

Final Report on Insect Survey of
Soapstone Prairie Natural Area
Larimer County, Colorado

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Cover photograph: Malaise trap over run of Spottlewood Creek, Soapstone Prairie Natural Area, Larimer County, Colorado.

ABSTRACT

This is our third and final insect survey of Soapstone Prairie Natural Area (SPNA) from June to October 2011. We collected at three sites with emphasis on sampling aquatic macroinvertebrates. Original site 1 at Graves Creek (GC) and site 2 at Spottlewood Creek (SpC) were sampled for the third year and site 11 at Jack Spring (JSp) continued for the second year. These sites exhibited a typical regional assemblage of taxa, with several uncommon taxa. No threatened or endangered species were found as listed by the state of Colorado or Federal agencies. In 2011 we report 2 families, 130 genera and 97 species in addition to our 2009-2010 collections. In 2011 the 4,905 individuals collected represented 128 families, 329 genera, and 254 species. Additionally, we report uncommon taxa in 6 families, 25 genera and 26 species including four undescribed fly (Diptera) species. We recommended that additional efforts be made to protect the ecological integrity of the aquatic systems of SPNA, primarily limiting or preventing all livestock access. We additionally recommend the initiation of a long-term ecological monitoring program, sampling every 3 years the unique aquatic communities of Soapstone Prairie Natural Area to increase the effectiveness of management strategies.

INTRODUCTION

Background

A survey of Soapstone Prairie Natural Area (SPNA) insects at three headwater streams was approved at a meeting with Ralph Stoaks, Colorado State University (CSU), Chris Metz and Daylan Figgs, Department of Natural Resources (DNR), City of Fort Collins, Colorado in December 2010.

It was also agreed at the meeting that RS would collaborate with Boris Kondratieff on the survey. A DNR permit to access sites and collect insects at SPNA was renewed for Ralph Stoaks and Boris Kondratieff, visiting scientists, assisting university students and other volunteers.

At this meeting the survey was financially approved by Damon Figgs for the 2011 field year for basic equipment and gas mileage to conduct insect collections at Graves Creek (GC), Spottlewood Creek (SpC) and Jack Spring (JSp). SPNA is the largest Natural Area (18,728 acres) operated by the DNR.

The SpC site had a solar powered fence prior to 2009. However, GC and JSp were unprotected from livestock until prior to the 2011 surveys and typical impacts of livestock activity occurred.

Prior to our 2011 collections, new solar powered fences were constructed at GC and JSp. Recovery of the aquatic habitats was evident until electricity was lost sometime in September and cattle entered the protected areas.

Reporting

The insects collected from the aquatic habitats of SPNA are listed in Appendix 1 and were mostly collected in 2011, but include recently identified specimens from 2009 and 2010. Appendix 2 represents dominant insect taxa for 2009-2011 surveys. Qualitative collection methods (Nos. 1-9) are listed in Table 1 and a quantitative collection method (No. 10) was added using a Surber sampler.

Outlook

Effective management of natural resources depends on knowledge of macroinvertebrate community structure and function under natural conditions (see methods and discussion sections). Because of their small size and difficulty in observing their behavior, insects are easily overlooked and their roles often underestimated. In SPNA, insects are a vital source of food for other animals and serve as pollinators and decomposers.

OBJECTIVES

The objectives were to: 1) complete a multiyear insect survey of SPNA concentrating on aquatic habitats; 2) locate sites to monitor the most insect diversity (sites with greatest number of species per unit area) such as springs and streams and at interfaces of associated grasslands; 3) evaluate potential impacts; 4) determine if rare, endangered, or threatened species occurred; 5) report findings to the DNR to enhance future conservation planning.

Secondary objectives were to: 1) establish a reference collection of SPNA insects found during the survey; 2) plan future surveys that may have been missed. Many insects and other invertebrates have lifecycles that require two or more years to complete, adults may not have been present at the time of sampling conditions; 3) apply for funds to support our research efforts.

PHYSICAL SETTING

Location

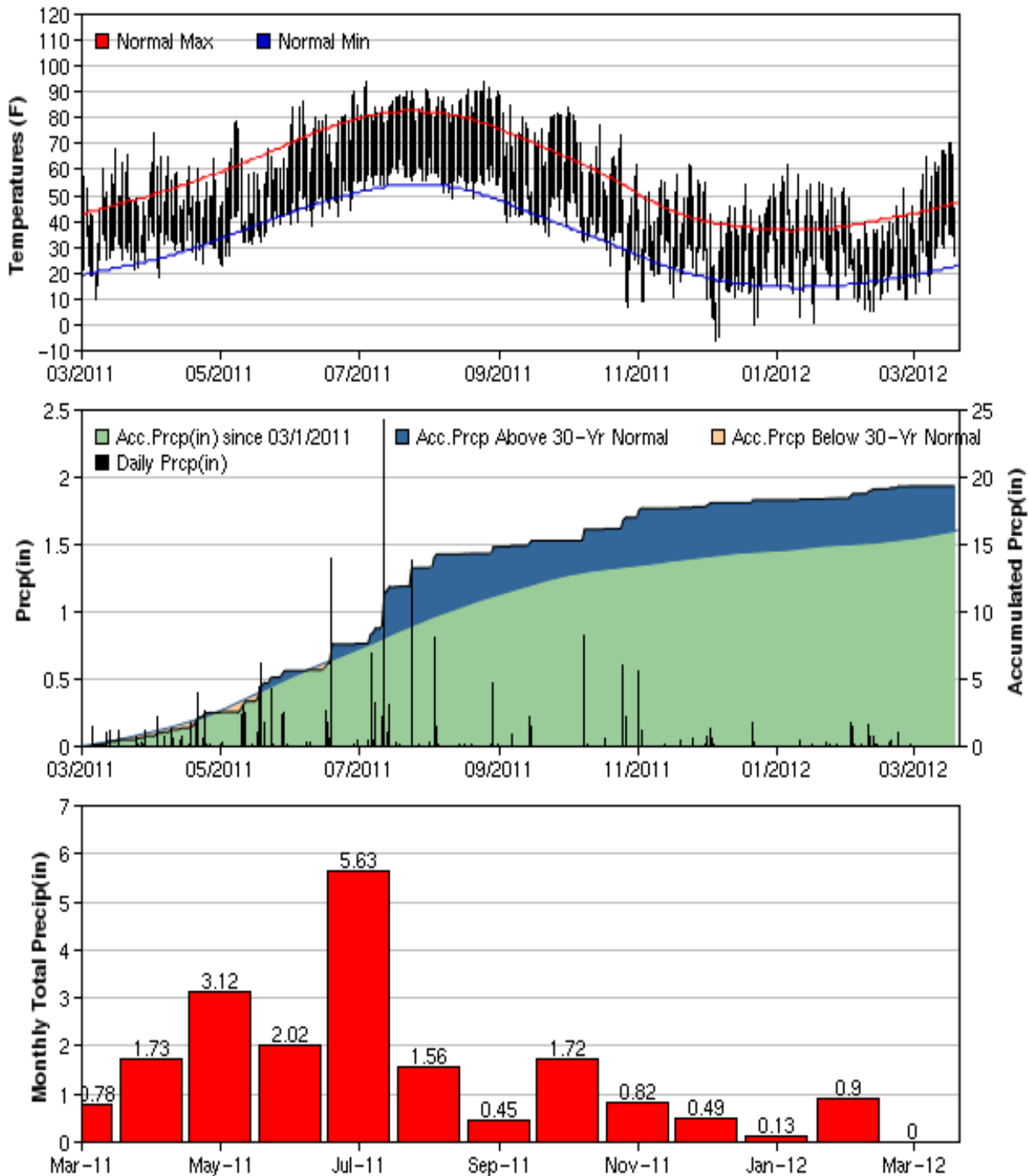
The SPNA is located in northeastern Larimer County. The northern border of SPNA is the Wyoming state line. The SPNA is approximately 35 mi (56 km) north of Fort Collins and east of the Rocky Mountains that abruptly rise from the Laramie Foothills. The short grass steppe increases in elevation from east to west 6,080 ft to 7,201 ft (1848-2189 m)(Mary Mosier, City of Fort Collins). Higher elevations are occupied by ponderosa pine, mountain mahogany, and mixed grasses on mesas and rolling hills. Road cuts and canyons expose mostly shale, sandstone, conglomerate, and other sedimentary rock and soil.

Climate

Climate information is summarized from: 1) Cheyenne, Wyoming airport (U.S. Weather Bureau 2011) which is about 10 mi (16 km) northeast of our study sites; 2) the High Plains Regional Climatic Center (HPRCC 2011), University of Nebraska, Lincoln, Nebraska (Fig.1). According to the HPRCC, the nearest weather station to SPNA is located in Cheyenne, Wyoming.

During the 2011 study period, temperatures exceeded the 30 year normal maximum. Precipitation was normal from the start of the study period in June to late July (total monthly precipitation was 5.63 in or 14.3 cm) when it was highest. From late July to the end of the study period, precipitation slightly declined and followed the 30 year normal. However, this is equivalent to drought at SPNA because the average precipitation from late July to early October was a monthly total of 1.00 in (2.54 cm) in hottest months. These climatic data correlated closely with a drop in water flow on 4 September 2011 at SpC causing a dry stream channel near the Malaise trap and slightly reduced flow at JkS but no impact at GC.

CHEYENNE MUNI AP, WY



Normals based up 1971-2000 Normals, if available
 Grey Shading indicates where data are flagged as "Missing"
 Accumulated Precip (where available) may not reflect actual deviations from normal if data are missing
 "Experimental" May Contain Preliminary Data
 High Plains Regional Climate Center
<http://hprcc.unl.edu>

Figure 1. Temperature and precipitation 2011. Graphs based on data from High Plains Regional Climate Center, University of Nebraska.

Soapstone Collection Sites

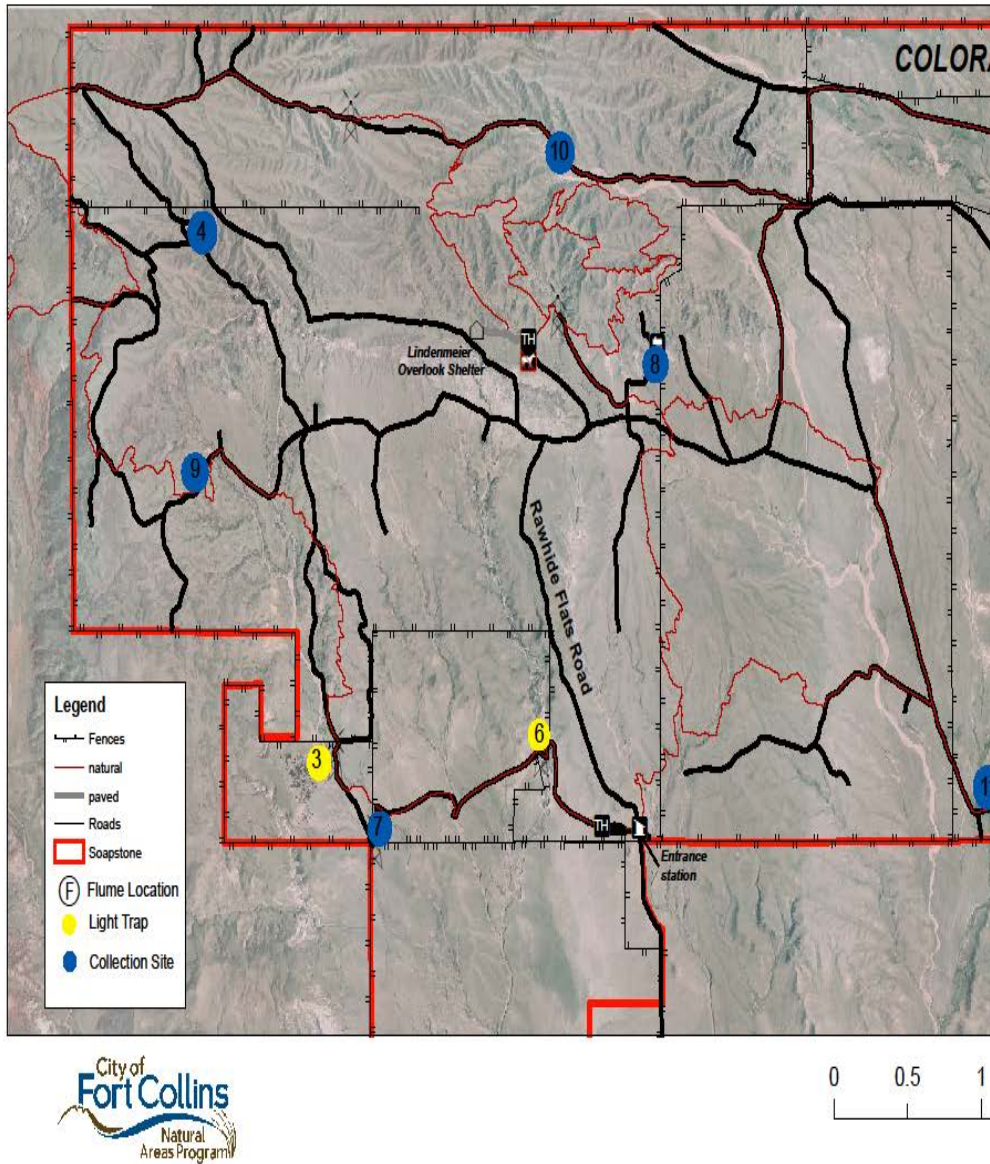


Figure 2. Map showing 2011 collection sites 1, 2 and 11, Soapstone Prairie Natural Area, Larimer Co., Colorado.

Table 1. Survey Dates, Collectors and Methods at Sites June-October 2011, Soapstone Prairie Natural Area, Larimer Co. Colorado.

Day	Month	Collectors*	Methods**			Conditions
			Site 1 Graves Creek	Site 2 Spottewood Creek	Site 11 Jack Spring	
1	Jun	RS, BK, CM	S HC	S HC D O ₂	S	Dry roads
12	Jun	RS, DH	S HC	S HC Set MT Set BT	S Set BT	Dry roads
14	Jun	RS, SW	HC	S MT BT SP	S BT SP	Dry roads
9	Jul	RS, DH	S Set BT	S Set BT	S Set MT	Dry roads
10	Jul	RS, PC	S BT SP	S Set MT BT SP	S MT	Approaching storm
6	Aug	RS, DH	S HC Set BT	S Set MT Set BT	S Set MT	Dry roads
7	Aug	RS, WC	S HC BT SP	S MT BT SP	SMT	Mostly dry roads
4	Sep	RS, BK, DH	S D SS O ₂	S Set MT D	S	Dry roads
5	Sep	RS, WJ	S	S MT	S	Dry roads
18	Sep	RS, DH	S	S HC		Water on ranch roads From recent rains
2	Oct	RS, DH	S	S		Mostly dry roads

*Trips by Collector

PC	Philip Cafaro	1
WC	Whitney Cranshaw	1
DH	Danny Hesser	6
WJ	William Jacobi	1
BK	Boris Kondratieff	2
CM	Chirs Metz	1
RS	Ralph Stoaks	11
SW	Steve Wilkin	1

**Collection Methods

1	D	D-net	6	HC	Hand collection
2	S	Sweep net	7	BT	Bottle trap
3	PFT	Pitfall trap	8	O ₂	Collect live, lab rear
4	MT	Malaise trap	9	SP	Screen pan
5	BLT	Black light trap	10	SS	Surber sampler

Table 2. Sampling sites and coordinates June-October 2011, Soapstone Prairie Natural Area, Larimer Co., Colorado.

