectabilis*, is a new record for the United States (it was described from Ontario, Canada, and known only from the holotype male).

Many of these species are undescribed, or are unidentifiable without resorting to examination of type material; most of these yet-unidentified species were assigned only number designators. It can generally be assumed that the taxa listed with numerical designators are undescribed, with the exception of the *Corynoneura*, *Parakiefferiella,* and *Thienemanniella* taxa; most of the species in those genera that are recorded from the Nearctic Region are so poorly described that it is difficult to identify them without examining type material or material in European collections. The genus *Tanytarsus* is probably represented by at least 30 species in the eastern U.S., but very few have been described (names are in manuscript for at least 4 of the taxa designated by numbers in this study). Two names, *Polypedilum* "*angulum*" and cf. "*bergi*" are used here in advance of their publication in a revision by Dave Maschwitz to appear soon.

Note that two "forms" (small and large) have been designated for *Polypedilum tritum*. These may be different species, but, without associated immature stages, no conclusion can be drawn.

The samples were particularly rich in species for several genera: *Pseudorthocladius, Polypedilum,* and *Tanytarsus*. The latter two are widespread, species-rich genera; such diversity would be expected from an area with good water/habitat quality. The identification of so many species of *Pseudorthocladius* was made possible by a recent revision of the genus (Saether & Sublette 1983). Many of the new taxa described in that work were originally described from the Aiken/Savannah River Plant area.

Species new to Science
Bryophaenocladius sp. 3 Epler
Psectrocladius sp. 1 Epler

Smittia sp. 1 Epler
Smittia sp. 2 Epler (may be *S. pratorum* (Goetghebuer))
Synorthocladius sp. 1 Epler
Rheotanytarsus sp. 4 Epler
Saetheria sp. 1 Epler (may be unknown male of *S. hirta* Saether)
Tanytarsus spp. 3, 8, 10, 11, 13, 14 Epler

Species new to South Carolina
Larsia sp. 1 Epler (description in ms by colleague)
Corynoneura cf. *oxfordana* Boesel & Winner
Parakiefferiella cf. *bathophila* Kieffer
Pseudorthocladius rectilobus Saether & Sublette
Cladopelm spectabilis Townes
Micropsectra cf. *geminata* Oliver & Dillon
Omisus sp. A Epler (description in ms by colleague)
Parachironomus alatus Beck
Parachironomus digitalis (Edwards) (new record for North America)
Polypedilum "angulum Maschwitz"
Polypedilum angustum Townes
Polypedilum cf. "*bergi* Maschwitz"
Polypedilum ophioides Townes

CHIRONOMIDAE	Male, Female	Collection Methods	Site	Date
Tanypodinae				
Ablabesmyia sp.	0,15	Light	PBI	22 Mar 1995
	0,1	Light	PBI	12 Jun 1995
	0,6	Light	PBI	30 Jul 1995
	0,2	Light	PBI	21 Sep 1995
	0,12	Light	PBI	2 Nov 1995
	0,26	Light	PBII	22 Mar 1995
	1,6	Light	PBII	10 May 1995
	0,23	Light	PBII	23 May 1995
	0,7	Light	PBII	27 Jun 1995
	0,1	Light	PBII	30 Jul 1995
	0,2	Light	PBII	21 Sep 1995
	0,8	Light	PBII	2 Nov 1995
	0,7	Light	PBIII	12 Jun 1995
	0,11	Light	PBIII	21 Sep 1995
Ablabesmyia annulata (Say)	0,2	Light	PBIII	21 Sep 1995
Ablabesmyia aspera (Roback)	1,0	Light	PBII	10 May 1995
	3,0	Light	PBII	23 May 1995
	2,0	Malaise	PBIII	29 Apr 1997
	1,0	Light	PBII	30 Jul 1995
Ablabesmyia cf. *idei* (Walley)	1,0	Light	PBI	30 Jul 1995
	1,0	Light	PBIII	21 Sep 1995
Ablabesmyia mallochi (Walley)	1,0	Light	PBI	12 Jun 1995
	1,0	Light	PBI	21 Sep 1995
	3,0	Light	PBI	2 Nov 1995
	1,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	2 Nov 1995
	1,0	Light	PBIII	30 Jul 1995
Ablabesmyia monilis (L.)	1,0	Light	PBI	30 Jul 1995

	3,0	Light	PBIII	30 Jul 1995
Coelotanypus concinnus (Coquillett)	4,3	Light	PBII	10 May 1995
Guttipelopia guttipennis (v.d. Wulp)	0,1	Light	PBI	22 Mar 1995
	2,0	Light	PBII	30 Jul 1995
	1,0	Light	PBIII	12 Jun 1995
	0,1	Light	PBIII	21 Sep 1995
Labrundinia pilosella (Loew)	1,0	Light	PBI	2 Nov 1995
	2,0	Light	PBII	10 May 1995
	2,0	Light	PBII	2 Nov 1995
Labrundinia virescens Beck & Beck	1,0	Light	PBII	2 Nov 1995
Labrundinia sp. SC-1 Epler	1,0	Light	PBI	30 Jul 1995
Larsia cf. *planensis* (Johannsen)	1,0	Light	PBII	27 Jun 1995
Larsia sp. 1 Epler	1,0	Malaise	PBIII	29 Apr 1997
Meropelopia americana Fittkau	1,0	Light	PBIII	21 Sep 1995
Natarsia baltimoreus (Macquart)	1,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	10 May 1995
Nilotanypus fimbriatus (Walker)	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBII	2 Nov 1995
Paramerina anomala Beck & Beck	1,0	Light	PBI	22 Mar 1995
Pentaneura inconspicua (Malloch)	1,0	Light	PBI	2 Nov 1995
Procladius bellus (Loew)	0,6	Light	PBI	22 Mar 1995
	0,7	Light	PBI	12 Jun 1995
	0,7	Light	PBI	30 Jul 1995
	1,1	Light	PBI	21 Sep 1995
	0,18	Light	PBI	2 Nov 1995
	1,3	Light	PBII	22 Mar 1995
	1,19	Light	PBII	23 May 1995
	0,4	Light	PBII	27 Jun 1995
	1,2	Light	PBII	30 Jul 1995
	0,9	Light	PBII	21 Sep 1995
	1,1	Light	PBII	24 Sep 1995
	0,9	Light	PBII	2 Nov 1995
	0,2	Light	PBIII	12 Jun 1995
	0,2	Light	PBIII	30 Jul 1995
	2,17	Light	PBIII	21 Sep 1995
Procladius freemani Sublette	1,0	Light	PBII	22 Mar 1995
Procladius sublettei Roback	5,28	Light	PBI	22 Mar 1995
	0,2	Light	PBI	12 Jun 1995
	21,35	Light	PBI	30 Jul 1995
	3,4	Light	PBI	21 Sep 1995
	22,51	Light	PBI	2 Nov 1995
	5,0	Light	PBII	22 Mar 1995
	5,0	Light	PBII	10 May 1995
	780 M&F	Light	PBII	23 May 1995
	3,5	Light	PBII	27 Jun 1995
	6,84	Light	PBII	30 Jul 1995
	4,4	Light	PBII	21 Sep 1995
	0,8	Light	PBII	24 Sep 1995
	3,61	Light	PBII	2 Nov 1995
	1,6	Light	PBIII	12 Jun 1995
	1,5	Light	PBIII	30 Jul 1995
Procladius sp.	0,52	Light	PBII	22 Mar 1995
	4,0	Light	PBII	10 May 1995
	0,1	Light	PBIII	21 Sep 1995
Tanypodinae sp.	0,5	Light	PBI	22 Mar 1995

	0,1	Malaise	PBI	29 Apr 1997
	0,2	Light	PBI	12 Jun 1995
	0,12	Light	PBI	30 Jul 1995
	0,1	Light	PBI	21 Sep 1995
	0,47	Light	PBI	2 Nov 1995
	0,15	Light	PBII	22 Mar 1995
	0,1	Light	PBII	23 May 1995
	0,11	Light	PBII	27 Jun 1995
	0,19	Light	PBII	30 Jul 1995
	0,37	Light	PBII	21 Sep 1995
	0,15	Light	PBII	24 Sep 1995
	0,180	Light	PBII	2 Nov 1995
	0,3	Malaise	PBIII	29 Apr 1997
	0,24	Light	PBIII	12 Jun 1995
	0,3	Light	PBIII	30 Jul 1995
Tanypus sp.	0,1	Light	PBI	30 Jul 1995
	0,1	Light	PBII	30 Jul 1995
Tanypus concavus Roback	0,1	Light	PBI	30 Jul 1995
	0,1	Light	PBII	23 May 1995
	0,1	Light	PBII	27 Jun 1995
	0,1	Light	PBII	30 Jul 1995
	0,2	Light	PBII	24 Sep 1995
Tanypus neopunctipennis Sublette	0,1	Light	PBI	30 Jul 1995
Diamesinae				
Potthastia longimana Kieffer	0,2	Light	PBII	22 Mar 1995
Orthocladiinae				
Antillocladius arcuatus Saether	1,0	Light	PBI	30 Jul 1995
Brillia flavifrons (Johannsen)	1,0	Light	PBI	12 Jun 1995
Bryophaenocladius impectinus Saether	1,0	Light	PBI	12 Jun 1995
	1,0	Light	PBII	30 Jul PBII
Bryophaenocladius sp. 3 Epler	1,0	Light	PBI	12 Jun 1995
Corynoneura cf. *lobata* Edwards	3,1	Light	PBI	22 Mar 1995
	5,0	Light	PBI	2 Nov 1995
	5,0	Light	PBII	22 Mar 1995
Corynoneura cf. *oxfordana* Boesel & Winner	6,0	Light	PBII	2 Nov 1995
Corynoneura sp.	0,4	Light	PBI	30 Jul 1995
	0,1	Light	PBI	2 Nov 1995
	0,1	Light	PBII	22 Mar 1995
	0,1	Light	PBII	23 May 1995
	0,1	Light	PBII	30 Jul 1995
Corynoneura sp. 1 Epler	1,0	Light	PBI	22 Mar 1995
Cricotopus sp.	0,2	Light	PBI	22 Mar 1995
	0,2	Light	PBI	12 Jun 1995
	0,9	Light	PBI	30 Jul 1995
	0,2	Light	PBI	21 Sep 1995
	0,9	Light	PBI	2 Nov 1995
	0,10	Light	PBII	22 Mar 1995
	0,2	Light	PBII	10 May 1995
	0,56	Light	PBII	23 May 1995
	0,8	Light	PBII	27 Jun 1995
	0,17	Light	PBII	30 Jul 1995
	0,6	Light	PBII	21 Sep 1995
	0,13	Light	PBII	2 Nov 1995
	0,3	Light	PBIII	12 Jun 1995

	0,1	Light	PBIII	21 Sep 1995
Cricotopus bicinctus (Meigen)	6,14	Light	PBI	22 Mar 1995
	0,63	Light	PBI	30 Jul 1995
	2,7	Light	PBI	2 Nov 1995
	4,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	10 May 1995
Cricotopus cf. *festivellus* (Kieffer)	1,0	Light	PBI	2 Nov 1995
Cricotopus luciae LeSage & Harrison	1,0	Light	PBII	22 Mar 1995
Cricotopus politus (Coquillett)	1,0	Light	PBI	21 Sep 1995
	2,0	Light	PBI	2 Nov 1995
	1,0	Light	PBII	22 Mar 1995
Cricotopus sylvestris (Fabricius) Grp. sp.	0,1	Light	PBII	22 Mar 1995
Cricotopus trifasciatus (Meigen)	1,0	Light	PBII	2 Nov 1995
Cricotopus cf. sp. 2 Epler	1,0	Light	PBI	30 Jul 1995
	7,0	Light	PBII	22 Mar 1995
Eukiefferiella cf. *claripennis* (Lundbeck)	3,0	Light	PBI	22 Mar 1995
	2,0	Light	PBII	22 Mar 1995
Eukiefferiella coerulescens (Kieffer) Grp. sp. 1	1,0	Light	PBIII	21 Sep 1995
Heterotrissocladius marcidus (Walker)	1,0	Light	PBI	22 Mar 1995
Limnophyes minimus (Meigen)	1,0	Light	PBI	22 Mar 1995
	2,0	Malaise	PBI	29 Apr 1997
	2,0	Light	PBI	2 Nov 1995
	2,0	Light	PBII	2 Nov 1995
	1,0	Light	PBIII	12 Jun 1995
Mesosmittia patrihortae Saether	1,0	Light	PBI	12 Jun 1995
	1,0	Light	PBII	30 Jul 1995
	1,0	Light	PBII	21 Sep 1995
Nanocladius cf. *rectinervis* (Kieffer)	1,0	Light	PBI	2 Nov 1995
	2,0	Light	PBII	2 Nov 1995
Nanocladius ? sp.	1,0	Light	PBI	22 Mar 1995
Orthocladius lignicola (Kieffer)	8,0	Light	PBI	22 Mar 1995
	43,0	Light	PBII	22 Mar 1995
Orthocladius cf. *nigritus* Malloch	1,0	Light	PBI	22 Mar 1995
Orthocladius obumbratus Johannsen	17,0	Light	PBI	22 Mar 1995
	4,0	Light	PBII	22 Mar 1995
Orthocladius oliveri Soponis	16,0	Light	PBII	22 Mar 1995
Parakiefferiella cf. *bathophila* (Kieffer)	1,0	Malaise	PBI	22 Mar 1995
Parakiefferiella sp. 2 Epler	1,0	Light	PBI	22 Mar 1995
	4,0	Light	PBII	22 Mar 1995
Parakiefferiella sp. 3 Epler	1,0	Light	PBII	22 Mar 1995
Parakiefferiella sp.	1,0	Light	PBI	2 Nov 1995
Parametriocnemus cf. *lundbeckii* (Johannsen)	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBI	2 Nov 1995
	1,0	Light	PBII	23 May 1995
	1,0	Malaise	PBIII	29 Apr 1997
Parametriocnemus sp. 4 Epler (aberrant *P. lundbeckii?)*	1,0	Light	PBI	22 Mar 1995
	1,0	Malaise	PBI	29 Apr 1997
Parametriocnemus sp.	1,0	Light	PBII	2 Nov 1995
Paraphaenocladius exagitans (Johannsen)	4,0	Malaise	PBI	29 Apr 1997
	3,0	Light	PBII	23 May 1995
	1,0	Light	PBIII	12 Jun 1995

Psectrocladius cf. *pilosus* Roback	5M 1 intersex	Light	PBI	22 Mar 1995
	8,0	Light	PBII	22 Mar 1995
Psectrocladius cf. *simulans* (Johannsen)	7,0	Light	PBII	23 May 1995
Psectrocladius vernalis (Malloch)	1,0	Light	PBI	2 Nov 1995
	1,0	Light	PBII	2 Nov 1995
Psectrocladius sp. 1 Epler	1,0	Light	PBII	22 Mar 1995
Pseudorthocladius clavatosus Saether & Sublette	6,0	Malaise	PBI	29 Apr 1997
Pseudorthocladius cf. *destitutus* Saether & Sublette	1,0	Malaise	PBIII	29 Apr 1997
Pseudorthocladius dumicaudus Saether & Sublette	3,0	Malaise	PBI	29 Apr 1997
Pseudorthocladius macrovirgatus Saether & Sublette	2,0	Malaise	PBIII	29 Apr 1997
Pseudorthocladius rectilobus Saether & Sublette	14,0	Malaise	PBIII	29 Apr 1997
Pseudorthocladius rectangularis Caspers & Siebert	1,0	Light	PBII	22 Mar 1995
Pseudorthocladius uniserratus Saether & Sublette	7,0	Malaise	PBIII	29 Apr 1997
Pseudorthocladius wingoi Saether & Sublette	1,0	Light	PBII	10 May 1995
Pseudosmittia forcipata (Goetghebuer)	2,0	Malaise	PBI	29 Apr 1997
	5,0	Malaise	PBIII	29 Apr 1997
Rheocricotopus glabricollis (Meigen)	1,0	Light	PBI	22 Mar 1995
Rheocricotopus robacki (Beck & Beck)	2,0	Light	PBI	22 Mar 1995
	1,0	Malaise	PBI	29 Apr 1997
	1,0	Light	PBI	12 Jun 1995
	2,0	Light	PBI	30 Jul 1995
	1,0	Light	PBI	2 Nov 1995
	20,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	21 Sep 1995
	1,0	Light	PBII	2 Nov 1995
Smittia sp. 1 Epler	5,0	Malaise	PBIII	29 Apr 1997
Smittia cf. sp. 2 Epler	1,0	Light	PBI	2 Nov 1995
	3,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	10 May 1995
Synorthocladius sp. 1 Epler	1,0	Light	PBII	23 May 1995
Thienemanniella sp.	10,0	Light	PBI	2 Nov 1995
	0,4	Light	PBII	22 Mar 1995
	1,1	Light	PBII	23 May 1995
	0,7	Light	PBII	2 Nov 1995
Thienemanniella sp. 1 Epler	7,0	Light	PBI	2 Nov 1995
	6,0	Light	PBII	22 Mar 1995
Thienemanniella sp. 2 Epler	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBII	22 Mar 1995
Tvetenia sp.	1,0	Light	PBII	23 May 1995
Unniella multivirga Saether	5,0	Light	PBI	22 Mar 1995
	28,0	Light	PBII	22 Mar 1995
Orthocladiinae sp.	1,172	Light	PBI	22 Mar 1995
	0,20	Malaise	PBI	29 Apr 1997
	0,8	Light	PBI	12 Jun 1995
	0,9	Light	PBI	30 Jul 1995
	0,1	Light	PBI	21 Sep 1995

	0,48	Light	PBI	2 Nov 1995
	0.265	Light	PBII	22 Mar 1995
	0.20	Light	PBII	10 May 1995
	0,90	Light	PBII	23 May 1995
	1,10	Light	PBII	27 Jun 1995
	0,5	Light	PBII	30 Jul 1995
	0.2	Light	PBII	24 Sep 1995
	0.20	Light	PBII	2 Nov 1995
	0,25	Malaise	PBIII	29 Apr 1997
	0,1	Light	PBIII	12 Jun 1995
	0,3	Light	PBIII	21 Sep 1995
Chironominae				
Chironomus decorus (Johannsen)	0,4	Light	PBI	22 Mar 1995
	2.35	Light	PBI	12 Jun 1995
	6,14	Light	PBI	30 Jul 1995
	0,4	Light	PBI	21 Sep 1995
	45,71	Light	PBI	2 Nov 1995
	3,9	Light	PBII	22 Mar 1995
	30,46	Light	PBII	23 May 1995
	0,1	Light	PBII	21 Sep 1995
	2,19	Light	PBII	2 Nov 1995
	0,1	Malaise	PBIII	29 Apr 1997
	0,5	Light	PBIII	12 Jun 1995
	0,4	Light	PBIII	30 Jul 1995
	0,3	Light	PBIII	21 Sep 1995
Chironomus longipes Staeger	1,0	Light	PBI	12 Jun 1995
	2,0	Light	PBI	30 Jul 1995
	1,0	Light	PBIII	12 Jun 1995
Chironomus sp. 2 Epler	1,0	Light	PBII	10 May 1995
Cladopelma amachaerum (Townes)	4,0	Light	PBI	30 Jul 1995
	1,0	Light	PBI	21 Sep 1995
	3,0	Light	PBI	2 Nov 1995
	3,0	Light	PBII	21 Sep 1995
	1,0	Light	PBII	24 Sep 1995
	5,0	Light	PBII	2 Nov 1995
	1,0	Light	PBIII	21 Sep 1995
Cladopelma collator (Townes)	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBI	21 Sep 1995
	3,0	Light	PBI	2 Nov 1995
	5,0	Light	PBII	22 Mar 1995
	3,0	Light	PBII	23 May 1995
	4,0	Light	PBIII	21 Sep 1995
Cladopelma edwardsi (Kruseman)	1M	Light	PBI	12 Jun 1995
	1 intersex			
	6,0	Light	PBI	30 Jul 1995
	1,0	Light	PBI	21 Sep 1995
	5,0	Light	PBI	2 Nov 1995
	11,0	Light	PBII	22 Mar 1995
	6,0	Light	PBII	23 May 1995
	0,5	Light	PBII	30 Jul 1995
	4,0	Light	PBII	21 Sep 1995
	1,0	Light	PBII	24 Sep 1995
Cladopelma galeator (Townes)	5,0	Light	PBI	2 Nov 1995
Cladopelma spectabile (Townes)	3,0	Light	PBII	23 May 1995
Cladotanytarsus sp. 1 Epler	1,0	Light	PBII	24 Sep 1995

