

Dragonflies and damselflies

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Unlike most other arthropod groups in the Potomac Gorge, the dragonflies and damselflies have been surveyed several times over the past century. Orr (2005) provided the most recent and complete survey of the region, which includes all of the historical data.

During the 2006 Potomac Gorge BioBlitz, all of the odonates encountered were identified either by observed or collected adults or cast larval skins (exuviae). No fieldwork was undertaken on 25 June due to heavy rains.

Forty-six species of dragonflies and damselflies were recorded during the BioBlitz (Table 13), all of which are native to the region. None are listed as threatened, endangered, or globally rare. However, six species are of special interest in the District of Columbia, Maryland, and Virginia, including *Argia sedula* (Hagen) (MD-S3 natural heritage rank), *Enallagma traviatum* Selys (MD-S3), *Tachopteryx thoreyi* (Hagen) (DC-concern, MD-S2), *Erpetogomphus designatus* (Hagen) (MD-S2), *Gomphus fraternus* (Say) (MD-S2, VA-S2), *Neurocordulia obsoleta* (Say) (DC-concern, MD-S3), and *Neurocordulia yamaskanensis* (Provancher) (MD-S2, VA-S2).

The members of the Odonata survey team were Richard Orr (team leader), Michael Bean, Paul Bedell, Ken Clayton, Cathy and Angela Hutto, ZoAnn Lapinsky, Susan Muller, Steve, Tim, and Ben Roble, Charles and Karen Sheffield, Bob and Jo Solem, Ashley and Kate Traut, and June Tveekrem. They contributed a combined total of 242 hours in the field (including preparation and travel time) and 25 hours on specimen preparation and identification (including data entry, report writing, specimen transfer to NPS) for a grand total of 267 hours (Table 25).

Table 12. Spiders (Arachnida) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHO=C & O Canal National Historical Park, MD (CB=Chain Bridge Flats; GF=Great Falls Park; PI*= near Plummers Island).

FAMILY	SPECIES	GWMP		CHOH		
		GF	TR	CB	GF	PI*
Agelenidae	<i>Agelenopsis</i> poss. <i>kastoni</i> (Walckenaer)	X				
Araneidae	<i>Acacesia hamata</i> (Hentz)				X	
	<i>Mangora maculata</i> (Keyserling)	X				
	<i>Metepeira labyrinthea</i> (Hentz)	X				
	<i>Micrathena gracilis</i> (Walckenaer)	X				
	<i>Neoscona arabesca</i> (Walckenaer)				X	
	<i>Neoscona domicilorum</i> (Hentz)				X	
	<i>Neoscona</i> prob. <i>arabesca</i> (Walckenaer)	X				
	<i>Verrucosa arenata</i> (Walckenaer)	X				
Corinnidae	<i>Castianeira variata</i> Gertsch	X	X			
Linyphiidae	<i>Frontinella communis</i> (Hentz)	X				
Lycosidae	<i>Allocosa funerea</i> (Hentz)	X				
	<i>Pardosa milvina</i> (Hentz)	X	X			
	<i>Rabidosia rabida</i> (Walckenaer)		X			
	<i>Schizocosa ocreata</i> (Hentz)	X				
Oxyopidae	<i>Oxyopes aglossus</i> Chamberlin	X				
	<i>Oxyopes salticus</i> Hentz	X				
Pisauridae	<i>Dolomedes</i> prob. <i>scriptus</i> Hentz					X
	<i>Dolomedes scriptus</i> Hentz	X				
	<i>Dolomedes striatus</i> Giebel (or <i>triton</i>)			X		
	<i>Dolomedes vittatus</i> Walckenaer	X				
	<i>Pisaurina</i> prob. <i>mira</i> (Walckenaer)	X				
Salticidae	<i>Habrocestum pulex</i> (Hentz)	X				
	<i>Habronattus coecatus</i> (Hentz)			X		
	<i>Habronattus</i> poss. <i>decorus</i> (Blackwall)				X	
	<i>Phidippus princeps</i> (Peckham & Peckham)	X				
	<i>Phidippus</i> sp.	X				
	<i>Thiodina sylvana</i> (Hentz)	X				
	<i>Zygoballus rufipes</i> Peckham & Peckham				X	
Tetragnathidae	<i>Leucauge venusta</i> (Walckenaer)	X			X	
	<i>Tetragnatha elongata</i> Walckenaer	X				
Theridiidae	<i>Anelosimus studiosus</i> (Hentz)	X				
	<i>Faiditus cancellatus</i> (Hentz)	X				
	<i>Parasteatoda tepidariorum</i> (C.L. Koch)	X				
Theridiosomatidae	<i>Theridiosoma gemmosum</i> (L. Koch)	X				
Thomisidae	<i>Misumenops oblongus</i> (Keyserling)				X	
	<i>Xysticus fraternus</i> Banks	X				

Table 13. Dragonflies and damselflies (Odonata) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; Chain Bridge Flats); CHOH=C & O Canal National Historical Park, MD (CR=Carderock; GF=Great Falls Park).

FAMILY	SPECIES	GWMP		CHOH	
		GF	CB	CR	GF
Calopterygidae	<i>Calopteryx maculata</i> (Beauvois)	X	X	X	X
	<i>Hetaerina americana</i> (Fabricius)	X	X	X	X
Lestidae	<i>Lestes inaequalis</i> Walsh	X	X		
	<i>Lestes rectangularis</i> Say		X		X
Coenagrionidae	<i>Argia apicalis</i> (Say)	X	X	X	X
	<i>Argia fumipennis</i> (Hagen)	X		X	X
	<i>Argia moesta</i> (Hagen)	X	X	X	X
	<i>Argia sedula</i> (Hagen)	X	X		
	<i>Argia tibialis</i> (Rambur)	X	X	X	X
	<i>Argia translata</i> Hagen in Selys	X		X	X
	<i>Enallagma basidens</i> (Calvert)				X
	<i>Enallagma civile</i> (Hagen)			X	X
	<i>Enallagma exsulans</i> (Hagen)	X	X	X	X
	<i>Enallagma geminatum</i> Kellicott			X	X
	<i>Enallagma signatum</i> (Hagen)			X	X
	<i>Enallagma traviatum</i> Selys				X
	<i>Ischnura kellicotti</i> Williamson				X
	<i>Ischnura posita</i> (Hagen)	X	X	X	X
	<i>Ischnura verticalis</i> (Selys)	X	X		
Petaluridae	<i>Tachopteryx thoreyi</i> (Hagen)				X
Aeshnidae	<i>Anax junius</i> (Drury)				X
	<i>Basiaeschna janata</i> (Say)	X	X		
	<i>Boyeria vinosa</i> (Say)	X	X		
	<i>Epiaeschna heros</i> (Fabricius)	X	X		X
	<i>Nasiaeschna pentacantha</i> (Rambur)	X	X	X	X
Gomphidae	<i>Dromogomphus spinosus</i> Selys	X	X	X	X
	<i>Erpetogomphus designatus</i> Hagen	X	X	X	
	<i>Gomphus fraternus</i> (Say)		X		
	<i>Gomphus vastus</i> Walsh	X	X	X	X
	<i>Hagenius brevistylus</i> Selys		X	X	X
	<i>Stylurus spiniceps</i> (Walsh)	X	X	X	X
Macromiidae	<i>Macromia illinoiensis</i> Walsh	X	X		X
Corduliidae	<i>Epitheca princeps</i> (Hagen)	X	X	X	X
	<i>Neurocordulia obsoleta</i> (Say)	X	X	X	X
	<i>Neurocordulia yamaskanensis</i> (Provancher)		X		X
Libellulidae	<i>Erythemis simplicicollis</i> (Say)	X	X	X	X
	<i>Libellula cyanea</i> Fabricius		X		
	<i>Libellula incesta</i> Hagen	X	X	X	X
	<i>Libellula luctuosa</i> Burmeister	X	X		X
	<i>Libellula lydia</i> (Drury)	X	X	X	
	<i>Libellula needhami</i> Westfall	X	X		
	<i>Libellula pulchella</i> Drury		X		
	<i>Libellula vibrans</i> Fabricius				X
	<i>Pachydiplax longipennis</i> (Burmeister)	X	X	X	X
	<i>Perithemis tenera</i> (Say)	X	X	X	X
	<i>Tramea carolina</i> Linnaeus	X			X

Mayflies, stoneflies,
caddisflies, and neuropteroids

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Over the last few years, surveys of mayflies, stoneflies, caddisflies, and lacewings and their relatives have been undertaken on Plummers Island (CHOH, MD) (Flint, 2008a, c) and in Great Falls and Turkey Run Parks (GWMP, VA). As a result, the fauna of the Potomac Gorge has become fairly well known; there were no surprises in the species tallied at the BioBlitz.

In general, the BioBlitz coincided with the high season for these insect orders. In spite of the good numbers of individuals, there were many species in all groups that, with emergence times typically earlier or later in the year, were apparently missed during the event. The heavy rains caused problems with the

daytime net collections and the high waters made it difficult or impossible to get into many streams. The weather did not prevent these insects from being lured into light traps at night.

Light trapping produced the bulk of the specimens gathered during the BioBlitz. A total of 58 species was recorded, including seven mayflies (Ephemeroptera), five stoneflies (Plecoptera), four neuropterans (one lacewing, two antlions, one spongillafly; Neuroptera), and 42 species of caddisflies (Trichoptera) (Tables 14, 15). Of the seven species of mayflies, only five were readily identifiable to species. All of the species collected are native and, as far as is known, none of the species are listed as threatened or endangered, or as globally or state rare.

The members of the survey team were Oliver Flint (team leader), Blair Goodman, Diane Keefe, and Kurt Moser. They contributed a combined total of 36 hours in the field (including preparation and travel time) and 68 hours on specimen preparation and identification (including data entry, report writing, specimen transfer to NPS), for a grand total of 104 hours (Table 25).

Table 14. Mayflies (Order Ephemeroptera), stoneflies (Order Plecoptera), and neuropterans (Order Neuroptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (BI=Bear Island; CR=Carderock; GF=Great Falls Park; PI=Plummers Island).