Site #	Description	Latitude	Longitude
1	Graves Creek	40° 59' 10.121"N	105° 0' 26.863"W
2	Spottewood Creek	40° 58' 0.829"N	105° 0' 55.662"W
11	Jack Spring	40° 56' 42"N	105° 2' 0.0"W

Geology and Groundwater

The SPNA is included within the Ogallala Aquifer (or High Plains Aquifer in northeastern Colorado (USGS 2009). The aquifer consists of near-surface deposits of unconsolidated or partly consolidated gravel, sand, silt or clay of Tertiary or Quaternary age. Ground water in the aquifer contains calcium magnesium bicarbonate due to the substrate. Dissolved solids in the aquifer in eastern Colorado are generally less than 500 mg/l, but may exceed 1000 mg/l (USGS 2009).

The DNR constructed a flume to measure discharge at GC and indicated that discharge was a continuous mean flow of 0.26 cfs (7.3 l/sec) in 2010 and had similar low flow in 2011 with only slightly reduced discharge in summer-fall of both years (C. Metz, personal communication).

METHODS AND MATERIALS

Day visits to sites and field data were recorded on a field data sheet with summary of stream temperature measurements and general stream conditions, sites visited, collecting method/site and other data (Table 1). Sites with coordinates are in Table 2 and numbered 1, 2, and 11 on the map of collection sites (Fig. 2).

Day insect collections were mostly conducted with a standard 15 in (27 cm) sweep net, and by a Malaise trap (Fig. 3) containing vaponal as a killing agent. Specimens collected in nets were placed in killing jars, labeled and returned to the lab in zip-lock bags for identification. Sweeping was conducted with an aerial net (Fig. 4) over vegetation along stream banks and emergent plants in streams. Hand collections were made on vegetation, rock and the ground next to streams. Sampling was mainly conducted during sunny to cloudy days and occasionally in rain. Live immature specimens were transported from streams and occasionally from pools in daylight by D-net and or by hand. The stream water was oxygenated by small, battery powered pumps during transport. In the lab, specimens were



Figure 3. Malaise trap in use at Spottlewood Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.



Figure 4. Sweep netting along Spottlewood Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.



Figure 5. "Living stream" used to rear aquatic insects in lab, Colorado State University, Fort Collins, Colorado.



Figure 6. Bottle trap set in Graves Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.

placed in a "living stream" (Fig. 5) that approximated natural stream conditions (Frigid Units, Toledo, Ohio). Immature specimens were reared to adults for identification, labeled and stored in vials in 80% alcohol. In lieu of black light traps utilized in 2009, we collected specimens from stream pools using standard one gallon bottle traps (BT) (Fig. 6). The contents of the BTs were poured into a white bottomed pan over a wire mesh window screen as we slowly added about 0.5 in (1 cm) of water, then collected stranded specimens with forceps by tilting the pan from side-to-side. On 4 September 2011, we conducted 3 Surber sample replicates (Fig. 7 and Fig. 8) from the substrate at two sites south of the road culvert on Graves Creek.



Figure 7. Surber sampler in Graves Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.



Figure 8. Surber sampler showing capture net and frame, Graves Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.

Table 3. Insect identification experts for selected specimens that were not specifically identified by B. C. Kondratieff, Soapstone Prairie Natural Area, Larimer Co., Colorado.

Order	Consultant	Location	Family & Species
Coleoptera	D. E. Bright	Colorado State University Fort Collins, CO dbright@mail.colostate.edu	Curculionidae
	S. M. Clark	Life Sciences Museum Brigham Young University Provo, UT shawn_clark@byu.edu	Chrysomelidae
	D. Hume	Agriculture Canada Ottawa, Canada DouglasH@inspectionGC.CA	Elateridae
Diptera	R. H. Disney	Zoology Department Cambridge University Cambridge, England CAMBRIDGE CB2 3EJ rhld2@hermes.cam.ac.uk	Phoridae
Hemiptera	A. Hicks	University of Colorado Museum of Natural History Boulder, CO Andrew.Hicks@Colorado.edu	Cicadellidae
Hymenoptera	C. McEwen	Entomological Department University of Maryland College Park, MD clm.c.ewen@Gmail.com	Some Chalcidoidea
	V. Scott	University of Colorado Museum of Natural History Boulder, CO Virginia.Scott@Colorado.edu	Apoidea
	W. van Steenis	Utrecht, Netherlands w.v.stennis@casema.nl	Syrphidae
	D. Wahl	American Entomological Institute Gainesville, FL aei@aei.cfoxmail.com	Ichneumonidae
	K. Williams	Zoology Department UT State University Logan, UT Kevin.Williams@usu.edu	Mutillidae
Orthoptera	T. J. McNary	USDA, PPQ, WR Fort Collins, CO Timothy.J.McNary@aphis.usda.gov	All
Trichoptera	D. Ruitter	Centennial, CO druiter@msn.com	All

Table 4. Uncommon Insect Taxa identified in 2011, Soapstone Prairie Natural Area, Larimer County, Colorado. Genera and species listed were uncommon and families marked with an asterisk.

Order	Family	Genus & Species	Reference	Special feature
Coleoptera	*Apionidae	<i>Apion punctinasum</i> Smith	(Bright, Table 3)	Difficult to Identify
		<i>Apion wickhami</i> Kissinger	(Bright, Table 3)	Difficult to identify
Diptera	*Acroceridae	<i>Ogcodes pallidipennis</i> Loew	Schlinger 1960	
	Anthomyiidae	<i>Hydrophoria borealis</i> Malloch	Huckett 1971	Lower latitude of range
		<i>Hydrophoria frontosa</i> Zetterstedt	Huckett 1971	Lower altitude of range
		<i>Hydrophoria wierzekii</i> Mik	Huckett 1971	Lower altitude of range
	Conopidae	<i>Phytocephala texana</i> Williston	Buchmann 2010	
	*Diopsidae	<i>Sphyracephala subbifasciata</i> Fitch	Feijen 1989, Stoaks & Scott 2011	
	Ephydriidae	<i>Philotelma alaskense</i> Becker	Zatwarniki & Baez 1991	Lower altitude of range
	Phoridae	<i>Megaselia</i> n. sp. 1	(Disney, Table 3)	New species
		<i>Megaselia</i> n. sp. 2	(Disney, Table 3)	New species
		<i>Megaselia longiseta</i> Wood	(Disney, Table 3)	
	*Psilidae	<i>Loxocera fumipennis</i> Coquillett	Buck & Marshall 2006	
Ptychopteridae	<i>Ptychoptera</i> sp.	McAlpine et al. 1986	New species	
Tachinidae	<i>Colorodomyia eucosmaphaga</i> Arnaud	Arnaud 1978, O'Hare & Wood 2004	New addition to CSUC	
Hemiptera	Berytidae	<i>Neoneides muticus</i> Say	Uncommon	
	*Cydnidae	<i>Pangaeus</i> sp.	Smith & Holmes 2002	
	Nabidae	<i>Nabicula nigrovittata nearctica</i> Kerzhwer	Uncommon	Uncommon species
Hymenoptera	Andrenidae	<i>Panurginus</i> sp.	Scott 2011	
		<i>Pseudopanugus</i> sp.	Scott 2011	
		<i>Hylaeus leptcephalus</i> (Moran)	Scott 2011	
		<i>Hylaeus mesillae</i> (Cockerell)	Scott 2011	
	Ichneumonidae	<i>Banchus</i> sp.	CSUC, Wall, Table 3)	
		<i>Diadegma</i> sp.	CSUC, (Wall, Table 3)	
*Sapygidae	<i>Sapyga</i> sp.	Johnson & Triplehorn 2005		
Neuroptera	Hemerobiidae	<i>Symphorobris perparvus</i> McLachlan	Nakahara 1965	
Plecoptera	Perlodidae	<i>Isoperla quinquepunctata</i> complex	Kondratieff & Baumann 2002	Rare in study area
Trichoptera	Hydropsychidae	<i>Cheumatopsyche campyla</i> Ross	Herrmann, Ruitter & Unzicker 1986	
	Limnephilidae	<i>Anabolia consocius</i> (Walker)	Herrmann, Ruitter & Unzicker 1986	Westernmost range limit
		<i>Clistoronia maculata</i> (Banks)	Herrmann, Ruitter & Unzicker 1986	
		<i>Limnephilus acnestus</i> Banks	Herrmann, Ruitter & Lavigne 1986	Rare throughout range

Table 5 Aquatic insects collected at Graves Creek, Spottlewood Creek and Jack Spring, Soapstone Prairie Natural Area, Larimer Co., Colorado 2009-2011.

Order	Family	Genus & Species	Graves Creek	Spottlewood Creek	Jack Spring	
Coleoptera	Dryopidae	<i>Helichus striatus</i> LeConte	x	x		
		Dytiscidae				
		<i>Agabus affinis</i> Paykull		x		
		<i>Agabus ambiguus</i> Say		x		
		<i>Agabus disintegratus</i> (Crotch)		x		
		<i>Agabus griseipennis</i> LeConte		x		
		<i>Agabus semivittatus</i> LeConte		x		
		<i>Agabus seriatus</i> Say	x			
		<i>Colymbetes exaratus incognitus</i> Zimmerman		x		
		<i>Coptotomus longulus longulus</i> LeConte		x		
		<i>Hydroporus notabilis</i> LeConte		x	x	
		<i>Hygrotus impressopunctatus</i> (Schaller)		x		
		<i>Hygrotus marklini</i> (Gyllenthal)		x		
		<i>Hygrotus nubilis</i> (LeConte)		x		
		<i>Hygrotus patruelis</i> (LeConte)		x		
		<i>Ilybius biguttulus</i> (Germar)		x		
		<i>Laccophilus maculosus decipiens</i> LeConte	x	x	x	
		<i>Liodessus abjectus</i> (Sharp)	x	x	x	
		<i>Neoporus obscurellus</i> (LeConte)		x		
		<i>Neoporus dimidiatus</i> Gemminger & Harold	x	x		
		<i>Rhantus binotatus</i> Harris		x		
		<i>Rhantus gutticollis</i> (Say)	x	x		
		<i>Stictotarsus striatellus</i> (LeConte)		x		
		Elmidae				
			<i>Optioservus castanipennis</i> (Fallen)	x	x	
			<i>Optioservus divergens</i> (LeConte)	x	x	
		Halipidae				
			<i>Haliplus deceptus</i> Matheson		x	
			<i>Haliplus fulvus</i> (Fabricius)		x	
			<i>Haliplus immaculicollis</i> Harris	x	x	
			<i>Peltodytes callosus</i> LeConte		x	
		Hydrophilidae				
			<i>Anacena</i> sp.	x	x	x
		<i>Berosus fraternus</i> LeConte		x		
		<i>Berosus stylifer</i> Horn		x		
		<i>Cercyon</i> sp.		x		
		<i>Cymbiodyta</i> sp.	x			
		<i>Cymbiodyta beckeri beckeri</i> Smetana		x		
		<i>Enochrus hamiltoni</i> (Horn)	x	x		
		<i>Helophorus orientalis</i> Motschulsky		x		
		<i>Helophorus robertsi</i> Smetana		x		
		<i>Laccobius agilis</i> Randall		x		
		<i>Laccobius mexicanus</i> Orchymont		x		
		<i>Tropisternus affinis</i> Motschulsky		x		
		<i>Tropisternus columbianus</i> Brown	x	x	x	
		<i>Tropisternus ellipticus</i> LeConte	x			
		<i>Tropisternus lateralis limbalis</i> (LeConte)		x		
		<i>Tropisternus lateralis nimbatus</i> (Say)		x		
		<i>Tropisternus sublaevis</i> (LeConte)		x	x	
Diptera	Ceratopogonidae	sp.	x	x		
		<i>Atrichopogon fuscus</i> Coquillett		x	x	
		<i>Culicoides</i> sp.		x		
		<i>Culicoides cockerelli</i> Coquillett			x	

Order	Family	Genus & Species	Graves Creek	Spottlewood Creek	Jack Spring
		<i>Dasyhella</i> sp.			x
		<i>Forcipomyia</i> sp.			x
	Chironomidae	sp.	x	x	x
		<i>Apedilum</i> sp.	x	x	
		<i>Cricotopus</i> sp.	x	x	
		<i>Diamesa</i> sp.		x	
		<i>Dicrotendipes</i> sp.		x	
		<i>Micropsecta</i> sp.		x	
		<i>Odontomesa</i> sp.		x	
		<i>Orthocladius</i> sp.	x		
		<i>Paracladius</i> sp.		x	
		<i>Parametriacnemus</i> sp.	x	x	
		<i>Paraphaenocladius</i> sp.	x		
		<i>Psectrocladius</i> sp.		x	
		<i>Pseudochironomus</i> sp.		x	
		<i>Rhadotanypus</i> sp.		x	
	Culicidae	<i>Aedes</i> sp.		x	
		<i>Aedes dorsalis</i> (Meigen)		x	
		<i>Aedes increpitus</i> Dyar		x	
		<i>Aedes nigromaculis</i> (Ludlow)	x		x
		<i>Culiseta</i> sp.		x	
		<i>Culiseta impatiens</i> (Walker)	x	x	
		<i>Culiseta inornata</i> (Williston)			x
		<i>Culiseta morsitans</i> (Theobald)		x	
	Dixidae	<i>Dixella</i> sp.		x	
	Dolichopodidae	<i>Chrysotus leucostoma</i> (Loew)		x	
		<i>Dolichopus bifractus</i> Loew		x	
		<i>Dolichopus cuprinus</i> Wiedemann	x	x	
		<i>Dolichopus obcordatus</i> Aldrich		x	
		<i>Dolichopus palustris</i> Melander & Brues		x	
		<i>Dolichopus ramifer</i> Loew		x	
		<i>Hydroporus</i> sp.		x	
		<i>Medetera</i> sp.		x	
		<i>Medetera veles</i> Loew		x	
		<i>Pelastroneurus vagans</i> Loew		x	
		<i>Rhaphium nr. exile</i> Curran		x	
		<i>Rhaphium effilatum</i> Wheeler		x	
		<i>Scellus exustus</i> Walker		x	
		<i>Scellus monstrosus</i> Osten Sacken		x	
		<i>Syntormon clavatum</i> Van Duzee		x	
	Ephydriidae	sp.		x	x
		<i>Athyroglossa</i> sp.			x
		<i>Calocoenia</i> sp.		x	
		<i>Coenia</i> sp.		x	
		<i>Ephydra</i> sp.			x
		<i>Ephydra (Hydropyrus)</i> sp.	x		
		<i>Mosillus</i> sp.	x	x	x
		<i>Notiphilia (Dichaeta)</i> sp.	x		x
		<i>Notiphila (Notiphila)</i> sp.	x	x	x
		<i>Ochthera</i> sp.		x	x
		<i>Paralimna</i> sp.	x	x	x
		<i>Parydra (Parydra)</i> sp.		x	x