Cladotanytarsus sp. 2 Epler	1,0	Light	PBI	2 Nov 1995
Cryptochironomus fulvus (Johannsen)	1,0	Light	PBI	22 Mar 1995
	2,0	Light	PBI	12 Jun 1995
	34,0	Light	PBI	2 Nov 1995
	5,0	Light	PBII	23 May 1995
	0,14	Light	PBII	2 Nov 1995
Cryptochironomus ponderosus Sublette	2,0	Light	PBI	2 Nov 1995
Dicrotendipes sp.	0,9	Light	PBI	22 Mar 1995
	0,13	Light	PBI	12 Jun 1995
	0,82	Light	PBI	2 Nov 1995
	0,31	Light	PBII	22 Mar 1995
	0,7	Light	PBII	23 May 1995
	0,1	Light	PBII	21 Sep 1995
	0,38	Light	PBII	2 Nov 1995
	0,8	Light	PBIII	12 Jun 1995
	0,3	Light	PBIII	30 Jul 1995
	0,5	Light	PBIII	21 Sep 1995
Dicrotendipes lucifer (Joh.) Complex sp.	2,0	Light	PBI	2 Nov 1995
Dicrotendipes modestus (Say)	1,0	Light	PBI	12 Jun 1995
	21,0	Light	PBI	2 Nov 1995
	5,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	27 Jun 1995
	31,0	Light	PBII	23 May 1995
	3,0	Light	PBII	2 Nov 1995
	1,0	Light	PBIII	12 Jun 1995
	5,0	Light	PBIII	30 Jul 1995
	16,0	Light	PBIII	21 Sep 1995
Dicrotendipes tritomus Kieffer	1,0	Light	PBI	22 Mar 1995
	142,0	Light	PBI	2 Nov 1995
	19,0	Light	PBII	22 Mar 1995
	3,0	Light	PBII	27 Jun 1995
	12,0	Light	PBII	2 Nov 1995
	1,0	Light	PBIII	21 Sep 1995
Einfeldia natchitocheae (Sublette)	1,0	Light	PBI	30 Jul 1995
Einfeldia cf. *pagana* (Meigen)	1,0	Light	PBII	23 May 1995
Einfeldia sp. 1 Epler	2,0	Light	PBIII	21 Sep 1995
Endotribelos sp. 1 Epler	1,0	Light	PBII	21 Sep 1995
Glyptotendipes cf. *lobiferus* (Say)	2,0	Light	PBIII	21 Sep 1995
Micropsectra cf. *geminata* Oliver & Dillon	2,0	Malaise	PBIII	29 Apr 1997
Microtendipes pedellus (DeGeer)	1,1	Light	PBI	12 Jun 1995
	2,0	Light	PBII	22 Mar 1995
	1,26	Light	PBII	23 May 1995
	0,1	Light	PBII	27 Jun 1995
Nilothauma bicorne (Townes)	1,0	Light	PBIII	12 Jun 1995
Omisus sp. A Epler	1,14	Light	PBII	22 Mar 1995
Parachironomus alatus (Beck)	3,0	Light	PBI	30 Jul 1995
	1,0	Light	PBIII	30 Jul 1995
	2,0	Light	PBIII	21 Sep 1995
Parachironomus carinatus (Townes)	1,0	Light	PBI	30 Jul 1995
	1,0	Light	PBIII	21 Sep 1995
Parachironomus chaetoalus (Dendy & Sublette)	2,0	Light	PBII	2 Nov 1995
Parachironomus digitalis (Edwards)	2,0	Light	PBI	12 Jun 1995
	1,0	Light	PBIII	12 Jun 1995

Parachironomus monochromus (Wulp)	1.0	Light	PBI	30 Jul 1995
Parachironomus tenuicaudatus (Malloch)	1.0	Light	PBI	30 Jul 1995
	1.0	Light	PBII	23 May 1995
Parachironomus sp. C Epler	1.0	Light	PBI	2 Nov 1995
Paralauterborniella nigrohalterale (Malloch)	1.0	Light	PBI	22 Mar 1995
	1.0	Light	PBIII	12 Jun 1995
Paracladopelma undine (Townes)	1.0	Light	PBI	30 Jul 1995
	1.0	Light	PBII	23 May 1995
	1.0	Light	PBII	27 Jun 1995
Paracladopelma nereis (Townes)	1.0	Light	PBI	2 Nov 1995
Paratanytarsus dissimilis Johannsen	2.0	Light	PBII	22 Mar 1995
Paratanytarsus quadratus Sublette	1.0	Light	PBI	2 Nov 1995
Paratanytarsus sp. 2 Epler	4.0	Light	PBI	2 Nov 1995
	6.0	Light	PBII	22 Mar 1995
	4.0	Light	PBII	2 Nov 1995
Paratendipes subaequalis (Malloch)	1.0	Light	PBII	23 May 1995
Phaenopsectra flavipes (Meigen)	2.0	Light	PBIII	21 Sep 1995
Polypedilum "angulum Maschwitz"	2.0	Light	PBII	10 May 1995
Polypedilum angustum Townes	1.0	Light	PBI	12 Jun 1995
	1.0	Light	PBII	10 May 1995
	1.0	Light	PBII	23 May 1995
	1.0	Light	PBII	27 Jun 1995
	1.0	Light	PBII	24 Sep 1995
	1.0	Light	PBIII	12 Jun 1995
Polypedilum cf. "*bergi* Maschwitz"	3.0	Light	PBI	30 Jul 1995
	2.0	Light	PBI	2 Nov 1995
	7.0	Light	PBII	23 May 1995
	1.0	Light	PBII	2 Nov 1995
Polypedilum convictum (Walker)	4.0	Light	PBI	2 Nov 1995
	1.0	Light	PBII	27 Jun 1995
	1.0	Light	PBII	24 Sep 1995
	1.0	Light	PBII	2 Nov 1995
Polypedilum digitifer Townes	2.0	Light	PBII	22 Mar 1995
	1.0	Light	PBIII	21 Sep 1995
Polypedilum griseopunctatum Malloch	2.1	Malaise	PBI	29 Apr 1997
	1.3	Light	PBI	30 Jul 1995
	1.0	Light	PBI	21 Sep 1995
Polypedilum halterale (Coquillett)	6.0	Light	PBI	2 Nov 1995
	1.0	Light	PBII	10 May 1995
	2.0	Light	PBII	27 Jun 1995
	1.0	Light	PBII	30 Jul 1995
	3.0	Light	PBII	2 Nov 1995
	2.0	Light	PBIII	12 Jun 1995
	1.0	Light	PBIII	21 Sep 1995
Polypedilum illinoense (Malloch)	4.0	Light	PBI	30 Jul 1995
	7.0	Light	PBI	2 Nov 1995
	1.0	Light	PBII	22 Mar 1995
	7.0	Light	PBII	10 May 1995
	14.0	Light	PBII	23 May 1995
	3.0	Light	PBII	27 Jun 1995
	4.0	Light	PBII	30 Jul 1995
	4.0	Light	PBII	2 Nov 1995
	3.0	Light	PBIII	21 Sep 1995
Polypedilum ophioides Townes	2.0	Malaise	PBI	29 Apr 1997

Polypedilum scalaenum (Schrank)	4.59	Light	PBI	22 Mar 1995
	3.2	Malaise	PBI	29 Apr 1997
	4.29	Light	PBI	12 Jun 1997
	4.64	Light	PBI	30 Jul 1995
	0,2	Light	PBI	21 Sep 1995
	13.28	Light	PBI	2 Nov 1995
	3,53	Light	PBII	22 Mar 1995
	1,15	Light	PBII	10 May 1995
	0,13	Light	PBII	23 May 1995
	1,8	Light	PBII	27 Jun 1995
	1,1	Light	PBII	30 Jul 1995
	0,5	Light	PBII	21 Sep 1995
	0,3	Light	PBII	24 Sep 1995
	0,23	Light	PBII	2 Nov 1995
	1,0	Malaise	PBIII	29 Apr 1997
	3,25	Light	PBIII	12 Jun 1995
	1,0	Light	PBIII	30 Jul 1995
Polypedilum simulans Townes	10,0	Light	PBII	23 May 1995
	3,0	Light	PBII	21 Sep 1995
	2,0	Light	PBII	2 Nov 1995
	1,0	Light	PBIII	21 Sep 1995
Polypedulum trigonus Townes	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	24 Sep 1995
	1,0	Light	PBIII	12 Jun 1995
Polypedilum tritum Walker (small)	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBI	12 Jun 1995
	17,0	Light	PBI	2 Nov 1995
	2,0	Light	PBII	22 Mar 1995
	3,0	Light	PBII	10 May 1995
	13,0	Light	PBII	23 May 1995
	5,0	Light	PBII	27 Jun 1995
	5,0	Light	PBII	30 Jul 1995
	14,0	Light	PBII	21 Sep 1995
	10,0	Light	PBII	24 Sep 1995
	6,0	Light	PBII	2 Nov 1995
	11,0	Light	PBIII	12 Jun 1995
	5,0	Light	PBIII	21 Sep 1995
Polypedilum tritum Walker (large)	4,0	Light	PBI	22 Mar 1995
	1,0	Light	PBI	12 Jun 1995
	1,0	Light	PBI	30 Jul 1995
	3,0	Light	PBI	2 Nov 1995
	4,0	Light	PBII	10 May 1995
	3,0	Light	PBII	23 May 1995
	2,0	Light	PBII	27 Jun 1995
	12,0	Light	PBII	30 Jul 1995
	2,0	Light	PBII	21 Sep 1995
	2,0	Light	PBII	24 Sep 1995
	21 Male 1 Intersex	Light	PBII	2 Nov 1995
	4,0	Light	PBIII	12 Jun 1995
Polypedilum vibex Townes	1,0	Light	PBII	30 Jul 1995
	1,0	Light	PBIII	12 Jun 1995

Pseudochironomus fulviventris (Johannsen)	2,2	Light	PBI	12 Jun 1995
	1,6	Light	PBII	22 Mar 1995
	20,2	Light	PBII	23 May 1995
	3,0	Light	PBIII	12 Jun 1995
Rheotanytarsus distinctissimus Brundin	1,0	Light	PBI	22 Mar 1995
	1,0	Light	PBI	12 Jun 1995
	1,0	Light	PBI	30 Jul 1995
	5,0	Light	PBI	2 Nov 1995
	14,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	10 May 1995
	7,0	Light	PBII	30 Jul 1995
	3,0	Light	PBII	21 Sep 1995
	12,0	Light	PBII	24 Sep 1995
	2,0	Light	PBII	2 Nov 1995
	3,0	Light	PBIII	12 Jun 1995
	2,0	Light	PBIII	21 Sep 1995
Rheotanytarsus exiguus Johannsen	6,0	Light	PBI	22 Mar 1995
	2,0	Light	PBI	12 Jun 1995
	2,0	Light	PBI	30 Jul 1995
	32,0	Light	PBI	2 Nov 1995
	239,0	Light	PBII	22 Mar 1995
	3,0	Light	PBII	10 May 1995
	44,0	Light	PBII	23 May 1995
	31,0	Light	PBII	27 Jun 1995
	172,0	Light	PBII	30 Jul 1995
	21,0	Light	PBII	21 Sep 1995
	8,0	Light	PBII	24 Sep 1995
	49,0	Light	PBII	2 Nov 1995
	1,0	Malaise	PBIII	29 Apr 1997
	24,0	Light	PBIII	12 Jun 1995
Rheotanytarsus sp. 4 Epler	1,0	Light	PBI	30 Jul 1995
	22,0	Light	PBI	2 Nov 1995
	3,0	Light	PBII	22 Mar 1995
Saetheria sp. 1 Epler	1,0	Light	PBI	2 Nov 1995
Stenochironomus macateei (Malloch)	1,0	Light	PBI	21 Sep 1995
Stenochironomus poecilopterus (Mitchell)	1,0	Light	PBI	12 Jun 1995
	1,0	Light	PBI	30 Jul 1995
Stenochironomus sp.	1,0	Light	PBII	10 May 1995
Tanytarsus cf. *allicis* Sublette	30,0	Light	PBI	2 Nov 1995
	1,0	Light	PBII	30 Jul 1995
	6,0	Light	PBII	2 Nov 1995
Tanytarsus cf. *brundini* Lindeberg	1,0	Malaise	PBI	29 Apr 1997
Tanytarsus cf. *buckleyi* Sublette	4,0	Light	PBI	12 Jun 1995
	1,0	Light	PBII	23 May 1995
Tanytarsus cf. *confusus* Malloch	1,0	Light	PBII	24 Sep 1995
Tanytarsus dendyi Sublette	3,0	Light	PBI	12 Jun 1995
	4,0	Light	PBI	21 Sep 1995
	9,0	Light	PBI	2 Nov 1995
	1,0	Light	PBII	2 Nov 1995
Tanytarsus cf. *guerlus* Roback	106,0	Light	PBI	2 Nov 1995
	13,0	Light	PBII	22 Mar 1995
	1,0	Light	PBII	27 Jun 1995
	1,0	Light	PBIII	21 Sep 1995
Tanytarsus mendax Kieffer	69,0	Light	PBI	2 Nov 1995

	3,0	Light	PBII	10 May 1995
	17,0	Light	PBII	23 May 1995
	8,0	Light	PBII	2 Nov 1995
Tanytarsus neoflavellus (Malloch)	1,0	Light	PBIII	12 Jun 1995
Tribelos fuscicorne (Malloch)	1,0	Light	PBII	24 Sep 1995
Xestochironomus subletti Borkent	1,0	Light	PBIII	12 Jun 1995
	1,0	Light	PBIII	21 Sep 1995
Zavreliella marmorata (Wulp)	1,0	Light	PBI	21 Sep 1995
	1,0	Light	PBIII	12 Jun 1995
	1,2	Light	PBIII	21 Sep 1995
Tanytarsus sp. 3 Epler	1,0	Malaise	PBI	29 Apr 1997
Tanytarsus sp. 8 Epler	1,0	Light	PBI	22 Mar 1995
	8,0	Light	PBII	22 Mar 1995
Tanytarsus sp. 9 Epler	1,0	Light	PBII	23 May 1995
	2,0	Light	PBIII	30 Jul 1995
Tanytarsus sp. 10 Epler	2,0	Malaise	PBIII	29 Apr 1997
Tanytarsus sp. 11 Epler	2,0	Light	PBIII	21 Sep 1995
Tanytarsus sp. 13 Epler	2,0	Light	PBI	30 Jul 1995
	13,0	Light	PBIII	12 Jun 1995
Tanytarsus sp. 14 Epler	1,0	Light	PBI	12 Jun 1995
Chironomini sp.	0,244	Light	PBI	22 Mar 1995
	0,4	Malaise	PBI	29 Apr 1997
	0,88	Light	PBI	12 Jun 1995
	0,139	Light	PBI	30 Jul 1995
	0,45	Light	PBI	21 Sep 1995
	0,456	Light	PBI	2 Nov 1995
	0,72	Light	PBII	22 Mar 1995
	0,109	Light	PBII	10 May 1995
	0,231	Light	PBII	23 May 1995
	0,86	Light	PBII	27 Jun 1995
	0,93	Light	PBII	30 Jul 1995
	0,107	Light	PBII	21 Sep 1995
	0,60	Light	PBII	24 Sep 1995
	0,206	Light	PBII	2 Nov 1995
	0,7	Malaise	PBIII	29 Apr 1997
	0,141	Light	PBIII	12 Jun 1995
	0,25	Light	PBIII	30 Jul 1995
	0,92	Light	PBIII	Sep 1995
Tanytarsini sp.	0,51	Light	PBI	22 Mar 1995
	0,4	Malaise	PBI	29 Apr 1997
	0,87	Light	PBI	12 Jun 1995
	0,67	Light	PBI	30 Jul 1995
	0,21	Light	PBI	21 Sep 1995
	0,1354	Light	PBI	2 Nov 1995
	0,360	Light	PBII	22 Mar 1995
	0,81	Light	PBII	10 May 1995
	0,256	Light	PBII	23 May 1995
	0,71	Light	PBII	27 Jun 1995
	0,50	Light	PBII	30 Jul 1995
	0,35	Light	PBII	21 Sep 1995
	0,39	Light	PBII	24 Sep 1995
	0,404	Light	PBII	2 Nov 1995
	0,4	Malaise	PBIII	29 Apr 1997
	0,107	Light	PBIII	12 Jun 1995
	0,5	Light	PBIII	30 Jul 1995

0.59 Light PBIII 21 Sep 1995

CONCLUSIONS

Among the several streams on the Savannah River Site studied to date, the study sites on the headwaters of Pen Branch and Lower Three Runs Creek are both second-order streams, with the historical study site on Lower Three Runs Creek slightly smaller than those on Pen Branch. For a stream of its size, Pen Branch's known insect fauna, with total of 341 species [60 Trichoptera (Moore1998) and 281 non-Trichoptera (Table III)], compares favorably with the number of species (376) known from Lower Three Runs Creek (Table IV). It should be noted that Lower Three Runs Creek was studied intensively by not only light trap and Malaise trap techniques, but also by benthic sampling. Furthermore, sorting and identification of some aquatic insect groups (e.g., Diptera-Ceratopogonidae and Lepidoptera), identified in the Lower Three Runs Creek work, were not attempted from Pen Branch samples.

The documentation of so many species of aquatic insects from second-order streams, especially so close together geographically, is highly unusual in the annals of benthology. Even so, the Pen Branch fauna has unique characteristics. The 33 new state records, the new national record, and the 11 species new to science found in this study are significant contributions to the advancement of knowledge of North American aquatic entomology.

Therefore, this study has established Pen Branch as a stream of outstanding diversity and faunistic significance compared to other streams in South Carolina and the world. It harbors many species endemic to the stream itself and many others representing the only records for South Carolina. Given its uniqueness and diversity, this headwater portion of Pen Branch is a stream worthy of protection and can serve as an excellent reference for streams of similar size in the region.

LITERATURE CITED

Alexander, C.P. 1942. Tanyderidae (pp. 183-184), Ptychopteridae (pp. 184-187), Trichoceridae (pp. 188-192) and Tipulidae (pp. 196-486). Guide to the Insects of Connecticut. Part VI. The Diptera or True Flies of Connecticut. Bulletin 64, State Geological and Natural History Survey of Connecticut

Bartsch, A.F., and W.M. Ingram. 1966. Biological analysis of water pollution in North America. Verhandlungen der Internationalen Vereiningung fuer Theoretische und Angewandte Limnologie 16: 786-780.