ORDER	FAMILY	SPECIES	GWMP		CHOH			
			GF	TR	BI	CR	GF	PI
Ephemeroptera	Caenidae	<i>Caenis latipennis</i> Banks			X			
	Ephemeridae	<i>Hexagenia limbata</i> (Serville) *						
	Heptageniidae	<i>Leucocuta aphrodite</i> (McDunnough)	X					
		<i>Maccaffertium vicarium</i> (Walker)		X				X
		<i>Maccaffertium</i> sp.			X			
		Heptageniidae sp. 1	X					
Potamanthidae	<i>Anthopotamus myops</i> (Walsh)				X			
Plecoptera	Perlidae	<i>Acroneuria arenosa</i> (Pictet)	X	X				
		<i>Agnatina annulipes</i> (Hagen)	X					
		<i>Agnatina flavescens</i> (Walsh)	X					
		<i>Neoperla clymene</i> (Newman)	X	X	X	X		
	Perlodidae	<i>Isoperla</i> sp.	X					
Neuroptera	Chrysopidae	<i>Chrysoperla rufilabris</i> (Burmeister)				X		
	Myrmeleontidae	<i>Brachynemurus abdominalis</i> (Say)					X	
		<i>Myrmeleon immaculatus</i> DeGeer	X					
Sisyridae	<i>Climacia areolaris</i> (Hagen)			X			X	

* Recorded only at Glen Echo Park.

Table 15. Caddisflies (Trichoptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (BI=Bear Island; CR=Carderock; PI=Plummers Island).

FAMILY	SPECIES	GWMP		CHOH		
		GF	TR	BI	CR	PI
Glossosomatidae	<i>Protophila georgina</i> Denning			X	X	
	<i>Protophila palina</i> Ross		X	X		
Helicopsychidae	<i>Helicopsyche borealis</i> (Hagen)			X	X	
Hydropsychidae	<i>Cheumatopsyche analis</i> (Banks)				X	X
	<i>Cheumatopsyche ela</i> Denning			X		
	<i>Cheumatopsyche minuscula</i> (Banks)	X	X	X	X	
	<i>Hydropsyche betteni</i> Ross			X	X	
	<i>Hydropsyche bronta</i> Ross	X			X	
	<i>Hydropsyche brunneipennis</i> Flint & Butler			X	X	X
	<i>Hydropsyche hageni</i> Banks	X	X			
	<i>Hydropsyche hoffmani</i> Ross	X				
	<i>Hydropsyche leonardi</i> Ross	X	X	X		
	<i>Hydropsyche ophthalmica</i> Flint	X		X		
	<i>Hydropsyche phalerata</i> Hagen	X	X	X	X	
	<i>Hydropsyche scalaris</i> Hagen				X	
	<i>Hydropsyche sparna</i> Ross				X	
	<i>Macrostemum zebratum</i> (Hagen)		X	X		X
Hydroptilidae	<i>Hydroptila spatula</i> Morton	X		X		
	<i>Orthotrichia aegerfsciella</i> (Chambers)				X	
	<i>Orthotrichia tarsalis</i> (Hagen)	X			X	
	<i>Oxyethira pallida</i> (Banks)			X		
Lepidostomatidae	<i>Lepidostoma togatum</i> (Hagen)	X				
Leptoceridae	<i>Ceraclea flava</i> (Banks)	X		X		X
	<i>Ceraclea maculata</i> (Banks)	X		X	X	
	<i>Ceraclea slossonae</i> (Banks)	X	X	X	X	X
	<i>Ceraclea tarsipunctata</i> (Vorhies)			X		
	<i>Mystacides sepulchralis</i> (Walker)	X				
	<i>Nectopsyche exquisita</i> (Walker)			X		X
	<i>Nectopsyche pavidia</i> (Hagen)	X				
	<i>Oecetis avara</i> (Banks)	X	X	X	X	X
	<i>Oecetis cinarens</i> (Hagen)			X		
	<i>Oecetis ditissa</i> Ross				X	
	<i>Oecetis inconspicua</i> (Walker)	X	X	X	X	X
	<i>Oecetis persimilis</i> (Banks)			X	X	
	<i>Triaenodes flavescens</i> Banks		X			
	<i>Triaenodes ignitus</i> (Walker)	X				
<i>Triaenodes injustus</i> (Hagen)		X	X		X	
Philopotamidae	<i>Chimarra aterrima</i> (Hagen)	X			X	
	<i>Chimarra obscura</i> (Walker)	X		X		
	<i>Chimarra socia</i> (Hagen)	X		X	X	
Polycentropidae	<i>Cyrnellus fraternus</i> (Banks)			X	X	
	<i>Polycentropus cinereus</i> Hagen		X	X	X	X

True bugs (Hemiptera: Heteroptera)

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This survey was the first organized collecting event for the true bugs in the area, though, historically, various researchers from the National Museum of Natural History and United States Department of Agriculture have worked this region since the late 19th century.

Overall, the collecting was relatively poor. Rain posed a particular problem and limited the amount of

time that could be devoted to fieldwork. The number of taxa could easily have been doubled with sampling at multiple locations.

A total of 55 species of Heteroptera (Table 16) was recorded during the BioBlitz, none of which are listed as threatened or endangered, or as globally or state rare. Forty species were taken Maryland and 24 in Virginia. All of the species collected or observed, except one, are native to both states (Henry et al., 2008)

The members of the survey team were Thomas Henry (team leader) and Kathryn Ciulla. They contributed a combined total of 36 hours in the field (including preparation and travel time) and 10 hours on specimen preparation and identification (including data entry, report writing, specimen transfer to NPS) for a grand total of 46 hours (Table 25).

Table 16. True bugs (Hemiptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (BG=Billy Goat Trail; BI=Bear Island; CR=Carderock; GF=Great Falls Park).

FAMILY	SPECIES	GWMP		CHOH			
		GF	TR	BG	BI	CR	GF
Anthocoridae	<i>Amphiareus obscuriceps</i> (Poppius) **	X					
Berytidae	<i>Jalysus wickhami</i> Van Duzee						X
Blissidae	<i>Blissus leucopterus</i> (Say)			X			
Coreidae	<i>Acanthocephala terminalis</i> (Dallas)	X					
	<i>Leptoglossus occidentalis</i> Heidemann		X				
	<i>Leptoglossus</i> sp. prob. <i>phyllopus</i> (Linnaeus) (nymph)						X
	Coreidae sp. 1	X					
	Coreidae sp. 2	X					
Cydnidae	<i>Amnestus basidentatus</i> Froeschner	X					
	<i>Corimelaena lateralis</i> (Fabricius)		X	X			
	<i>Corimelaena pulicaria</i> (Germar)						X
	<i>Galgupha</i> sp. (nymph only)						X
	<i>Sehirus cinctus</i> (Palisot de Beauvois)			X			
Geocoridae	<i>Geocoris bullatus</i> (Say)			X			
Lygaeidae	<i>Neacoryphus bicrucis</i> (Say)	X					
Miridae	<i>Agnocoris pulverulentus</i> (Uhler)						X
	<i>Ceratocapsus incisus</i> Knight *	X					
	<i>Ceratocapsus nigrellus</i> Knight						X
	<i>Corticoris signatus</i> (Heidemann) *	X					
	<i>Deraeocoris poecilis</i> (McAtee) *	X					
	<i>Dichrooscytus repletus</i> (Heidemann)						X
	<i>Hyaliodes harti</i> Knight (nymphs only) *						X
	<i>Hyaliodes vitripennis</i> (Say) (nymphs only) *						X
	<i>Lopidea robiniae</i> (Uhler) (nymphs only) *						X
	<i>Neolygus inconspicuus</i> (Knight)						X
	<i>Neolygus nyssae</i> (Knight) *	X					
	<i>Neolygus omnivagous</i> (Knight) *						X
	<i>Neurocolpus nubilus</i> (Say)		X				X
	<i>Neurocolpus tiliae</i> Knight						X
	<i>Parthenicus juniperi</i> (Heidemann)						X
	<i>Pilophorus uhleri</i> Knight *						X
<i>Ranzovius clavicornis</i> (Knight)						X	

* indicates apparent new state record; ** indicates new Western Hemisphere record.

Table 16 (continued).

FAMILY	SPECIES	GWMP		CHOH			
		GF	TR	BG	BI	CR	GF
Nabidae	<i>Nabis roseipennis</i> (Reuter)	X					
Pachygronthidae	<i>Oedancala dorsalis</i> (Say)	X					X
Pentatomidae	<i>Acrosternum hilare</i> (Say)	X			X		X
	<i>Banasa sordidus</i> Stal	X			X		X
	<i>Euschistus servus</i> (Say)	X		X			X
	<i>Euschistus tristigmus</i> (Say)						X
	<i>Meneclis insertus</i> (Say)	X					X
	<i>Mormidea lugens</i> (Fabricius)						X
	<i>Oebalus pugnax</i> (Fabricius)			X			
	<i>Pnirontis modesta</i> Banks	X					
	<i>Pselliopus cinctus</i> (Fabricius)						X
<i>Stenopoda cinerea</i> Laporte	X						
Rhyparochromidae	<i>Harmostes fraterculus</i> (Say)						X
Rhopalidae	<i>Boisea trivittatus</i> (Say)						X
	<i>Drymus crassus</i> Van Duzee						X
	<i>Heraeus plebejus</i> Stal	X			X		X
	<i>Myodocha serripes</i> Olivier	X					
	<i>Neopamera albocincta</i> (Barber)	X					
	<i>Ozophora picturata</i> Uhler					X	X
	<i>Pseudopachybrachius basalis</i> (Dallas)			X			
Tingidae	<i>Corythucha marmorata</i> (Uhler)			X			
	<i>Gargaphia tiliae</i> (Walsh)						X
	<i>Leptopypha mcateei</i> Drake *						X

Scorpionflies

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The Order Mecoptera, known commonly as hangingflies, snow scorpionflies, earwig scorpionflies, and common scorpionflies, are represented in the United States by members of five families: Bittacidae, Boreidae, Meropeidae, Panorpididae, and Panorpodidae (Penny, 2005). The genera *Bittacus*, *Boreus*, *Merope*, and *Panorpa* have all been recorded from the Potomac Gorge region (Hoffman, 2002; Flint, 2008b).

Prior to the BioBlitz, the only mecopteran recorded from GWMP was *Panorpa helena* Byers. Flint (2008b) reported *Bittacus occidentis* Walker, *B. pilicornis* Westwood, *B. punctiger* Westwood, *B. stigmaterus* Say, *B. strigosus* Hagen, *Panorpa consuetudinis* Snodgrass, *P. helena* Byers, *P. isolata* Carpenter, and *P. maculosa* Hagen from Plummers Island (CHOH, MD). Several other species have been recorded for regions of Maryland and Virginia near CHOH and GWMP and would be expected to be found at both parks, including *P. dissimilis* Carpenter and *P. virginica* Banks (O. Flint, pers. comm.).

Boreus brumalis Fitch, commonly known as a “snow scorpionfly” or “snow flea,” is a winter species that has been recorded from Plummers Island (Flint, 2008b) and several localities in Arlington and Fairfax counties, Virginia, including Riverbend Park near Great Falls (Hoffman, 2002). The earwig scorpionfly, *Merope tuber* (Meropeidae), also has been collected on Plummers Island, and there are additional records from nearby localities in Virginia and Maryland (Flint, 2008b).