Order	Family	Genus & Species	Graves Creek	Spottlewood Creek	Jack Spring
		<i>Pelina</i> sp.		x	
		<i>Philotelma alaskense</i> Becker			x
		<i>Scatophila</i> sp.	x	x	x
	Ptychopteridae	<i>Ptychoptera</i> sp.	x	x	x
	Sciomyzidae	<i>Dictya</i> sp.	x	x	
		<i>Dictya texensis</i> Curran		x	x
		<i>Limnia ottawensis</i> Melander		x	
		<i>Sepedon armipes</i> Loew		x	x
		<i>Tetanocera</i> sp.		x	x
		<i>Tetanocera ferruginea</i> Fallen		x	x
		<i>Tetanocera plebeja</i> Loew		x	
	Simuliidae	<i>Prosimulium</i> sp.		x	
		<i>Simulium</i> sp.	x	x	x
		<i>Simulium decorum</i> Walker	x	x	x
	Stratiomyidae	<i>Anoplodonta nigriostriis</i> Loew		x	
		<i>Euparyphus cinctus</i> (Osten Sacken)		x	
		<i>Euparyphus mutabilis</i> Adams	x	x	x
		<i>Hedriodiscus binotatus</i> Loew		x	x
		<i>Microchrysa polita</i> Linnaeus			x
		<i>Nemotelus</i> sp.		x	x
		<i>Nemotelus beameri</i> James		x	
		<i>Odontomyia</i> sp.		x	
		<i>Odontomyia cincta</i> Olivier		x	
		<i>Stratiomys barbata</i> Loew		x	
		<i>Stratiomys normula</i> Loew		x	
	Tabanidae	<i>Chrysops fulvaster</i> Osten Sacken		x	
		<i>Chrysops mitis</i> Osten Sacken		x	
		<i>Hybomitra</i> sp.	x	x	
	Tipulidae	sp.	x		
		<i>Limonius fulviopilis</i> Candenze		x	
		<i>Limonius nitidulus</i> Horn		x	
		<i>Tipula</i> sp.	x	x	
Ephemeroptera	Baetidae	<i>Baetis magnus</i> McCafferty & Waltz	x	x	
		<i>Baetis tricaudatus</i> Dodds		x	
		<i>Callibaetis ferrugineus hageni</i> Eaton	x		
		<i>Fallceon quilleri</i> (Dodds)	x	x	x
	Leptohyphidae	<i>Tricorythodes explicatus</i> (Eaton)	x	x	
Hemiptera	Belostomatidae	<i>Belostoma fluminea</i> Say		x	
	Corixidae	<i>Cenocorixa utahensis</i> (Hungerford)		x	
		<i>Sigara alternata</i> (Say)		x	
		<i>Sigara grossolineata</i> Hungerford		x	
		<i>Trichocorixa borealis</i> Sailor		x	
	Gerridae	<i>Aquarius remigis</i> (Say)		x	
		<i>Gerris gillettei</i> Lethierry & Severin	x	x	
	Macroveliidae	<i>Macrovelia horni</i> Uhler	x		
	Notonectidae	<i>Notonecta kirbyi</i> (Hungerford)		x	
		<i>Notonecta undulata</i> Say		x	
Odonata	Aeshnidae	<i>Aeshna palmata</i> Hagen	x		
	Coenagrionidae	<i>Amphiagrion abbreviatum</i> Selys	x	x	x
		<i>Argia alberta</i> (Hagen)		x	
		<i>Argia vivada</i> Hagen		x	
		<i>Enallagma anna</i> Williamson		x	

Order	Family	Genus & Species	Graves Creek	Spottlewood Creek	Jack Spring
		<i>Enallagma civile</i> (Hagen)		x	
		<i>Ischnura</i> sp.		x	
		<i>Ischnura damula</i> Calvert		x	
		<i>Ischnura perparva</i> McLachlan	x	x	
		<i>Ischnura verticalis</i> Say		x	
	Libellulidae	<i>Libellula pulchella</i> Drury		x	
		<i>Plathemis subornata</i> (Hagen)		x	
		<i>Sympetrum obtrusum</i> (Hagen)		x	
		<i>Sympetrum semicinctum fuscicata</i> (Say)		x	x
	Lestidae	<i>Lestes congener</i> Hagen		x	
		<i>Lestes disjunctus</i> Selys	x	x	
Plecoptera	Perlodidae	<i>Isoperla quinquepunctata</i> (Banks)		x	
	Nemouridae	<i>Malenka coloradensis</i> (Banks)	x		
Trichoptera	Helicopsychidae	<i>Helicopsyche</i> n. sp.	x	x	
	Hydropsychidae	<i>Cheumatopsyche analis</i> Banks	x	x	
		<i>Chematopsyche campyla</i> Ross		x	
	Leptoceridae	<i>Oecetis disjuncta</i> (Banks)	x	x	
		<i>Ylodes frontalis</i> Banks		x	
	Limnephilidae	<i>Anabolia bimaculatus</i> (Walker)		x	
		<i>Anabolia consocius</i> (Walker)	x		
		<i>Clistronia maculata</i> (Banks)		x	
		<i>Hesperophylax</i> sp.	x	x	
		<i>Hesperophylax designatus</i> (Walker)	x	x	x
		<i>Hesperophylax magnus</i> Banks	x		
		<i>Hesperophylax occidentalis</i> (Banks)	x		
		<i>Limnephilus acnestus</i> Ross	x	x	x
		<i>Limnephilus castor</i> Ross & Merkeley		x	
		<i>Limnephilus diversus</i> (Banks)		x	x
		<i>Limnephilus frijole</i> Ross		x	
		<i>Limnephilus spinatus</i> Banks		x	
		<i>Limnephilus taloga</i> Ross		x	
	Philopotamidae	<i>Chimarra utahensis</i> Ross		x	

In Table 1, collecting sites and in Appendix 1, site and collection methods are summarized. For example, sites use 2009 and 2010 numbering at GC (site 1) and SpC (site 2) and JSp (site 11). The criteria to rate specimens as uncommonly collected were if: 1) a county record, 2) considered regionally uncommon, 3), indicated by an expert (e.g., Table 3), or 4) uncommon as reported in the literature. These uncommon specimens are identified with an asterisk in Appendices 1-2 and in Tables 4-5.

Identification and Verification

Insect specimens were initially sorted to orders. There is no single source or reference available to identify North American insects to genus and species. Primary taxonomic literature available at the C.P. Gillette Museum of Arthropod Diversity (CSUC) was used. Specimens were sent to experts for identification in specific groups (Table 3). Insect specimens collected are deposited in the CSUC. Scientific names, distribution and synonyms were verified according to Poole and Gentili (1996-1997) or more current literature. Pinned specimens are stored in Cornell

drawers in fumigated steel cabinets. Specimens are stored in 80% alcohol or on mounted insect pins. A specifically equipped lab for rearing immature stream insects to adults is located in the Plant Sciences building on the CSU campus. New species of Phoridae specimens were determined by Dr. Henry Disney, Cambridge University, England.

Table 6. Relative abundance of macroinvertebrates/m² using a Surber sample on 4 September 2011, Graves Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.

Taxa	Site 1			Site 2		
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
<i>Lumbriculus</i> sp. (aquatic worms)	10	10	10			
<i>Dugesia dortocephala</i> (planaria)		10	80	60	90	20
<i>Erobodella parva</i> (leech)	10					
<i>Mooreobdella fervida</i> (leech)		10				
<i>Baetis magnus</i> (mayfly nymphs)	20	120	510	460	180	590
<i>Optioservus</i> sp. (elmid beetle adults)	10	20	140	280	10	320
<i>Optioservus</i> sp. (elmid beetle larvae)	300	90	150	100	90	320
<i>Hesperophylax</i> sp. (caddisfly larvae)	50	80	80	20	20	10
<i>Hesperophylax</i> sp. pupae				60		40
<i>Paraphaenocladus</i> sp. (chironomid larvae)		10	10			
<i>Simulium decorum</i> (blackfly larvae)	20	40	30	60	110	30
Ephydridae (shore fly larvae)			10			
<i>Sigara</i> sp. (water boatman)			10			
<i>Gammarus lacustris</i> (scuds)	30	110	180	210	90	40
Total Number/m ²	450	510	1,210	1,260	610	1,370

Site 1, 30m south of Graves Creek culvert

Site 2, 60m south of Graves Creek culvert

RESULTS

For 2011, we report a total of 128 families, 329 genera, 254 species and 4,905 specimens in addition to those by reported Stoaks and Kondratieff (2009, 2010). Additionally, we report 6 uncommon families, 25 genera and 26 species for 2011. The combined total of specimens for three years is 17,709. The 2011 total for Rare/uncommon taxa not reported in 2009 and 2010 were: 6 families, 25 genera and 26 species.

Rare or uncommon insects collected are indicated by an asterisk in Appendices 1-2, but no threatened or endangered species were found as listed by the state of Colorado or Federal agencies.

Surber samples at GC on 4 September 2011 yielded mostly: mayfly larvae of *Baetis magnus* McCafferty and Waltz, caddisfly larvae and pupae of *Hesperphylax occidentalis* (Banks) and riffle beetle adults and larvae of *Optioservus* spp. Aquatic insects collected by Surber samples are listed in Table 6 (Aquatic taxa) and their ecology is explained in the Discussion below. Table 4 includes the stalk eyed fly, *Sphyracephala subbifasciata* Fitch (Feijen 1989)(Figs. 9 -10)(Stoaks and Shaw 2011). Single specimens were collected in tall grasses at SpC near the stream by sweep net in October 2010 and by malaise trap over the stream in October 2011. The undescribed species of phantom crane fly discovered in 2009 (Stoaks and Kondratieff 2010), were recollected at JkS on 1 June 2011.



Figure 9. Lateral view, Stalk eyed fly, *Sphyracephala subbifasciata* Fitch from Spottlewood Creek, Soapstone Prairie Natural Area, Larimer Co. Colorado. Photo credit: Todd Gilligan, CSU.



Figure 10. Head, frontal view, Stalk eyed fly, *Sphyracephala subbifasciata* Fitch from Spottlewood Prairie Natural Area, Larimer Co., Colorado. Photo credit: Todd Gilligan, CSU.

DISCUSSION

Surveys of the biological conditions of U.S. streams have indicated that most are influenced by chemical, physical or flow alterations. As a consequence "natural" biological communities continue to be altered despite federal legislation mandating their protection. The city of Fort Collins Natural Areas Program (fcgov.com/naturalareas) is concerned with the aquatic resources on landscapes being currently managed, and in particular, the long-term maintenance of the biotic integrity of these resources. A component of this is the ability to anticipate and predict possible future impacts to specific aquatic resources. Resource inventory and monitoring are essential elements in this process, since they provide the basis for verifying predicted impacts as well as assessing the pace and extent of any changes in the status of the resource. Stream biota reflect the chemical, physical, and biological conditions in which they evolved. Biological community changes, and therefore biological evaluation, reflect many environmental conditions and anthropogenic impacts.

This report includes an inventory of the aquatic macroinvertebrates of GC, SpC, and JkS of the Soapstone Prairie Natural Area. These aquatic habitats have had a long and continued history of impacts mostly from livestock grazing. Armour et al. (1994), Fleischner (1994), and Belsky et al. (1999), provide reviews of the numerous deleterious impacts of livestock grazing on aquatic ecosystems. The headwater region of SpC is still being grazed as well as other sections of the stream. It is suggested that a long-term monitoring program of the aquatic resources of Soapstone Prairie Natural Area using biological criteria should be implemented to follow recovery or continued degradation of these unique ecological systems.

Karr et al. (1986) defined five classes of environmental factors that affect aquatic ecosystems: energy source, water quality, habitat quality, flow regime, and biotic interactions (Table 7). They stress that these classes are interrelated and the biological community may be altered by changes in any one of the factors. Therefore, the components and structure of the biological community reflect many environmental factors, making biological monitoring a powerful tool. Additionally, the integration of many environmental factors suggests that approaches to water resource management problems be broad-based. Solutions that consider many aspects of the watershed, and manage the ultimate cause of a problem, are likely to be more effective and more economical than solutions which only consider proximate causes (Karr et al. 1986).

Table 7. Environmental factors that affect aquatic biota (modified from Karr et al. 1986)

1. Food (Energy) Source
 - type, amount, and particle size of organic material entering a stream from the riparian zone versus primary production in the stream
 - seasonal pattern of available energy
 2. Water Quality
 - temperature
 - turbidity
 - dissolved oxygen
 - nutrients (primarily nitrogen and phosphorus)
 - organic and inorganic chemicals, natural and synthetic
 - heavy metals and toxic substances
 - pH
 3. Habitat Structure
 - substrate type
 - water depth and current velocity
 - spawning, nursery, and hiding places
 - diversity (pools, riffles, woody debris)
 - basin size and shape
 4. Flow Regime
 - water volume
 - temporal distribution of floods and low flows
 5. Biotic Interactions
 - competition
 - predation
 - disease
-

Quantitative Sampling Design

A Surber square-foot bottom sampler was used to obtain quantitative samples from Graves Creek. Three replicate samples were taken at each site, 30 m and 60 m below road culvert by the ranch house.

The Surber sampler is commonly used to sample shallow streams. All organisms within the area of the sampler on the natural stream bottom are collected. Quantitative sampling yields numerical estimates of the absolute abundance of each species per unit area for the habitat sampled (Platts et al. 1983, Hauer and Lamberti 1996, Merritt et al. 2008). This methodology provides data on population densities which may be used to detect variations over time and space. The Surber sampler consisted of a capture net and frame, which supports the net and defines the sampling area (Fig. 8). The sampling area was 0.0929 m² (1 square foot), and capture net was nylon with 1.050 mm openings (Wildco, Wildlife Supply Company, Saginaw, Michigan). The sampler was placed on the stream bottom in areas where depth and current were sufficient to wash dislodged organisms into the capture net. The substrate within the sampler frame was disturbed with a garden cultivator to a depth of 8-10 cm in order to dislodge organisms.

Individual rocks were brushed with a vegetable brush and then visually inspected in order to free any clinging organisms. The catch net was washed several times to concentrate the contents into the end. Contents were placed into a labeled plastic bag by inverting the net and preserved by 80% ethanol. Macroinvertebrates were enumerated, and identified to the lowest practical taxonomic level. Final storage of samples was in 80% ethanol.