Floyd, M.A., J.C. Morse, and J.V. McArthur. 1993. Aquatic insects of Upper Three Runs Creek, Savannah River Site, South Carolina, part IV: caddisflies (Trichoptera) of the lower reaches. Journal of Entomological Science 28: 85-95.

Hart, C.W., and S.L.H. Fuller (eds.). 1974. Pollution Ecology of Freshwater Invertebrates. Academic Press, New York. 389 pp.

Henry, T.J. 1988. Catalog of the Heteroptera, or True Bugs, of Canada nd the Continental United States. E.J. Brill, Leiden, xix + 958 pp.

Kondratieff, B.C., and R.F. Kirchner. 1984. New species of *Taeniopteryx* (Plecoptera: Taeniopterygidae) from South Carolina. Annals of the Entomological Society of America 77: 733-736.

Lenat, D.R. 1993. A biotic index for the southeastern United States: derivation and list of tolerance values, with criteria for assigning water-quality ratings. Journal of the North American Benthological Society 7(3): 222-223.

Maschwitz, D.E. 1976. Revision of the Nearctic species of the subgenus *Polypedilum* (Chironomidae: Diptera). Ph.D. thesis, University of Minnesota, 325 pp. [in press now at Ohio Biological Survey].

Merritt, R.W. , and H.D. Newson. 1978. Chap. 6. Ecology and management of arthropod populations in recreational lands. Pp. 125-162 *in* G.W. Frankie and C.S. Koehler (eds.). Perspectives in urban entomology. Academic Press, New York. 417 pp.

Moore, S.B. 1998. Studies in aquatic macroinvertebrate diversity of Upper Three Runs Creek and Pen Branch at Savannah River Site, Aiken, South Carolina. M.S. thesis Clemson university. 41pp.

Morse, J.C., J.W. Chapin, D.D. Herlong, and R.S. Harvey. 1980. Aquatic insects of Upper Three Runs Creek, Savannah River Plant, South Carolina, part I: orders other than Diptera. Journal of the Georgia Entomological Society 15:73-101.

Morse, J.C., J.W. Chapin, D.D. Herlong, and R.S. Harvey. 1983. Aquatic insects of Upper Three Runs Creek, Savannah River Plant, South Carolina, part II: Diptera. Journal of the Georgia Entomological Society 18:303-316.

Morse, J.C. 1990 ("1988"). *Protoptila morettii* (Trichoptera: Glossosomatidae), a new caddisfly species from the southeastern United States. Rivista di Idrobiologia 27: 299-308.

Morse, J.C., M.A. Floyd and S.C. Harris. 1997. Aquatic insects of Lake Jocassee Catchment, North and South Carolina, part II: Caddisflies (Trichoptera) of six additional drainages, with a description of a new species. The Journal of the Elisha Mitchell Society 113(3):133-142.

Rounsefell, G.A., and W.H. Everhart. 1953. Fishery Science, Its Methods and Applications. John Wiley & Sons, Inc., New York. 444 pp.

Saether, O.A., and J.E. Sublette. 1983. A review of the genera *Doithrix* n. gen., *Georthocladius* Strenzke, *Parachaetocladius* Wulker, and *Pseudorthocladius* Goetghebuer (Diptera: Chironomidae, Orthocladiinae). Ent. scand. Suppl. 20:1-100.

Sanderson, M.W. 1982. Chapter 6, Aquatic and semiaquatic Heteroptera. Pp. 6.1-6.49 in A.R. Brigham, W.U. Brigham, and A. Gnilka (eds.), Aquatic Insects and Oligochaetes of North and South Carolina. Midwest Aquatic Enterprises, Mahomet, Illinois.

Specht, W.L. 1994. Report # WSRC-TR-95-0006: Results of macroinvertebrate sampling conducted at 33 SRS stream locations, Jul-August 1993. Westinghouse Savannah River Company, Aiken, South Carolina.

Stark, B.P. 1980. Plecoptera in J.C. Morse, et al. eds. Aquatic insects of Upper Three Runs Creek, Savannah River Plant, South Carolina. Part I. Orders other than Diptera. Journal of the Georgia Entomological Society.

Warren, C.E. 1971. Biology and Water Pollution Control. W.B. Saunders, Philadelphia. 434 pp.

Wike, L.D., R.W. Shipley, J.A. Bowers, A.L. Bryan, C.L. Cummins, B.R. del Carmen, G.P. Friday, J.E. Irwin, H.E. Mackey, Jr., J.J. Mayer, E.A. Nelson, M.H. Paller, V.A. Rogers, W.L. Specht, and E.W. Wilde. WSRC-TR-93-496: SRS Ecology. Westinghouse Savannah River Company, Aiken, SC.

Wilhm, J.L., and T.C. Dorris. 1968. Biological parameters of water quality. BioScience 18:447-481.

Workman, S.W., and K.W. McLeod. 1990. Vegetation of the Savannah River Site: Major community types. A publication of the Savannah River Site National Environmental Research Park Program, Aiken, South Carolina. 137 pp.

Table I. Publicized Results Based entirely or in Part upon Clemson University Research on Upper Three Runs Creek Insect Fauna, Savannah River National Environmental Research Park, Aiken, South Carolina, through September 1998.

PRESENTATIONS AT SCIENTIFIC MEETINGS:

1. Chapin, J. W. 1977. Larvae of the genus Micrasema (Trichoptera: Brachycentridae) in the Southeastern United States. Southeastern Branch of the Entomol. Soc. of America annual meeting, Charleston, South Carolina, 26 January 1977.

2. Chapin, J. W., and J. C. Morse. 1978. A comparison of benthic faunal surveys based on bottom sampling and light trapping. North American Benthological Society annual meeting in Winnipeg, Manitoba, 12 May 1978.

3. English, W. R. 1985. Importance of Sparganium americanum and Potamogeton epihydras in structuring aquatic insect communities in streams. Formal Conference on Aquatic Insect/Plant Interactions (invited speaker), Entomological Society of America annual meeting in Hollywood, Florida, 10 December 1985.

4. English, W. R. 1985. Importance of aquatic plants in the macrobenthic community structure of Sand Hills streams. North American Benthological Society annual meeting in Corvallis, Oregon, 26 June 1985.

5. English, W. R. 1986. Relationships between habitat type and aquatic invertebrate community structure. (Invited speaker) Association of Southeastern Biologists annual meeting in Columbia, South Carolina, 10 April 1986.

6. English, W. R. 1987. Physical-chemical dynamics of a South Carolina Sandhills stream. North American Benthological Society annual meeting in Orono, Maine, 4 June 1987.

7. English, W. R. 1987. Physical-chemical dynamics of a South Carolina Sandhills stream. Carolinas Area Benthic Biologists Annual Meeting in New Hill, North Carolina, 5 November 1987.

8. Floyd, M.A., and J.C. Morse. 1992. The larvae of the caddisfly genus Oecetis in North America (Trichoptera: Leptoceridae); Entomological Society of America; Baltimore, Maryland.

9. Floyd, M.A., and J.C Morse. 1992. The larvae of the caddisfly genus Oecetis in North America (Trichoptera: Leptoceridae); South Carolina Entomological Society, Charleston, South Carolina.

10. Herlong, D. D. 1978. Aquatic Lepidoptera in South Carolina. Southeastern Branch of the Entomological Society of America annual meeting in Gainesville, Florida, 25 January 1978.

11. Herlong, D. D. 1978. Aquatic Lepidoptera (Pyralidae: Nymphulinae) in South Carolina. South Carolina Entomological Society annual meeting in Myrtle Beach, South Carolina, 16 February 1978.

12. Holzenthal, R. W. 1981. Historical biogeography and ecology of two new species of Nearctic Setodes (Trichoptera: Leptoceridae). North American Benthological Society annual meeting in Provo, Utah, 29 April 1981.

13. Holzenthal, R. W., and S. W. Hamilton. 1983. Endemic caddisflies of the southeastern Coastal Plain: distribution and historical biogeography. Florida Entomological Society annual meeting in Clearwater, Florida, 8-12 August 1983.

14. Holzenthal, R. W., and S. W. Hamilton. 1984. Trichoptera diversity and endemism in the Southeastern Coastal Plain. North American Benthological Society annual meeting in Raleigh, North Carolina, 24 May1984, in symposium entitled, "Blackwater Rivers."

15. Kelley, R. W. 1981. A reassessment of species groups of southeastern Oxyethira (Trichoptera: Hydroptilidae) based on an analysis of the females. North American Benthological Society annual meeting in Provo, Utah, 29 April 1981.

16. McEwan, E. M. 1980. Biology and life history of two southeastern species of Agarodes (Trichoptera: Sericostomatidae). Entomological Society of America annual meeting in Atlanta, Georgia, 2 December 1980.

17. Menking, D. E. 1976. The tube-building habits of the genus Phylocentropus (Trichoptera: Polycentropodidae). Georgia/South Carolina Entomological Societies joint annual meeting in Savannah, Georgia, 18 March 1976.

18. Morse, J. C. 1980. Trichoptera, in Symposium on Aquatic Invertebrate Fauna of the Southeastern United States. North American Benthological Society annual meeting in Savannah, Georgia, 26-38 March 1980.

19. Morse, J. C. 1981. Aquatic insect investigations in South Carolina, U.S.A. (Invitational Address) Victorian Entomological Society bimonthly meeting in Melbourne, Victoria, Australia, November 1981.

20. Morse, J. C. 1981. Benthological research in South Carolina, U.S.A. (Invitational Address) Victoria Branch, Limnological Society of Australia, quarterly meeting in Melbourne, Victoria, Australia, December1981.

21. Morse, J.C. 1981. Studies of aquatic insects in South Carolina, U.S.A.; National Museum of Victoria, Melbourne, Australia.

22. Morse, J.C. 1986. Flight range and attractance of Trichoptera to ultraviolet light; North American Benthological Society.

23. Morse, J.C. 1987. Threatened or endangered Trichoptera (In symposium entitled, "Threatened or Endangered Invertebrates"); North American Benthological Society, Orono, Maine.

24. Morse, J.C. 1994. Biodiversity and endangered species, Nanjing Agricultural University; Nanjing, People's Republic of China.

25. Morse, J.C. 1996. Insect Community in Upper Three Runs Creek; Entomological Society of America, Louisville, Kentucky.

26. Morse, J.C. 1997. A Review of the Current Taxonomy of Carolinas Trichoptera; Carolinas Area Benthological Workshop, Columbia, South Carolina.

27. Morse, J.C. 1998. Aquatic Insect Research in South Carolina; South Carolina Association of Naturalists, Columbia, South Carolina.

28. Morse, J. C., J. W. Chapin, D. D. Herlong , and R. S. Harvey. 1979. The insects of Upper Three Runs Creek, Savannah River Plant. Georgia/South Carolina Entomological Societies joint annual meeting on Hilton Head Island, South Carolina, 23 March 1979.

29. Morse, J.C., and J.D. Culin. 1991. Bright lights and the urge to travel; South Carolina Entomological Society, Florence, SC.

30. Morse, J.C., and J.D. Culin. 1992. Attractance of caddisflies to ultraviolet light at varying distances from a stream; North American Benthological Society, Louisville, KY, and 7th International Symposium on Trichoptera, Umeä, Sweden. (poster presentation)

31. Morse, J. C., and W. R. English. 1984. Insect community characteristics of a blackwater stream in the South Carolina Sandhills. North American Benthological Society annual meeting in Raleigh, North Carolina, 24 May 1984, in symposium entitled, "Blackwater Rivers."

32. Morse, J.C., and S.W. Hamilton. 1990. The southeastern caddisfly fauna: origins and affinities; South Carolina Entomological Society.

33. Morse, J.C., S.W. Hamilton, and R.W. Holzenthal. 1986. Historical biogeography of a freshwater insect group in North America, the caddisflies; South Carolina Entomological Society.

34. Morse, J. C. and R. W. Kelley. 1982. Aquatic insects of Upper Three Runs Creek, South Carolina. North American Benthological Society annual meeting in Ann Arbor, Michigan, 19 May 1982.

THESIS AND DISSERTATIONS:

1. Chapin, J. W. 1978. Systematics of Nearctic Micrasema (Trichoptera: Brachycentridae). Ph.D. Dissertation, Clemson University. xv + 136 pp.

2. Chen, Y.E. 1993. Revision of the Oecetis (Trichoptera: Leptoceridae) of the world. Ph.D. Dissertation, Clemson University. xvii + 704 pp.

3. English, W.R. 1991. Ecosystem dynamics of a South Carolina Sandhills stream. Ph.D. Dissertation, Clemson University. xiv + 118 pp.

4. Floyd, M.A. 1994. Larvae of the caddisfly genus Oecetis (Trichoptera: Leptoceridae) in North America. Ph.D. Dissertation, Clemson University. x + 163 pp.

5. Herlong, D. D. 1978. Aquatic Pyralidae (Lepidoptera: Nymphulinae) in South Carolina. M.S. thesis, Clemson University. viii + 42 pp.

6. Kelley, R. W. 1982. The micro-caddisfly genus Oxyethira (Trichoptera: Hydroptilidae): morphology, biogeography, evolution and classification. Ph.D. dissertation, Clemson University. xv + 437 pp.

7. McEwan, E. M. 1980. Biology and life history of the genus Agarodes (Trichoptera: Sericostomatidae) in the southeastern United States. M.S. thesis, Clemson University. vii + 67 pp.

8. Menking, D. E. 1978. Biology and life history of the caddisfly genus Phylocentropus (Polycentropodidae) with special reference to influences of heated water. M.S. thesis, Clemson University. v + 28 pp.

9. Moore, S.B. 1998. Studies in aquatic macroinvertebrate diversity of Upper Three Runs Creek and Pen Branch at Savannah River Site, Aiken, South Carolina. M.S. thesis, Clemson University. vi + 41 pp.

10. Napolitano, J.F. 1996. The distribution and habitat characteristics of the American Sand-burrowing Mayfly, Dolania americana (Ephemeroptera: Behningiidae). M.S. thesis, Clemson University. vii + 44 pp.

11. Wymer, D.A. 1997. The ecology of Trichoptera colonizers of snag habitat in headwater streams on the Savannah River Site. M.S. thesis, Clemson University. viii + 102 pp.

PUBLICATIONS IN SCHOLARLY BOOKS AND REFEREED PROFESSIONAL JOURNALS:

1. Brigham, A. R. and D. D. Herlong. 1982. Lepidoptera, Chapter 12. In A. R.Brigham, W. U. Brigham and A. Gnilka, editors, Aquatic Insects and Oligochaetes of North and South Carolina. Midwest Aquatic Enterprises, Mahomet, Illinois. 837 pp. (pp. 12.1 - 12.36)

2. Bueno-Soria, J. 1981. Estudios en insectos acuaticos de Mexico I. Trichoptera (Leptoceridae). Cinco nuevas especies de Oecetis McLachlan. Fol. Entomol. Mex. 49: 103-120. -- includes original description of Oecetis morsei from Upper Three Runs Creek.

3. English, W.R. 1988. Three inexpensive aquatic invertebrate samplers for benthos, drift, and emergent fauna. Entomological News 98: 171-179.

4. Floyd, M.A., J.C. Morse, and J.V. McArthur. 1993. Aquatic insects of Upper Three Runs Creek, Savannah River Site, South Carolina, part IV: Caddisflies of the lower reaches. Journal of Entomological Science 28: 85-95.

5. Floyd, M.A. 1993. The biology and distribution of Oecetis larvae in North America (Trichoptera: Leptoceridae). Pages 87-91 in C. Otto, editor, Proceedings of the 7th International Symposium on Trichoptera, Umeå, Sweden, 3-8 August 1992. Backhuys Publishers, Leiden, The Netherlands. 312 pages.

6. Hamilton, S.W., and J.C. Morse. 1990. Southeastern caddisfly fauna: origins and affinities. Florida Entomologist 73(4): 587-600 (also preface entitled, "Symposium: origins of the southeastern arthropod fauna," pp. 527-528).

7. Herlong, D. D. 1979. Aquatic Pyralidae (Lepidoptera: Nymphulinae) in South Carolina. Florida Entomol. 62: 188-193.

8. Hoffman, K.M., and J.C. Morse. 1990. Descriptions of the females of three Polycentropus species (Trichoptera: Polycentropodidae). Proceedings of the Entomological Society of Washington 92(2): 274-281.

9. Holzenthal, R. W., and S. C. Harris. 1985. The female of Setodes guttatus with distribution notes (Trichoptera: Leptoceridae). J. Kansas Entomol. Soc. 58(1): 166-167.

10. Holzenthal, R. W. 1982. The caddisfly genus Setodes in North America (Trichoptera: Leptoceridae). J. Kansas Entomol Soc., 55(2): 253-271.

11. Holzenthal, R. W. and R. W. Kelley. 1984. New micro-caddisflies from the southeastern United States (Trichoptera: Hydroptilidae). Florida Entomol. 66(4) 1983): 464-472.

12. Kelley, R. W. 1981. New species of Oxyethira (Trichoptera: Hydroptilidae) from the southeastern United States. J. Georgia Entomol. Soc., 16(3): 368-375.

13. Kelley, R. W. 1984. Phylogeny, morphology and classification of the micro-caddisfly genus Oxyethira Eaton (Trichoptera: Hydroptilidae). Trans. Amer. Entomol. Soc., 110: 435-463.

14. Kelley, R. W. 1985. Revision of the micro-caddisfly genus Oxyethira (Trichoptera: Hydroptilidae). Part II: Subgenus Oxyethira. Trans. Amer. Entomol. Soc. 111: 223-253.

15. Kelley, R. W. 1987. Revision of the micro-caddisfly genus Oxyethira (Trichoptera: Hydroptilidae) Part III: Subgenus Holarctotrichia. Proc. Entomol. Soc. Washington 88(4): 777-785.

16. Kelley, R. W. and J. C. Morse. 1982. A key to the females of the genus Oxyethira (Trichoptera: Hydroptilidae) from the southern United States. Proc. Entomol. Soc. Washington, 84(2): 256-269.

17. Morse, J. C. 1981. Aquatic insect investigations in South Carolina, U.S.A. Victorian Entomol. 2(6): 62-64.

18. Morse, J.C. 1990 ("1988"). Protoptila morettii (Trichoptera: Glossosomatidae), a new caddisfly species from the southeastern United States. Rivista di Idrobiologia 27(2-3): 299-308.

19. Morse, J. C., J. W. Chapin, D. D. Herlong and R. S. Harvey. 1980. Aquatic insects of Upper Three Runs Creek, Savannah River Plant, South Carolina. Part I: Orders other than Diptera. J. Georgia Entomol. Soc., 15(1): 73-101.

20. Morse, J.C., J.W. Chapin, D.D. Herlong, and R.S. Harvey. 1983. Aquatic insects of Upper Three Runs Creek, Savannah River Plant, South Carolina. Part II: Diptera. Journal of the Georgia Entomological Society 18(3): 303-316.

21. Morse, J.C., and R.W. Holzenthal. 1984. Trichoptera genera. Chapter 17, pp. 312-347, in R.W. Merritt and K.W. Cummins, editors, An Introduction to the Aquatic Insects of North America, Second Edition. Kendall/Hunt Publishing Company, Dubuque, Iowa. 722 pp.

22. Morse, J.C., and R.W. Holzenthal. 1996. Trichoptera genera. Chapter 18, pp. 350--386, in R.W. Merritt and K.W. Cummins, editors, An Introduction to the Aquatic Insects of North America, Third Edition. Kendall/Hunt Publishing Company, Dubuque, Iowa. 862 pp.
Morse, J.C. 1997. Checklist of World Trichoptera. Pages 339-342 in R.W. Holzenthal and O.S. Flint, Jr., editors, Proceedings of the 8th International Symposium on Trichoptera. Ohio Biological Survey, Columbus, Ohio. 496 pp.