The BioBlitz, which took place during the third week of June, occurred at a time when Mecoptera abundance is generally low and they are less likely to be encountered by collectors. As a result, the Mecoptera Survey found very few scorpionflies.

On 24 June, team leader Jones worked alone and covered the lower C&O Canal, Valley Trail, the Gold Mine Loop, and Plummers Island. Collecting was most productive in a grassy site west of Carderock on the northwestern bank of the Canal (see below), across from Vaso Island. Jones stirred up individuals as he walked through the grasses. Though somewhat cryptic with their clear wings and ability to abruptly grab a leaf to hang (Fig. 12) and virtually disappear into the shadows, bittacids are relatively poor flyers and are collected fairly easily with a sweep net.



Fig. 12. The hangingfly *Bittacus strigosus* hanging characteristically from a leaf. ©2006, Joshua Jones.

Only one species, *Bittacus strigosus* Hagen, was collected during the event, including nine males and 29 females (Table 17). Collection sites included habitats with high forbs and low hanging hardwood branches along the Ford Mine Trail west of the parking lot (Fig. 13) and the lower branches of various hardwood trees and woody shrubs along the Valley Trail and Gold Mine Loop. Low leafy undergrowth in the latter two areas was largely non-existent, owing primarily to overgrazing by deer and a long history of disturbance (personal communication with park employees).

Most of the *B. strigosus* taken on 24 June were found on the northern bank of the Canal below the intersection of MacArthur Boulevard and Clara Barton Parkway northwest of Carderock. This area was devoid of trails and less impacted than other sites, and undergrowth was generally more dense.

The scorpionfly survey team consisted of team leader Joshua Jones, with some assistance by Alex Kim on 25 June. Jones contributed a total of 20 hours in the field (including preparation and travel time) and 10 hours on specimen preparation and identification (including data entry, report writing, specimen transfer to NPS) for a grand total of 30 hours (Table 25).

Table 17. Collection data for *Bittacus strigosus* obtained during the 2006 Potomac Gorge BioBlitz (all specimens from CHOH, MD).

COLLECTION SITE	NO. OF SPECIMENS
Ford Mine Trail, N side of C&O Canal	2 ♂♂, 2 ♀♀
Valley Trail, along trail	1 ♀
Gold Mine Loop, along trail	1 ♀
North bank of C&O Canal, below jct. of MacArthur Blvd. and Clara Barton Parkway west of Carderock	7 ♂♂, 21 ♀♀
Carderock: Billy Goat Trail Section C	4 ♀♀
Total specimens	9 ♂♂, 29 ♀♀

Beetles

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Beetles represent the most diverse group of animals in the Potomac Gorge. Yet, with the notable exception of Plummers Island (CHOH, MD) (Erwin, 1981; Staines, 2008a-f; Steiner, 2008), and a recent survey of leaf beetles and their allies (Cavey, 2006), no concerted effort has been made to document the beetle fauna of the region, save for Ulke's informative, yet long outdated list (1902) of the species known to occur in Washington, DC.

The Great Falls region of Virginia has been intensively surveyed by National Museum of Natural History and United States Department of Agriculture coleopterists for more than a century, but most of their records, along with new species descriptions, appear in widely scattered scientific journals. Much of the material collected in the region, including type specimens, is housed at the National Museum of Natural History, Smithsonian Institution.

Baited traps were rendered ineffectual by the overcast skies that allowed little sunlight to stimulate many of the larger day-flying species, and evening rains that deterred nocturnal species. The traps and their contents at both sites were removed on the morning of 24 June.

By far, collecting at blacklights and mercury vapor lights on the night of 23 June in Great Falls Park (GWMP, VA) was the single most productive method in terms of both species diversity and number of individuals. Two blacklight bucket traps were also productive.



Fig. 13. Site along the Ford Mine Trail, where a few specimens of *Bittacus strigosus* were collected. ©2006, Joshua Jones.

On 24 June, the beetle team split up into three groups. One team, led by A.V. Evans, concentrated on the trails and streams of Great Falls Park (GWMP, VA). The other team, led by W.E. Steiner, spent their field time on Bear Island (CHOH, MD). The last group, consisting of S. Lingafelter, J. Mawdsley, and N. Woodley, focused their efforts on Turkey Run Park (GWMP, VA).

Blooms of lizardtail (*Saururus cernuus* L.) and other plants were carefully examined and produced beetles of several families, including cantharids, cerambycids, mordellids, scarabs, and scaptiids, as well as other flower-visiting species. Beating vegetation resulted in the collection of anthribids, attelabids, buprestids, cerambycids, chrysomelids, coccinellids, curculionids, elaterids, and scarabs, among others. Inspection of dead trees, logs, and stumps, especially those still covered with loose bark, and their associated fungi, yielded additional families and species.

Due to rapidly deteriorating weather conditions, all

field collecting and trapping activities abruptly ceased on the afternoon of 24 June. The remainder of the time was spent processing specimens.

A total of 302 species of beetles was recorded during the BioBlitz (Table 18). Nineteen new state records were recorded for Virginia. Due to the lack of species lists for the parks, no attempt was made to verify any historical records. No species new to science are known to have been collected, nor were any globally or state rare species encountered. Several exotic species were found during the survey, all of which were known previously from the region.

The members of the Coleoptera survey team were Arthur V. Evans (team leader), Steve Lingafelter, Jonathan Mawdsley, Deblyn Mead, Warren Steiner, Jil Swearingen, Chris Wirth, and Norm Woodley. They contributed a combined total of 132 hours in the field (including travel time) and 229 hours on specimen preparation and identification (including data entry, report writing, and specimen transfer to NPS) for a grand total of 361 hours (Table 25).

Table 18. Beetles (Coleoptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (BI=Bear Island; CR=Carderock; GF=Great Falls Park; PI=Plummers Island; PI*= near Plummers Island). Species preceded by an asterisk (*) are new state records for Virginia.

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CR	GF	PI	PI*
Aderidae	<i>Aderus populneus</i> (Panzer)			X				
Anobiidae	Anobiidae sp. 1			X				
	<i>Dorcatoma setulosa</i> LeConte			X				
	<i>Oligomerus alternans</i> LeConte		X					
	<i>Trichodesma klagesi</i> Fall		X					
Anthicidae	<i>Anthicus cervinus</i> Laferte-Senectere	X						
	<i>Ischyropalpus obscurus</i> (LaFerté)			X				
	<i>Macratia murina</i> (Fabricius)	X						
	<i>Notoxus muripennis</i> (LeConte)	X						
	<i>Stictocomus tobias</i> (Marseul)	X						
Anthribidae	<i>Eurymycter fasciatus</i> (Olivier)		X					
	<i>Ischnocerus infuscatus</i> (Fahraeus)		X					
	<i>Toxonotus cornutus</i> (LeConte)	X	X					
Attelabidae	<i>Eugnamptus angustatus</i> (Herbst)		X					
Bostrichidae	<i>Lichenophanes bicornis</i> (Weber)	X	X	X				
Brentidae	<i>Arrenodes minutus</i> (Drury)		X					
Buprestidae	<i>Agrilus bilineatus</i> (Weber)	X	X					
	<i>Agrilus obsoletoguttatus</i> Gory		X					
	<i>Agrilus ruficollis</i> (Fabricius)	X						
	<i>Anthaxia viridifrons</i> Gory		X					
	<i>Brachys aerosus</i> Melsheimer			X				
	<i>Pachyschelus laevigatus</i> (Say)	X		X				
Byrrhidae	<i>Chaetophora spinosa</i> (Rossi)	X						
Cantharidae	<i>Chauliognathus marginatus</i> (Fabricius)			X				X
	<i>Podabrus pygmaeus</i> Green	X						
	<i>Podabrus</i> sp.							X
Carabidae	<i>Acupalpus indistinctus</i> Dejean			X				
	<i>Acupalpus pauperculus</i> Dejean	X		X				
	<i>Acupalpus testaceus</i> Dejean	X						
	<i>Agonum punctiforme</i> (Say)		X					
	<i>Amara aenea</i> DeGeer	X						
	<i>Amara familiaris</i> Duftschmidt	X						
	<i>Amphasia sericea</i> (Harris)	X			X			
	<i>Bembidion impotens</i> Casey			X				
	<i>Bembidion</i> sp.	X						
	Carabidae sp. 1	X						
	Carabidae sp. 2		X					
	Carabidae sp. 3						X	
	Carabidae sp. 4			X				
	Carabidae sp. 5			X				
	<i>Chlaenius aestivus</i> Say	X	X					
	<i>Chlaenius tricolor</i> Dejean			X				
	<i>Cicindela repanda</i> Dejean			X				
	<i>Cicindela sexguttata</i> Fabricius	X						
	<i>Clivina americana</i> Dejean	X						
	<i>Clivina bipustulata</i> (Fabricius)	X		X				
	<i>Clivina dentipes</i> Dejean	X		X				
	<i>Colliuris pensylvanicus</i> (Linnaeus)	X						
	<i>Dyschiriodes haemorroidalis</i> (Dejean)	X		X				