Analysis

A sample was defined as the mean number of organisms of each taxon found in the three Surber replicate samples at each site and date. Data from the macroinvertebrate samplers were analyzed to obtain basic benthic aquatic community data including taxa richness and density of macroinvertebrates.

Results of Quantitative Benthic Macroinvertebrate Sampling, Graves Creek

Table 6 presents the total number of macroinvertebrate taxa collected using the Surber sampler on 4 September 2011 from two sites GC, 11 total taxa. These are typical taxa for groundwater fed systems of the immediate geographical region (B. C. Kondratieff, personal observation). However, the original macroinvertebrate fauna of these systems was not documented prior to the impacts of irrigated agriculture and livestock grazing. Additionally, no studies have been published on the macroinvertebrate composition of springs of the High Plains of Colorado. A single species of baetid mayfly, *Baetis magnus* McCafferty and Waltz, the riffle beetle genus *Optioservus* (mostly *O. castanipennis* (Fall) and few *O. divergens* (LeConte)), the amphipod *Gammarus lacustris* Sars, and the limnephilid caddisfly, *Hesperophylax* spp. (including *H. designatus* Banks and *H. occidentalis* (Banks)) composed 87% of the total number of individuals/m² collected on 4 September 2011. The freshwater planarian *Dugesia dorotocephala* (Woodworth) and blackflies (*Simulium decorum* Walker) contributed an additional 10% of the total numbers of individuals. Two taxa, the mayfly *B. magnus*, averaging 313/m² individuals and the riffle beetle *Optioservus* spp. larvae and adults (averaging 305/m²) dominated along with *G. lacustris* (averaging 110/m²) on the sampling date. The limnephilid caddisfly *Hesperophylax* spp. (60 larvae & pupae/ m²) was the next most numerous macroinvertebrates. The major taxa in regard to feeding guilds (Cummins et al. 2008) were collector-gatherer taxa (*B. magnus*, *Optioservus* spp. larvae) or shredder taxa (*Hesperophylax* spp. *Optioservus* spp. adults, *G. lacustris*), no doubt making use of ample living vascular material of *Veronica anagallis-aquatica* L.) and the presence of large amounts of decaying in stream organic material.

Graves Creek

Graves Creek is a unique system originating from a groundwater source near the ranch house. There is no developed riparian vegetation zone associated with the drainage, but vegetation is ample in stream beds of the emergent macrophyte *Veronica anagallis-aquatica* L. Additionally, inputs from livestock grazing (Gary et al. 1983) and wind deposited organic material enrich the rheocrene. The macroinvertebrate community is composed of at least 58 insect taxa (Table 5), many well-known associates of rheocrenes. Several taxa occur in large numbers throughout the year, the baetid mayfly, *Baetis magnus* McCafferty and Waltz, the riffle beetle genus *Optioservus* (including mostly adults and larvae *O. castanipennis* (Fall), but a few *O.*

divergens (LeConte)), the amphipod *Gammarus lacustris* Sars, and the limnephilid caddisfly, *Hesperophylax* spp. (including *H. designatus* Banks and *H. occidentalis* (Banks)). Near the head of the spring, by the road culvert, a small population of the regionally uncommon nemourid stonefly *Malenka coloradensis* (Banks) occurs. A population of the generally eastern North American limnephilid caddisfly, *Anabolia consocius* (Walker), an uncommon species found in the eastern half of Colorado. Additional taxa of aquatic worms, leeches, planarians, and crustaceans occur throughout Graves Creek, especially the amphipod *G. lacustris*.

Spottlewood Creek

At least 158 different insect taxa were collected from SpC during the three years of sampling (Table 5). The majorities of these are lentic or standing water species and are usually geographically widespread and common western North American species. During the summer months, especially in dry years, running water reaches of SpC dry (Fig.11) (or leave or form isolated pools. Several of these pools along the length of the stream are fed by groundwater inputs (Fig. 12), Several of the pools were 0.5 to 1.0 m deep, with ample emergent and submergent macrophytes and filamentous algae, supporting high densities of aquatic macroinvertebrates. These pools often have relatively high densities of pond damselflies (Coenagrionidae), meadowhawks (*Sympetrum* spp.) and darners (*Aeshna palmata* Hagen)(Fig. 13), waterboatman (Corixidae), back swimmers (Notonectidae), giant water bugs (*Belostoma fluminea* Say), predaceous diving beetles (Dytiscidae), water scavenger beetles (Hydrophilidae), and crawling water beetles (Haliplidae) (Table 5). In the few riffle sections, the small baetid mayfly *Fallceon quilleri* (Dodds) is often abundant. It is interesting to note, that despite the grazing impacts, a small remnant population of the perlodid stonefly, known as the “Fivespot Stripetail,” *Isoptera quinquepunctata* (Banks) occurred in a few riffle sections.



Figure 11. Spottlewood Creek with seasonal low flow and small pools on 6 August 2011, Soapstone Prairie Natural Area, Larimer Co., Colorado.



Figure 12. A bottle trap being used at spring sources at Spottlewood Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado.



Figure 13. The Paddle-tailed Darner, *Aeshna palmata* Hagan, a species found at pools in Spottlewood Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado. Photo Credit: Ed McAskill, BugGuide.Net.



Figure 14. Typical snail-like case of the caddisfly, *Helicopsyche* found at Graves Creek, Soapstone Prairie Natural Area, Larimer Co., Colorado. Photo Credit: Mike Quinn, BugGuide.Net.

Stoneflies are usually sensitive to perturbations such as cattle grazing (Scrimgeour and Kendall, 2003) Several relatively uncommon regional caddisflies exist in SpC, including an undescribed species of snail case caddis fly genus *Helicopsyche* (Fig. 14), the limnephild *Clistoronia maculata* (Banks), and the philopotamid caddisfly *Chimarra utahensis* Ross (Stoaks and Kondratieff 2010, 2011).

Jack Spring

As Van Kamp (1995) indicated, springs are points of concentrated discharge from groundwater flow systems. Usually springs, in terms of water temperatures and chemistry, are relatively constant. Relatively little information is known about the aquatic insect communities of the High Plains of western North America (Ferrington 1995). At least 42 insect taxa were collected in the three years of sampling (Table 5). Approximately, 70% of these species were flies (Table 5). No unique taxa were collected during the three year survey at this location. The uncommon limnephild caddisfly *Limnephilus acnestus* Ross was found in relatively large numbers. The spring source and its drainage have been severely impacted by livestock grazing (Fig.15) It could be plausible that other unique invertebrate taxa may have been associated with High Plains springs, such as JkS before livestock grazing impacts.



Figure 15. Livestock impact on stream at Jack Spring, Soapstone Prairie Natural Area, Larimer Co., Colorado.



Figure 16. Operational electric fence at Jack Spring, Soapstone Prairie Natural Area, Larimer Co., Colorado.

RECOMMENDATIONS

We recommend that solar fences be routinely checked to exclude livestock from aggregating in stream habitats especially during grazing rotation (Fig 16). We recommend the initiation of a long term monitoring program, sampling every 3 years, using both qualitative and quantitative sampling methods as described in the report. This program will ensure the long term integrity of the unique aquatic resources at SPNA.

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Appendix 1. 2011 Insect Species List, Soapstone Prairie Natural Area, Larimer Co., Colorado.

Order	Family	Scientific Name	Date Collected	Site Number	Collection Method	Quantity	
Coleoptera	Anobiidae	sp.	29-May-10	1	2	1	
		sp.	25-Jul-10	11	2	1	
	*Apionidae	sp.	9-Jul-11	11	4	2	
		sp.	4-Sep-11	2	2	3	
		*Apion sp.	5-Sep-11	2	2	2	
		Apion sp.	7-Aug-11	2	2	2	
		*Apion punctinasum Smith	14-Jun-11	2	4	1	
		*Apion wickhami Kissinger	12-Jun-11	11	2	1	
		*Apion wickhami Kissinger	5-Sep-11	2	2	2	
		Brachypteridae	Brachypterolus pulicarius (Linnaeus)	7-Aug-11	1	2	1
	Buprestidae	Taphocerus schaefferi Nicolay and Weiss	12-Jun-11	2	2	1	
	Cantharidae	Chauliognathus basalis (LeConte)	5-Sep-11	2	2	6	
		Podabrus sp.	1-Jun-11	2	2	2	
	Carabidae	sp.	12-Jun-11	2	2	1	
		sp.	12-Jun-11	11	2	1	
		sp.	28-Jul-10	2	3	1	
		sp.	31-Jul-10	2	4	1	
		sp.	12-Jun-11	2	2	1	
		sp.	18-Sep-11	2	6	3	
		Agonum sp.	18-Sep-11	2	6	2	
		Bembidion	12-Jun-11	2	2	1	
		Bembidion	28-Jul-11	2	3	1	
		Harpalus sp.	18-Sep-11	2	6	2	
		Cerambycidae	Crossidius discoideus (Say)	4-Sep-11	2	2	3
		Chrysomelidae	sp.	6-Jun-10	2	2	1
			sp.	31-Jul-10	2	3	1
	sp.		8-Aug-11	1	2	1	
	Acanthoscelides sp.		8-Aug-09	2	2	1	
	Altica sp.		4-Sep-09	2	3	1	
	Chaetocnema opulenta Horn		12-Jul-10	11	2	1	
	Chaetocnema opulenta Horn		25-Jul-10	11	2	1	
	Chaetocnema opulenta Horn		4-Sep-11	2	2	2	
	Chaetocnema subviridis LeConte		4-Sep-11	2	2	1	
	Chaetocnema subviridis LeConte		29-May-10	12	2	1	
	Cryptocephalus confluentus Say		4-Sep-11	2	2	1	
	Diabrotica virgifera LeConte		7-Aug-11	1	2	2	
	Diabrotica virgifera LeConte		7-Aug-11	2	2	3	
	Diabrotica virgifera LeConte		7-Aug-11	11	2	1	
	Dibolia borealis Chevrolat		12-Jun-11	2	2	1	
	Epitrix sp.		6-Aug-11	2	2	1	
	Glyptina sp.		6-Jun-10	2	2	1	
	Glyptina sp.	1-Jun-11	2	2	1		
	Glyptina sp.	6-Jun-11	2	2	1		
Glyptotina atriventris Horn	25-Jul-10	2	3	1			
Longitarsus sp.	27-Jun-09	9	2	1			
Monoxia sp.	7-Aug-11	1	2	1			

	<i>Pachybrachis</i> sp.	4-Sep-09	2	2	1
	<i>Pachybrachis</i> h. <i>hepatica</i> Melsheimer	16-Aug-10	12	2	1
	<i>Phylliodes</i> sp.	6-Jun-10	2	2	1
	<i>Phyllotreta</i> sp.	27-Jun-09	6	2	1
	<i>Phyllotreta</i> sp.	9-Sep-09	2	4	1
	<i>Phyllotreta</i> sp.	12-Jun-10	1	2	1
	<i>Phyllotreta</i> sp.	29-May-10	2	2	1
	<i>Phyllotreta</i> sp.	12-Jun-11	1	2	1
	<i>Phyllotreta</i> sp.	12-Jun-11	11	2	1
	<i>Phyllotreta</i> sp.	7-Aug-11	1	2	1
	<i>Phyllotreta</i> sp.	4-Sep-11	1	2	1
	<i>Phyllotreta conjuncta</i> Gentner	7-Aug-11	2	4	3
	<i>Zygogramma heterothecae</i> Linell	7-Aug-11	11	4	4
Cicindelidae	<i>Cicindela punctulata</i> Olivier	14-Jun-11	2	4	1
	<i>Cicindela purpurea audubonii</i> LeConte	4-Sep-11	2	2	1
Coccinellidae	sp.	2-Jun-10	1	2	1
	sp.	12-Jun-11	11	2	1
	sp.	9-Jul-11	1	2	31
	sp.	6-Aug-11	2	2	1
	<i>Anatis lecontei</i> Casey	12-Jun-11	11	2	1
	<i>Brachiacantha</i> sp.	12-Jun-11	2	2	1
	<i>Brachiacantha</i> sp.	9-Jul-11	2	2	1
	<i>Brachiacantha decora</i> Casey	12-Jun-11	11	4	1
	<i>Brachiacantha decora</i> Casey	9-Jul-11	1	2	4
	<i>Brachiacantha tau</i> LeConte	10-Jul-11	2	4	2
	<i>Coccidula lepida</i> LeConte	12-Jun-11	11	2	4
	<i>Coccinella septempunctata</i> Linnaeus	10-Jul-11	11	2	8
	<i>Coccinella septempunctata</i> Linnaeus	7-Aug-11	11	4	1
	<i>Coccinella septempunctata</i> Linnaeus	7-Aug-11	2	4	4
	<i>Coccinella septempunctata</i> Linnaeus	9-Jul-11	1	2	2
	<i>Coccinella septempunctata</i> Linnaeus	9-Jul-11	1	2	13
	<i>Coccinella transversoguttata</i> Fabricius	9-Jul-11	1	2	2
	<i>Coccinella transversoguttata</i> Fabricius	10-Jul-11	11	2	11
	<i>Coccinella transversoguttata</i> Fabricius	7-Aug-11	11	4	2
	<i>Coccinella transversoguttata</i> Fabricius	5-Sep-11	2	2	1
	<i>Coccinella transversoguttata</i> Fabricius	3-Oct-11	1	2	1
	<i>Coccinella transversoguttata</i> Fabricius	3-Oct-11	2	2	1
	<i>Coleomegilla maculata</i> De Geer	6-Aug-11	2	2	2
	<i>Hippodamia apicalis</i> Casey	6-Aug-11	2	2	2
	<i>Hippodamia apicalis</i> Casey	9-Jul-11	1	2	2
	<i>Hippodamia convergens</i> Guerin-Meneville	9-Jul-11	1	2	13
	<i>Hippodamia convergens</i> Guerin-Meneville	9-Jul-11	2	2	1
	<i>Hippodamia convergens</i> Guerin-Meneville	10-Jul-11	11	2	11
	<i>Hippodamia convergens</i> Guerin-Meneville	28-Jul-11	11	4	1
	<i>Hippodamia convergens</i> Guerin-Meneville	6-Aug-11	2	2	1
	<i>Hippodamia convergens</i> Guerin-Meneville	6-Aug-11	2	2	1
	<i>Hippodamia convergens</i> Guerin-Meneville	7-Aug-11	11	4	1
	<i>Hippodamia convergens</i> Guerin-Meneville	4-Sep-11	2	2	2
	<i>Hippodamia convergens</i> Guerin-Meneville	5-Sep-11	2	2	5
	<i>Hippodamia convergens</i> Guerin-Meneville	2-Oct-11	1	2	2