23. Morse, J.C., B.P. Stark, W.P. McCafferty, and K.J. Tennessen. 1998 ("1997"). Chapter 2. Southern Appalachian and other southeastern streams at risk: implications for mayflies, dragonflies and damselflies, stoneflies, and caddisflies. Pages 17-42 in G.W. Benz and D.E. Collins, editors, Aquatic Fauna in Peril: the Southeastern Perspective. Special Publication 1, Southeast Aquatic Research Institute, Lenz Design and Communications, Decatur, Georgia. 554 pp.

24. Oliver, D. R., and M. E. Roussel. 1983. Redescription of Brillia Kieffer(Diptera: Chironomidae) with descriptions of Nearctic species. Can.Entomol., 115: 257-279.

25. Saether, O. A. 1980. Three female chironomid genitalia (Diptera). In D. A.Murray, editor, Chironomidae: Ecology, Systematics, Cytology andPhysiology. Pergamon Press, New York.

26. Saether, O. A. 1982. Orthocladiinae (Diptera: Chironomidae) from SE U.S.A.,with descriptions of Plhudsonia, Unniella and Platysmittia n. genera and Atelopodella n. subgen. Entomol. Scand., 13: 465-510.

27. Saether, O. A. 1983. A review of the genera Doithrix n. gen., Georthocladius Strenzke, Parachaetocladius Wulker and Pseudorthocladius Goetghebuer(Diptera: Chironomidae; Orthocladiinae). Entomol. Scand. suppl. 20:1-100. (Includes Pseudorthocladius (P.) morsei from SRS).

28. Schuster, G. A., and S. W. Hamilton. 1984. The genus Phylocentropus in North America (Trichoptera: Polycentropodidae). Pages 347-362 in J. C. Morse, ed. Proceedings of the 4th International Symposium on Trichoptera, Ser. Entomol. 30, Dr. W. Junk Pub., The Hague. 486 pp.

29. Surdick, R. F. 1981. New Nearctic Chloroperlidae (Plecoptera). Great Basin Naturalist, 41(3): 349-359.

30. Unzicker, J. D., V. H. Resh and J. C. Morse. 1982. Trichoptera, Chapter 9. In A. R. Brigham, W. U. Brigham and A Gnilka, editors. Aquatic Insects and Oligochaetes of North and South Carolina. Midwest Aquatic Enterprises, Mahomet, Illinois. 837 pp. (pp. 9.1 - 9.138)

31. Weaver, J. S., III. 1984. The diversification of Lepidostomatidae. Page 421 in J. C. Morse, ed. Proceedings of the 4th International Symposium on Trichoptera, Ser. Entomol. 30, Dr. W. Junk Pub. The Hague. 486 pp.

32. Weaver, J. S., III. 1988. A synopsis of the North American Lepidostomatidae (Trichoptera). Contrib. Amer. Entomol. Inst. 24(2): 1-141.

33. Wood, J. R., V. H. Resh and E. M. McEwan. 1982. Egg masses of Nearctic sericostomatid caddisfly genera (Trichoptera). Ann. Entomol. Soc. Amer., 75(4): 430-434.

34. White, D. S. 1982. Stenelmis morsei, a new species of riffle beetle (Coleoptera: Dryopoidea: Elmidae) from South Carolina. The Coleopterists Bull. 36(2): 170-174.

35. White, T. R., K. J. Tennessen, R. C. Fox and P. H. Carlson. 1980. The aquatic insects of South Carolina, Part I: Anisoptera (Odonata). Bull. South Carolina Agric. Expt. Sta., Clemson University, Clemson, South Carolina. 632: 1-153.

36. White, T. R., K. J. Tennessen, R. C. Fox and P. H. Carlson. 1983. The aquatic insects of South Carolina, Part II: Zygoptera (Odonata). Bull. South Carolina Agric. Expt. Sta., Clemson Univ., Clemson, S.C., 648:1-72.

PLEASE NOTE: In addition to the above, several manuscripts are in preparation or have been published which describe about 60 new species and 2 new genera of aquatic insects captured in these investigations. Other manuscripts are in preparation which provide more detailed information or numerous, significant new distribution records for particular species. Specimens of many interesting species are now so widely scattered among taxonomic specialists that it will probably be impossible to tally an exhaustive list of publications and other scientific communications resulting from the base-line research conducted on Upper Three Runs Creek to date.

Furthermore, J.C. Morse and his students have provided numerous seminar presentations for various groups at Clemson University regarding the aquatic insect fauna of Upper Three Runs Creek.

Table II. Codes for localities on the Savannah River Site, dates, and collecting methods (and lifeforms) for aquatic insect taxa cited in Table III (with references to sources of data).

A - Upper Three Runs Creek at SRS route 8-1, Treadway Bridge (Site A)

Aa	1976-77, light trapping (adults) (Morse, Chapin, Herlong & Harvey 1980, 1983)
Ab	1979-80, light trapping (adults) (Morse, Kelley, & McEwan unpublished)
Ac	1979-80, Malaise trapping (adults) (Morse, Kelley, & McEwan unpublished)
Ad	1979-80, emergence trapping (adults) (Morse, Kelley, & McEwan unpublished)
Ae	1979-80, sweeping (adults) (Morse, Kelley, & McEwan unpublished)
Af	1979-80, benthic net sampling (larvae and pupae) (Morse, Kelley, & McEwan unpublished)
Ag	1979-80, debris sampling (larvae and pupae) (Morse, Kelley, & McEwan unpublished)
Ah	1982-85, general qualitative benthic sampling (larvae and pupae) (English 1991)
Ai	1976-77, benthic net sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Aj	1976-77, debris sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Ak	1984, light trapping (adults) (Morse, McCreadie, & Culin unpublished)

B - Tinker Creek at SRS route 9-1 (Site B)

Ba	1976-77, light trapping (adults) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Bb	1979-80, Malaise trapping (adults) (Morse, Kelley, & McEwan unpublished)
Bc	1976-77, benthic net sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Bd	1976-77, debris sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Be	1979-80, sweeping (adults) (Morse, Kelley, & McEwan unpublished)

C - Mill Creek at SRS route E-2 (Site C)

Ca	1976-77, light trapping (adults) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Cb	1976-77, benthic net sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Cc	1976-77, debris sampling (larvae and pupae) (Morse, Chapin, Herlong & Harvey 1980, 1983)
Cd	1979-80, Malaise trapping (adults) (Morse, Kelley, & McEwan unpublished)
Ce	1979-80, emergence trapping (adults) (Morse, Kelley, & McEwan unpublished)
Cf	1979-80, sweeping (adults) (Morse, Kelley, & McEwan unpublished)

D - Boggy Gut Creek at U.S. Forest Service route 781-4 (Site D)

Da	1976-77, light trapping (adults) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Db	1976-77, benthic net sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Dc	1976-77, debris sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)

E - Mill Creek at unnamed fork (Site E) 2.75 km upstream from SRS route E-2 (location of Site C above)

Ea	1976-77, light trapping (adults) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Eb	1979-80, Malaise trapping (adults) (Morse, Kelley, & McEwan unpublished)
Ec	1979-80, emergence trapping (adults) (Morse, Kelley & McEwan unpublished)
Ed	1976-77, benthic net sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Ee	1976-77, debris sampling (larvae and pupae) (Morse, Chapin, Herlong, & Harvey 1980, 1983)

F - Upper Three Runs Creek at SRS route F (Site F)

Fa	1976-77, light trapping (adults) (Morse, Chapin, Herlong, & Harvey 1980, 1983)
Fb	1976-77, qualitative benthic collecting (larvae and pupae) (Chapin & Herlong unpublished)

G - Lower Three Runs Creek 800 m upstream from SRS route 8-8 (Site G)

Ga 1979-80, light trapping (adults) (Morse, Kelley, & McEwan unpublished)
Gb 1979-80, benthic sampling (larvae and pupae) (Morse, Kelley, & McEwan unpublished)
Gc 1979-80, debris sampling (larvae and pupae) (Morse, Kelley, & McEwan unpublished)
Gd 1979-80, Malaise trapping (adults) (Morse, Kelley, & McEwan unpublished)
Ge 1979-80, emergence trapping (adults) (Morse, Kelley, & McEwan unpublished)
Gf 1984, light trapping (adults) (Morse, McCreadie, & Culin unpublished)

H - Upper Three Runs Creek at SRS route C

Ha 1989-90, light trapping (adults) (Floyd, Morse, & McArthur 1993)
Hb 1989-90, qualitative benthic collecting (larvae and pupae) (Floyd unpublished)
Hc 1976-77, qualitative benthic collecting, (larvae and pupae) (Menking 1978)
Hd 1995-96, qualitative benthic sampling (larvae) (Napolitano 1996)
He 1996-97, quantitative drift net sampling (Moore 1998)

I - Upper Three Runs Creek 2 km downstream from SC route 125

Ia 1989-90, light trapping (adults) (Floyd, Morse, & McArthur 1993)
Ib 1989-90, qualitative benthic collecting (larvae and pupae) (Floyd unpublished)

J - Five unnamed tributaries of Tinker Creek just inside northeastern boundary of SRS

Ja 1996-97, quantitative snag habitat sampling (larvae and pupae) (Wymer 1997)

K - Par Pond, northeast arm

Ka 1976-77, qualitative benthic sampling (Herlong 1978)

L - Pen Branch at SRS road B (PB I)

La 1995, light trapping (adults) (Moore 1998; Moore, Morse, & Specht unpublished)
Lb 1995-97, Malaise trapping (adults) (Moore 1998; Moore, Morse & Specht unpublished)

M - Pen Branch 1.3 km upstream of site L (PB II)

Ma 1995, light trapping (adults) (Moore 1998; Moore, Morse, & Specht unpublished)
Mb 1995-97, Malaise trapping (adults) (Moore 1998; Moore, Morse & Specht unpublished)

N - Pen Branch at SRS road C (PB III)

Na 1995, light trapping (adults) (Moore 1998; Moore, Morse, & Specht unpublished)
Nb 1995-97, Malaise trapping (adults) (Moore 1998; Moore, Morse, & Specht unpublished)

O - Pen Branch 200m downstream of srs road A-13

Oa 1996-97, Hester-Dendy multiplate samples (larvae & pupae) (R.B. Parker 1998)

P - Meyers Branch at SRS road 9

Pa 1996-97, Hester-Dendy multiplate samples (larvae & pupae) (R.B. Parker 1998)

Q - Upper Three Runs Creek at U.S. route 278

Qa 1996-97, Hester-Dendy multiplate samples (larvae & pupae) (R.B. Parker 1998)

* Taxa for which adult specimens were captured at light trap(s) in 1976-77, but for which locality records are now ambiguous (i.e., localities were Aa, Ba, Ca, Da, Ea, and/or Fa).

** Taxa for which larval specimens were captured in benthic sampling and/or debris sampling in 1976-77, but for which locality, and sampling method records are now ambiguous (i.e., localities and sampling methods were Ai, Aj, Bc, Bd, Cb, Cc, Db, Dc, Ed, Ee, and/or Fb).

Table III. Aquatic insect taxa of the Savannah River Site collected during 1976-1997 by Clemson University personnel. The meanings of codes and asterisks (*) are provided in Table II.

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
EPHEMEROPTERA																																																								
Acerpenna pygmaea (Hagen)			X	X		X																										X	X	X	X	X																			
Attenella attenuata (McDunnough)							X					X		X																		X	X	X		X																			
Baetis bimaculatus (Berner)									X	X		X																		X																									
Baetis dubius (Walsh)						X	X																										X	X	X																				
Baetisca obesa (Say)						X																													X																				
Caenis amica Hagen												X																			X																			X					
Caenis anceps Traver																																	X																		X					
Caenis diminuta Walker							X																										X																		X					
Callibaetis pretiosus Banks																																										X															
Dolania americana Edmunds & Traver																																																										
Ephemerella dorothea Needham																																																										
Ephemerella inconstans Traver														X	X			X											X	X																												
Ephemerella invaria (Walker)																																		X	X																						
Ephoron leukon Williamson	X											X		X																																												
Eurylophella funeralis (McDunnough)						X	X																													X																					
Eurylophella prudentalis (McDunnough)																															X																									
Habrophlebiodes americana Banks							X					X																					X		X																					
Habrophlebiodes annulata Traver																																	X			X	X																			
Heptagenia flavescens (Walsh)	X																													X			X																						
Heptagenia pulla (Clemens)																																		X																						
Hexagenia limbata (Serville)	X		X			X	X					X					X														X		X																						
Isonychia arida (Say)	X											X					X																																								
Labiobaetis ephippiatus (Traver)	X					X	X																										X	X	X																				
Labiobaetis frondalis (McDunnough)			X																																																					
Labiobaetis propinqua (Walsh)												X																			X																								
Leptophlebia cupida (Say)	X											X																					X	X																						
Leptophlebia intermedia (Traver)			X			X								X	X			X											X																										
Neoephemera youngi Berner	X																													X			X																						
Paraleptophlebia volitans (McDunnough)																		X																																						
Serratella deficiens (Morgan)			X																														X			X																			
Stenacron floridense (Lewis)	X											X					X																																							
Stenacron interpunctatum (Say)																																	X																							
Stenonema mexicanum (Ulmer)			X	X		X	X			X		X		X	X		X								X	X			X	X	X		X																						
Stenonema modestum (Banks)	X								X			X		X	X		X																																						
Stenonema smithae (Traver)																																																									
Timpanoga simplex (McDunnough)																		X								X																													
Tricorythodes albilineatus Berner																																																								
EPHEMEROPTERA TOTAL TAXA 37	9	0	6	2	0	8	8	0	2	1	0	11	0	5	3	0	4	4	0	0	0	0	0	1	2	0	0	0	4	2	9	0	15	7	9	2	5	0	0	0	0	1	0	0	0	0	0	3	0	5	0	0	0	3	4	1
ODONATA																																																							
Amphiagrion saucium (Burmeister)			X																																																				
Argia bipunctatulata (Hagen)					X																																																		
Argia fumipennis (Burmeister)	X		X		X		X		X																	X																												
Argia tibialis (Rambur)	X		X		X		X		X			X		X							X			X	X																													
Argia Translata (Hagen)																																																							
Basiaeschna janata (Say)		X					X		X				X																																										
Boyeria vinosa (Say)	X	X			X	X	X		X			X			X		X			X	X			X		X	X				X				X																			
Calopteryx dimidiata Burmeister	X		X		X		X		X			X	X			X																																							
Calopteryx maculata (Beauvois)	X		X		X		X		X			X		X		X	X				X		X																																
Cordulegaster diastatops (Selys)							X																																																
Cordulegaster maculatus Selys						X	X																X											X	X																			
Dromogomphus armatus Selys	X					X	X		X	X														X																															
Enallagma divagans Byers					X		X			X																																													
Enallagma weewa (Say)	X		X	X			X															X																																
Erythemis simplicicollis (Say)	X				X								X								X																																
Erythrodiplax connata minuscula (Rambur)																																																					
Gomphus (Gomphus) diminutus Selys						X	X																																													
Gomphus (Gomphus) exilis Currie						X																																														
Gomphus (Hylogomphus) poss. parvidens Currie							X						X																							X																	
Gomphus lividus Selys						X	X					X		X																																							
Hagenius brevistylus Selys	X					X			X								X		X					X					X																									
Helocordulia selysii (Hagen)																																																					
Hetaerina americana (Fabricius)	X	X	X		X		X																						X																							
Ischnura hastata (Say)			X																		X																																
Ischnura posita (Hagen)			X																																																	

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Fc	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Ischnura prognatha (Hagen)										X																																													
Lestes disjunctus australis (Walker)																					X																																				
Lestes inaequalis Walsh									X																																														
Libellula deplanata Rambur					X																																																			
Libellula lydia Drury			X																																																				
Libellula poss. incesta Hagen						X														X	X																																			
Libellula vibrans Fabricius																																																		X					
Macromia taeniolata Rambur						X																																																	
Neurocordulia alabamensis Hodges	X	X					X		X	X		X		X	X				X				X	X	X					X					X																						X
Ophiogomphus mainensis Packard																					X																																			
Pachydiplax longipennis (Burmeister)																X				X	X																															X				
Somatochlora provocans Calvert																					X																																			
Stylurus ivae Williamson															X					X						X								X	X																				
Stylurus laurae Williamson						X																												X																						
Synpetrum ambiguum (Rambur)																X					X																																			
ODONATA TOTAL TAXA 40	11	4	10	1	10	10	16	0	10	4	0	6	4	4	3	4	3	0	3	6	8	0	6	3	2	3	0	0	1	2	0	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	2	0	2
PLECOPTERA																																																								
Acroneuria abnormis (Newman)	X	X					X					X					X		X				X		X	X								X	X																				
Acroneuria arenosa (Pictet)	X						X					X			X		X								X					X																									
Acroneuria carolinensis (Banks)	X	X																												X																								
Acroneuria evoluta Klapálek																				X																																			
Acroneuria internata (Walker)																																		X	X																				
Agnetina capitata (Pictet)	X											X																																												
Allocapnia virginiana Frison																																																			X					
Allocapnia wrayi Ross																																																		X			X		
Alloperla leonarda Ricker	X	X				X	X					X					X													X	X			X																				
Amphinemura nigritta (Provancher)					X														X																																					
Clioperla clio (Newman)												X						X	X						X				X		X																		X	X		X			
Eccoptura xanthenes (Newman)												X																						X																				
Haploperla brevis (Banks)	X											X	X				X																																							
Helopicus subvarians (Banks)												X													X																															
Isoperla bilineata (Say)																																																					X	X	X
Isoperla cotta Ricker	X						X					X					X																	X																				
Isoperla davisi James																																																		X		X			
Isoperla dicala Frison	X											X			X		X		X						X								X																					
Isoperla gibbsae Harper						X	X																																																
Isoperla holochlora (Klapálek)																																		X																				
Isoperla marlynia Needham & Claassen	X		X														X														X																						
Isoperla orata Frison																															X																						
Leuctra ferruginea (Walker)	X	X	X			X						X											X			X						X	X	X																			
Leuctra moba Ricker	X	X	X	X		X						X	X		X									X	X	X						X																					
Leuctra tribiba Claassen	X											X																																								X				
Neoperla carlsoni Stark & Baumann	X	X				X						X		X									X			X						X			X																		
Neoperla clymene (Newman)																																																			X				
Paragnetina fumosa (Banks)	X	X					X					X							X				X		X						X			X																				
Paragnetina kansensis (Banks)	X											X			X										X	X																						X			X	X	X
Perlesta frisoni Banks	X	X		X			X							X																		X	X	X																			
Perlesta placida (Hagen)	X			X		X	X		X	X		X	X	X	X		X		X		X		X	X	X	X		X				X	X	X																			
Perlesta shubuta Stark																																																			X				
Perlinella drymo (Newman)	X											X		X	X		X													X	X	X	X																	X	X			
Perlinella ephyre (Newman)	X						X					X																				X																						
Pteronarcys dorsata (Say)	X						X									X	X						X								X																						
Taeniopteryx lita Frison	X					X	X			X		X			X		X						X		X	X				X																						
Taeniopteryx lonicera Ricker & Ross							X																												X																X		X		
Taeniopteryx robinae Kondratieff & Kirchner																									X																										X		X		
Tallaperla maria (Needham & Smith)																									X									X	X																		
PLECOPTERA TOTAL TAXA 39	21	8	3	3	1	7	12	0	1	2	0	20	3	4	7	1	11	1	6	1	1	0	7	2	11	7	0	1	1	2	14	1	7	9	14	0	0	0	0	0	0	0	0	0	0	0	0	2	7	5	0	0	6	2	2	2
HEMIPTERA: Corixidae																																																							
Corisella edulis (Champion)	X					X	X																																																
Hesperocorixa brimley (Kirkaldy)									X																									X																				
Hesperocorixa lucida (Abbott)	X																																																					
Hesperocorixa minor (Abbott)	X																																	X																				
Palmacorixa buenoi Abbott	X																X																																					
Ramphocorixa acuminata (Uhler)	X					X	X																								X																					
Sigara (Vermicorixa) sp		X					X																											X																				
Sigara alternata (Say)	X					X						X					X														X																						