Table 18 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CR	GF	PI	PI*
Carabidae	<i>Elaphropus saturatus</i> Casey			X				
	<i>Elaphropus xanthopus</i> Dejean	X		X				
	<i>Elaphrus californicus</i> Mannerheim							
	<i>Harpalus pensylvanicus</i> (DeGeer)	X						
	<i>Lebia grandis</i> Hentz			X				
	<i>Lebia lobulata</i> LeConte	X						
	<i>Lebia ornata</i> Say	X						
	<i>Lebia viridipennis</i> Dejean	X						
	<i>Lebia viridis</i> Say	X						
	<i>Notiophilus aeneus</i> (Herbst)	X						
	<i>Paratachys scitulus</i> (LeConte)			X				
	<i>Platynus cincticollis</i> (Say)				X			
	<i>Platynus opaculus</i> LeConte		X					
	<i>Poecilus lucublandus</i> (Say)	X						
	<i>Pterostichus coracinus</i> (Newman)	X						
	<i>Pterostichus ohionis</i> Csiki	X						
	<i>Scaphinotus viduus</i> (Dejean)	X						
	<i>Scarites subterraneus</i> (Fabricius)	X	X					
	<i>Stenolophus lecontei</i> (Chaudoir)	X		X				
	<i>Stenolophus ochropezus</i> (Say)	X	X	X				
<i>Tetragonoderus fasciatus</i> (Haldeman)			X					
<i>Trichotichnus autumnalis</i> (Say)	X							
<i>Trichotichnus dichrous</i> Dejean	X							
Cerambycidae	<i>Astylopsis macula</i> (Say)		X					
	<i>Ecyrus dasycerus</i> (Say)		X					
	<i>Elaphidion mucronatum</i> (Say)	X	X					
	<i>Eupogonius pauper</i> (LeConte)		X					
	<i>Eupogonius subarmatus</i> (LeConte)		X					
	<i>Hyperplatys aspersa</i> (Say)	X	X					
	<i>Lepturges confluens</i> (Haldeman)	X	X					
	<i>Metacmaeops vitatta</i> (Swederus)		X					
	<i>Oberea perspicillata</i> Haldeman		X					
	<i>Prionus imbricornis</i> (Linnaeus)	X			X			
	<i>Psenocerus supernotatus</i> (Say)		X					
	<i>Smodicum cucujiforme</i> (Say)	X						
	<i>Strangalepta abbreviata</i> (Germar)	X						
	<i>Strangalia famelica</i> Newman	X						
	<i>Strangalia luteicornis</i> (Fabricius)	X	X				X	
	<i>Tylonotus bimaculatus</i> Haldeman	X						
	<i>Typocerus velutinus</i> (Olivier)	X	X					
	<i>Urgleptes facetus</i> (Say)	X	X					
	<i>Urgleptes signatus</i> (LeConte)	X	X					
	<i>Urographis despectus</i> (LeConte)		X					
<i>Urographis fasciatus</i> (DeGeer)	X							
<i>Xylotrechus colonus</i> (Fabricius)	X							
Cerylonidae	<i>Philothermus glabriculus</i> LeConte	X						
Chrysomelidae	<i>Altica chalybea</i> Illiger		X					
	<i>Altica ignita</i> Illiger	X						
	<i>Baliosus nervosus</i> (Panzer)		X					
	<i>Bassareus mammifer</i> (Newman)		X					
	<i>Brachypnoea clypealis</i> (Horn)	X		X				
	<i>Chaetocnema truncata</i> White	X						
<i>Chrysochus auratus</i> (Fabricius)							X	

Table 18 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CR	GF	PI	PI*
Chrysomelidae	<i>Demotina modesta</i> Baly	X						
	<i>Diabrotica undecimpunctata howardi</i> Barber	X		X				
	<i>Epitrix fuscula</i> Crotch			X				
	<i>Fidia longipes</i> (Melsheimer)		X					
	<i>Globobruchus mimus</i> (Say)	X						
	<i>Odontota dorsalis</i> (Thunberg)	X	X					
	<i>Odontota scapularis</i> Olivier		X					
	<i>Paria fragariae</i> Wilcox	X						
	<i>Paria quadrinotata</i> (Say)	X						
	<i>Paria</i> sp.				X			
	<i>Sumitrosis inaequalis</i> (Weber)		X					
<i>Tymnes tricolor</i> (Fabricius)	X	X						
Cleridae	<i>Cregya oculata</i> (Say)		X					
	<i>Madoniella dislocatus</i> (Say)		X					
Coccinellidae	<i>Chilocoris stigma</i> (Say)			X		X		
	<i>Coccinella septempunctata</i> (Linnaeus)	X		X				
	<i>Coelomegilla maculata lengi</i> Timberlake							X
	<i>Diomus humilis</i> Gordon	X						
	<i>Diomus terminatus</i> (Say)	X						
	<i>Harmonia axyridis</i> (Pallas)	X	X	X		X	X	X
<i>Hyperaspis</i> sp.	X							
Cupedidae	<i>Tenomerga cinereus</i> Say	X						
Curculionidae	* <i>Acalles carinatus</i> LeConte		X					
	* <i>Acoptus suturalis</i> LeConte		X					
	* <i>Anthonomous suturalis</i> LeConte	X						
	<i>Aphrastus taeniatus</i> Say	X	X	X				
	<i>Calomycterus setarius</i> Roelofs	X						
	* <i>Cophes obtensus</i> (Herbst)		X					
	<i>Cossonus impressifrons</i> Boheman	X		X				
	* <i>Cryptorhynchus tristis</i> LeConte	X						
	<i>Eubulus bisignatus</i> (Say)	X						
	<i>Euplatypus compositus</i> (Say)	X						
	* <i>Listronotus humilis</i> Gyllenhal	X						
	<i>Listronotus oregonensis</i> (LeConte)						X	
	<i>Myllocerus hilleri</i> Faust	X						
	<i>Myrmex myrmex</i> (Herbst)	X						
	<i>Perigaster cretura</i> (Herbst)	X						
	<i>Pseudocneorhinus bifasciatus</i> (Roelofs)	X						
	<i>Rhodoaenus quinquepunctatus</i> (Weber)			X				
	Scolytinae sp.	X						
	<i>Sphenophorus minimus</i> Hart			X				
	<i>Tychius picirostris</i> (Fabricius)	X						
<i>Xyloborus celsus</i> Eichhoff	X		X					
<i>Xyloborus ferrugineus</i> (Fabricius)	X		X					
<i>Xyloborus pubescens</i> Zimmerman			X					
<i>Xylosandrus crassiusculus</i> (Motschulsky)	X		X					
Dermestidae	<i>Cryptorhopalus triste</i> LeConte	X						
Dytiscidae	<i>Neoporus striatopunctatus</i> (Melsheimer)	X						

Table 18 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CR	GF	PI	PI*
Elateridae	<i>*Aeolus scutellatus</i> (Schaeffer)	X						
	<i>Alaus oculatus</i> (Fabricius)	X						
	<i>Conoderus bellus</i> (Say)	X						
	Elateridae sp. 1			X				
	Elateridae sp. 2	X		X				
	Elateridae sp. 3			X			X	
	Elateridae sp. 4			X				
	Elateridae sp. 5	X		X	X			
	Elateridae sp. 12		X					
	Elateridae sp. 14	X		X				
	<i>Hemicrepidus memnonius</i> (Herbst)	X		X	X			
	<i>Melanactes piceus</i> DeGeer	X						
<i>*Neopristilophus aethiops</i> (Herbst)	X							
Elmidae	<i>Stenelmis bicarinata</i> LeConte	X						
	<i>Stenelmis mera</i> Sanderson	X						
Endomychidae	<i>Endomychus biguttatus</i> Say	X	X					
Erotylidae	<i>Acropteroxys gracilis</i> (Newman)			X				
	<i>Ischyurus quadripunctatus</i> (Olivier)			X			X	
	<i>Megalodacne heros</i> (Say)	X						
	<i>Toramus pulchellus</i> (LeConte)	X		X				
	<i>Triplax flavicollis</i> Lacordaire	X						
	<i>Triplax thoracica</i> (Say)	X						
Eucinetidae	<i>Eucinetus morio</i> LeConte			X				
Eucnemidae	<i>*Dirrhagofarsus lewisi</i> (Fleutiaux)	X	X					
	<i>Isorhipis ruficornis</i> Say		X					
	<i>*Stethon pectorosus</i> LeConte	X						
Haliplidae	<i>Peltodytes sexmaculatus</i> Roberts	X						
Heteroceridae	<i>Lanternarius mollinus</i> (Kiesenwetter)	X		X				
	<i>Neoheterocerus longilobulus</i> Pacheco	X						
	<i>Tropicus pusillus</i> (Say)			X				
Hybosoridae	<i>Germarostes globosus</i> (Say)			X				
Hydrophilidae	<i>Berosus perigrinus</i> (Herbst)	X		X				
	<i>Enochrus ochraceus</i> (Melsheimer)			X				
	<i>Enochrus pygmaeus nebulosus</i> (Say)			X				
	<i>Helocombus bifidus</i> (LeConte)			X				
	<i>Hydrobius melaenus</i> (Germar)	X					X	
	<i>Hydrochara soror</i> Smetana	X						
	<i>Hydrochus</i> sp. 1			X				
	<i>Hydrochus</i> sp. 2			X				
	<i>Hydrophilus ovatus</i> (Gemming & Harold)	X						
	<i>Tropisternus collaris striolatus</i> (LeConte)						X	
	<i>Tropisternus lateralis nimbatus</i> (Say)	X	X					
Ithyceridae	<i>Ithycerus novaboracensis</i> (Forster)	X						
Lampyridae	<i>Lucidota atra</i> (Fabricius)		X	X				
	<i>Photinus pyralis</i> (Linnaeus)	X	X					
	<i>Photuris lucicrescens</i> Barber	X						
	<i>Photuris pensylvanicus</i> (DeGeer)	X						
Latridiidae	<i>*Melanophthalma distinguenda</i> Comolli	X						
Leiodidae	<i>Prionochaeta opaca</i> (Say)		X					
Lucanidae	<i>Ceruchus piceus</i> (Weber)	X	X	X				
	<i>Dorcus parallelus</i> (Say)	X						

Table 18 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CR	GF	PI	PI*
Lycidae	<i>Eros</i> sp.		X					
Melandryidae	<i>Dircaea liturata</i> (LeConte)	X		X				
	* <i>Orchesia ovata</i> Laliberte	X						
Melyridae	<i>Collops tricolor</i> (Say)			X				
Mordellidae	<i>Falsomordellistena hebraica</i> (LeConte)	X	X					
	<i>Falsomordellistena pubescens</i> (Fabricius)	X						
	* <i>Glipa hilaris</i> (Say)	X	X					
	<i>Glipstenoda ambusta</i> LeConte		X					
	<i>Hoshihananomia octopuncta</i> (Fabricius)	X	X					
	<i>Mordella marginata</i> Melsheimer	X						
	<i>Mordellistena andrae</i> LeConte	X						
	<i>Mordellistena liturata</i> Melsheimer	X						
	* <i>Mordellistena ornata</i> (Melsheimer)		X					
	<i>Mordellistena trifasciata</i> (Say)			X				
	<i>Paramoredellaria triloba</i> (Say)	X						
	<i>Pseudotolida arida</i> (LeConte)	X						
	* <i>Pseudotolida lutea</i> (Melsheimer)	X	X					
Mycetophagidae	<i>Mycetophagus punctatus</i> Say			X				
Nitidulidae	<i>Amphicrossus ciliatus</i> (Olivier)	X		X				
	<i>Cryptarcha ampla</i> Erichson	X		X				
	<i>Epuraea rufa</i> (Say)	X	X					
	<i>Prometopia sexmaculata</i> (Say)			X				
	<i>Stelidota geminata</i> (Say)		X					
Passalidae	<i>Odontataenius disjunctus</i> (Illiger)	X	X	X				
Ptilodactylidae	<i>Ptilodactyla angustata</i> Horn	X						
	<i>Ptilodactyla carinata</i> Johnson & Freytag	X						
Pyrochroidae	<i>Neopyrochora flabellata</i> (Fabricius)	X	X					
Ripiphoridae	<i>Ripiphorus schwarzi</i> LeConte		X					
Scarabaeidae	<i>Blackburneus stercorosus</i> (Melsheimer)	X		X				
	<i>Ataenius gracilis</i> (Melsheimer)	X		X				
	<i>Ataenius imbricatus</i> (Melsheimer)	X						
	<i>Ataenius simulator</i> Harold	X						
	<i>Calamosternus granarius</i> (Linnaeus)	X		X				
	<i>Cyclocephala borealis</i> Arrow	X		X	X			
	<i>Dichotomius carolinus</i> (Linnaeus)	X						
	<i>Diplotaxis frondicola</i> (Say)				X			
	<i>Diplotaxis liberta</i> (Germar)	X						
	<i>Exomala orientalis</i> (Waterhouse)	X	X	X	X			
	<i>Maladera castanea</i> (Arrow)	X		X				
	<i>Nipponoserica peregrina</i> (Chapin)			X	X			
	<i>Osmoderma scabra</i> (Palisot de Beauvois)					X		
	<i>Pelidnota punctata</i> (Linnaeus)	X						
	<i>Phyllophaga crenulata</i> (Froelich)	X		X	X		X	
<i>Phyllophaga ephilida</i> (Say)	X		X	X				
<i>Popillia japonica</i> Newman	X		X					
<i>Serica atracapilla</i> (Kirby)			X					
Scirtidae	<i>Cyphon obscurus</i> (Guerin)	X						
	<i>Prionocyphon limbata</i> LeConte			X				
Scraptiidae	<i>Anaspis rufa</i> Say	X	X					
Silphidae	<i>Necrophila americana</i> (Linnaeus)	X	X	X				
	<i>Nicrophorus orbicollis</i> Say	X	X					
	<i>Nicrophorus tomentosus</i> Weber	X						
	<i>Oiceoptoma novaboracense</i> (Forster)		X					