	Hippodamia convergens Guerin-Meneville	2-Oct-11	2	2	2
	Hippodamia expurgata Casey	10-Jul-11	11	4	1
	Hippodamia sinuata crotochi Casey	7-Aug-11	11	4	1
	Mulsantina picta (Randall)	28-Jul-10	2	4	1
	Mulsantina picta (Randall)	4-Sep-11	2	2	1
	Scymnus sp.	7-Jun-11	11	2	1
Curculionidae	sp.	12-Jun-11	1	2	1
	sp.	2-Oct-11	2	2	3
	sp.	12-Jun-11	1	2	1
	sp.	9-Jul-11	1	2	5
	Anthonomus squamosus LeConte	2-Oct-11	2	2	1
	Ceutorhynchus americanus Buchanan	5-Sep-11	2	2	1
	Ceutorhynchus americanus Buchanan	2-Oct-11	1	2	3
	Hylurgops piniplex (Finch)	4-Sep-11	2	2	1
	Tychius sp.	1-Jun-11	2	2	4
	Tychius sp.	9-Jul-11	1	2	2
	Tychius sp.	4-Sep-11	2	6	1
	Tychius sp.	5-Sep-11	2	2	1
Dryopidae	Helichus striatus LeConte	4-Sep-11	2	2	2
Dytiscidae	Agabus ambigus Say	1-Jun-11	2	1	1
	Agabus griseipennis LeConte	1-Jun-11	2	1	1
	Colymbetes exaratus incognitus Zimmerman	4-Sep-11	2	6	1
	Coptotomus longulus LeConte	1-Jun-11	2	1	3
	Coptotomus longulus LeConte	12-Jun-11	12	2	1
	Coptotomus longulus LeConte	4-Sep-11	2	1	2
	Hygrotus impressopunctatus (Schaller)	14-Jun-11	2	7	2
	Laccophilus maculosus decipiens LeConte	1-Jun-11	1	1	1
	Laccophilus maculosus decipiens LeConte	12-Jun-11	11	2	1
	Neoporus dimidiatus Gemminger & Harold	1-Jun-11	2	6	3
	Neoporus dimidiatus Gemminger & Harold	4-Sep-11	2	1	1
	Rhantus gutticollis (Say)	1-Jun-11	2	1	4
	Rhantus gutticollis (Say)	7-Aug-11	1	7	1
Elmidae	Optioservus sp.	7-Aug-11	1	7	3
	Optioservus sp.	4-Sep-11	1	10	145
	Optioservus castanipennis (Fall)	1-Jun-11	2	2	4
Hydrophilidae	Anacena sp.	6-Aug-11	2	2	4
	Cercyon sp.	31-Jul-10	2	4	1
	Cercyon sp.	16-Aug-10	12	2	1
	Cercyon sp.	12-Jun-10	2	2	1
	Cymbiodyta sp.	7-Aug-11	1	2	4
	Hydrobius fuscipes Linnaeus	1-Jun-11	1	1	1
	Hydrobius fuscipes Linnaeus	4-Sep-11	2	2	6
	Tropisternus sublaevis LeConte	1-Jun-11	2	1	9
	Tropisternus sublaevis LeConte	4-Sep-11	2	2	1
Lampyridae	Pyropyga minuta LeConte	12-Jun-11	11	2	1
	Pyropyga minuta LeConte	6-Aug-11	2	2	4
	Pyropyga minuta LeConte	7-Aug-11	1	2	2
	Pyropyga minuta LeConte	7-Aug-11	2	2	5
Meloidae	Epicauta stuarti LeConte	6-Aug-11	2	2	3
	Epicauta pensylvanica (De Geer)	4-Sep-11	2	2	1

		Epicauta pensylvanica (De Geer)	5-Sep-11	11	2	2
		Epicauta pensylvanica (De Geer)	2-Oct-11	2	2	1
		Zontis sayi Wickham	6-Jun-09	1	2	5
		Zonitis sayi Wickham	4-Sep-11	2	2	1
	Melyridae	sp.	12-Jun-11	1	2	3
		Collops sp.	12-Jun-11	11	2	1
		Collops sp.	9-Jul-11	2	2	1
		Collops bipunctatus (Say)	6-Aug-11	2	2	3
		Collops bipunctatus (Say)	6-Aug-11	11	2	1
		Collops bipunctatus LeConte	4-Sep-11	2	2	1
		Malachius aeneus (Linnaeus)	1-Jun-11	2	2	1
		Malachius aeneus (Linnaeus)	12-Jun-11	1	2	3
		Malachius aeneus (Linnaeus)	14-Jun-11	2	4	1
		Trichochrous sp.	7-Aug-11	1	2	4
	Mordellidae	Mordella sp.	29-May-10	1	2	1
		Mordellistena sp.	29-May-10	2	2	1
		Mordellistena sp.	2-Jun-10	2	2	1
		Mordellistena sp.	6-Jun-10	11	2	1
		Mordellistena sp.	6-Jun-10	12	2	1
		Mordellistena sp.	28-Jul-10	2	4	1
		Mordellistena sp.	12-Jun-11	2	2	5
	Nitidulidae	Epuraea sp.	1-Jul-09	2	2	1
		Carpophilus sp.	12-Jun-11	1	2	2
		Carpophilus sp.	12-Jun-11	2	2	1
	Orsodacnidae	Orsodacne atra (Ahrens)	29-May-09	2	2	1
		Orsodacne atra (Ahrens)	4-Sep-11	2	2	1
		Orsodacne atra (Ahrens)	22-Sep-11	2	4	1
	Phalacridae	sp.	2-Jun-10	11	2	1
		sp.	5-Sep-10	2	4	1
		sp.	1-Jun-11	11	2	1
		sp.	14-Jun-11	2	4	1
		sp.	6-Aug-11	2	2	1
		sp.	7-Aug-11	1	2	1
		sp.	4-Sep-11	1	2	1
		sp.	2-Oct-11	2	2	1
	Scarabaeidae	sp.	1-Jun-11	2	2	1
		Euphoria inda (Linnaeus)	6-Aug-11	11	2	1
	Scraptiidae	Anaspis sp.	7-Aug-11	1	2	1
	Staphylinidae	sp.	1-Jun-11	2	2	1
		sp.	1-Jun-11	2	2	2
		sp.	12-Jun-11	11	2	1
		sp.	5-Sep-11	2	2	1
	Tenebrionidae	Eleodes carbonaria obsoleta (Say)	5-Sep-11	11	2	2
Diptera	*Acroceridae	sp.	29-May-10	11	2	1
		*Ogcodes pallidipennis Loew	14-Jun-11	2	4	1
		Pterodontia misella Osten Sacken	10-Jun-11	11	2	1
	Agromyzidae	sp.	7-Aug-11	11	4	2
	Anthomyiidae	sp.	10-Jul-11	11	4	1
		sp.	7-Aug-11	1	2	1
		sp.	7-Aug-11	2	4	1

sp.	18-Sep-11	2	2	1
sp	19-Sep-11	1	2	1
sp.	14-Jun-11	11	2	1
sp.	7-Aug-11	11	4	14
sp.	6-Aug-11	1	2	1
Acrostilpna sp.	5-Sep-11	2	2	1
Calythea sp.	5-Sep-11	11	2	1
Calythea pratincola (Panzer)	2-Oct-11	2	2	1
Calythea pratincola (Panzer)	14-Jun-11	2	4	1
Calythea pratincola (Panzer)	14-Jun-11	11	2	8
Calythea pratincola (Panzer)	9-Jul-11	1	2	5
Calythea micropteryx Thompson	9-Jul-11	2	2	6
Calythea micropteryx Thompson	6-Aug-11	2	2	9
Calythea micropteryx Thompson	7-Aug-11	1	2	1
Calythea micropteryx Thompson	7-Aug-11	1	4	64
Calythea micropteryx Thompson	7-Aug-11	2	2	5
Calythea micropteryx Thompson	7-Aug-11	2	4	6
Calythea micropteryx Thompson	7-Aug-11	2	4	3
Calythea micropteryx Thompson	12-Jun-11	11	2	3
Calythea micropteryx Thompson	9-Jul-11	2	2	2
Calythea micropteryx Thompson	10-Jul-11	11	2	1
Chelisia elegans Stein	12-Jun-11	1	2	1
Chelisia elegans Stein	9-Jul-11	2	2	2
Chelisia elegans Stein	10-Jul-11	11	2	1
Chelisia elegans Stein	6-Aug-11	1	2	1
Chelisia elegans Stein	4-Sep-11	1	2	1
Circia tinctipennis	22-Sep-10	2	3	1
Coenosopia prima Malloch	6-Aug-11	1	2	3
Crinurina sp.	6-Aug-11	1	2	1
Crinurina sp.	1-Jun-11	1	2	1
Eummesomyia sp.	10-Jul-11	2	2	1
Eummesomyia sp.	2-Oct-11	11	2	3
Eummesomyia sp.	9-Jul-11	2	2	1
Eustalomyia sp.	12-Jul-10	11	2	1
Eustalomyia sp.	14-Jun-11	11	2	1
Eustalomyia sp.	10-Jul-11	1	2	2
Eustalomyia vittipes Zetterstedt	15-Jul-10	2	2	1
Fuscillia sp.	6-Aug-11	1	2	3
Fuscillia sp.	6-Aug-11	11	2	1
Fuscillia sp.	4-Sep-11	1	2	1
Fuscillia sp.	5-Sep-11	11	2	1
Fuscillia sp.	18-Sep-11	2	2	1
Fuscillia sp.	29-May-10	1	2	3
Fuscillia sp.	22-Sep-10	11	4	38
Fuscillia sp.	1-Jun-11	11	2	1
Hydrophoria sp.	1-Jun-11	2	2	2
Hydrophoria sp.	12-Jun-11	1	2	4
Hydrophoria sp.	14-Jun-11	2	2	1
Hydrophoria sp.	14-Jun-11	2	4	20
Hydrophoria sp.	9-Jul-11	1	2	9

Hydrophoria sp.	9-Jul-11	11	2	21
Hydrophoria sp.	10-Jul-11	2	2	7
Hydrophoria sp.	10-Jul-11	2	4	8
Hydrophoria sp.	10-Jul-11	11	2	14
Hydrophoria sp.	31-Jul-11	2	3	1
Hydrophoria sp.	6-Aug-11	1	2	31
Hydrophoria sp.	6-Aug-11	2	2	2
Hydrophoria sp.	6-Aug-11	2	6	3
Hydrophoria sp.	7-Aug-11	1	2	20
Hydrophoria sp.	7-Aug-11	2	2	7
Hydrophoria sp.	7-Aug-11	2	4	10
Hydrophoria sp.	7-Aug-11	11	2	5
Hydrophoria sp.	4-Sep-11	2	4	8
Hydrophoria sp.	5-Sep-11	1	2	1
Hydrophoria sp.	5-Sep-11	2	2	5
Hydrophoria sp.	5-Sep-11	2	4	2
Hydrophoria sp.	18-Sep-11	2	2	2
Hydrophoria sp.	18-Sep-11	11	2	4
Hydrophoria sp.	2-Oct-11	1	2	5
Hydrophoria sp.	2-Oct-11	2	2	2
Hydrophoria sp.	2-Oct-11	2	2	3
Hydrophoria sp.	18-Sep-11	11	2	6
Hydrophoria sp.	6-Aug-11	2	2	1
Hydrophoria sp.	7-Aug-11	11	2	1
Hydrophoria sp.	18-Sep-11	11	4	2
Hydrophoria ambigua Malloch	12-Jun-11	2	6	1
Hydrophoria ambigua Malloch	14-Jun-11	2	2	1
Hydrophoria ambigua Malloch	29-May-10	11	2	1
Hydrophoria ambigua Malloch	14-Jun-11	2	2	1
*Hydrophoria borealis Malloch	9-Jul-11	11	2	2
Hydrophoria flavohaltera Malloch	10-Jul-11	1	2	1
Hydrophoria flavohaltera Malloch	10-Jul-11	11	4	1
Hydrophoria flavohaltera Malloch	6-Aug-11	11	2	1
Hydrophoria flavohaltera Malloch	7-Aug-11	1	2	1
Hydrophoria flavohaltera Malloch	14-Jun-11	2	2	1
Hydrophoria flavohaltera Malloch	7-Aug-11	2	2	2
Hydrophoria flavohaltera Malloch	31-Jul-11	2	2	1
*Hydrophoria frontata (Zetterstedt)	14-Jun-11	2	4	4
*Hydrophoria frontata (Zetterstedt)	12-Jun-11	11	2	1
Hydrophoria subpellucida Malloch	6-Aug-11	11	2	1
Hydrophoria subpellucida Malloch	6-Aug-11	1	2	3
Hydrophoria subpellucida Malloch	7-Aug-11	2	2	2
Hydrophoria subpellucida Malloch	18-Sep-11	1	3	5
Hydrophoria subpellucida Malloch	6-Aug-11	11	2	1
Hydrophoria subpellucida Malloch	7-Aug-11	1	2	11
Hydrophoria subpellucida Malloch	7-Aug-11	1	2	1
Hydrophoria uniformis Malloch	6-Aug-11	11	4	3
Hydrophoria uniformis Malloch	7-Aug-11	11	2	1
Hydrophoria uniformis Malloch	7-Aug-11	1	2	1
Hydrophoria uniformis Malloch	7-Aug-11	11	4	2

	Hydrophoria uniformis Malloch	6-Aug-11	11	4	5
	Hydrophoria uniformis Malloch	14-Jun-11	2	2	5
	Hydrophoria uniformis Malloch	5-Sep-10	2	2	1
	Hydrophoria uniformis Malloch	6-Aug-11	11	2	2
	*Hydrophoria wiezejskii Mik	5-Sep-11	1	2	1
	Hylemyza partita (Meigan)	18-Sep-11	2	2	5
	Hylemyza partita (Meigan)	2-Oct-11	2	2	5
	Hylemyza partita (Meigan)	29-May-10	11	2	1
	Hylemyza partita (Meigan)	1-Jun-11	2	2	1
	Hylemyza partita (Meigan)	2-Oct-11	2	2	1
	Leucophora fusca Hockett	9-Jul-11	1	2	1
	Leucophora fusca Hockett	10-Jul-11	11	2	1
	Paregle sp.	25-Jul-10	11	2	1
	Paregle sp.	12-Jul-10	11	2	1
	Paregle sp.	14-Jun-11	11	2	1
	Pegomya palposa Stein	14-Jun-11	11	2	1
	Pegoplata palposa Stein	6-Aug-11	1	2	3
	Pegoplata palposa Stein	6-Aug-11	2	2	2
	Pegoplata palposa Stein	7-Aug-11	1	2	1
	Pegoplata palposa Stein	7-Aug-11	11	2	2
	Pegoplata palposa Stein	7-Aug-11	11	2	1
	Pegoplata palposa Stein	18-Sep-11	2	2	1
	Pegoplata palposa Stein	14-Jun-11	11	2	1
	Pegoplata palposa Stein	9-Jul-11	2	4	1
	Pegoplata palposa Stein	6-Aug-11	1	2	3
Asilidae	Asilus sp.	6-Aug-11	11	2	2
	Asilus sp.	4-Sep-11	2	2	1
	Asilus sp.	18-Sep-11	2	2	1
	Backomyia limpidipennis Wilcox	9-Jul-11	1	2	3
	Backomyia limpidipennis Wilcox	10-Jul-11	11	4	2
	Backomyia limpidipennis Wilcox	7-Aug-11	1	2	2
	Backomyia limpidipennis Wilcox	7-Aug-11	11	4	2
	Leptogaster alticola Kieffer	9-Jul-11	1	2	3
	Leptogaster alticola Kieffer	9-Jul-11	2	2	1
	Leptogaster alticola Kieffer	4-Sep-11	2	2	1
	Leptogaster alticola Kieffer	5-Sep-11	2	2	1
	Leptogaster arida Cole	12-Jun-11	1	2	2
	Leptogaster arida Cole	12-Jun-11	2	2	1
	Leptogaster arida Cole	10-Jul-11	11	2	1
	Leptogaster arida Cole	4-Sep-11	2	2	1
	Machimus prairiensis Tucker	9-Jul-11	11	2	5
Bibionidae	Bibio sp.	1-Jun-11	2	2	3
	Bibio albipennis Say	12-Jun-11	1	2	6
	Dilophus sp.	4-Sep-11	2	4	7
Bombyliidae	Exprosopa decora Loew	6-Aug-11	2	2	1
	Exprosopa decora Loew	10-Jul-11	2	2	2
	Stoechus sp.	7-Aug-11	2	4	4
	Poecilanthrax alcyon Say	7-Aug-11	11	4	5
	Villa sp.	7-Aug-11	11	4	2
Calliphoridae	Cochliomya hominivorax Fabricius	6-Aug-11	2	2	1