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Sigara bradleyi (Abbott)	X	X				X	X										X													X		X																							
Sigara hubbelli (Hungerford)		X				X	X																									X																							
Sigara modesta (Abbott)	X																																																							
Sigara signoidea (Abbott)	X	X				X	X					X																		X		X																							
Sigara zimmermanni (Fieber)	X	X				X						X					X												X		X																							
Trichocorixa calva (Say)	X	X				X	X					X																		X		X																X		X				
Trichocorixa kanza Sailer		X				X	X																							X		X																							
Trichocorixa louisianae Jaczewski		X					X																																																	
Trichocorixa macroceps (Kirkaldy)	X																X																																								
Trichocorixa minima (Abbott)		X					X																							X																									
Trichocorixa sexcincta (Champion)	X	X				X	X					X					X													X		X																							
Trichocorixa verticalis (Fieber)		X					X																																																
HEMIPTERA: Corixidae TOTAL TAXA 20	**13**	**11**	**0**	**0**	**0**	**10**	**12**	**0**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Gerridae																																																							
Limnoporus canaliculatus (Say)																	X																																						
HEMIPTERA: Gerridae TOTAL TAXA 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Hydrometridae																																																						
Hydrometra martini Kirkaldy	X																																																					
HEMIPTERA: Hydrometridae TOTAL TAXA 1	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Mesoveliidae																																																					
Mesovelia mulsanti White	X											X																		X																							
HEMIPTERA: Mesoveliidae TOTAL TAXA 1	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Naucoridae																																																					
Pelocoris femoratus (Palisot)	X																																																				
HEMIPTERA: Naucoridae TOTAL TAXA 1	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Nepidae																																																					
Ranatra buenoi Hungerford	X																																																				
HEMIPTERA: Nepidae TOTAL TAXA 1	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Notonectidae																																																					
Buenoa confusa Truxal						X	X					X																		X																							
Buenoa scimitra Bare						X	X																							X		X																						
Notonecta irrorata Uhler																																X																						
Notonecta uhleri Kirkaldy																																X																						
HEMIPTERA: Notonectidae TOTAL TAXA 4	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
HEMIPTERA: Veliidae																																																					
Rhagovelia obesa Uhler	X								X			X					X						X			X			X			X																				
HEMIPTERA: Veliidae TOTAL TAXA 1	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MEGALOPTERA																																																					
Chauliodes pectinicornis (L.)	X	X										X					X															X																						
Chauliodes rastricornis Rambur																	X															X																						
Corydalus cornutus (L.)	X	X					X					X		X																		X																				X		X	X	X
Nigronia fasciata (Walker)																								X																														
Nigronia serricornis (Say)		X			X	X	X		X	X				X				X	X					X	X				X	X			X																		X	X
Sialis vagans Ross			X																																																			
MEGALOPTERA TOTAL TAXA 6	**2**	**3**	**1**	**0**	**1**	**1**	**2**	**0**	**1**	**1**	**0**	**2**	**0**	**2**	**0**	**0**	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**2**
NEUROPTERA																																																					
Climacia areolaris (Hagen)	X											X					X																																					
Sisyra vicaria? (Walker)												X																																									
NEUROPTERA TOTAL TAXA 2	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Brachycentridae																																																				
Brachycentrus chelatus Ross	X					X	X					X					X						X			X					X		X		X																
Brachycentrus nigrosoma (Banks)	X						X					X		X	X															X		X		X	X																
Brachycentrus numerosus (Say)	X	X					X			X		X					X												X		X																						
Micrasema rusticum (Hagen)	X								X	X		X			X								X	X	X					X		X		X																	
Micrasema wataga Ross	X	X				X	X			X	X	X																				X		X		X	X																
TRICHOPTERA: Brachycentridae TOTAL TAXA 5	**5**	**2**	**0**	**0**	**0**	**2**	**4**	**0**	**1**	**3**	**1**	**5**	**0**	**1**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**1**	**2**	**0**	**0**	**0**	**4**	**0**	**4**	**1**	**4**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Calamoceratidae																																																				

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Anisocentropus pyraloides (Walker)	X	X				X	X		X		X	X			X		X									X			X		X		X	X	X			X	X																
Heteroplectron americanum (Walker)	X					X	X			X	X																																X		X										
TRICHOPTERA: Calamoceratidae TOTAL TAXA 2	2	1	0	0	0	2	2	0	1	1	2	1	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	2	1	2	0	0	1	1	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0
TRICHOPTERA: Dipseudopsidae																																																						
Phylocentropus carolinus Carpenter	X	X									X																				X							X					X		X								
Phylocentropus lucidus (Hagen)	X	X									X																				X		X					X					X										
Phylocentropus placidus (Banks)	X	X									X																											X	X				X		X								
TRICHOPTERA: Dipseudopsidae TOTAL TAXA 3	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	3	0	2	0	0	3	0	1	0	1	0	1	0	0	0	0	0	0
TRICHOPTERA: Glossosomatidae																																																						
Glossosoma sp	X																																																					
Protoptila lega Ross																																																X		X				
Protoptila morettii Morse	X	X									X																				X																							
TRICHOPTERA: Glossosomatidae TOTAL TAXA 3	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0
TRICHOPTERA: Hydropsychidae																																																						
Ceratopsyche bronta Ross	X										X																																											
Ceratopsyche morosa (Hagen)		X									X																																										
Ceratopsyche sparna Ross	X	X									X																																										
Cheumatopsyche edista Gordon	X	X																															X					X							X								
Cheumatopsyche gyra Ross	X	X																																																			
Cheumatopsyche pasella Ross	X	X									X																				X		X					X	X				X				X						
Cheumatopsyche pettiti (Banks)	X	X									X																						X					X	X				X				X						
Cheumatopsyche pinaca Ross	X	X									X																						X					X	X				X				X	X	X				
Cheumatopsyche richardsoni Gordon	X	X									X																						X					X	X				X				X						
Cheumatopsyche virginica Denning	X	X									X																				X		X					X	X				X				X						
Diplectrona modesta Banks	X	X					X			X	X	X											X			X							X	X	X			X	X						X									
Hydropsyche alvata Denning																																																						
Hydropsyche betteni Ross	X	X									X																																											
Hydropsyche bidentata Denning		X									X																						X					X	X				X				X						
Hydropsyche decalda Ross	X	X																															X					X															
Hydropsyche elisasona Ross	X	X				X	X				X	X		X	X								X	X	X						X		X		X			X	X				X										
Hydropsyche incommoda Hagen	X	X																															X					X							X								
Hydropsyche nr scalaris Hagen	X																																																				
Hydropsyche n. sp. Moore & Morse nr. incommoda Hagen											X																											X																
Hydropsyche orris Ross	X																																																				
Hydropsyche rossi Flint	X	X							X	X	X																						X					X	X				X										
Hydropsyche venularis Banks																																																					
Macrostemum carolina (Banks)	X	X				X	X				X												X		X								X					X	X														
TRICHOPTERA: Hydropsychidae TOTAL TAXA 23	18	17	0	0	0	2	3	0	1	2	15	2	0	1	1	0	0	0	0	0	0	0	3	1	2	1	0	0	0	0	3	0	14	1	2	0	0	13	11	0	0	0	8	0	2	0	7	0	7	1	3	0	0	1	1
TRICHOPTERA: Hydroptilidae																																																					
Hydroptila armata Ross																																						X													X			
Hydroptila carolae Holzenthal & Kelley																																																				
Hydroptila consimilis Morton	X																																																			
Hydroptila delineata Morton																																																				
Hydroptila disgalera Holzenthal & Kelley		X									X																						X					X														
Hydroptila latosa Ross	X	X																															X																			
Hydroptila novicola Blickle & Morse		X																																																	
Hydroptila quinola Ross	X	X										X																					X						X					X		X						
Hydroptila remita Blickle & Morse	X	X									X	X																			X		X					X	X				X								
Hydroptila strepha Ross	X																														X																				
Hydroptila tridentata Holzenthal																																																			
Hydroptila trispinosa Holzenthal	X																																																		
Hydroptila waubesiana Betten	X	X									X																						X					X					X								
Hydroptila xonela Ross																																	X																		
Mayatrichia ayama Mosely	X	X		X							X																				X							X					X		X						
Neotrichia falca Ross	X	X		X							X																											X					X								
Neotrichia minutisimella (Chambers)																															X							X					X								
Orthotrichia aegerfasciella (Chambers)	X	X									X																				X		X					X	X				X				X				
Orthotrichia cristata Morton		X									X																						X					X									X				
Orthotrichia curta Kingsolver & Ross		X																																																	
Orthotrichia dentata Kingsolver & Ross																															X																				
Orthotrichia nr. balduft Kingsolver & Ross	X																																																		
Oxyethira abacatia Denning	X	X	X								X																																									
Oxyethira anabola Blickle																																																			

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Oxyethira dunbartonensis Kelley	X	X	X								X																				X		X					X	X				X				X		X						
Oxyethira elerobi (Blickle)	X	X	X	X				X			X																						X					X										X						
Oxyethira forcipata Mosely		X									X																						X					X										X						
Oxyethira glasa (Ross)	X	X	X	X							X																				X		X					X	X				X				X						
Oxyethira grisea Betten	X	X		X							X																											X										X						
Oxyethira janella Denning	X	X	X	X			X	X			X	X																					X					X	X				X				X						
Oxyethira limosa Ross	X	X	X	X							X	X																			X		X					X	X				X				X						
Oxyethira michiganensis Mosely		X		X																																																		
Oxyethira novasota Ross	X	X	X								X	X																			X		X					X	X				X				X						
Oxyethira pallida (Banks)	X	X	X								X																				X		X					X					X				X						
Oxyethira savanniensis Kelley		X									X																																										
Oxyethira setosa Denning		X									X																												X										X						
Oxyethira sinunsigne Kelley		X									X																																										
Oxyethira verna Ross	X	X	X								X																						X					X										X						
Oxyethira zeronia Ross	X	X	X								X																						X					X	X				X				X						
TRICHOPTERA: Hydroptilidae TOTAL TAXA 39	**22**	**27**	**10**	**8**	**0**	**0**	**1**	**2**	**0**	**0**	**22**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**17**	**0**	**0**	**0**	**0**	**14**	**15**	**0**	**0**	**0**	**0**	**17**	**0**	**1**	**0**	**6**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Lepidostomatidae																																																					
Lepidostoma carolina (Banks)	X	X					X				X																			X		X					X	X				X										
Lepidostoma carrolli Flint		X																																																			
Lepidostoma latipenne (Banks)	X	X									X																						X					X	X				X										
TRICHOPTERA: Lepidostomatidae TOTAL TAXA 3	**2**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Leptoceridae																																																					
Ceraclea cancellata (Betten)	X	X									X																						X					X					X						X				
Ceraclea diluta (Hagen)	X	X					X				X																						X		X			X					X						X				
Ceraclea flava (Banks)	X	X									X																						X					X												X			
Ceraclea maculata (Banks)	X	X									X																						X					X	X				X						X				
Ceraclea nepha Ross																																																		X				
Ceraclea ophioderus (Ross)		X									X																						X					X												X			
Ceraclea protonepha Morse & Ross	X	X					X				X																						X										X										
Ceraclea resurgens (Walker)	X	X									X																											X																
Ceraclea tarsipunctata (Vorhies)	X	X									X																						X					X					X						X				
Ceraclea transversa (Hagen)	X																																																				
Leptocerus americanus (Banks)	X	X									X																						X					X	X				X						X				
Nectopsyche candida (Hagen)	X	X									X																						X					X					X						X				
Nectopsyche exquisita (Walker)																																																					
Nectopsyche pavida (Hagen)	X	X									X																						X					X	X				X						X				
Oecetis avara (Banks)																																																					
Oecetis cinereascens (Hagen)	X	X									X																						X					X	X				X						X				
Oecetis ditissa Ross	X	X									X																						X					X	X				X						X				
Oecetis georgia Ross		X									X																						X					X	X				X										
Oecetis inconspicua (Walker)	X	X									X																						X					X	X				X				X		X				
Oecetis morsei Bueno-Soria	X	X									X																				X						X	X				X						X				
Oecetis nocturna Ross		X									X																											X																
Oecetis osteni Milne	X	X									X																				X		X					X	X				X						X				
Oecetis persimilis (Banks)	X	X									X																				X		X					X	X				X						X				
Setodes arenatus Holzenthal	X	X									X																						X					X					X						X				
Triaenodes abus Milne	X																																																			
Triaenodes ignitus (Walker)	X	X									X																						X					X	X				X						X				
Triaenodes injustus (Hagen)																																																				
Triaenodes marginatus Sibley	X	X									X																						X					X	X				X						X				
Triaenodes n. sp. (bicornis) Manuel		X									X																						X										X										
Triaenodes n. sp. (morsei) Manuel		X									X																																									
Triaenodes nox Ross		X									X																												X															
Triaenodes ochraceus (Betten & Mosely)	X																																																		
Triaenodes perna Ross	X	X									X																											X										X						
Triaenodes smithi Ross																																X					X	X				X										
Triaenodes tardus Milne	X								X	X		X		X	X		X	X	X				X	X	X	X		X	X																	X		X						
TRICHOPTERA: Leptoceridae TOTAL TAXA 35	**24**	**26**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**26**	**1**	**0**	**1**	**1**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**1**	**1**	**0**	**6**	**0**	**24**	**0**	**1**	**0**	**0**	**21**	**25**	**0**	**0**	**0**	**0**	**25**	**0**	**3**	**0**	**8**	**0**	**16**	**0**	**1**	**0**	**1**	**0**	**0**
TRICHOPTERA: Limnephilidae																																																				
Hydatophylax argus (Harris)							X																																													
Ironoquia n. sp. Moore																																																				
Ironoquia punctatissima (Walker)		X																																																	
Platycentropus radiatus (Say)		X									X																											X					X									
Pychopsyche divergens (Walker)		X																																																	
Pycnopsyche antica (Walker)	X	X					X		X	X		X					X	X	X				X		X						X														X				X		X			

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Pycnopsyche divergens (Walker)							X																			X																														
Pycnopsyche guttifera (Walker)							X																X			X								X																					
Pycnopsyche indiana Ross	X	X																																				X				X					X									
Pycnopsyche lepida Hagen	X									X		X														X												X				X					X									
Pycnopsyche luculenta Betten	X	X							X	X		X		X	X		X	X	X				X	X	X	X				X			X		X				X				X					X									
Pycnopsyche virginica (Banks)																																						X																		
TRICHOPTERA: Limnephilidae TOTAL TAXA 12	**4**	**6**	**0**	**0**	**0**	**0**	**4**	**0**	**2**	**3**	**1**	**3**	**0**	**1**	**1**	**0**	**2**	**2**	**2**	**0**	**0**	**0**	**3**	**1**	**2**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Molannidae																																																								
Molanna blenda Sibley	X	X				X	X		X		X	X		X			X	X	X										X				X	X			X							X									
Molanna tryphena Betten	X	X				X	X		X		X																						X	X			X	X						X									
TRICHOPTERA: Molannidae TOTAL TAXA 2	**2**	**2**	**0**	**0**	**0**	**2**	**2**	**0**	**2**	**0**	**2**	**1**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Odontoceridae																																																							
Psilotreta indecisa (Walker)																																	X																						
Psilotreta frontalis Banks	X	X									X																																		X										
TRICHOPTERA: Odontoceridae TOTAL TAXA 2	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Philopotamidae																																																							
Chimarra aterrima Hagen	X	X									X																				X		X					X					X										
Chimarra augusta Morse																																	X																						
Chimarra florida Ross	X	X									X																				X		X					X	X				X										
Chimarra maselyi Denning		X									X																						X					X	X				X										
Chimarra obscura Walker		X									X																						X					X					X										
Chimarra socia Hagen																																	X																						
Wormaldia sp. poss. shawnee (Ross)																																	X					X																
TRICHOPTERA: Philopotamidae TOTAL TAXA 7	**2**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**7**	**0**	**0**	**0**	**0**	**4**	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**
TRICHOPTERA: Phryganeidae																																																							
Agrypnia vestita (Walker)	X	X									X																						X					X	X				X										
Banksiola concatenata (Walker)	X	X									X																																												
Ptilostomis ocellifera (Walker)	X	X									X																						X						X				X										
Ptilostomis postica (Walker)																																							X					X										
TRICHOPTERA: Phryganeidae TOTAL TAXA 4	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Polycentropodidae																																																						
Cernotina spicata Ross	X	X									X																						X					X	X				X										
Cyrnellus fraternus (Banks)	X																														X							X					X										
Neureclipsis crepuscularis (Walker)		X									X																				X		X					X	X				X										
Neureclipsis meleo Ross	X	X									X																						X																						
Nyctiophylax affinis (Banks)	X	X									X																				X		X					X	X				X										
Nyctiophylax celta Denning																																							X					X										
Nyctiophylax moestus Banks		X					X					X			X		X						X	X		X			X	X						X																
Nyctiophylax serratus Lago & Harris																																																							
Polycentropus blicklei Ross & Yamamoto	X										X																						X						X				X										
Polycentropus cinereus Hagen	X	X									X																						X						X	X				X										
Polycentropus clinei (Milne)		X									X																						X					X															
Polycentropus confusus Hagen		X									X																																											
Polycentropus crassicornis (Walker)		X																																																				
Polycentropus maculatus Banks		X									X																						X						X														
Polycentropus nascotius Ross	X																																																					
TRICHOPTERA: Polycentropodidae TOTAL TAXA 15	**7**	**10**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**9**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**1**	**1**	**3**	**0**	**8**	**0**	**1**	**0**	**0**	**7**	**6**	**0**	**0**	**0**	**0**	**9**	**0**	**1**	**0**	**2**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	**0**
TRICHOPTERA: Psychomyiidae																																																						
Lype diversa (Banks)	X						X			X		X		X	X		X						X		X	X				X			X	X	X			X					X		X		X		X		X	X	X
TRICHOPTERA: Psychomyiidae TOTAL TAXA 1	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**1**
TRICHOPTERA: Rhyacophilidae																																																					
Rhyacophila carolina Banks		X										X											X		X								X		X			X															
TRICHOPTERA: Rhyacophilidae TOTAL TAXA 1	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TRICHOPTERA: Sericostomatidae																																																					
Agarodes crassicornis (Walker)	X	X								X	X																						X					X					X										
Agarodes libalis Ross & Scott	X	X				X	X			X	X																						X	X	X			X	X				X										
Agarodes wallacei Ross & Scott	X	X				X	X			X	X																							X	X																	
TRICHOPTERA: Sericostomatidae TOTAL 3	**3**	**3**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
LEPIDOPTERA																																																						