Table 18 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CR	GF	PI	PI*
Silvanidae	<i>*Cathartosilvanus imbellis</i> (LeConte)			X				
	<i>Uleiota dubia</i> (Fabricius)		X					
Staphylinidae	<i>Paederus</i> sp. 1			X				
	<i>Paederus</i> sp. 2	X						
	<i>Pinophilus latipes</i> Gravenhorst	X						
	<i>Platydracus maculicollis</i> (Gravenhorst)	X						
	Staphylinidae sp. 1			X				
	Staphylinidae sp. 2			X				
	Staphylinidae sp. 3		X	X				
	<i>Tachinus fimbriatus</i> (Gravenhorst)		X					
Synchroidae	<i>Synchroa punctata</i> Newman	X	X	X				
Tenebrionidae	<i>Alaetrinus minimus</i> (Palisot de Beauvois)			X				
	<i>Alobates pennsylvanicus</i> DeGeer	X						
	<i>Arthromacra aenea</i> Say		X					
	<i>Centronopus calcaratus</i> (Fabricius)			X				
	<i>Eutochia picea</i> Melsheimer			X				
	<i>Gorginus rubens</i> (LeConte)			X				
	<i>Hapladrus fulvipes</i> Herbst			X				
	<i>Hymenorus obesus</i> Casey			X				
	<i>Hymenorus perforatus</i> Say				X			
	<i>Hymenorus pilosus</i> Melsheimer			X				
	<i>Isomira sericea</i> (Say)	X						
	<i>Lobopoda erythrocnemis</i> (Germar)			X				
	<i>Meracantha contracta</i> Palisot de Beauvois	X	X	X				
	<i>Merinus laevis</i> (Olivier)		X					
	<i>Neomida bicornis</i> (Fabricius)	X		X				
	<i>Platydema excavatum</i> Say			X				
	<i>Platydema ruficorne</i> (Sturm)		X					
	<i>Platydema subcostatum</i> Laporte & Brulle	X	X					
	<i>*Strongylium crenatum</i> Malkin	X	X					
	<i>Strongylium tenuicollis</i> (Say)				X			
<i>Strongylium terminatum</i> (Say)	X							
<i>Uloma impressa</i> Melsheimer		X						
<i>*Uloma mentalis</i> Horn	X		X					
<i>Xylopinus saperdoides</i> (Olivier)	X		X					
Teratomidae	<i>Penthe obliquata</i> (Fabricius)	X						
	<i>Penthe pimelia</i> (Fabricius)			X				
	<i>Synstrophus repandus</i> (Horn)	X						
Throscidae	<i>Trixagus chevrolati</i> (Bonvouloir)			X				
Trogidae	<i>Trox spinulosus simi</i> Robinson	X						
Trogossitidae	<i>Tenebroides americanus</i> (Kirby)	X						
Zopheridae	<i>*Euicontes marginalis</i> (Melsheimer)			X				
Other Coleoptera	sp. 2	X		X				
	sp. 3	X						
	sp. 4	X						

Flies

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The first BioBlitz ever was held in 1996 (weekend of 31 May-1 June) at Kenilworth Gardens (Washington, DC). Dr. F. Christian Thompson led the Diptera group, which recorded 183 species of flies. This report concerns the Diptera (190 species; see Table 19) that were sampled as part of the Potomac Gorge BioBlitz held ten years later.

A survey of the true flies in the greater Washington, DC area was started early in the 20th century by local dipterists. This early survey resulted in a series of papers on the Diptera or true flies, beginning with Banks et al. (1916). These papers dealt with the Diptera fauna on a family basis, and the series was eventually intended to treat comprehensively all represented families. Only 17 families were then published, with the last appearing in 1931 (Malloch et al., 1931). Nearly 50 years later, Wirth and coauthors (Wirth et al., 1977; Wirth & Grogan 1979, 1981) published three faunistic papers on three tribes of the family Ceratopogonidae. Most recently, the Ephydriidae of Plummers Island (CHOH) was reviewed by Mathis & Mathis (2008).

Although the BioBlitz is not a comprehensive family treatment, the resulting survey is part of a continuing effort to increase our knowledge of Diptera from this region.

Efforts were made to collect all families of flies during the sampling period, but the species collected during the BioBlitz somewhat reflects the biases of the collectors taking part in the survey. Thus Nematocera, or the lower Diptera, are not as well represented as some groups of higher Diptera. Comparatively well-sampled were the families Dolichopodidae,

Ephydriidae, and Syrphidae.

Because our knowledge of Diptera from the Mid-Atlantic states is generally meager, especially specific information on their distribution, abundance, and natural history, we are hesitant to list any species as rare. However, some of the sampled species are of particular interest because they are not generally collected including *Hyadina corona* (Cresson), *Scatophila carinata* Sturtevant & Wheeler (both Ephydriidae), *Leptomorphus nebulosus* Walker (Mycetophilidae), and *Rachicercus obscuripennis* Loew (Xylophagidae).

The team collected on 24 June in Turkey Run and Great Falls parks (GWMP, VA). Severe weather that evening and the next day precluded any collecting in Maryland.

The success of short-term, rapid surveys, measured in terms of the number of species collected to that actually occurring at the site, is strongly influenced by seasonality and serendipity. In 2006, the shore flies (family Ephydriidae) were sampled throughout the field season at Turkey Run and Great Falls parks, resulting in 61 species. On the single day of collecting for the BioBlitz at the same sites, we found 37 species, which was the greatest number of species sampled on a single day during 2006.

Participants (collectors and identifiers [I=identifier only]) included Paul Bedell, Irina Brake, Stephen D. Gaimari (I), Jon K. Gelhaus (I), Graham C. D. Griffiths (I), Lloyd V. Knutson (I), Stephen A. Marshall (I), Wayne N. Mathis, Allen L. Norrbom, Gary D. Ouellette, Justin B. Runyon (I), Aubrey G. Scarbrough (I), Betty Thompson, F. Christian Thompson, Terry A. Wheeler (I), Hollis B. Williams, Norman E. Woodley, and Tadeusz F. Zatwarnicki. The Diptera team spent a combined total of 140 hours in the field, 24 hours on specimen preparation (including data entry, report writing, and specimen transfer to NPS), and 168 hours on specimen identification for a total of 332 hours (Table 25).

Table 19. Flies (Diptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (CR=Carderock; PI=Plummers Island); GE=Glen Echo Park (GWMP, MD).

FAMILY	SPECIES	GWMP		CHOH		GE
		GF	TR	CR	PI	
Anthomyiidae	<i>Delia platura</i> (Meigen)		X			
	<i>Eustalomyia vittipes</i> (Zetterstedt)	X				
	<i>Eutrichota lipsia</i> (Walker)	X				
	<i>Hylemyia partita</i> (Meigen)	X	X			
	<i>Zaphne uniformis</i> (Malloch)		X			
	Anthomyiidae sp. 3	X				
Asilidae	Anthomyiidae sp. 7		X			
	<i>Eudioctria tibialis</i> (Banks)	X				
	<i>Laphria canis</i> Williston	X			X	
	<i>Laphria flavicollis</i> Say		X			
	<i>Laphria ithypyga</i> McAtee	X				
	<i>Laphria sicula</i> McAtee		X			
	<i>Laphria thoracica</i> Fabricius		X			
	<i>Machimus notatus</i> (Wiedemann)	X				
	<i>Neoitamus flavofemoratus</i> (Hine)		X			
<i>Philonicus fuscatus</i> (Hine)	X			X		
Bombyliidae	<i>Anthrax argyropygus</i> (Wiedemann)	X				
Calliphoridae	<i>Lucilia coeruleiviridis</i> Macquart	X				
	<i>Lucilia illustris</i> (Meigen)		X			X
	<i>Phormia regina</i> Meigen	X				
	<i>Pollenia labialis</i> Robineau-Desvoidy	X	X			
Ceratopogonidae	Ceratopogonidae sp.	X	X			
Chloropidae	<i>Apallates caxerdix</i> (Fitch)		X			
	<i>Apotropina hirtaides</i> (Sabrosky)		X			
	<i>Chlorops</i> sp. 2		X			
	<i>Elachiptera eulopha</i> (Coquillett)	X				
	<i>Elachiptera</i> nr. <i>angustifrons</i> Sabrosky					X
Culicidae	Culicidae sp.	X	X			X
Dolichopodidae	<i>Argyra flavipes</i> Van Duzee		X			
	<i>Chrysotus philtrum</i> Melander	X				
	<i>Chrysotus picticornis</i> Loew		X			X
	<i>Chrysotus</i> sp. 1		X			
	<i>Chrysotus</i> sp.2	X				
	<i>Condylostylus scaber</i> (Loew)		X			
	<i>Condylostylus siphon</i> (Say)		X			
	<i>Dolichopus longipennis</i> Loew	X				
	<i>Dolichopus tonsus</i> Loew	X	X			
	<i>Gymnoptermus flavus</i> Loew		X			
	<i>Gymnoptermus humilis</i> Loew	X				
	<i>Gymnoptermus meniscus</i> Loew		X			
	<i>Gymnoptermus opacus</i> Loew		X			
	<i>Gymnoptermus politus</i> Loew	X	X			
	<i>Gymnoptermus pseudodebilis</i> Robinson	X				
	<i>Gymnoptermus</i> sp.		X			
	<i>Micromorphus</i> sp.	X				
	<i>Pelastoneurus</i> sp.	X				

Table 19 (continued).