	Lucilia silvarum (Meigan)	9-Jul-11	1	2	1
	Lucilia silvarum (Meigan)	10-Jul-11	11	4	3
	Lucilia silvarum (Meigan)	6-Aug-11	2	2	3
	Lucilia silvarum (Meigan)	7-Aug-11	2	2	1
	Lucilia silvarum (Meigan)	7-Aug-11	2	4	6
	Lucilia silvarum (Meigan)	7-Aug-11	11	2	1
	Phormia regina (Meigan)	10-Jul-11	11	4	9
	Pollenia pediculata Macquart	6-Aug-11	2	2	1
	Pollenia pediculata Macquart	7-Aug-11	2	4	2
	Protophormia terranovae Robineau-Desvoidy	12-Jun-11	2	2	1
	Protophormia terranovae Robineau-Desvoidy	10-Jul-11	11	4	1
	Protophormia terranovae Robineau-Desvoidy	7-Aug-11	11	4	1
Ceratopogonidae	sp.	7-Aug-11	1	2	2
	sp.	9-Jul-11	2	4	2
	sp.	9-Jul-11	1	2	2
	sp.	7-Aug-11	2	2	2
	Atrichopogon fuscus Coquillett	14-Jun-11	11	2	35
	Atrichopogon fuscus Coquillett	9-Jul-11	2	2	3
	Atrichopogon fuscus Coquillett	7-Aug-11	2	4	17
	Culicoides sp.	7-Aug-11	6	2	1
Chironomidae	sp.	1-Jun-11	2	2	3
	sp.	12-Jun-11	11	2	3
	sp.	14-Jun-11	2	4	9
	sp.	9-Jul-11	2	7	1
	sp.	10-Jul-11	2	2	2
	sp.	10-Jul-11	11	4	4
	sp.	7-Aug-11	2	7	1
	sp.	7-Aug-11	1	2	5
	sp.	7-Aug-11	2	4	6
	sp.	4-Sep-11	11	4	14
	sp.	2-Oct-11	2	2	3
	Chironomus sp.	7-Aug-11	2	10	2
	Paraphaenocladus sp.	4-Sep-11	2	10	1
Chloropidae	sp.	14-Jun-11	1	2	3
	sp.	4-Sep-11	2	4	1
	Atropina sp. or near	12-Jun-11	2	2	1
	Chlorops sp.	9-Jul-11	2	2	1
	Chlorops sp.	7-Aug-11	2	2	1
	Chlorops sp.	10-Jul-11	2	4	2
	Chlorops sp.	9-Jul-11	1	2	6
	Meromyza sp.	9-Jul-11	2	2	2
	Meromyza sp.	10-Jul-11	2	2	8
	Meromyza sp.	7-Aug-11	2	4	6
	Meromyza sp.	7-Aug-11	1	2	3
	Meromyza sp.	2-Oct-11	2	2	3
	Meromyza sp.	9-Jul-11	2	2	14
	Meromyza sp.	10-Jul-11	1	2	1
	Meromyza sp.	6-Aug-11	2	4	1

	Oscellia sp.	7-Aug-11	11	2	11
	Oscellia sp.	7-Aug-11	1	2	29
	Oscellia sp.	9-Jul-11	2	2	16
	Oscellia sp.	9-Jul-11	2	4	6
	Oscellia sp.	1-Jun-11	1	2	1
	Pseudopachychaeta sp.	12-Jun-11	2	2	6
	Pseudopachychaeta sp.	14-Jun-11	1	1	1
	Thaumatomyia sp.	9-Jul-11	2	4	1
	Thaumatomyia sp.	10-Jul-11	1	2	2
	Thaumatomyia sp.	10-Jul-11	2	2	1
	Thaumatomyia sp.	10-Jul-11	11	2	1
	Thaumatomyia sp.	7-Aug-11	2	2	3
	Thaumatomyia sp.	2-Oct-11	2	2	1
	Thaumatomyia sp.	2-Oct-11	11	2	1
	Thaumatomyia sp.	7-Aug-11	1	2	32
	Thaumatomyia sp.	7-Aug-11	2	4	1
	Thaumatomyia sp.	2-Oct-11	11	2	23
Conopidae	*Phytocephala texana Williston	7-Aug-11	11	4	1
	Theophora propinqua (Adams)	10-Jul-11	11	4	4
	Theophora propinqua (Adams)	7-Aug-11	11	4	9
	Theophora occidentis (Walker)	10-Jul-11	11	4	2
	Theophora occidentis (Walker)	6-Aug-11	2	4	1
	Theophora occidentis (Walker)	7-Aug-11	2	4	2
	Theophora occidentis (Walker)	7-Aug-11	11	4	2
	Theophora occidentis (Walker)	2-Oct-11	2	2	1
	Zodion fulvifrons Say	10-Jul-11	11	4	6
	Zodion fulvifrons Say	7-Aug-11	2	4	5
	Zodion fulvifrons Say	4-Sep-11	2	2	1
Culicidae	sp.	7-Aug-11	1	2	1
	sp.	14-Jun-11	11	2	4
	Aedes sp.	14-Jun-11	2	4	1
*Diopsidae	*Sphyracephala subbifasciata Fitch	12-Jun-11	2	4	1
	Dixa sp.	14-Jun-11	2	4	3
Dixidae	sp.	14-Jun-11	2	7	1
Dolichopidae	sp.	10-Jul-11	11	2	3
	sp.	2-Oct-11	2	2	8
	sp.	10-Jul-11	2	2	2
	sp.	4-Sep-11	11	4	1
	sp.	25-Jul-10	2	2	1
	Diaphous sp.	5-Sep-11	2	2	1
	Paraclius sp.	12-Sep-11	2	2	2
	Dolichopus sp.	12-Jun-11	2	2	9
	Dolichopus curpinus (Wiedemann)	9-Jul-11	1	2	1
	Hercostomus sp.	9-Jul-11	1	2	1
	Rhapium sp.	6-Aug-11	2	2	1
Empedidae	sp.	7-Aug-11	2	4	1
	sp.	7-Aug-11	1	2	12
	sp.	12-Jun-11	11	4	4
	sp.	14-Jun-11	2	2	3
	sp.	14-Jun-11	11	2	1

	sp.	14-Jun-11	11	2	1
Ephydridae	Athyroglossa sp. or near	15-Jul-10	11	2	1
	Callinapaea sp. or near	2-Oct-11	2	2	2
	Calocoenia sp.	9-Jul-11	2	2	1
	Cirrula sp.	14-Jul-11	2	4	1
	Coenia sp.	14-Jun-11	2	1	1
	Coenia sp.	25-Jul-10	1	2	1
	Coenia sp.	15-Jul-10	12	2	1
	Coenia sp.	10-Jul-11	11	2	1
	Ephydra sp.	3-Oct-11	11	2	6
	Ephydra (Hydropyrus) sp.	9-Jul-11	1	2	1
	Mosilius sp.	9-Jul-11	2	2	1
	Mosillus sp.	2-Oct-11	2	2	1
	Mosillus sp. or near	6-Aug-11	2	2	1
	Mosillus sp. or near	7-Aug-11	11	2	5
	Notiphila sp.	6-Aug-11	1	2	1
	Notiphila sp.	12-Jun-11	11	2	12
	Notiphila sp.	7-Aug-11	2	2	1
	Notiphila sp.	10-Jul-11	1	2	4
	Notiphila sp.	18-Jul-11	11	2	11
	Notiphila (Dichaeta) sp.	10-Jul-11	11	4	1
	Notiphila (Dichaeta) sp.	6-Aug-11	11	2	12
	Notiphila (Notiphila) sp.	2-Oct-11	1	2	1
	Notiphila (Notiphila) sp.	6-Aug-11	2	2	19
	Ochthera sp.	7-Aug-11	2	2	6
	Ochthera sp.	7-Aug-11	11	4	1
	Oedenops nuda (Coquette)	7-Aug-11	1	2	2
	Paralimna sp.	7-Aug-11	1	2	1
	Paralimna sp.	2-Oct-11	2	2	2
	Paralimna sp.	6-Aug-11	2	2	2
	Parylimna sp.	7-Aug-11	11	2	1
	Parylimna sp.	5-Sep-11	1	2	2
	Paralimna (Parylimna) sp.	18-Sep-11	2	2	4
	Paralimna (Parylimna) sp.	2-Oct-11	1	2	6
	Paralimna (Parylimna) sp.	2-Oct-11	1	2	1
	Paralimna (Parylimna) sp.	25-Jul-11	2	2	1
	Paralimna (Parylimna) sp.	7-Aug-11	1	2	1
	Parylimna (Parylimna) sp.	5-Sep-11	1	2	1
	Parylimna (Parylimna) sp.	5-Sep-11	2	2	1
	Parydra (Parydra) sp.	2-Oct-11	11	2	2
	Parydra (P.) sp.	6-Aug-11	2	2	45
	Pelina sp.	2-Oct-11	2	2	1
	Pelina sp.	12-Jun-11	2	2	1
	Pelina sp.	9-Jul-11	2	2	1
	Pelina sp.	10-Jul-11	2	2	1
	*Philotelma alaskense Becker	7-Aug-11	11	2	2
	Scatophila sp.	29-Sep-10	2	2	1
	Scatophila sp.	7-Aug-11	1	2	1
	Scatophila sp.	5-Sep-11	2	2	1
	Scatophila sp.	12-Jul-11	1	2	1

	Scatophila sp.	12-Jul-11	2	2	1
	Scatophila sp.	2-Oct-11	2	2	1
	Rhysophora robusta Cresson	2-Oct-11	11	2	1
Heleomyzidae	Heleomyza sp.	10-Jul-11	11	2	4
	Pseudoleria sp.	14-Jun-11	2	4	2
	Pseudoleria sp.	6-Aug-11	2	2	1
	Pseudoleria sp.	7-Aug-11	12	2	1
	Pseudoleria sp.	18-Sep-11	2	2	1
	Pseudoleria sp.	2-Oct-11	2	2	1
	Pseudoleria sp.	12-Jun-11	2	2	5
	Pseudoleria sp.	7-Aug-11	1	2	5
	Pseudoleria sp.	2-Oct-11	1	2	6
Lauxanidae	sp.	15-Jul-11	11	4	1
	sp.	7-Aug-11	11	4	1
Lonchopteridae	Lonchoptera furcata Fallen	12-Jun-11	2	2	2
	Lonchoptera furcata Fallen	9-Jul-11	11	2	7
	Lonchoptera furcata Fallen	2-Oct-11	1	2	2
Micropizidae	Compsobata pallipes (Say)	14-Jun-11	2	2	2
	Compsobata pallipes (Say)	9-Jul-11	2	4	1
	Compsobata pallipes (Say)	10-Jul-11	2	2	3
Milichidae	Madiza glabra Fallen	9-Jul-11	1	2	3
	Madiza glabra Fallen	9-Jul-11	2	2	2
	Madiza glabra Fallen	31-Jul-10	11	2	1
	Madiza glabra Fallen	6-Aug-11	11	4	4
	Madiza glabra Fallen	7-Aug-11	11	2	1
	Madiza glabra Fallen	7-Aug-11	1	2	1
	Madiza glabra Fallen	4-Sep-11	2	2	1
	Madiza glabra Fallen	5-Sep-11	11	2	1
Muscidae	spp.	14-Jun-11	2	2	246
	Caricea erythrocerata Robineau-Desvoidy	25-Jul-10	2	2	1
	Caricea erythrocerata Robineau-Desvoidy	12-Jun-11	2	4	1
	Caricea erythrocerata Robineau-Desvoidy	10-Jul-11	2	2	1
	Caricea erythrocerata Robineau-Desvoidy	6-Aug-11	1	2	1
	Caricea erythrocerata Robineau-Desvoidy	6-Aug-11	11	4	1
	Caricea erythrocerata Robineau-Desvoidy	5-Sep-11	2	4	2
	Haemotobia irritans (Linnaeus)	18-Sep-11	2	2	1
	Helina negropennis (Walker)	8-Aug-09	2	2	1
	Lispe sp.	10-Jul-11	2	2	1
	Lispe sp.	10-Jul-11	11	4	20
	Lispe sp.	12-Jun-11	11	4	6
	Lispe sp.	5-Jun-11	1	2	2
	Stomoxys calcitrans (Linnaeus)	14-Jun-11	1	2	1
	Stomoxys calcitrans (Linnaeus)	10-Jul-11	11	4	12
	Stomoxys calcitrans (Linnaeus)	7-Aug-11	11	4	4
	Stomoxys calcitrans (Linnaeus)	4-Sep-11	2	2	1
	Thricops sp	10-Jul-11	2	4	1
Mycetophilidae	Diadacidia sp.	2-Jun-10	12	2	1
	sp.	12-Jun-11	1	2	1
	sp.	12-Jun-11	2	2	4
	sp.	14-Jun-11	2	4	1