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Chrysendeton immitabilis (Dyar)	X																																																							
Chrysendeton kimballi Lange												X																			X																									
Chrysendeton medicinalis (Grote)	X											X																																												
Eoparargyractis irroratalis (Dyar)	X	X										X																			X																X									
Langessa nomophilalis (Dyar)																																															X									
Munroessa faulalis (Walker)																																															X									
Munroessa gyralis (Hulst)	X																																X														X									
Munroessa icciusalis (Walker)	X	X															X		X												X		X														X									
Munroessa nebulosalis (Fernald)																																																								
Neocataclysta magnificalis (Hübner)	X																																																							
Parapoynx allionealis Walker	X	X										X																			X		X														X									
Parapoynx maculalis (Clemens)																																															X									
Parapoynx obscuralis (Grote)	X	X	X	X		X	X		X	X		X																			X																									
Parapoynx seminealis (Walker)	X	X										X																																			X									
Synclita obliteralis (Walker)		X																																													X									
Synclita tinealis Munroe																																																								
LEPIDOPTERA TOTAL TAXA 16	9	6	1	1	0	1	1	0	1	1	0	6	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
COLEOPTERA																																																								
Agabetes acuductus (Harris)	X																X														X																									
Agabus aeruginosus Aube																																																		X						
Agabus gagates Aube		X										X					X																X																							
Agabus seriatus (Say)		X																															X																							
Anacaena limbata (Fabricius)		X																															X																							
Anchytarsus bicolor (Melsheimer)												X			X								X	X	X																															
Ancyronyx variegata (Germar)	X								X			X		X			X		X				X	X	X	X			X	X																								X	X	X
Anodocheilus exiguus (Aube)																																	X																							
Berosus aculeatus LeConte	X	X										X																			X		X															X		X						
Berosus exiguus (Say)	X	X										X																					X																	X						
Berosus fraternus LeConte		X																															X																	X						
Berosus infuscatus LeConte	X	X										X					X														X		X																							
Berosus pantherinus LeConte	X											X		X			X														X																									
Berosus peregrinus (Herbst)	X																																																							
Berosus pugnax LeConte																															X																									
Berosus striatus (Say)	X	X										X																			X		X															X		X						
Bidessonotus inconspicuus (LeConte)		X																															X																							
Bidessus granarius (Aube)		X																															X																	X		X				
Bidessus lacustris (Say)		X										X																			X		X															X		X		X				
Celina angustata Aube		X										X					X														X		X																	X						
Celina grossula LeConte												X																																												
Celina slossoni Mutchler	X	X																													X		X																	X						
Chelonarium lecontei Thomson	X											X																																												
Copelatus caelatipennis Aube		X																															X																	X						
Copelatus chevrolati Aube	X	X										X																					X																	X						
Copelatus glyphicus (Say)	X	X										X					X														X		X																	X						
Coptotomus interrogatus (Fabricius)	X											X					X														X																			X						
Coptotomus loticus [sic; = longulus LeConte?]		X																															X																							
Cybister fimbriolatus (Say)																															X																									
Cymbiodyta blanchardi Horn	X											X					X														X																									
Cymbiodyta chamberlaini Smetana												X																																												
Cymbiodyta vindicata Fall		X										X																					X																	X						
Cyphon obscurus (Guerin-Meneville)	X																X														X																									
Derallus altus (LeConte)		X																																																X						
Desmopachria grana (LeConte)		X																															X																	X		X				
Dineutus carolinus LeConte		X																															X															X		X						
Dineutus horni Roberts																																																		X						
Dineutus nigrior Roberts		X																																																						
Dineutus serrulatus LeConte		X																															X																							
Donacia biimpressa Melsheimer																																				X																				
Dubiraphia quadrinotata (Say)																		X											X																											
Dubiraphia vittata (Melsheimer)									X									X																																						
Ectopria nervosa (Melsheimer)									X					X	X			X	X										X	X																										
Enochrus blatchleyi (Fall)	X											X																																						X						
Enochrus cinctus (Say)	X											X					X														X																			X						
Enochrus consors (LeConte)		X										X																					X																	X						
Enochrus consortus Green	X	X										X	X				X														X		X																	X						
Enochrus hamiltoni (Horn)		X										X																					X																							
Enochrus interruptus Gundersen																	X																																							

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Enochrus ochraceus (Melsheimer)	X	X										X					X													X		X																							
Enochrus perplexus (LeConte)		X																														X																		X					
Enochrus pygmaecus nebulosus (Say)	X	X																												X		X																							
Enochrus sayi Gunderson																																																									
Enochrus sublongus (Fall)																																																			X					
Gonielmis dietrichi Musgrave)	X								X			X		X	X		X	X	X				X	X	X	X			X	X																				X		X					
Graphoderus liberus (Say)																															X																									
Gyrinus affinus Aube		X					X																																																		
Gyrinus gibber LeConte (= G. frosti Fall)																																																								
Gyrinus pachysomus Fall						X	X																																																	
Gyrinus penitidus LeConte																																																								
Haliplus punctatus Aube	X											X					X														X		X																		X					
Helichus basalis LeConte																													X																								X				
Helichus fastigiatus (Say)																		X																																						
Helichus lithophilus (Germar)								X																																																	
Helochares maculicollis Mulsant	X																																																							
Helocombus bifidus (LeConte)	X	X										X					X																X																		X					
Hydaticus bimarginatus (Say)	X	X										X					X														X		X																		X		X			
Hydaticus modestus Sharp												X					X																																							
Hydrobius fuscipes (L.)	X											X																				X																								
Hydrobius tumidus LeConte		X																															X																							
Hydrocanthus iricolor Say	X	X										X																				X		X																						
Hydrocanthus oblongus Sharp	X	X																														X																								
Hydrochara brevipalpis Smetana																																		X																						
Hydrochara obtusata (Say)	X											X					X														X																								
Hydrochara soror Smetana		X																																																							
Hydrochara spangleri Smetana																																	X																		X		X			
Hydrochus inaequalis LeConte																																																								
Hydrochus simplex LeConte		X																																																							
Hydrochus subcuperus Randall	X								X			X		X			X	X												X			X																							
Hydroporus americanus Aube																																	X																							
Hydroporus cimicoides Sharp		X																															X																							
Hydroporus clypealis Sharp																																																								
Hydroporus hybridus Aube																																																								
Hydroporus lobatus Sharp																																																							
Hydroporus lynceus Sharp		X																															X																							
Hydroporus rufilabris Sharp																																	X																							
Hydroporus vittatipennis Gemminger & Harold		X																															X																							
Hydrovatus pustulatus (Melsheimer)	X																																X																							
Hygrotus fractus (LeConte)																										X																														
Hygrotus nubilus (LeConte)		X																																																					
Illybius biguttulus (Germar)		X																															X																							
Laccophilus fasciatus Aube		X																															X																							
Laccophilus proximus Say		X																															X																							
Liodessus affinis (Say)	X	X										X																				X																		X					
Liodessus fuscatus (Crotch)	X											X					X														X																		X		X			
Liporeus pilatei (Fall)		X																																																					
Macronychus glabratus Say	X								X			X		X	X		X	X	X				X		X	X			X	X																							X	X	X
Microcylloepus pusillus hoedingi (Musgrave)														X																																								
Microcylloepus pusillus pusillus (LeConte)														X	X			X	X					X	X					X	X																							X	X	X
Onoplhron americanum Dejean	X								X																																														
Oulimnius latiusculus (LeConte)	X											X					X								X																														
Parnecymus confusus Wooldridge		X																														X																							
Parnecymus dispersus Wooldridge																															X																							
Paracymus subcupreus (Say)	X	X																															X																						
Peltodytes bradleyi Young		X																															X																						
Peltodytes dunavani Young																																																							
Peltodytes muticus LeConte	X	X										X					X														X																						
Peltodytes oppositus Roberts	X	X										X																																										
Peltodytes sexmaculatus Roberts	X																X														X		X																		X			
Plateumaris flavipes (Kirby)																																				X																		
Primocyphon limbatus LeConte	X																																																					
Rhantus calidus (Fabricius)		X																															X																		X			
Scirtes ovalis Blatchley	X											X																				X																						
Stenelmis antennalis Sanderson	X								X								X								X					X																						
Stenelmis bicarinata LeConte	X								X			X		X	X		X	X					X	X	X	X			X		X	X																						
Stenelmis lateralis Sanderson	X								X																																													
Stenelmis morsei White	X																																																					

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Stenelmis sinuata LeConte	X								X			X		X	X		X	X						X	X	X				X	X	X																									
Suphisellus bicolor (Say)		X																																																							
Suphisellus puncticollis (Crotch)												X																				X																									
Thermonectes basillaris (Harris)	X	X										X																				X		X																							
Tropisternus blatchleyi d'Orchymont	X											X					X														X																									
Tropisternus lateralis nimbatus (Say)	X	X										X					X														X		X																									
Tropisternus collaris LeConte	X	X										X					X														X		X																									
Tropisternus mixtus (LeConte)	X	X															X														X																									
COLEOPTERA TOTAL TAXA 125	**52**	**57**	**0**	**0**	**0**	**1**	**2**	**0**	**12**	**0**	**0**	**47**	**1**	**10**	**7**	**0**	**33**	**10**	**5**	**0**	**0**	**0**	**6**	**6**	**9**	**5**	**0**	**0**	**10**	**7**	**39**	**2**	**52**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**1**	**47**	**2**	**5**	**0**	**3**	**4**	**3**
DIPTERA: Athericidae																																																									
Atherix lantha Webb**																																		X																								
DIPTERA: Athericidae TOTAL TAXA 1	**0**	**0**	**0**	**0**	**0**	**0**	**X**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DIPTERA: Ceratopogonidae																																																								
Allohelea johannseni (Wirth)																																	X																								
Alluaudomyia needhami Thomsen		X	X																																																						
Atrichopogon cf. peregrinus (Johannsen)			X	X																X																																						
Atrichopogon fusculus (Coquillett)		X	X																																																					
Atrichopogon geminus Boesel		X																															X																								
Atrichopogon levis (Coquillett)*																																																								
Atrichopogon minutus (Meigen)			X																																																					
Atrichopogon titanus Boesel		X	X										X							X														X																							
Bezzia (Aspinabezzia) prob. glabra (Coquillett)**		X																															X																								
Bezzia (B.) sp. 1 Knausenberger**																																																								
Bezzia (B.) sp. 2 Knausenberger**																																																								
Bezzia (Phaenobezzia) prob. opaca (Loew)**																																																								
Bezzia (Pseudobezzia) setulosa (Loew)*																																																							
Bezzia (Pseudobezzia) sp. 1 Knausenberger**																																																							
Bezzia (Pseudobezzia) sp. 2 Kn. pulverea (Coq.) Grp.**																																																							
Bezzia bicolor (Meigen) group																																					X																		
Bezzia expolita (Coquillett) group			X																																																				
Bezzia fairchildi Wirth		X																															X																								
Bezzia flavitarsis Malloch		X																															X																								
Bezzia varicolor (Coquillett)																				X																																				
Ceratoculicoides virginianus Wirth		X																																																					
Culicoides arboricola Root & Hoffman																																	X																								
Culicoides crepuscularis Malloch**													X																																										
Culicoides guttipennis (Coquillett)																																	X																								
Culicoides niger Root & Hoffman			X																																																				
Culicoides prob. haematopotus Malloch**		X	X																																																				
Culicoides spinosus Root & Hoffman			X																																																				
Culicoides stellifer (Coquillett)		X																															X																								
Culicoides venustus Hoffman**			X																																																				
Dasyhelea grisea (Coquillett)																																	X																								
Dasyhelea pseudoincisurata Waugh & Wirth																																	X																								
Dasyhelea scutellata (Meigen)			X																																																				
Dasyhelea traverae Thomsen			X																	X																																					
Downes helea stonei (Wirth)		X																															X																								
Echinohelea lanei Wirth			X										X							X																		X																		
Forcipomyia (F.) nr. bipunctata (L.)*																																																							
Forcipomyia (F.) prob. bystraki Grogan & Wirth*																																																							
Forcipomyia fairfaxensis Wirth			X																	X																																				
Forcipomyia glauca Edwards*			X																																																					
Isohelea sp. (prob.) Knausenberger**																																																							
Mallochohelea atripes Wirth		X																		X																																				
Mallochohelea candellii (Coquillett)																																	X																								
Mallochohelea sp. 1 Knausenberger**																																																						
Mallochohelea sp. 2 Knausenberger**																																																							
Mallochohelea sp. 3 Knausenberger**																																																						
Mallochohelea sp. 4 Knausenberger poss. Atripes Wirth**																																																						
Monohelea stonei Wirth		X																																																				
Palpomyia flaviceps (Johannsen)																																	X																								
Palpomyia lineata (Meigen)**																																	X																								
Palpomyia plebeia (Loew)**																				X																																				
Palpomyia plebeiella Grogan & Wirth**																				X																																				
Palpomyia pseudorufa Grogan & Wirth																					X																																			
Palpomyia rubiginosa Grogan & Wirth																																	X																								

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Palpomyia sp. 1 poss. tibialis (Meigen) Grp. **																																X																								
Palpomyia sp. 3 poss. flavipes (Meigen) Grp. **																																X				X																				
Palpomyia sp. 4 prob. lineata (Meigen)**																																																											
Palpomyia sp. poss. subaspera (Coquillett)**																																																											
Palpomyia walteri Grogan & Wirth																																																											
Probezzia nigra Wirth		X																														X				X																							
Probezzia sp. 1 Grp. Knausenberger**																																																											
Probezzia sp. 2 Knausenberger**																																																											
Probezzia sp. 3 Knausenberger**																																																											
Sphaeromiini Gen. sp. 2 Grp. Knausenberger**																																																											
Sphaeromiini Gen. sp. 3 Knausenberger**																																																											
Sphaeromiini Gen. sp. 4 Knausenberger**																																																											
Sphaeromiini Gen. sp. 5 Knausenberger**																																																											
Sphaeromiini Gen. sp. 6 Knausenberger**																																																											
Sphaeromiini Gen. sp. 7 Knausenberger**																																																											
Sphaeromiini Gen. Sp. 8 Knausenberger**																																																											
Sphaeromiini Gen. sp. 1 Grp. Knausenberger**																																																											
Stilobezzia antennalis (Coquillett)**			X																														X																											
Stilobezzia bulla Thomsen			X																																																								
Stilobezzia glauca Macfie			X																																																								
Stilobezzia lutea (Malloch)		X	X																														X																											
Stilobezzia prob. (Neostilobezzia) lutea (Malloch)**																																																											
Stilobezzia rabelloi Lane		X																																																									
Stilobezzia stonei Wirth			X																														X				X																							
Stilobezzia sybleae Wirth**			X																																																								
Stilobezzia viridis (Coquillett)																				X																																							
DIPTERA: Ceratopogonidae TOTAL TAXA 77	0	14	21	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	24	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA: Chaoboridae																																																										
Chaoborus punctipennis (Say)*																																																										
DIPTERA: Chaoboridae TOTAL TAXA 1																																																										
DIPTERA: Chironomidae																																																										
Ablabesmyia annulata (Say)																																																										
Ablabesmyia aspera (Roback)*			X																																																							
Ablabesmyia cf. idei (Walley)																																																										
Ablabesmyia illinoensis (Malloch)*																																																										
Ablabesmyia janta (Roback)*				X																													X																											
Ablabesmyia mallochi (Walley)*		X	X	X									X							X														X																											
Ablabesmyia monilis (L.)																				X																																							
Ablabesmyia parajanta Roback																					X													X																											
Ablabesmyia tarella Roback			X																																																								
Antillocladius arcuatus Saether																																		X																											
Antillocladius pluspilatus Saether*		X																																																								
Beckidia n. sp. Saether																				X																																							
Brillia flavifrons (Johannsen)*																				X														X				X																						
Bryophaenocladius funosinus (Curran)			X																																																							
Bryophaenocladius inpectinus Saether																																																										
Bryophaenocladius nerius (Curran)*																																																										
Bryophaenocladius sp. 3 Epler																																																										
Cantopelopia prob. gesta Roback													X																																														
Cardiocladius sp. Saether*																																																										
Chernovskiia orbicus (Townes)*																																																										
Chironomus decorus (Johannsen) Group*		X																															X																											
Chironomus longipes Staeger																																																										
Chironomus n. sp. 1 Sublette*																																																										
Chironomus n. sp. 2 Sublette																																	X																											
Chironomus n. sp. 52 Sublette*																																																										
Chironomus plumosus (L.)																																	X																											
Chironomus sp. 2 Epler																																																										
Cladopelma amachaerum (Townes)		X																															X																											
Cladopelma collator (Townes)*																																																										
Cladopelma edwardsi (Kruseman)																																																										
Cladopelma galeator (Townes)																																	X																											
Cladopelma spectabile (Townes)																																																									
Cladotanytarsus sp. 1 Epler																																																									
Cladotanytarsus sp. 2 Epler																																																									
Clinotanypus pinguis (Loew)		X	X	X																																																					

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Coelotanypus concinnus (Coquillett)																																																								
Conchapelopia aleta Roback*		X	X																		X																													X							
Conchapelopia americana Fittkau		X																																																						
Conchapelopia cornuticaudata (Walley)																					X																																				
Conchapelopia flavifrons (Johannsen)																					X																																				
Conchapelopia gonoides (Sublette)		X	X	X																	X																																				
Conchapelopia pilicaudata (Walley)*		X	X																		X																																				
Corynoneura cf. lobata Edwards		X	X	X									X																				X			X														X						
Corynoneura cf. oxfordana Boesel & Winner																																																		X						
Corynoneura lacustris (Walley)			X	X																X	X																																				
Corynoneura n. sp. 1 Saether*																																																									
Corynoneura n. sp. 2 Saether*																																																									
Corynoneura sp. 1 Epler																																																									
Cricotopus bicinctus (Meigen)			X																		X												X																	X		X				
Cricotopus cf. festivellus (Kieffer)																																																				X					
Cricotopus cf. sp. 2 Epler																																																				X					
Cricotopus luciae LeSage & Harrison																																																				X		X			
Cricotopus n. sp. 1 Sublette																																																					X			
Cricotopus politus (Coquillett)																																																				X		X			
Cricotopus sylvestris (Fabricius) Grp. sp.																																																						X			
Cricotopus trifasciatus (Meigen)																																																					X			
Cricotopus vuripes (Coquillett)																					X												X			X																				
Cricotopus vierriensis Goetghebuer*		X											X								X												X																							
Cryptochironomus fulvus (Johannsen)																																																									
Cryptochironomus fulvus (Joh.) Gr. n. sp. 1 Sublette*		X	X	X									X							X													X																	X		X				
Cryptochironomus fulvus (Joh.) Gr. n. sp. 2 Sublette*																																	X																	X		X				
Cryptochironomus n. sp. nr. scimitarus Townes*		X	X	X																	X																																				
Cryptochironomus nr. blarina Townes*		X											X																																											
Cryptochironomus ponderosus Sublette																																																								
Cryptochironomus sorex Townes*		X	X	X									X								X												X																							
Cryptotendipes pseudotener (Goetghebuer)																				X																																				
Demicryptochironomus cuneatus (Townes)*		X		X																X																																				
Dicrotendipes incurvus Sublette*																																	X			X																				
Dicrotendipes lucifer (Johannsen) Complex sp.																																																			X					
Dicrotendipes modestus (Say)*			X																		X												X																	X		X		X		
Dicrotendipes neomodestus (Malloch)*													X																																												
Dicrotendipes tritomus Kieffer																																																			X		X		X		
Diplocladius cultriger Kieffer*																																																							
Djalmabatista pulcher (Johannsen)													X							X	X																																				
Einfeldia cf. pagana (Meigen)																																																					X			
Einfeldia dorsalis (Meigen)																				X													X																							
Einfeldia natchitocheae (Sublette)*																																	X																	X						
Einfeldia sp. 1 Epler																																																						X		
Endochironomus nigricans (Johannsen)*		X																																																					
Endotribelos sp. 1 Epler																																																					X			
Epoicocladius n. sp. 1 Saether*		X																			X																																			
Epoicocladius n. sp. 2 Saether		X																																																						
Epoicocladius prob. Saether*																					X																																				
Eukiefferiella cf. claripennis (Lundbeck)																																																			X		X			
Eukiefferiella coerulescens (Kieffer) Grp. sp. 1																																																						X			
Glyptotendipes cf. lobiferus (Say)*																																																						X		
Glyptotendipes meridionalis Dendy & Sublette		X																															X																							
Goeldichironomus holoprasinus (Goeldi)*																																																								
Guttipelopia currani Beck & Beck*		X																																																						
Guttipelopia guttipennis (Wulp)																																																								
Heterotrissocladius marcidus (Walker)*		X																															X			X													X		X		X		
Labrundinia becki Roback													X																																							X					
Labrundinia pilosella (Loew)		X	X										X								X												X			X													X		X				
Labrundinia sp. SC-1 Epler																																																			X		X			
Labrundinia virescens Beck & Beck																																																					X			
Larsia cf. planensis (Johannsen)																																																				X			
Larsia indistincta Beck & Beck																				X	X																																			
Larsia n. sp. Bilyj*		X	X																																																					
Lauterborniella agrayloides (Kieffer)				X																																																			
Limnophyes hudsoni Saether*			X										X																				X			X																			
Limnophyes minimus (Meigen)																																																				X	X	X		X		
Limnophyes n. sp. Saether*																																																							
Lipurometriocnemus vixlobatus Saether																																	X																							