FAMILY	SPECIES	GWMP		CHOH		GE
		GF	TR	CR	PI	
Dolichopodidae	<i>Peloropecodes</i> sp. 1	X				
	<i>Peloropecodes</i> sp. 2	X				
	<i>Peloropecodes</i> sp. 3	X				
	<i>Rhaphium exile</i> Curran	X				
	<i>Sympycnus lineatus</i> Loew	X				
	<i>Thrypticus muhlenbergiae</i> Johannsen & Crosby	X				
Drosophilidae	<i>Amiota minor</i> Malloch		X			
	<i>Chmomyza amoena</i> (Loew)		X			
	<i>Scaptomyza adusta</i> (Loew)	X				
	<i>Scaptomyza pallida</i> (Zetterstedt)	X				
Empididae	<i>Hemerodromia superstitiosa</i> Say		X			
	<i>Platypalpus</i> sp.		X			
Ephydriidae	<i>Allotrichoma atrilabre</i> Cresson		X			
	<i>Allotrichoma simplex</i> (Loew)	X	X			
	<i>Athyroglossa dinorata</i> Mathis and Zatwarnicki	X	X			
	<i>Athyroglossa glaphyropus</i> Loew		X			
	<i>Axysta bradleyi</i> Cresson	X				
	<i>Brachydeutera argentata</i> (Walker)		X			
	<i>Diclasioipa lacteipennis</i> (Loew)	X	X			
	<i>Discocerina obscura</i> Williston	X				
	<i>Discocerina obscurella</i> (Fallén)	X	X			
	<i>Ditrichophora exigua</i> Cresson		X			
	<i>Gastrops nebulosus</i> Coquillett		X			
	<i>Hecamedoides unispinosus</i> (Collin)	X	X			
	<i>Hyadina binotata</i> (Cresson)	X				
	<i>Hyadina corona</i> (Cresson)	X				
	<i>Hydrellia</i> sp. possibly new	X				
	<i>Hydrellia formosa</i> Loew	X				
	<i>Hydrellia griseola</i> (Fallén)	X				
	<i>Hydrellia tibialis</i> Walker	X				
	<i>Hydrochasma leucoproctum</i> (Loew)	X	X			
	<i>Hydrochasma</i> sp. C		X			
	<i>Ilythea spilotata</i> (Curtis)	X				
	<i>Nostima picta</i> (Fallén)	X				
	<i>Notiphila carinata</i> Cresson		X			
	<i>Notiphila scalaris</i> Loew	X				
	<i>Notiphila solita</i> Walker	X				
	<i>Paralimna punctipennis</i> (Wiedemann)	X				
	<i>Parydra breviceps</i> Loew		X			
	<i>Parydra quadrituberculata</i> Loew	X				
	<i>Parydra unituberculata</i> Loew	X				
	<i>Polytrichophora orbitalis</i> (Loew)		X			
	<i>Psilopa dupla</i> Cresson		X			
	<i>Scatella obsoleta</i> Loew		X			
	<i>Scatella picea</i> (Walker)		X			
	<i>Scatella tenuicosta</i> Collin		X			
	<i>Scatophila carinata</i> Sturtevant & Wheeler	X				
	<i>Scatophila variabilis</i> Cresson	X	X			

Table 19 (continued).

FAMILY	SPECIES	GWMP		CHOH		GE
		GF	TR	CR	PI	
Ephydriidae	<i>Zeros flavipes</i> (Williston)	X	X			
Keroplastidae	Keroplastidae sp.	X				
Lauxaniidae	<i>Camptoprosopella confusa</i> Shewell		X			
	<i>Homoneura fuscibasis</i> (Malloch)		X			
	<i>Homoneura littoralis</i> (Malloch)	X				
	<i>Homoneura</i> sp.		X			
	<i>Minettia magna</i> Coquillett	X	X			
	<i>Neogriphoneura sordida</i> (Wiedemann)		X			
	<i>Poecilolygia</i> n.sp. nr. <i>aspinosa</i>		X			
	<i>Steganolauxania fascialis</i> (Coquillett)	X				
Limoniidae	<i>Epiphragma solatrix</i> (Osten Sacken)	X				
	<i>Eugnophomyia luctuosa</i> (Osten Sacken)	X				
	<i>Gnophomyia tristissima</i> (Osten Sacken)	X				
	<i>Limnophila macrocera</i> (Say)	X				
	<i>Pilaria recondite</i> (Osten Sacken)	X				
	<i>Pseudolimnophila contempta</i> (Osten Sacken)	X				
	<i>Teucholabis immaculata</i> Alexander	X				
	<i>Teucholabis</i> sp.			X		
Lonchopteridae	<i>Lonchoptera bifurcata</i> (Fallén)		X			
Micropezidae	<i>Rainieria antennepes</i> (Say)	X	X			
	<i>Taeniptera trivittata</i> Macquart		X			
Muscidae	<i>Coenosia</i> sp.		X			
	<i>Hebecnema nigra</i> (Rob.-Des.)		X			
	<i>Helina</i> sp.	X				
	<i>Limnophora narona</i> (Walker)		X			
	<i>Limnophora</i> sp.		X			
	<i>Lispe sociabilis</i> Loew		X			
	<i>Schoenomyza chrysostoma</i> Loew	X	X			
Mycetophilidae	<i>Leptomorphus nebulosus</i> Walker		X			
	<i>Mycetophila bipunctata</i> Loew		X			
Platystomatidae	<i>Rivellia</i> sp.		X			
Phoridae	Phoridae sp.	X				
	<i>Megaselia scalaris</i> Loew		X			
Pipunculidae	<i>Chalarus spureous</i> Fallen		X			
	<i>Eudorylas tarsalis</i> (Banks)					X
	<i>Nephrocerus atrepilus</i> Skevington		X			
Psilidae	<i>Loxocera cylindrical</i> Say	X				
Ptychopteridae	<i>Bittacomorpha clavipes</i> (Fabricius)	X				
	<i>Ptychoptera rufocincta</i> Osten Sacken	X				
Pyrgotidae	<i>Sphecomyia valida</i> Harris				X	
Rhagionidae	<i>Chrysopilus fasciatus</i> (Say)	X				
	<i>Chrysopilus modestus</i> Loew	X	X			X
	<i>Chrysopilus quadratus</i> (Say)	X				
	<i>Chrysopilus rotundipennis</i> Loew	X				
Sarcophagidae	<i>Metopia argyrocephala</i> (Meigen)	X	X			
	<i>Helicobia rapax</i> (Walker)		X			
	<i>Ravinia stimulans</i> (Walker)	X				
Sciomyzidae	<i>Atrichomelina pubera</i> (Loew)		X			

Table 19 (continued).

FAMILY	SPECIES	GWMP		CHOH		GE
		GF	TR	CR	PI	
Sciomyzidae	<i>Dictya brimleyi</i> Steyskal		X			
	<i>Dictya texana</i> Curran	X	X			
	<i>Dictya</i> sp. (female)					X
	<i>Pherbellia nana</i> (Fallén)	X	X			X
	<i>Pherbellia parallela</i> (Walker)		X			
	<i>Sepedon armipes</i> (Loew)	X	X			
	<i>Sepedon floridensis</i> Steyskal	X	X			
Sepsidae	<i>Sepsis punctum</i> Fabricius	X				
Sphaeroceridae	<i>Leptocera</i> sp.					X
	<i>Rachispoda</i> sp.					X
Stratiomyidae	<i>Ptecticus trivittatus</i> (Say)	X				
	<i>Sargus elegans</i> Loew	X				
Syrphidae	<i>Allograpta obliqua</i> (Say)					X
	<i>Chalcosyrphus metallicus</i> (Wiedemann)	X				
	<i>Copestylum vesicularium</i> (Curran)		X			
	<i>Eumerus funeralis</i> Meigen					X
	<i>Eupeodes americanus</i> (Wiedemann)		X			X
	<i>Ocyrtamus fuscipennis</i> (Say)		X			
	<i>Platycheirus obscurus</i> (Say)		X			
	<i>Sphegina campanulata</i> Robertson		X			
	<i>Sphegina keeniana</i> Williston		X			
	<i>Syrirta pipiens</i> (Linnaeus)					X
	<i>Syrphus rectus</i> Osten Sacken	X	X		X	
	<i>Syrphus ribesii</i> (Linnaeus)		X			
	<i>Temnostoma trifasciatum</i> Robertson	X				
	<i>Toxomerus geminatus</i> (Say)	X	X			X
	<i>Toxomerus marginatus</i> (Say)		X			
	<i>Xylota</i> n. sp. 78-3 Thompson	X	X			
Tachinidae	<i>Blondelia hyphantriae</i> (Tothill)	X	X			
	<i>Cordyligaster septentrionalis</i> Townsend		X			
	<i>Eucelatoria texana</i> (Reinhard)		X			
	<i>Leschenaultia reinhardi</i> Toma & Grimaraes		X			
	<i>Lespesia</i> sp.		X			
	<i>Mystacella chrysoprocta</i> (Wiedemann)	X				
	<i>Neomintho celeris</i> (Townsend)		X			
	<i>Siphona flavipes</i> (Coquillett)		X			
	<i>Winthemia rufopicta</i> (Bigot)	X				
Tipulidae	<i>Dolichopeza carolus</i> Alexander	X				
	<i>Nephrotoma eucera</i> (Loew)	X		X		
	<i>Nephrotoma macrocera</i> (Say)	X				
	<i>Tipula concava</i> Alexander		X		X	
	<i>Tipula duplex</i> Walker	X				
	<i>Tipula eluta</i> Loew			X	X	
	<i>Tipula eucera</i> (Loew)	X				
	<i>Tipula flavoumbrosa</i> Alexander	X	X			
	<i>Tipula submaculata</i> Loew	X				
<i>Tipula</i> n. sp.	X					
Xylophagidae	<i>Rachicerus obscuripennis</i> Loew	X				

Moths and butterflies

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The vast majority of the species and specimens were moths collected in blacklight traps at night, while the diurnal surveys provided observations of several butterfly species. The documented species were all common and widespread in the region (see also Steury et al., 2007; Brown et al., 2008; Pogue, 2008; Solis, 2008; Vann, 2008). No state or federally listed endangered or threatened species or species of special concern were observed. As would be expected, Noctuidae (57 species) was the dominant family in the traps. Nearly all blacklight traps included males of the gypsy moth (*Lymantria dispar* [Linnaeus]), the females of which are diurnal and rarely taken in blacklight traps. This species was abundant on Plummerville Island during the diurnal surveys on 24 June. A total of 185 species (ca. 500 individuals) in 28 families of Lepidoptera was documented (Table 20) during the BioBlitz.