	sp.	9-Jul-11	1	2	1
	sp.	7-Aug-11	2	4	4
	sp.	2-Oct-11	2	2	1
Phoridae	sp.	14-Jun-11	11	2	1
	sp.	7-Aug-11	11	4	2
	<i>Diploneura funebris</i> (Meigen)	10-Oct-10	2	3	1
	* <i>Megaselia longiseta</i> Wood	6-Jun-10	2	3	2
	* <i>Megaselia</i> n. sp.	10-Oct-10	2	3	1
	* <i>Megaselia</i> n. sp. near <i>folliculorum</i>	19-Jun-09	2	3	2
Pipunculidae	<i>Tomosvaryella</i> sp.	14-Jun-11	2	4	1
	<i>Tomosvaryella</i> sp.	9-Jul-11	2	2	1
	<i>Tomosvaryella</i> sp.	10-Jul-11	11	4	4
	<i>Tomosvaryella</i> sp.	7-Aug-11	2	4	1
	<i>Tomosvaryella</i> sp.	2-Oct-11	2	2	1
*Psilidae	* <i>Loxocera fumipennis</i> Coquillett	7-Aug-11	2	2	1
Ptychopteridae	* <i>Ptychoptera</i> n. sp.	1-Jun-11	11	2	5
	* <i>Ptychoptera</i> n. sp.	12-Jun-11	11	2	4
	* <i>Ptychoptera</i> n. sp.	10-Jul-11	11	4	2
	* <i>Ptychoptera</i> n. sp.	9-Jul-11	1	2	1
	* <i>Ptychoptera</i> n. sp.	7-Aug-11	1	2	3
	* <i>Ptychoptera</i> n. sp.	7-Aug-11	2	4	1
Rhagionidae	<i>Chrysophilus falvibarbis</i> Adams	9-Jul-11	11	2	1
	<i>Chrysophilus falvibarbis</i> Adams	5-Sep-10	2	2	7
	<i>Chrysophilus falvibarbis</i> Adams	12-Jul-10	2	4	1
	<i>Chrysophilus falvibarbis</i> Adams	25-Jul-10	11	2	1
	<i>Chrysophilus falvibarbis</i> Adams	22-Sep-10	1	2	3
Sarcophagidae	sp.	2-Oct-11	1	2	3
	sp.	12-Jun-11	2	2	1
	sp.	2-Oct-11	1	2	2
	<i>Neosarcophaga</i> sp.	7-Aug-11	1	2	1
	<i>Ravinia</i> sp.	10-Jul-11	2	3	1
	<i>Ravinia</i> sp.	12-Jul-11	11	2	5
	<i>Ravinia</i> sp.	25-Jul-11	11	2	1
	<i>Sarcophaga</i> sp. or near	6-Aug-11	2	4	3
	<i>Sarcophaga</i> sp.	10-Jul-11	1	2	27
	<i>Sarcophaga</i> sp.	6-Jun-10	1	2	1
	<i>Sarcophaga</i> sp.	12-Jun-11	1	2	1
	<i>Sarcophaga</i> sp.	7-Aug-11	2	4	2
Scathophagidae	<i>Ceratinostoma</i> cf. <i>ostiorum</i> (Curtis)	7-Aug-11	1	2	1
	<i>Cordillura</i> sp.	12-Jun-11	1	2	1
	<i>Cordillura</i> (<i>Scoliaphieps</i>) cf. <i>ustulata</i> Becker	14-Jun-11	1	2	1
	<i>Scathophaga stercoraria</i> Linnaeus	9-Jul-11	2	4	4
	<i>Scathophaga stercoraria</i> Linnaeus	7-Aug-11	2	4	2
	<i>Scathophaga stercoraria</i> Linnaeus	7-Aug-11	2	2	2
	<i>Scathophaga stercoraria</i> Linnaeus	6-Jun-10	11	4	7
	<i>Stenotania rubiventris</i> (Maquart)	22-Sep-10	1	2	1
Sciariidae	<i>Schwenkfeldina</i> sp.	7-Aug-11	2	4	1
	<i>Schwenkfeldina</i> sp.	12-Jun-11	11	2	23
Sciomyzidae	<i>Dictya</i> sp.	12-Jun-11	1	2	1
	<i>Dictya</i> sp.	12-Jun-11	2	2	3

	Dictya sp.	14-Jun-11	2	4	1
	Dictya sp.	9-Jul-11	1	2	1
	Dictya sp.	18-Sep-11	1	2	1
Sepsidae	sp.	14-Jun-11	2	2	2
	sp.	2-Oct-11	2	2	3
	Saltella sphondylli (Schank)	9-Jul-11	2	2	2
	Saltella sphondylli (Schank)	9-Jul-11	1	2	68
	Saltella sphondylli (Schank)	10-Jul-11	2	2	18
	Saltella sphondylli (Schank)	14-Jun-11	2	4	1
	Saltella sphondylli (Schank)	10-Jul-11	11	2	1
	Saltella sphondylli (Schank)	7-Aug-11	11	4	427
	Saltella sphondylli (Schank)	2-Oct-11	2	2	4
	Sepsidimorpha sp.	7-Aug-11	2	2	2
	Sepsidimorpha sp.	22-Sep-10	1	2	4
	Sepsidimorpha sp.	7-Aug-11	2	4	1
	Sepsidimorpha sp.	7-Aug-11	2	4	7
	Themira sp.	2-Oct-11	2	2	25
Simuliidae	Simulium sp.	7-Aug-11	11	4	6
	Simulium sp.	7-Aug-11	2	4	1
	Simulium piperi Dyar and Shannon	1-Jun-11	1	10	30
Sphaeroceridae	Leptocera sp.	12-Jun-11	2	1	15
Stratiomyidae	sp.	7-Aug-11	2	2	1
	sp.	2-Oct-11	2	2	2
	Anoplodonta nigrirostris Loew	4-Sep-11	2	2	7
	Euparyphus mutabilis Adams	31-Jul-10	2	4	1
	Euparyphus mutabilis Adams	12-Jun-11	2	2	1
	Euparyphus mutabilis Adams	9-Jul-11	2	1	1
	Euparyphus mutabilis Adams	10-Jul-11	11	2	9
	Euparyphus mutabilis Adams	6-Aug-11	1	2	1
	Euparyphus mutabilis Adams	6-Aug-11	2	2	1
	Euparyphus mutabilis Adams	6-Aug-11	11	2	1
	Euparyphus mutabilis Adams	7-Aug-11	1	2	1
	Euparyphus mutabilis Adams	7-Aug-11	2	2	1
	Euparyphus mutabilis Adams	7-Aug-11	2	4	4
	Euparyphus mutabilis Adams	18-Sep-11	2	2	1
	Heterodiscus binotatus (Linnaeus)	6-Aug-11	2	2	1
	Heterodiscus binotatus (Linnaeus)	4-Sep-11	2	2	1
	Nemotelus sp.	31-Jul-10	2	4	1
	Nemotelus sp.	7-Aug-11	11	4	1
	Nemotelus beameri James	6-Aug-11	2	2	1
	Nemotelus beameri James	6-Aug-11	11	2	1
	Sargus cuprarius (Linnaeus)	7-Aug-11	11	4	1
	Zabrachia sp.	12-Jun-11	2	2	1
Syrphidae	sp.	7-Aug-11	2	2	1
	sp.	7-Aug-11	11	4	4
	sp.	7-Aug-11	2	4	7
	sp.	12-Jun-11	11	4	24
	sp.	14-Jun-11	1	2	3
	sp.	14-Jun-11	2	4	1
	sp.	7-Aug-11	11	2	4

<i>Allographa exotica</i> Wiedemann)	9-Sep-09	2	4	1
<i>Copestylum</i> sp.	31-Jul-10	2	4	1
<i>Copestylum caudatum</i> Curran	4-Sep-09	2	2	1
<i>Copestylum caudatum</i> Curran	10-Jul-10	2	3	1
<i>Copestylum caudatum</i> Curran	25-Jul-10	2	3	1
<i>Copestylum caudatum</i> Curran	25-Jul-10	11	2	1
<i>Copestylum caudatum</i> Curran	10-Oct-10	2	3	1
<i>Copestylum caudatum</i> Curran	31-Jul-10	2	4	1
<i>Copestylum fasciata</i> Macquart	12-Jul-10	12	2	1
<i>Copestylum fasciata</i> Macquart	15-Jul-10	11	2	1
<i>Copestylum fasciata</i> Macquart	10-Oct-10	11	2	1
<i>Copestylum satr</i> Osten Sacken	12-Jun-09	2	4	1
<i>Copestylum satr</i> Osten Sacken	1-Jul-09	2	2	1
<i>Copestylum satr</i> Osten Sacken	8-Aug-09	2	4	2
<i>Copestylum vittatum</i> Thompson	8-Aug-09	2	4	1
<i>Eristalis hirta</i> (Loew)	23-Aug-10	2	2	1
<i>Eumerus</i> sp.	11-Jul-09	2	2	1
<i>Eumerus</i> sp.	6-Jun-10	1	2	2
<i>Eumerus</i> sp.	12-Jun-11	1	2	1
<i>Eumerus</i> sp.	12-Jun-11	11	2	9
<i>Eumerus</i> sp.	14-Jun-11	11	2	5
<i>Eumerus</i> sp.	10-Jul-11	11	4	1
<i>Eumerus</i> sp.	6-Aug-11	2	2	1
<i>Eupodes</i> sp.	8-May-09	2	2	1
<i>Eupodes</i> sp.	12-Jun-09	2	3	1
<i>Eupodes</i> sp.	26-Sep-09	2	3	1
<i>Eupodes</i> sp.	27-Jun-09	9	2	1
<i>Eupodes</i> sp.	10-Jul-11	11	4	1
<i>Eupodes</i> sp.	6-Aug-11	2	2	1
<i>Eupeodes</i> sp.	7-Aug-11	11	4	4
<i>Eupeodes volucris</i> Osten Sacken	31-Jul-10	2	4	1
<i>Helophilus latifrons</i> Loew	5-Jun-09	2	2	1
<i>Helophilus latifrons</i> Loew	4-Sep-09	2	2	1
<i>Helophilus latifrons</i> Loew	25-Jul-10	11	2	3
<i>Neosciasia metallica</i> (Williston)	27-Jun-09	6	2	1
<i>Neosciasia metallica</i> (Williston)	29-May-10	11	2	1
<i>Neosciasia metallica</i> (Williston)	12-Jun-11	1	2	2
<i>Neosciasia metallica</i> (Williston)	12-Jun-11	2	2	2
<i>Neosciasia metallica</i> (Williston)	12-Jun-11	11	2	5
<i>Neosciasia metallica</i> (Williston)	14-Jun-11	11	2	7
<i>Neosciasia metallica</i> (Williston)	10-Jul-11	11	2	5
<i>Ocyptamus lemur</i> Osten Sacken	1-Aug-11	2	4	3
<i>Ocyptamus lemur</i> Osten Sacken	7-Aug-11	1	2	1
<i>Ocyptamus lemur</i> Osten Sacken	7-Aug-11	2	2	1
<i>Ocyptamus lemur</i> Osten Sacken	7-Aug-11	11	4	1
<i>Orthonevra</i> sp.	5-Jun-09	2	2	3
<i>Orthonevra</i> sp.	26-Jun-09	2	4	1
<i>Orthonevra</i> sp.	6-Jun-10	1	2	1
<i>Orthonevra</i> sp.	1-Jun-11	2	2	1
<i>Orthonevra</i> sp.	12-Jun-11	1	2	1

Orthonevra sp.	12-Jun-11	2	2	1
Orthonevra sp.	12-Jun-11	11	2	1
Orthonevra sp.	10-Jul-11	11	4	1
Orthonevra pictipennis (Loew)	1-Jul-09	2	2	3
Orthonevra robusta (Shannon)	26-Jun-09	2	4	1
Paragus bicolor (Fabricius)	9-Jul-11	2	2	1
Paragus bicolor (Fabricius)	9-Jul-11	11	4	2
Paragus bicolor (Fabricius)	10-Jul-11	11	4	2
Paragus bicolor (Fabricius)	18-Sep-11	2	2	1
Paragus variabilis Volkeroth	9-Jul-11	2	2	1
Paragus (Paragus) sp	5-Jun-11	2	2	2
Paragus (Paragus) sp.	26-Jun-11	2	4	1
Paragus (Paragus) sp.	6-Aug-11	2	2	1
Paragus (Paragus) sp.	7-Aug-11	2	2	1
Phytoptera sp. or near	31-Jul-10	2	4	1
Platychirus sp.	5-Jun-09	2	2	1
Platychirus sp.	5-Jun-09	2	3	1
Platychirus sp.	4-Aug-09	2	2	1
Platychirus sp.	8-Aug-09	2	2	1
Platychirus sp.	6-Jun-10	1	2	1
Platychirus sp.	12-Jul-10	1	2	1
Platychirus sp.	25-Jul-10	1	2	1
Platycheirus sp.	6-Aug-11	1	2	1
Platycheirus sp.	6-Aug-11	2	2	3
Platycheirus sp.	7-Aug-11	11	4	1
Platycheirus quadratus (Say)	5-Jun-09	1	2	1
Platycheirus quadratus (Say)	11-Jul-09	2	2	1
Platycheirus quadratus (Say)	8-Aug-09	2	2	1
Platycheirus quadratus (Say)	6-Aug-11	2	2	1
Platycheirus quadratus (Say)	7-Aug-11	1	2	3
Platycheirus immarginatus (Zetterstedt)	25-Jul-10	2	2	1
Platycheirus luteipennis (Curran)	1-Jul-09	2	2	1
Polydontomyia curvipes (Wiedeman)	6-Aug-11	2	2	3
Polydontomyia curvipes (Wiedeman)	6-Aug-11	11	2	1
Sphaerophoria contigua Macquart	18-Jul-09	2	4	1
Sphaerophoria contigua Macquart	23-Jul-09	2	4	1
Sphaerophoria contigua Macquart	4-Aug-09	2	3	1
Sphaerophoria contigua Macquart	7-Aug-11	2	4	3
Sphaerophoria contigua Macquart	7-Aug-11	11	4	2
Syrirta pipiens (Linnaeus)	8-Aug-09	2	2	2
Syrirta pipiens (Linnaeus)	6-Aug-11	11	2	2
Syrirta pipiens (Linnaeus)	4-Sep-11	2	2	1
Syrirta pipiens (Linnaeus)	18-Sep-11	2	2	1
Toxomerus marginalis (Say)	5-Jun-09	2	2	1
Toxomerus marginalis (Say)	8-Aug-09	2	4	2
Toxomerus marginalis (Say)	29-May-10	1	2	1
Toxomerus marginalis (Say)	29-May-10	11	2	1
Toxomerus marginalis (Say)	6-Jun-10	1	2	1
Toxomerus marginalis (Say)	31-Jul-10	2	3	1
Toxomerus marginatus (Say)	9-Jul-11	2	2	2