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Lopescladius sizlzea Roback & Coffman			X																																																			
Macropelopia johnsoni (Coquillett)*																																																						
Meropelopia americana Fittkau																																																						
Mesosmittia patrihortae Saether*		X																																																			
Metriocnemus fuscipes (Meigen)		X											X																																			X		X				
Micropsectra cf. geminata Oliver & Dillon																																	X																				
Micropsectra n. sp. 1 Sublette*																																																					
Micropsectra n. sp. 2 Sublette*																																																			X		
Microtendipes caelum Townes*		X	X	X																																																
Microtendipes pedellus (DeGeer)*		X											X								X												X																			
Nanocladius cf. rectinervis (Kieffer)																					X												X			X												X		X			
Nanocladius parvulus (Kieffer)*		X		X																																												X		X			
Nanocladius spiniplenus Saether																					X																												X		X			
Natarsia baltimoreus (Macquart)																					X																																	
Nilotanypus fimbriatus (Walker)*			X										X																																					X				
Nilothauma babiyi (Rempel)*		X		X									X																				X															X		X			
Nilothauma bicorne (Townes)																																	X																X		X		X	
Nilothauma mirabile (Townes)*		X		X																	X																															X		
Odontomesa fulva (Kieffer)*																																	X																				
Omisus sp. A Epler																					X																																	
Orthocladius annectens Saether*		X	X	X																	X												X			X													X				
Orthocladius cf. nigritus Malloch																																																						
Orthocladius curtiseta Saether																																																		X				
Orthocladius dentifer Brundin*		X	X																X	X																																	
Orthocladius lignicola (Kieffer)*		X	X																														X			X																
Orthocladius obumbratus Johannsen*		X											X								X												X															X		X		X	X
Orthocladius oliveri Soponis																																				X													X		X			
Orthocladius sublettei Soponis				X																																														X				
Oschia dorsenna Saether																																																						
Pagastiella sp. (larva only 1976-77)												X																																									
Parachaetocladius hudsoni (Saether)*		X																																																			
Parachironomus alatus (Beck)																																	X																				
Parachironomus carinatus (Townes)																																																	X			X		
Parachironomus chaetoulus (Dendy & Sublette)																																																	X			X		
Parachironomus digitalis (Edwards)																																																	X				
Parachironomus monochromus (Wulp)																																																	X			X		
Parachironomus potamogeti (Townes)																																	X																X				
Parachironomus sp. C Epler																																	X																X				
Parachironomus tenuicaudatus (Malloch)																																																	X				
Paracladopelma doris (Townes)*													X																																					X		X			
Paracladopelma laminata Beck & Beck*		X											X																				X																				
Paracladopelma n. sp. nr. schlitzensis Ringe		X																	X																																			
Paracladopelma nereis (Townes)																																																						
Paracladopelma undine (Townes)		X																																															X					
Parakiefferiella cf. bathophila (Kieffer)																			X	X													X			X												X		X			
Parakiefferiella n. sp. 1 Saether*		X	X	X									X								X																														X				
Parakiefferiella n. sp. 2 Saether*		X																			X																																	
Parakiefferiella n. sp. 3 Saether*		X																			X												X																				
Parakiefferiella n. sp. 4 Saether		X																															X																				
Parakiefferiella sp. 2 Epler																																																					
Parakiefferiella sp. 3 Epler																																																					
Paralauterborniella nigrohalterale (Malloch)*		X	X	X																																												X		X			
Parametrina anomala Beck & Beck																					X												X			X												X				
Parametrina fragilis (Walley)			X																																														X			X		
Parametriocnemus sp. 4 Epler (abortant P. lundbeckii?)																					X												X																X				
Parametriocnemus n. sp. 3 Saether*				X																																													X	X			
Parametriocnemus n. sp. 4 Saether*			X																																																	
Parametriocnemus aculeatus Saether*	X	X										X																																									
Parametriocnemus discaudatus Saether*	X	X																															X																				
Parametriocnemus cf. lundbeckii (Johannsen)	X	X	X									X							X	X																																		
Parametriocnemus hamatus Johannsen	X	X																															X																X		X		
Paraphaenocladius exagitans (Johannsen)	X																																																		
Paraphaenocladius impensus Saether*	X	X										X							X	X																														X	X			
Paraphaenocladius sebosior Saether*												X																					X																				
Paratanytarsus dissimilis Johannsen																																																				
Paratanytarsus quadratus Sublette*	X	X										X																																						X				
Paratanytarsus sp. 2 Epler																																																	X				
Paratendipes subaequalis (Malloch)			X																																													X		X			

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Paratrichocladius n. sp. 1 Sublette*																																																							
Pentaneura inconspicua (Malloch)				X																	X																										X							
Phaenopsectra flavipes (Meigen)																																																			X			
Polypedilum albicorne (Meigen)*																					X												X																						
Polypedilum angulum Maschwitz*		X	X	X																	X												X																		X				
Polypedilum angustum Townes																																																	X		X		X			
Polypedilum aviceps Townes*													X							X	X																														X					
Polypedilum cf. "bergi Maschwitz"																																																	X					
Polypedilum convictum (Walker)			X	X																	X												X																X		X			
Polypedilum digitifer Townes																																																	X		X			
Polypedilum fallax (Johannsen)*				X									X								X												X			X																		
Polypedilum gomphus Townes*		X	X	X																													X																						
Polypedilum griseopunctatum Malloch																																																	X	X					
Polypedilum halterale (Coquillett)*																																	X																X		X		X		
Polypedilum illinoense (Malloch)*		X	X										X								X												X																X		X		X		
Polypedilum lactum (Meigen)*		X		X																													X			X																		
Polypedilum n. sp. nr. griseopunctatum Malloch*		X	X	X									X							X	X												X																X	X					
Polypedilum n. sp. Sublette nr. braseniae (Leathers)				X																													X																						
Polypedilum n. sp. Sublette nr. simulans Townes		X	X	X									X							X													X																						
Polypedilum n. sp. Sublette nr. vibex Townes													X																				X																		X		X		
Polypedilum n. sp. Sublette*																																																							
Polypedilum obtusum Townes*		X	X	X									X																																											
Polypedilum ophioides Townes																																																		X					
Polypedilum parascalaenum Beck		X		X									X																				X																						
Polypedilum parvum (Townes)*																																																							
Polypedilum scalaenum (Schrank)*		X	X	X									X							X	X												X			X												X	X	X		X	X		
Polypedilum simulans Townes				X																													X																		X		X		
Polypedilum sordens (v.d. Wulp)																																	X																						
Polypedilum sulaceps Townes				X																																																				
Polypedilum trigonus Townes*																				X													X																X		X		X		
Polypedilum tritum (Walker)		X	X																		X												X																X		X		X		
Polypedilum vibex Townes																																																				X		X		
Potthastia longimana (Kieffer)*		X				X																													X																	X			
Procladius bellus (Loew)*		X																		X	X												X																X		X		X		
Procladius denticulatus Sublette*		X	X	X																													X																						
Procladius freemani Sublette																																																				X				
Procladius sublettei Roback*		X	X	X																													X			X																X		X		
Psectrocladius cf. pilosus Roback																																																			X		X		
Psectrocladius limbatellus (Holmgren) Group*													X																																										
Psectrocladius n. sp. Saether*		X																																																					
Psectrocladius psilopterus Kieffer Group*		X		X									X																																									
Psectrocladius cf. simulans (Johannsen)*																																																			X				
Psectrocladius vernalis (Malloch)*																																																			X		X		
Pseudochironomus n. sp. Saether nr. prasinatus (Staeger)																																	X																						
Pseudochironomus articaudus Saether													X																																										
Pseudochironomus fulviventris (Johannsen)																																																			X		X		
Pseudochironomus julia (Curran)*																																																						
Pseudorthocladius clavatosus Saether & Sublette																																																			X				
Pseudorthocladius cf. destitutus Saether & Sublette*		X																																																			X	
Pseudorthocladius dumicaudus Saether & Sublette																																																			X				
Pseudorthocladius inyoensis Saether & Sublette																																	X																						
Pseudorthocladius macrovirgatus Saether & Sublette			X										X																																									X	
Pseudorthocladius morsei Saether & Sublette																				X																																		
Pseudorthocladius n.sp. Sae. & Su. nr. dumicaudatus Sae.													X																				X																		X			
Pseudorthocladius rectangularis Caspers & Siebert																																																			X			
Pseudorthocladius rectilobus Saether & Sublette																																																					X	
Pseudorthocladius tricanthus Saether & Sublette													X																																										
Pseudorthocladius uniserratus Saether & Sublette*																																																					X	
Pseudorthocladius virgatus Saether & Sublette		X																																																			
Pseudorthocladius wingoi Saether & Sublette													X								X																															X			X		
Pseudosmittia cf. forcipata (Goetghebuer)		X	X										X																																								X				
Pseudosmittia sp. 1 Saether		X																																																					
Rheocricotopus eminellobus Saether*		X	X										X																																										
Rheocricotopus glabricollis (Meigen)																																																			X				
Rheocricotopus kenorensis Saether*		X		X																	X												X			X																		
Rheocricotopus robacki (Beck & Beck)																																																			X	X	X				
Rheotanytarsus distinctissimus Brundin																																																			X		X		X		
Rheotanytarsus exiguus Johannsen																																																			X		X	X	X		

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Rheotanytarsus n. sp. 2 Sublette*		X	X										X								X											X			X																	
Rheotanytarsus n. sp. 3 Sublette*		X	X																													X																				
Rheotanytarsus n. sp. 4 Sublette*		X											X								X											X			X																	
Rheotanytarsus n. sp. 5 Sublette*		X	X	X																												X																				
Rheotanytarsus pellucidus (Walker)		X	X	X																												X																				
Rheotanytarsus sp. 4 Epler																																				X													X				
Robackia claviger (Townes)*		X				X	X														X											X	X	X																	
Saetheria sp. 1 Epler																																				X																
Saetheria tylus (Townes)			X																													X																				
Smittia cf. sp. 2 Epler																																				X													X				
Smittia n. sp. 1 Saether*																					X											X			X																	
Smittia n. sp. 2 Saether*		X																														X			X																	
Smittia n. sp. 3 Saether*																																																						
Smittia n. sp. 4 Saether*																																X																					
Smittia sp. 1 Epler																																																				X	
Stelechomyia n. sp. Saether			X																																																		
Stelechomyia perpulchra (Mitchell)		X											X																																							
Stempellina alni Brundin		X		X																																																
Stempellina bausei (Kieffer)																				X																																		
Stempellina n. sp. 1 Sublette		X	X																																																	
Stempellina n. sp. 5 Sublette*			X	X																												X																				
Stempellinella brevis (Edwards)*		X	X	X																												X																				
Stempellinella leptocelloides (Webb)			X	X									X							X																																
Stenochironomus aestivalis Townes																				X	X																																
Stenochironomus cinctus Townes				X																																																
Stenochironomus hilaris (Walker)*				X									X								X																																
Stenochironomus macateei (Malloch)*																																				X																
Stenochironomus n. sp. Subletter nr. unictus Townes																																X																				
Stenochironomus poecilopterus (Mitchell)*																				X	X											X				X																
Stictochironomus devinctus (Say)		X																																																		
Synorthocladius semivirens (Kieffer)*		X	X	X																																															
Synorthocladius sp. 1 Epler																																																		X			
Tanypus concavus Roback																																				X													X			
Tanypus neopunctipennis Sublette																																				X																
Tanypus punctipennis Meigen*																																																				
Tanytarsus (Calopsectra) n. sp. 1 Sublette*																																																			
Tanytarsus (T.) n. sp. 1 Sublette*																																																			
Tanytarsus cf. allicis Sublette																																				X													X			
Tanytarsus cf. brundini Lindeberg																																					X															
Tanytarsus cf. buckleyi Sublette*		X	X	X									X																							X													X			
Tanytarsus cf. guerlus Roback				X									X							X	X																											X		X		
Tanytarsus confusus Malloch*		X																		X																													X			
Tanytarsus dendyi Sublette*			X																													X																	X			
Tanytarsus mendax Kieffer																																X																	X			
Tanytarsus n. sp. 13 Sublette*																																																			
Tanytarsus n. sp. 14 Sublette*																																																			
Tanytarsus n. sp. 16 Sublette*																																																			
Tanytarsus n. sp. 19 Sublette*																																																			
Tanytarsus n. sp. 2 Sublette*																																																			
Tanytarsus n. sp. 20 Sublette*																																																			
Tanytarsus n. sp. 3 Sublette*																																																			
Tanytarsus n. sp. 5 Sublette*																																																			
Tanytarsus n. sp. 6 Sublette*																																																			
Tanytarsus n. sp. 9 Sublette*																																																			
Tanytarsus neoflavellus (Malloch)																																																		X		
Tanytarsus recurvatus Brundin				X																																																
Tanytarsus sp. 10 Epler																																																		X		
Tanytarsus sp. 11 Epler																																																		X		
Tanytarsus sp. 13 Epler																																				X													X			
Tanytarsus sp. 14 Epler																																				X																
Tanytarsus sp. 2 Epler																																					X															
Tanytarsus sp. 3 Epler																																					X															
Tanytarsus sp. 8 Epler																																				X													X			
Tanytarsus sp. 9 Epler																																																	X		
Tanytarsus tibialis Webb				X																																															
Thienemanniella n. sp. 1 Saether																																																			
Thienemanniella n. sp. 2 Saether																																																			
Thienemanniella nr. obscura Brundin		X	X																																																

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Thienemanniella partita Schlee*		X																																																					
Thienemanniella sp. 1 Epler																																																								
Thienemanniella sp. 2 Epler																																																X		X						
Thienemanniamyia senata (Walley)													X																																		X		X						
Tribelos fuscicorne (Malloch)																																																	X						
Tribelos jucundum (Malloch)*		X	X	X									X							X	X												X																							
Tribelos n. sp. Sublette																																	X																								
Tvetenia paucunca (Saether)		X											X								X											X																							
Tvetenia vitracies (Saether)*		X		X																																																				
Unniella multivirga Saether*		X																															X																								
Xenochironomus xenolabis (Kieffer)																																	X																								
Xestochironomus subletti Borkent																																																								
Xylotopus par (Coquillett)*		X											X								X												X																							
Zavrelia marmorata (Walp)																																																								
Zavrelimyia simulosa (Coquillett)*				X									X																																											
Zavrelimyia thryptica Sublette			X																		X																																			
DIPTERA: Chironomidae TOTAL TAXA 323	**0**	**97**	**66**	**55**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**57**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**95**	**1**	**2**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**91**	**16**	**90**	**0**	**43**	**10**	**1**	**1**	**0**
DIPTERA: Culicidae																																																							
Aedes vexans (Meigen)*																																																							
Anopheles cruciins-georgianus Complex*																																																				X			
Anopheles punctipennis (Say)*																																																				X			
Anopheles quadrimaculatus Say*																																																				X			
Culex nigripalpus Theobald																																																				X			
Culex pipiens quinquefasciatus Say																																																			X			
Culex territans Walker																																																			X			
Culiseta melanura (Coquillet)																																																			X			
Uranotaenia sapphirina (Osten Sacken)*																																																			X			
DIPTERA: Culicidae TOTAL TAXA 9	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**
DIPTERA: Dixidae																																																							
Dixa sp.**																																			X																					
DIPTERA: Dixidae TOTAL TAXA 1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DIPTERA: Empididae																																																						
Hemerodromia sp.**						X																												X																					
DIPTERA: Empididae TOTAL TAXA 1	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DIPTERA: Ptychopteridae																																																					
Bittacomorpha clavipes (Fabricius)			X																																																			
Ptychoptera quadrifasciata Say			X										X																																									
DIPTERA: Ptychopteridae TOTAL TAXA 2	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
DIPTERA: Simuliidae																																																						
Ectemnia invenusta (Walker)**		X	X				X																																															X
Cnephia pecuarum (Riley)		X																																																			
Simulium cytospecies F																																																						
Simulium (Phosterodotos) spp		X	X	X	X																																																
Simulium decorum Walker																																																						
Simulium dixiense Stone & Snoddy**						X	X																																														
Simulium jenningsi Malloch Group**																																																					
Simulium jonesi Stone & Snoddy**																																		X																			
Simulium lakei Snoddy																																		X																			
Simulium tuberosum (Lundstroem)		X		X	X		X																											X																		
Simulium venustum Say		X	X																																																		
Simulium verecundum Stone & Jamnback																																																					
Stegopterna mutata (Malloch)			X																																																		
DIPTERA: Simuliidae TOTAL TAXA 13	**0**	**5**	**4**	**2**	**2**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**0**	**0**	**1**
DIPTERA: Stratiomyiidae																																																					
Odontomyia sp.**																																																					
Solva pallipes Loew*.**																																																					
DIPTERA: Stratiomyiidae TOTAL TAXA 2																																																				
DIPTERA: Tabanidae																																																				
Chlorotabanus crepuscularis (Bequaert)*.**																																																			
Chrysops sp.**																																																			
Tabanus nodestus Say*							X																																													