The members of the team were John Brown (team leader), Dave Adamski, Don and Mignon Davis, Cristina Francois, Stan Hopkins, Lisa Kaltenberger, Jon Lewis, Eric Lind, Robert Lyon, Becca Phillips, Michael Pogue, Anne Pogue, Matthew Southy, and Kimberly Vann. They contributed a combined total of 30 hours in the field (including travel time) and 200 hours on specimen preparation (Fig. 14) and identification



Fig. 14. Moth vouchers in the process of being sorted and segregated to morphospecies by volunteer surveyors. Most of the moths captured during the BioBlitz were collected in blacklight traps. ©2006, Mark Godfrey.

(including data entry, report writing, specimen transfer to NPS) for a grand total of 230 hours (Table 25).

Ants and bees

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Previous surveys of the Hymenoptera in the Potomac Gorge are largely limited to the works of Karl Krombein, who published numerous books and papers that included his bee data from Plummerville Island (CHOH, MD) (see Norden, 2008).

Forty-eight species of bees were found during the BioBlitz. Some species of *Lasioglossum* and *Sphecodes* have been sent to specialists where they await identification upon the completion of monographic revisions. It is notable that while there was a fair amount of fringed loosestrife (*Lysimachia ciliata* Linnaeus) blooming along the river, no species of *Macropis* were collected; three species in this genus were recorded in the region during the early part of the last century.

Dan Kjar identified 17 species of ants following a general inspection of ant residue submitted from several survey teams. In most cases, no specimens were preserved. All are common and expected species. One of the exotic species encountered, *Vollenhovia emeryi* Wheeler from Asia, is known in the United States only from populations in Philadelphia and the Washington, DC area (Kjar & Suman, 2007). The other exotic ant species encountered are cosmopolitan, or nearly so, and their occurrence in the Potomac Gorge is not notable.

Wasps were not determined to species during this study. Twenty-nine morphospecies were collected, but vouchers were not retained nor were collection records kept; these morphospecies are not included in the total species number.

The ant and bee team recorded a total of 65 species during the BioBlitz (Table 21). The members of the survey team were Sam Droege (team leader), Jesse Duff-Woodruff, Beth Johnson, Hormuzd Katki, Dan Kjar, John Pascarella, Eric Soderholm, Craig Tufts, and David Ziolkowski; Brent Steury of the NPS (GWMP, VA) also contributed samples to the survey. The team contributed a combined total of 62 hours in the field (including travel time) and 26 hours on specimen preparation and identification (including data entry, report writing, specimen transfer to NPS) for a grand total of 88 hours (Table 25).

Table 20. Moths and butterflies (Lepidoptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (BI=Bear Island; CO=Lock 11; CR=Carderock; PI=Plummers Island; PI*= near Plummers Island).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CO	CR	PI	PI*
Acrolophidae	<i>Acrolophus arcanella</i> (Clemens)	X				X		
	<i>Acrolophus panamae</i> Busck	X				X		
	<i>Acrolophus plumifrontella</i> (Clemens)	X				X		
	<i>Amydria</i> n. sp.	X						
Apatelodidae	<i>Olceclostera angelica</i> (Grote)		X					
Arctiidae	<i>Epantheria scribonia</i> (Stoll)	X						
	<i>Euchaetes egle</i> (Drury)		X	X				
	<i>Halysidota tessellaris</i> (J. E. Smith)	X	X			X	X	
	<i>Haploa clymene</i> (Brown)	X					X	
	<i>Hyphantria cunea</i> (Drury)			X				
	<i>Hypoprepia fucosa</i> Huebner	X	X					
	<i>Lycomorpha pholus</i> (Drury)	X						
	<i>Spilosoma latipennis</i> Stretch		X					
	<i>Spilosoma virginica</i> (Fabricius)	X	X					
Cossidae	<i>Prionoxystus robiniae</i> (Peck)	X						
Crambidae	<i>Crambus agitatellus</i> Clemens	X	X					
	<i>Fissicrambus mutabilis</i> Clemens						X	
	<i>Neodactria luteolella</i> (Clemens)						X	
	<i>Parapoynx obscuralis</i> (Grote)						X	
	<i>Petrophila bifascialis</i> (Robinson)	X					X	
	<i>Petrophila fulcalis</i> (Clemens)						X	
	Crambidae sp.			X				
Epiplemidae	<i>Callizzia amorata</i> Packard		X					
Geometridae	<i>Costaconvexa centrostrigaria</i> (Wollaston)		X					
	<i>Cyclophora packardi</i> (Prout)		X					
	<i>Cyclophora pendulinaria</i> (Guenée)	X						
	<i>Digrammia ocellinata</i> (Guenée)	X	X					
	<i>Ectropis crepuscularia</i> (Denis & Schiffermueller)		X					
	<i>Epimecis hortaria</i> (Fabricius)		X				X	
	<i>Eulithis diversilineata</i> (Huebner)		X					
	<i>Euphyia unangulata</i> (Haworth)		X					
	<i>Eusarca confusaria</i> Huebner		X					
	<i>Eutrapela clemataria</i> (J. E. Smith)	X	X				X	
	<i>Itame pustularia</i> (Guenée)	X	X				X	
	<i>Macaria aemulataria</i> (Walker)	X	X				X	
	<i>Melanolophia canadaria</i> (Guenée)		X					
	<i>Metarranthis angularia</i> Barnes & McDunnough		X					
	<i>Nemoria bistriaria</i> Huebner		X					
	<i>Orthonama obstipata</i> (Fabricius)		X				X	
	<i>Patalene olyzonaria</i> (Walker)		X					
	<i>Prochoerodes transversata</i> (Drury)	X						
	<i>Scopula limboundata</i> (Haworth)	X	X				X	
		<i>Thysanopyga intractata</i> (Walker)		X				
Gracillariidae	<i>Cameraria guttifinitella</i> (Clemens)					X		
	<i>Cameraria</i> (or <i>Phyllonorycter</i>) <i>ostryaefoliella</i> (Clemens)					X		
	<i>Cameraria</i> sp.	X						
	<i>Chrysaster ostensackenella</i> (Fitch)					X		
	<i>Parectopa robiniella</i> Clemens					X		

Table 20 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CO	CR	PI	PI*
Gracillariidae	<i>Phyllocnistis vitegenella</i> Clemens					X		
	<i>Phyllonorycter crataegella</i> (Clemens)					X		
	<i>Phyllonorycter</i> sp.	X						
Hesperiidae	<i>Epargyreus clarus</i> (Cramer)						X	
	<i>Poanes zabulon</i> (Boisduval & LeConte)						X	
	<i>Pompeius verna</i> (Edwards)						X	
Limacodidae	<i>Achardia stimulea</i> (Clemens)					X		
	<i>Apoda y-inversum</i> (Packard)		X					
	<i>Euclea delphinii</i> (Boisduval)	X	X			X		
	<i>Lithacodes fasciola</i> (Herrich-Schaeffer)		X	X		X	X	
	<i>Natada nasoni</i> (Grote)	X	X			X		
	<i>Parasa chloris</i> (Herrich-Schaeffer)	X						
	<i>Parasa indetermina</i> (Boisduval)					X		
Lycaenidae	<i>Celastrina ladon</i> (Cramer)				X			
	<i>Everes comyntas</i> (Godart)	X						
Lymantriidae	<i>Dasychira basiflava</i> (Packard)					X		
	<i>Dasychira obliquata</i> (Grote & Robinson)	X						
	<i>Dasychira tephra</i> Huebner		X					
	<i>Lymantria dispar</i> (Linnaeus)		X	X		X	X	
	<i>Orgyia definita</i> Packard		X			X		
Megalopygidae	<i>Lagoa crispata</i> (Packard)	X				X		
Mimallonidae	<i>Lacosoma chiridota</i> Grote	X						
Nepticulidae	<i>Stigmella</i> sp. 1	X						
	<i>Stigmella</i> sp. 2	X						
Noctuidae	<i>Acronicta americana</i> (Harris)		X					
	<i>Acronicta haesitata</i> (Grote)		X	X		X		
	<i>Acronicta increta</i> Morrison			X				
	<i>Acronicta laetifica</i> Smith					X		
	<i>Agrotis ipsilon</i> (Hufnagel)		X				X	
	<i>Allotria elonympha</i> (Huebner)		X	X		X		
	<i>Amphipoea velata</i> (Walker)		X					
	<i>Autographa precatioris</i> (Guenée)					X		
	<i>Azenia obtusa</i> (Herrich-Schaeffer)	X					X	
	<i>Baileya dormitans</i> (Guenée)		X					
	<i>Baileya ophthalmica</i> (Guenée)					X		
	<i>Bellura densa</i> (Walker)						X	
	<i>Bomolocha baltimoralis</i> (Guenée)		X					
	<i>Caenurgina crassiuscula</i> (Haworth)			X				
	<i>Catocala ilia</i> (Cramer)					X		
	<i>Condica vecors</i> (Guenée)		X			X		
	<i>Eudryas grata</i> (Fabricius)	X	X	X				
	<i>Galgula partita</i> Guenée		X					
	<i>Hypena madefactalis</i> (Guenée)		X					
	<i>Hypena scabra</i> (Fabricius)					X		
	<i>Hyposoropha hormos</i> Huebner			X				
	<i>Idia aemula</i> Huebner		X					
	<i>Idia americalis</i> (Guenée)		X			X		
	<i>Idia lubricalis</i> (Geyer)		X	X		X		
	<i>Idia rotundalis</i> (Walker)			X		X		
	<i>Idia scobialis</i> (Grote)					X		
	<i>Iodopepla u-album</i> (Guenée)			X				
	<i>Lacinipolia renigera</i> (Stephens)		X					