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
DIPTERA: Tabanidae TOTAL TAXA 3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIPTERA: Tipulidae																																																						
Antocha biarmataa Alexander		X																																																				
Antocha opalizans Osten Sacken*		X		X																							X					X															X		X				
Antocha saxicola Osten Sacken																																																		X				
Atarba picticornis Osten Sacken			X																													X																					
Brachypremna dispellens (Walker)*			X													X																																						
Dicranoptycha megaphallus Alexander																											X					X																					
Epiphragma solatrix (Osten Sacken)																																																			X		
Erioptera caliptera Say		X	X										X														X					X															X	X	X		X	X	
Erioptera cana (Walker)			X										X																																								
Erioptera chlorophylla Osten Sacken		X																																																			
Erioptera chrysocoma Osten Sacken																																																		X	X		X	
Erioptera furcifera Alexander			X	X																																																	
Erioptera graphica Osten Sacken																																X																					
Erioptera needhami Alexander		X	X										X																				X															X		X		X	
Erioptera nr. straminea Osten Sacken																																X																	X		X	
Erioptera parva Osten Sacken		X	X																								X					X															X		X		X	
Erioptera septentrionis Osten Sacken		X																														X															X		X			
Erioptera vespertina Osten Sacken			X										X																																							
Erioptera villosa Osten Sacken																																																		X				
Gnophomyia luctuosa Osten Sacken																																																		X			
Gonomyia florens Alexander																																																		X				
Gonomyia puer Alexander*		X	X																								X																								X		
Gonomyia subcinerea Osten Sacken		X	X																								X																									
Gonomyia sulphurella Osten Sacken*		X	X										X														X																						X		X		
Hexatoma aurata (Doane)																																X																					
Hexatoma cinerea (Alexander)*		X																																																			
Hexatoma eriophora (Williston)						X	X																										X	X																		
Hexatoma fuliginosa (Osten Sacken)													X																																							
Limnophila (Dicranophragma) fuscovaria Osten Sacken*																																																		X			
Limnophila (Phylidorea) similis Alexander*																																																				
Limnophila angustula Alexander		X																														X																		X		X		
Limnophila fuscovaria Osten Sacken																																																		X			
Limnophila irrorata Johnson		X	X																													X																					
Limnophila lutea Doane		X																																															X				
Limnophila macrocera Say			X																																																		
Limnophila marchandi Alexander*		X																																															X		X		
Limnophila munda Osten Sacken																																																	X			X	
Limnophila sp. nr. frosti Alexander*																																																				
Limonia brevivena (Osten Sacken)			X																																																	
Limonia communis (Osten Sacken)*			X																													X																					
Limonia defuncta (Osten Sacken)																																X																					
Limonia domestica (Osten Sacken)																																																	X	X		X	
Limonia immatura (Osten Sacken)			X																																																
Limonia liberta (Osten Sacken)			X																								X					X																					
Limonia rara (Osten Sacken)																																																			X		
Limonia rostrata (Say)*			X										X																				X																		X		
Limonia shannoni (Alexander)			X																													X																		X		X		
Limonia stulta (Osten Sacken)																																																			X		
Limonia triocellata (Osten Sacken)																											X																									
Longurio testaceus Loew																																																		X		
Molophilus forcipulus (Osten Sacken)																																																	X		X		
Molophilus pubipennis (Osten Sacken)		X																														X																				
Orimarga mirabilis (Osten Sacken)																																																X			X	
Ormosia nigripila (Osten Sacken)		X	X																													X																	X		X		
Ormosia palpalis Dietz																																																			X		
Ormosia rubella (Osten Sacken)																											X																									
Pedicia (Tricyphona) inconstans (Osten Sacken)*																																																	X			X	
Pilaria imbecilla (Osten Sacken)																																X																				
Pilaria recondita (Osten Sacken)*			X										X																				X																X		X		
Pilaria stanwoodae (Alexander)																																																		X		
Pilaria tenuipes (Say)			X										X														X																									
Pseudolimnophila australina Alexander		X																														X																X	X	X		X	X	
Pseudolimnophila contempta (Osten Sacken)			X																													X																					
Pseudolimnophila luteipennis (Osten Sacken)*		X	X										X														X					X															X	X	X		X	X	
Tasiocera ursina (Osten Sacken)																																																	X			

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Teucholabis complexa Osten Sacken		X	X										X																																												
Tipula (Yamatotipula) eluta Loew*																											X					X																								
Tipula abdominalis (Say)																																																									
Tipula aprilina Alexander																																			X																							
Tipula caloptera Loew													X																																													
Tipula fraterna Loew			X										X														X																														
Tipula furca Walker*			X										X																																													
Tipula manahatta Alexander																											X																														
Tipula sayi Alexander		X	X																																																						
Tipula stenorhabda Alexander																																																									
Tipula tricolor Fabricius*			X										X																				X																								
Toxorhina magna Osten Sacken*																											X																														
Toxorhina nuliebris Osten Sacken		X																																																						
Ulomorpha rogersella Alexander																																	X																								
DIPTERA: Tipulidae TOTAL TAXA 78	**0**	**22**	**29**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**15**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**27**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**14**	**23**	**0**	**11**	**16**	**0**	**0**	**0**
Ephemeroptera TOTAL TAXA 37	9	0	6	2	0	8	8	0	2	1	0	11	0	5	3	0	4	4	0	0	0	0	0	1	2	0	0	0	4	2	9	0	15	7	9	2	5	0	0	0	0	1	0	0	0	0	0	3	0	5	0	0	0	3	4	1
Odonata TOTAL TAXA 40	11	4	10	1	10	10	16	0	10	4	0	6	4	4	3	4	3	0	3	6	8	0	6	3	2	3	0	0	1	2	0	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	1	0	2	0	2
Plecoptera TOTAL TAXA 39	21	8	3	3	1	7	12	0	1	2	0	20	3	4	7	1	11	1	6	1	1	0	7	2	11	7	0	1	1	2	14	1	7	9	14	0	0	0	0	0	0	0	0	0	0	0	0	2	7	5	0	0	6	2	2	2
Hemiptera: Corixidae TOTAL TAXA 20	13	11	0	0	0	10	12	0	1	0	0	5	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	0	0	0
Hemiptera: Gerridae TOTAL TAXA 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hemiptera: Hydrometridae TOTAL TAXA 1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hemiptera: Mesoveliidae TOTAL TAXA 1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hemiptera: Naucoridae TOTAL TAXA 1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hemiptera: Nepidae TOTAL TAXA 1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hemiptera: Notonectidae TOTAL TAXA 4	0	0	0	0	0	2	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hemiptera: Veliidae TOTAL TAXA 1	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Hemiptera TOTAL TAXA 30	18	11	0	0	0	12	14	0	2	0	0	8	0	0	0	0	8	0	0	0	0	0	1	0	0	1	0	0	1	0	12	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	5	0	0	0	0	0	0
Megaloptera TOTAL TAXA 6	2	3	1	0	1	1	2	0	1	1	0	2	0	2	0	0	2	1	1	0	0	0	0	2	1	0	0	0	1	1	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	2
Neuroptera TOTAL TAXA 2	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera: Brachycentridae TOTAL TAXA 5	5	2	0	0	0	2	4	0	1	3	1	5	0	1	2	0	2	0	0	0	0	0	2	1	1	2	0	0	0	0	4	0	4	1	4	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
Trichoptera: Calamoceratidae TOTAL TAXA 2	2	1	0	0	0	2	2	0	1	1	2	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	1	2	0	0	1	1	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
Trichoptera: Dipseudopsidae TOTAL TAXA 3	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	3	0	2	0	0	3	0	1	0	1	0	0	0	0	0	0	0	0
Trichoptera: Glossosomatidae TOTAL TAXA 3	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera: Hydropsychidae TOTAL TAXA 23	18	17	0	0	0	2	3	0	1	2	15	2	0	1	1	0	0	0	0	0	0	0	0	3	1	2	1	0	0	0	3	0	14	1	2	0	0	13	11	0	0	0	0	8	0	2	0	7	0	7	1	3	0	0	1	0
Trichoptera: Hydroptilidae TOTAL TAXA 39	22	27	10	8	0	0	1	2	0	0	22	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	17	0	0	0	0	14	15	0	0	0	0	17	0	1	0	6	0	17	0	0	0	0	0	0
Trichoptera: Lepidostomatidae TOTAL TAXA 3	2	3	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	2	2	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0
Trichoptera: Leptoceridae TOTAL TAXA 35	24	26	0	0	0	0	2	0	1	1	26	1	0	1	1	0	1	1	1	0	0	0	1	1	1	1	0	1	1	0	6	0	24	0	1	0	0	21	25	0	0	0	0	25	0	3	0	8	0	16	0	1	0	1	0	0
Trichoptera: Limnephilidae TOTAL TAXA 12	4	6	0	0	0	0	4	0	2	3	1	3	0	1	1	0	2	2	2	0	0	0	3	1	2	4	0	0	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera: Molannidae TOTAL TAXA 2	2	2	0	0	0	2	2	0	2	0	2	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera: Odontoceridae TOTAL TAXA 2	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Trichoptera: Philopotamidae TOTAL TAXA 7	2	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Trichoptera: Polycentropodidae TOTAL TAXA 4	3	3	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	7	0	0	0	0	4	4	0	0	0	0	4	0	0	0	2	0	4	0	1	0	0	0	0
Trichoptera: Polycentropodidae TOTAL TAXA 15	7	10	0	0	0	0	1	0	0	0	9	1	0	0	1	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	2	0	0	0	0	1	3	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0
Trichoptera: Psychomyiidae TOTAL TAXA 1	1	0	0	0	0	0	1	0	0	1	0	1	0	1	1	0	1	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	1	1	1	0	0	1	0	0	0	0	1	0	1	0	1	0	2	0	4	0	1	0	0
Trichoptera: Rhyacophilidae TOTAL TAXA 1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera: Sericostomatidae TOTAL TAXA 3	3	3	0	0	0	2	2	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera TOTAL TAXA 160	101	110	10	8	0	10	23	2	8	14	95	21	0	6	8	0	9	4	4	0	0	0	12	5	8	12	0	1	4	3	34	0	89	8	16	0	0	72	80	0	2	0	0	85	0	15	0	30	0	59	1	6	0	2	2	2
Lepidoptera TOTAL TAXA 16	9	6	1	1	0	1	1	0	1	1	0	6	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0
Coleoptera TOTAL TAXA 125	52	57	0	0	0	1	2	0	12	0	0	47	1	10	7	0	33	10	5	0	0	0	6	6	9	5	0	0	10	7	39	2	52	0	0	2	0	0	0	0	0	0	0	0	0	0	0	10	1	47	2	5	0	3	4	3
Diptera: Athericidae TOTAL TAXA 1	0	0	0	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Ceratopogonidae TOTAL TAXA 77	0	14	21	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	24	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Chaoboridae TOTAL TAXA 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Chironomidae TOTAL TAXA 323	0	97	66	55	0	2	1	0	0	0	0	0	56	0	0	0	0	0	0	30	57	0	0	0	0	0	0	0	0	0	0	0	95	1	2	23	0	0	0	0	0	0	0	91	16	90	0	43	10	1	1	0	0	0	0	0
Diptera: Culicidae TOTAL TAXA 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Dixidae TOTAL TAXA 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Empididae TOTAL TAXA 1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Ptychopteridae TOTAL TAXA 2	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Aa	Ab	Ac	Ad	Ae	Af	Ag	Ah	Ai	Aj	Ak	Ba	Bb	Bc	Bd	Be	Ca	Cb	Cc	Cd	Ce	Cf	Da	Db	Dc	Ea	Eb	Ec	Ed	Ee	Fa	Fb	Ga	Gb	Gc	Gd	Ge	Gf	Ha	Hb	Hc	Hd	He	Ia	Ib	Ja	Ka	La	Lb	Ma	Mb	Na	Nb	Oa	Pa	Qa
Diptera: Simuliidae TOTAL TAXA 13	0	5	4	2	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	0	0	0	0	1
Diptera: Stratiomyiidae TOTAL TAXA 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Tabanidae TOTAL TAXA 3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera: Tipulidae TOTAL TAXA 78	0	22	29	2	0	1	1	0	0	0	0	0	15	0	0	1	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	27	1	2	0	0	0	0	0	0	0	0	0	0	0	16	14	23	0	11	16	0	0	0
Diptera TOTAL TAXA 512	0	138	122	60	2	5	6	0	0	0	0	0	75	0	0	1	0	0	0	40	58	0	0	0	0	0	16	0	0	0	0	0	146	3	8	26	2	0	0	0	0	0	0	0	0	0	111	30	122	0	54	26	1	1	1
INSECTA TOTAL TAXA 966	224	337	153	75	14	55	84	2	37	23	95	123	83	31	28	6	72	20	20	47	67	0	32	19	33	28	16	2	22	17	114	3	330	30	54	30	7	72	80	0	2	1	0	85	0	15	9	161	38	247	3	66	32	14	15	13

Table IV. Number of insect taxa reported for the Savannah River Site. Letter Codes for localities are as provided in Table II.

	Totals	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Ephemeroptera	37	21	13	8	2	4	9	18	1	0	0	0	3	5	0	3	4	1
Odonata	40	30	12	14	7	5	0	7	0	0	0	0	3	3	1	2	0	2
Plecoptera	39	24	22	15	14	9	14	18	0	0	0	0	9	5	6	2	2	2
Hemiptera	30	7	8	8	1	1	12	14	0	0	0	0	2	5	0	0	0	0
Megaloptera	6	4	3	3	2	1	0	4	0	0	0	0	0	1	0	1	2	2
Neuroptera	2	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Trichoptera	160	135	21	9	12	12	34	95	80	85	15	0	30	59	6	2	2	2
Lepidoptera	16	10	6	1	0	0	5	3	0	0	0	9	0	0	0	0	0	0
Coleoptera	125	91	50	38	9	12	40	54	0	0	0	0	11	47	5	3	4	3
Diptera	512	214+	76+	83+	0+	16+	0+	157	0	0	0	0	133	124	83	2	1	1
TOTALS	966	537+	213+	180+	47+	60+	115+	370	81	85	15	9	191	249	101	15	15	13

Note: There are 157 taxa of Diptera reported as adults that were captured in light traps in 1976-77, but for which available locality records are ambiguous (i.e., the localities are sites A, B, C, D, E, and/or F). Similarly, there are 40 taxa of Diptera reported as larvae that were captured in benthic or debris samples in 1976-77, but for which available locality records are ambiguous (for the same localities).

Table V. Physicochemical parameters and other characters of three sites surveyed during the 1995 Trichoptera Flight season at Pen Branch, Savannah River Site, Barnwell Co., SC.

	DATE (1995)	Temp.°C (Ambient)	Temp.°C (Water)	Velocity (m/sec)	Width (m)	Depth (m) (left)	Depth (m) (center)	Depth (m) (right)	Canopy
S	12 Jun	26	24	.45	5.0	.2	.09	.06	Partial-Complete
I	27 Jun	28	25	.44	5.0	.07	.09	.03	Partial-Complete
T	30 Jul	30	26	.45	5.0	.14	.11	.07	Partial-Complete
E	24 August	27	25	.53	5.0	.15	.13	.10	Partial-Complete
	21 Sept.	25	23	.33	5.0	.13	.10	.08	Partial-Complete
1	2 Nov.	23	19	.36	5.0	.15	.11	.10	Partial-Complete
S	12 Jun	26	23	.03	8.0	.32	.60	.25	Partial-Complete
I	27 Jun	28	25	.04	8.0	.40	.60	.30	Partial-Complete
T	30 Jul	32	27	.03	8.0	.40	.67	.40	Partial-Complete
E	24 August	27	25	.04	8.5	.40	.70	.40	Partial-Complete
	21 Sept.	25	24	.02	7.8	.25	.60	.31	Partial-Complete
2	2 Nov.	23	20	.03	8.5	.45	.80	.40	Partial-Complete
S	12 Jun	26	23	.10	2.0	*	.60	*	Complete
I	27 Jun	28	24	.09	2.0	*	.60	*	Complete
T	30 Jul	30	24	.07	1.6	*	.45	*	Complete
E	24 August	27	24	.09	1.6	*	.50	*	Complete
	21 Sept.	25	23	.05	2.0	*	.49	*	Complete
3	2 Nov.	23	19	.10	2.0	*	.40	*	Complete

Table VI. Light trap collection dates during the 1995 Trichoptera flight season or three sites on Pen Branch, Savannah River Site, Barnwell County, South Carolina.

COLLECTION DATES:	Site I	Site II	Site III
22 Mar 1995	*	*	
10 May 1995		*	
23 May 1995		*	
12 Jun 1995	*	*	
27 Jun 1995		*	
30 Jul 1995	*	*	*
24 August 1995		*	*
21 Sep 1995	*	*	*
2 Nov 1995	*	*	*

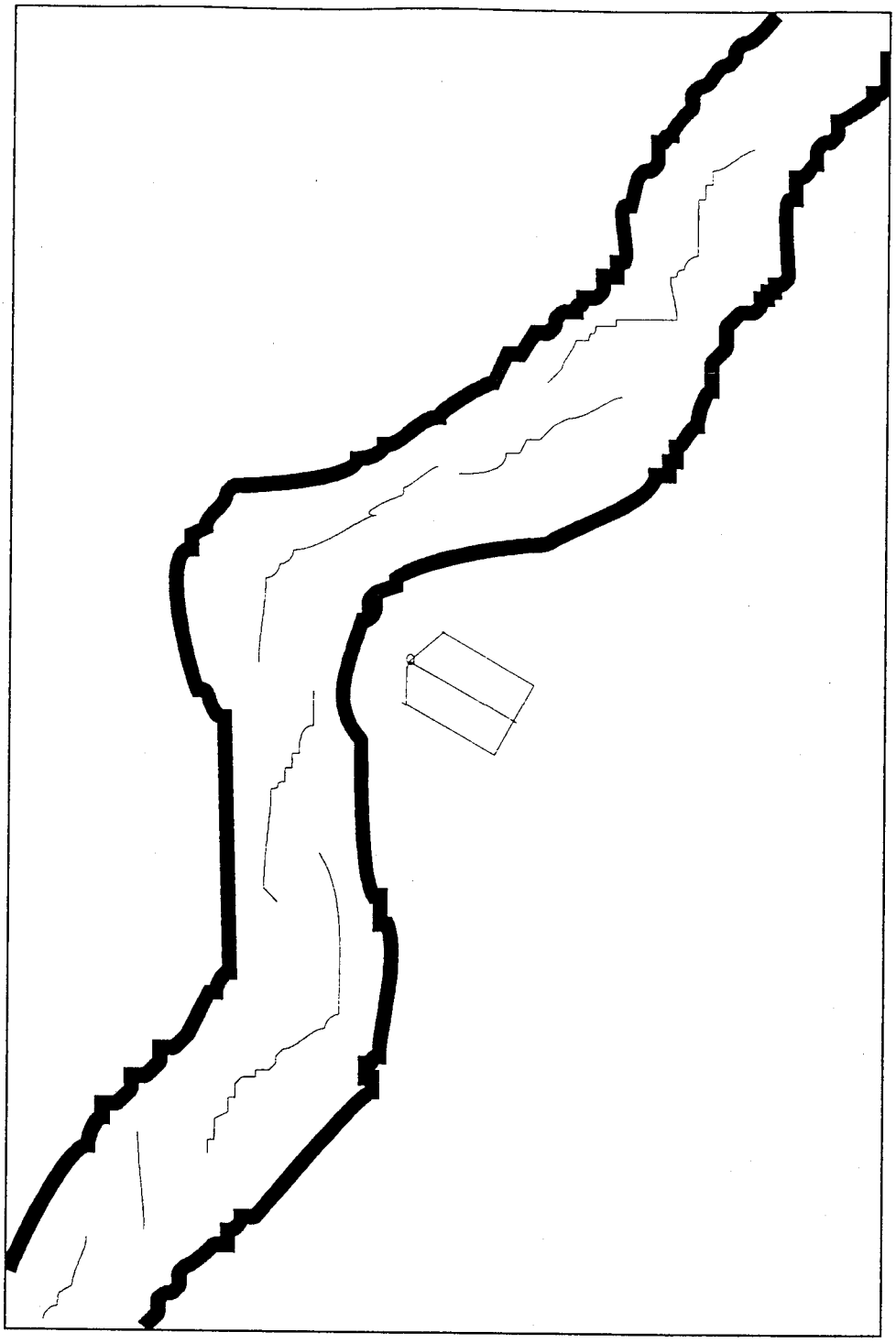

Figure 1. Illustration of Malaise trap placement.