Table 20 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CO	CR	PI	PI*
Noctuidae	<i>Ledaea perditalis</i> (Walker)			X			X	
	<i>Lithacodia carneola</i> (Guenée)						X	
	<i>Lithacodia musta</i> (Grote & Robinson)						X	
	<i>Marathyssa inficita</i> (Walker)			X				
	<i>Metalectra discalis</i> (Grote)		X					
	<i>Metalectra quadrisignata</i> (Walker)					X		
	<i>Mythimna unipuncta</i> Haworth		X					
	<i>Noctua pronuba</i> Linnaeus		X			X		
	<i>Orthodes cynica</i> Guenée		X	X				
	<i>Orzaba aeria</i> (Grote)					X	X	X
	<i>Paectes oculatrix</i> (Guenée)	X	X					
	<i>Palthis asopialis</i> (Guenée)		X					
	<i>Panopoda carneicosta</i> Guenée	X		X		X		
	<i>Panopoda rufimargo</i> (Huebner)	X	X					
	<i>Parallelia bistriaris</i> Huebner		X			X		
	<i>Phalaenophana pyramusalis</i> (Walker)		X					
	<i>Phosphila miselioides</i> (Guenée)	X						
	<i>Polygrammate hebraeicum</i> Huebner	X	X					
	<i>Pseudeustrotia carneola</i> (Guenée)							X
	<i>Renia adspersgilis</i> (Bosc)		X					
	<i>Scolecocampa liburna</i> (Geyer)		X	X				X
	<i>Spargaloma sexpunctata</i> Grote		X	X			X	
	<i>Thioptera nigrofimbria</i> (Guenée)						X	
<i>Xestia dolosa</i> Franclemont		X						
<i>Zale galbanata</i> (Morrison)		X	X					
<i>Zanclognatha cruralis</i> (Guenée)		X						
Notodontidae	<i>Datana angusii</i> Grote & Robinson	X	X	X		X		
	<i>Datana drexelli</i> (H. Edwards)						X	
	<i>Ellida caniplaga</i> (Walker)		X					
	<i>Heterocampa obliqua</i> Packard	X	X	X		X		
	<i>Heterocampa</i> sp.	X						
	<i>Hyarpax aurora</i> (J. E. Smith)	X						
	<i>Lochmaeus bilineata</i> (Packard)		X					
	<i>Macrurocampa marthesia</i> (Cramer)		X			X		
	<i>Nadata gibbosa</i> (J. E. Smith)		X	X		X		
	<i>Nerice bidentata</i> Walker			X				
	<i>Oligocentria lignicolor</i> (Walker)		X			X		
<i>Schizura ipomoeae</i> Doubleday		X						
Nymphalidae	<i>Asterocampa celtis</i> (Boisduval & LeConte)						X	
	<i>Megisto cymela</i> (Cramer)	X						
	<i>Phyciodes tharos</i> (Drury)	X					X	
Oecophoridae	<i>Agonopterix robinella</i> (Packard)			X				
	<i>Antaeotricha</i> sp.	X						
	<i>Martyringa latipennis</i> (Walsingham)			X				
Papilionidae	<i>Eurytides marcellus</i> (Cramer)						X	
	<i>Papilio glaucus</i> Linnaeus	X					X	
	<i>Papilio polyxenes</i> Fabricius						X	
	<i>Papilio troilus</i> Linnaeus						X	
Pieridae	<i>Pieris rapae</i> (Linnaeus)	X					X	
Psychidae	<i>Psyche casta</i> (Pallas)					X		
Pterophoridae	<i>Emmelina monodactyla</i> (Linnaeus)						X	

Table 20 (continued).

FAMILY	SPECIES	GWMP		CHOH				
		GF	TR	BI	CO	CR	PI	PI*
Pyralidae	<i>Aglossa caprealis</i> (Huebner)	X	X					
	<i>Conchylodes ovulalis</i> (Guenée)						X	
	<i>Desmia funeralis</i> (Huebner)		X					
	<i>Epipaschia superatalis</i> Clemens					X		
	<i>Herpetogramma pertextalis</i> (Lederer)	X						
	<i>Hypsopygia olinalis</i> (Guenée)							X
	<i>Ostrinia obumbratalis</i> (Lederer)						X	
	<i>Palpita magniferalis</i> (Walker)		X					
	<i>Pantographa limata</i> (Grote & Robinson)		X					
	<i>Pococera aplastella</i> (Hulst)		X					
	<i>Tosale oviplagalis</i> (Walker)		X					
<i>Udea rubigalis</i> (Guenée)		X				X		
Saturniidae	<i>Automeris io</i> (Fabricius)	X	X			X		
	<i>Callosamia angulifera</i> (Walker)		X					
	<i>Dryocampa rubicunda</i> (Fabricius)	X	X					
Sphingidae	<i>Amorpha juglandis</i> (Smith)		X					
	<i>Ceratomia catalpae</i> (Boisduval)						X	
Tineidae	<i>Kearfottia albifasciella</i> Fernald							X
	<i>Mea skinnerella</i> (Dietz)					X		
	<i>Tinea pellionella</i> Linnaeus		X					
	<i>Xylesthia</i> sp.		X				X	
Tortricidae	<i>Aethes angustana</i> Clemens						X	
	<i>Argyrotaenia velutinana</i> (Walker)						X	
	<i>Choristoneura parallelana</i> Walsingham			X				
	<i>Endothenia hebesana</i> (Walker)		X			X	X	
	<i>Episimus argutanus</i> (Clemens)		X					
	<i>Eucosma</i> sp.	X						
	<i>Olethreutes fasciatana</i> (Clemens)				X			
	<i>Olethreutes</i> sp.					X		
	<i>Phaenocarpa confixana</i> (Walker)		X					
	<i>Platynota idaeusalis</i> (Walker)						X	
	<i>Proteoteras crescentana</i> Kearfott	X						
<i>Sonia constrictana</i> (Zeller)		X						

Table 21. Ants and bees (Order Hymenoptera) documented during the Potomac Gorge BioBlitz, 23-25 June 2006. GWMP=George Washington Memorial Parkway, VA (GF=Great Falls Park; TR=Turkey Run Park); CHOH=C & O Canal National Historical Park, MD (CB=Chain Bridge Flats; GF=Great Falls Park; PI=Potomac River, south of Plummers Island); GE=Glen Echo Park (GWMP, MD).

FAMILY	SPECIES	GWMP		CHOH			GE
		GF	TR	CB	GF	PI	
Andrenidae	<i>Andrena (Gonandrena) fragilis</i> Smith			X			
Apidae	<i>Apis (Apis) mellifera</i> Linnaeus		X		X		
	<i>Bombus (Pyrobombus) bimaculatus</i> Cresson				X		
	<i>Bombus (Pyrobombus) impatiens</i> Cresson			X	X		
	<i>Bombus (Pyrobombus) perplexus</i> Cresson	X	X		X	X	
	<i>Bombus (Pyrobombus) vagans</i> Smith ?					X	
	<i>Bombus (Separatobombus) griseocollis</i> (DeGeer)			X	X	X	
	<i>Ceratina (Zadontomerus) calcarata</i> Robertson			X	X		
	<i>Ceratina (Zadontomerus) dupla</i> Say			X			
	<i>Ceratina (Zadontomerus) strenua</i> Smith			X			
	<i>Melittoma taurea</i> (Say)			X		X	
	<i>Xylocopa (Xylocopoides) virginica</i> (Linnaeus)			X			
Chrysididae	Chrysididae sp.			X			
Colletidae	<i>Colletes latitarsis</i> Robertson					X	
	<i>Hylaeus (Hylaeus) leptcephalus</i> (Morawitz)			X			
	<i>Hylaeus (Hylaeus) mesillae</i> (Cockerell)			X			
	<i>Hylaeus (Prosopis) modestus</i> Say	X		X		X	
Formicidae	<i>Aphaenogaster fulva</i> Roger		X				X
	<i>Aphaenogaster rudis</i> Enzmann		X				X
	<i>Aphaenogaster tennesseensis</i> (Mayr)		X				X
	<i>Camponotus castaneus</i> (Latreille)		X				X
	<i>Camponotus ferrugineus</i> (Fabricius)		X				X
	<i>Camponotus pennsylvanicus</i> (De Geer)		X				X
	<i>Camponotus subbarbatus</i> Emery		X				X
	<i>Crematogaster lineolata</i> (Say)		X				X
	<i>Leptothorax</i> sp.		X				X
	<i>Monomorium minimum</i> (Buckley)		X				X
	<i>Paratrechina faisonensis</i> (Forel)		X				X
	<i>Paratrechina flavipes</i> (Smith)		X				X
	<i>Ponera pennsylvanica</i> Buckley		X				X
	<i>Prenolepis imparis</i> (Emery)		X				X
	<i>Tapinoma sessile</i> (Say)		X				X
	<i>Tetramorium caespitum</i> (Linnaeus)		X				X
<i>Vollenhovia emeryi</i> Wheeler						X	
Halictidae	<i>Agapostemon (Agapostemon) virescens</i> (Fabricius)				X		
	<i>Augochlora (Augochlora) pura</i> (Say)	X	X	X		X	
	<i>Augochlorella aurata</i> (Smith)			X	X	X	
	<i>Halictus (Odontalictus) ligatus</i> Say			X			
	<i>Halictus (Odontalictus) ligatus/poeyi</i>				X		
	<i>Lasioglossum (Dialictus) abanci</i> (Crawford)			X			
	<i>Lasioglossum (Dialictus) admirandum</i> (Sandhouse)			X			
	<i>Lasioglossum (Dialictus) bruneri</i> (Crawford)			X			
	<i>Lasioglossum (Dialictus) coeruleum</i> (Robertson)					X	
	<i>Lasioglossum (Dialictus) divergens</i> (Lovell)					X	
	<i>Lasioglossum (Dialictus) imitatum</i> (Smith)			X		X	
	<i>Lasioglossum (Dialictus) laevisimum</i> (Smith)			X			
	<i>Lasioglossum (Dialictus) oblongum</i> (Lovell)	X			X	X	
	<i>Lasioglossum (Dialictus) pilosum</i> (Smith)			X			
	<i>Lasioglossum (Dialictus) rohweri</i> (Ellis)			X			
	<i>Lasioglossum (Dialictus) tegulare</i> (Robertson)	X		X			

Table 21 (continued).

FAMILY	SPECIES	GWMP		CHOH			GE
		GF	TR	CB	GF	PI	
Halictidae	<i>Lasioglossum (Dialictus) zephyrum</i> (Smith)			X			
	<i>Lasioglossum</i> sp. 1			X		X	
	<i>Lasioglossum</i> sp. 2			X			
	<i>Lasioglossum</i> sp. nr. <i>cattaleae</i>					X	
	<i>Lasioglossum</i> sp. nr. <i>oblongum</i>	X					
	<i>Sphecodes</i> sp.			X			
Megachilidae	<i>Anthidiellum (Loyolanthidium) notatum</i> (Latreille)	X					
	<i>Anthidium (Proanthidium) oblongatum</i> (Illiger)	X					
	<i>Coelioxys (Boreocoelioxys) sayi</i> Robertson	X					
	<i>Heriades (Neotrypetes) carinatus</i> Cresson	X					
	<i>Megachile (Chelostomoides) exilis</i> Cresson			X			
	<i>Megachile (Eutricharaea) rotundata</i> (Fabricius)			X			
	<i>Megachile (Litomegachile) brevis</i> Say			X			
	<i>Megachile (Litomegachile) mendica</i> Cresson			X	X	X	
<i>Osmia (Melanosmia) pumila</i> Cresson			X				