	Toxomerus marginalis (Say)	6-Aug-11	2	2	3
	Toxomerus marginalis (Say)	7-Aug-11	2	2	3
	Toxomerus marginatus (Say)	7-Aug-11	11	4	7
	Toxomerus marginalis (Sasy)	5-Sep-11	2	2	2
Tabanidae	Chrysops fulgaster Osten Sacken	10-Jul-11	2	4	2
	Chrysops fulgaster Osten Sacken	7-Aug-11	2	4	9
	Chrysops fulgaster Osten Sacken	25-Jul-10	2	4	1
	Hybomitra phaenops (Osten Sacken)	25-Jul-10	1	2	1
	Hybomitra phaenops (Osten Sacken)	25-Jul-10	2	2	1
Tachinidae	sp.	25-Jul-10	1	2	1
	sp.	31-Jul-10	2	4	1
	sp.	4-Sep-10	12	2	1
	sp.	5-Sep-11	2	2	1
	Admontia sp.	12-Jun-11	2	2	1
	Admontia sp.	14-Jun-11	2	4	4
	Admontia sp.	10-Jul-11	11	4	1
	Admontia sp.	7-Aug-11	11	4	2
	Archytas sp.	7-Aug-11	11	4	11
	Arctophyto sp.	6-Jun-10	2	4	1
	Atactopis reinhardi Sabrosky and Arnaud	27-Aug-10	2	3	1
	Carcelia sp.	12-Jun-11	11	2	1
	Carcelia sp.	7-Aug-11	2	4	3
	Ceracia dentata (Coquillett)	7-Aug-11	2	4	1
	Chaetocrania antennalis (Coquette)	10-Jul-11	11	4	1
	*Coloradomyia eucosmaphaga Arnaud	7-Aug-11	11	4	1
	Copecrypta sp.	26-Sep-09	2	3	1
	Cylindromyia sp.	2-Oct-11	2	2	1
	Deopalpus sp.	12-Jun-09	2	3	1
	Deopalpus sp.	1-Jul-09	2	4	1
	Deopalpus sp.	5-Sep-09	2	4	1
	Deopalpus sp.	26-Sep-09	2	3	1
	Dinera sp.	9-Sep-09	2	3	3
	Dinera sp.	28-Jul-10	2	4	1
	Dinera sp.	31-Jul-10	2	4	1
	Dinera sp.	6-Aug-11	2	2	1
	Dinera sp.	7-Aug-11	11	4	4
	Exorista sp.	10-Jul-11	11	4	1
	Gonia sp.	26-Jun-09	2	4	1
	Gonia sp.	29-May-10	1	2	1
	Gonia sp.	29-May-10	11	2	1
	Gonia sp.	1-Jun-11	2	2	1
	Gymnochaeta occidentalis Townsend	7-Aug-11	11	4	2
	Gymnoclydia sp.	7-Aug-11	11	4	2
	Gymnosoma fulginosa Desvoidy	10-Jul-11	2	2	1
	Hemdra aurata Robineau-Desvoidy	18-Sep-11	1	2	1
	Leskia sp.	19-Jun-09	2	3	1
	Leskia sp.	12-Jun-11	2	2	1
	Leskia sp.	6-Aug-11	2	2	1
	Leskia sp.	5-Sep-11	2	4	1
	Lydina sp.	5-Sep-10	2	3	2

	Microchaetina sp.	14-Jun-11	2	4	2
	Microchaetina sp.	7-Aug-11	11	4	1
	Ochrocera vaginalis Townsend	25-Jul-10	2	2	1
	Paradidyma sp. or near	6-Aug-11	2	2	1
	Peleteria sp.	7-Aug-11	11	4	1
	Phasia sp.	4-Sep-09	2	2	1
	Phasia sp.	5-Sep-10	2	3	2
	Phasia sp.	7-Aug-11	2	4	4
	Phasia sp. near aldrechi (Townsend)	7-Aug-11	11	4	11
	Phytomyptera sp.	10-Jul-11	11	4	1
	Ptilodexia sp.	31-Jul-10	2	4	1
	Tachina sp.	12-Jun-11	11	2	5
	Tachina sp.	10-Jul-11	11	4	1
	Thelaria americana Brooks	9-Sep-09	2	4	1
	*Vanderwulpia sp.	10-Jul-11	11	4	1
	Xanthomelodes sp.	11-Jul-10	2	4	1
Tephritidae	Neaspilota appendulata Freiberg and Mathis	12-Jun-11	11	2	1
	Neaspilota appendulata Freiberg and Mathis	9-Jul-11	1	2	1
	Neaspilota appendulata Freiberg and Mathis	10-Jul-11	11	2	1
	Neaspilota appendulata Freiberg and Mathis	6-Aug-11	1	2	1
	Neaspilota appendulata Freiberg and Mathis	6-Aug-11	2	2	1
	Neaspilota appendulata Freiberg and Mathis	6-Aug-11	11	2	1
	Neaspilota appendulata Freiberg and Mathis	7-Aug-11	1	2	2
	Neaspilota appendulata Freiberg and Mathis	7-Aug-11	2	2	1
	Neaspilota appendulata Freiberg and Mathis	7-Aug-11	2	4	3
	Neaspilota appendulata Freiberg and Mathis	7-Aug-11	11	4	1
	Neaspilota appendulata Freiberg and Mathis	4-Sep-11	2	2	1
	Neaspilota appendulata Freiberg and Mathis	18-Sep-11	2	2	1
	Paracanthus gentilis Hering	9-Jul-11	1	2	1
	Paracantha gentilis Hering	9-Jul-11	11	2	1
	Paracanthus gentilis Hering	4-Sep-11	2	2	2
	Rhagoletis sp.	9-Jul-11	2	2	1
Therevidae	Ozodiceromya sp.	9-Jul-11	1	2	2
	Ozodiceromya sp.	10-Jul-11	11	2	1
	Ozodiceromya sp.	10-Jul-11	11	4	1
	Ozodiceromya sp.	5-Sep-11	11	2	1
Tipulidae	Erioptera sp.	12-Jun-11	1	2	2
	Erioptera sp.	12-Jun-11	11	2	6
	Erioptera sp.	14-Jun-11	2	4	4
	Erioptera sp.	9-Jul-11	2	2	1
	Erioptera sp.	10-Jul-11	11	4	3
	Erioptera sp.	6-Aug-11	1	2	1
	Erioptera sp.	6-Aug-11	2	2	1
	Erioptera sp.	7-Aug-11	2	2	2
	Erioptera sp.	7-Aug-11	2	4	1
	Erioptera sp.	4-Sep-11	1	2	1
	Erioptera sp.	4-Sep-11	2	2	1
	Erioptera sp.	5-Sep-11	11	2	3
	Erioptera sp.	2-Oct-11	11	2	1
	Nephrotoma sp.	5-Sep-11	11	2	1

		Pseudolimnophila sp.	10-Jul-11	4	4	2
		Tipula sp.	9-Jul-11	2	2	2
		Tipula sp.	6-Aug-11	2	2	3
		Tipula sp.	7-Aug-11	2	2	7
		Tipula sp.	7-Aug-11	2	4	2
		Tipula sp.	2-Oct-11	2	2	3
		Chaetopsis sp.	6-Jun-10	1	2	1
	Ulididae	Euxesta notata Weidemann	31-Jul-10	2	4	1
		Euxesta sp.	14-Jun-11	11	4	1
		Euxesta sp.	9-Jul-11	2	4	1
Ephemeroptera	Baetidae	Baetis magnus McCafferty and Waltz	1-Jun-11	1	2	1
		Baetis magnus McCafferty and Waltz	7-Aug-11	2	8	27
		Baetis magnus McCafferty and Waltz	4-Sep-11	1	10	184
		Fallceon quilleri (Dodds)	1-Jun-11	2	8	21
		Fallceon quilleri (Dodds)	12-Jun-11	11	2	1
		Fallceon quilleri (Dodds)	7-Aug-11	1	2	2
		Fallceon quilleri (Dodds)	4-Sep-11	2	2	1
		Fallceon quilleri (Dodds)	18-Sep-11	1	2	2
		Fallceon quilleri (Dodds)	2-Oct-11	1	2	4
		Tricorythodes explicatus (Eaton)	7-Aug-11	2	7	2
Hemiptera	Aphalaridae	Craspedolepta sp.	10-Jul-11	11	4	1
		Craspedolepta sp.	7-Aug-11	1	2	1
		Craspedolepta sp.	5-Sep-11	11	2	1
		Craspedolepta sp.	2-Oct-11	1	2	1
		Livia sp.	1-Jun-11	1	2	1
		Livia sp.	6-Aug-11	11	2	3
		Livia sp.	2-Oct-11	1	2	1
	Aphididae	sp.	12-Jun-11	1	2	3
		sp.	12-Jun-11	2	2	1
		sp.	12-Jun-11	11	2	1
	Berytidae	*Neoneides muticus (Say)	12-Jun-11	11	2	1
	Cercopidae	Clastoptera sp.	7-Aug-11	11	4	1
		Philaenarcys bilineata (Say)	9-Jul-01	1	2	3
		Philaenarcys bilineata (Say)	7-Aug-11	1	2	1
		Philaenarcys bilineata (Say)	7-Aug-11	2	6	21
		Philaenarcys bilineata (Say)	7-Aug-11	11	2	1
		Philaenarcys bilineata (Say)	9-Jul-11	1	2	3
		Philaenarcys bilineata (Say)	7-Aug-11	1	2	6
	Cicadellidae	Balclusa neglecta Delong and Davidson	1-Jun-11	11	2	2
		Balclusa neglecta Delong and Davidson	14-Jun-11	2	2	5
		Balclusa neglecta Delong and Davidson	9-Jul-11	11	2	3
		Balclusa neglecta Delong and Davidson	10-Jul-11	1	2	15
		Balclusa neglecta Delong and Davidson	7-Aug-11	2	4	8
		Balclusa neglecta Delong and Davidson	5-Sep-11	2	2	71
		Balclusa neglecta Delong and Davidson	5-Sep-11	11	2	66
		Cuerna striata (Walker)	6-Aug-11	11	2	1
		Cuerna striata (Walker)	7-Aug-11	11	2	1
		Cuerna striata (Walker)	4-Sep-11	2	2	1
		Cuerna striata (Walker)	18-Sep-11	1	2	1
		Cuerna striata (Walker)	18-Sep-11	2	2	1

	Cuerna striata (Walker)	18-Sep-11	2	6	1
	Cuerna striata (Walker)	2-Oct-11	11	4	2
	Dracunculus noveboracensis (Fitch)	6-Aug-11	2	2	1
	Dracunculus noveboracensis (Fitch)	7-Aug-11	11	4	7
	Dracunculus noveboracensis (Fitch)	4-Sep-11	2	2	1
	Dracunculus noveboracensis (Fitch)	5-Sep-11	11	2	1
	Helochara communis(Fitch)	7-Aug-11	11	4	7
Cixiidae	Oliarius sp.	12-Jun-11	11	2	1
	Oliarius sp.	2-Oct-11	2	2	1
Corixidae	Hesperocorixa laevigata (Uhler)	1-Jun-11	11	2	2
	Hesperocorixa sp.	7-Aug-11	2	1	4
*Cydnidae	*Pangaeus sp.	12-Jun-11	11	2	1
Delphacidae	Pentagramma longistylata Penner	8-Aug-11	2	2	1
Geocoridae	Geocoris sp.	7-Aug-11	11	2	1
	Cymus sp.	1-Jun-11	1	2	1
	Cymus sp.	6-Aug-11	2	2	3
	Cymus sp.	5-Sep-11	2	2	3
	Cymus angustatus Stal	29-May-10	11	2	1
	Cymus angustatus Stal	12-Jun-11	2	2	2
	Cymus angustatus Stal	6-Aug-11	2	2	1
	Cymus lurida Stal	12-Jun-11	2	2	1
	Cymus lurida Stal	6-Aug-11	2	2	2
	Cymus lurida Stal	5-Sep-11	2	2	5
Lygaeidae	Lygaeus kalmii Stål	29-May-10	2	2	2
	Lygaeus kalmii Stål	1-Jun-11	2	2	3
	Lygaeus kalmii Stål	12-Jun-11	2	2	5
	Lygaeus kalmii Stål	2-Oct-11	2	2	1
	Nysius sp.	12-Jun-11	1	2	1
	Nysius sp.	7-Aug-11	1	2	5
	Nysius sp.	7-Aug-11	2	2	1
	Nysius sp.	7-Aug-11	11	4	6
	Nysius sp.	4-Sep-11	2	2	1
	Nysius sp.	5-Sep-11	11	2	2
	Nysius sp.	18-Sep-11	2	2	1
	Phlegyas abbreviatus (Uhler)	7-Aug-11	1	2	1
	Slaterobius insignis (Uhler)	18-Sep-11	11	6	1
	Sphragisticus nebulosus Fallen	12-Jun-11	2	2	1
	Sphragisticus nebulosus Fallen	7-Aug-11	11	4	1
	Sphragisticus nebulosus Fallen	2-Oct-11	2	2	1
Membracidae	sp.	7-Aug-11	2	2	3
	sp.	9-Jul-11	2	2	1
	sp.	7-Aug-11	1	2	11
	Campylenchia latipes (Say)	7-Aug-11	1	2	1
	Publicia modesta (Uhler)	18-Sep-11	2	2	2
	Publicia modesta (Uhler)	2-Oct-11	2	2	1
	Stictocephala sp.	6-Aug-11	2	2	1
	Tortistilus cinermis	4-Sep-11	2	2	2
Miridae	sp.	12-Jun-11	1	2	1
	sp.	12-Jun-11	2	2	6
	sp.	12-Jun-11	11	2	1

	sp.	14-Jun-11	2	4	1
	sp.	9-Jul-11	1	2	2
	sp.	9-Jun-11	2	2	5
	sp.	10-Jul-11	11	2	1
	sp.	6-Aug-11	2	2	2
	sp.	7-Aug-11	1	2	1
	sp.	7-Aug-11	2	2	2
	sp.	4-Sep-11	2	2	1
	sp.	5-Sep-11	2	2	1
	Irbissia sp.	12-Jun-11	11	2	1
	Irbissia sp.	9-Jul-11	1	2	1
	Lygus sp.	8-Sep-11	11	2	1
	Mimoceps insignis Uhler	14-Jun-11	2	4	1
	Mimoceps insignis Uhler	10-Jul-11	11	2	2
	Mimoceps insignis Uhler	4-Sep-11	1	2	2
	Stenodema sp.	12-Jun-11	1	2	4
	Stenodema sp.	12-Jun-11	2	2	2
	Stenodema sp.	9-Jun-11	1	2	4
	Stenodema sp.	9-Jun-11	2	2	1
	Stenodema sp.	10-Jun-11	11	2	5
	Stenodema sp.	6-Aug-11	2	2	3
	Stenodema sp.	7-Aug-11	1	2	4
Nabiidae	*Nabicula nigrovittata nearctica Kerzhner	10-Jul-11	2	2	2
	Nabicula subcoleoprata (Kirby)	9-Jul-11	2	2	2
	Nabis alternatus Parshley	9-Jul-11	1	2	1
	Nabis alternatus Parshley	6-Aug-11	2	2	1
	Nabis alternatus Parshley	7-Aug-11	2	4	1
	Nabis alternatus Parshley	5-Sep-11	2	2	2
	Nabis alternatus Parshley	5-Sep-11	11	2	1
	Nabis alternatus Parshley	2-Oct-11	1	2	1
Pachygranthidae	Phlegyas abbreviatus (Uhler)	7-Aug-11	1	2	1
Pentatomidae	Chinavia hilaris (Say)	4-Sep-11	2	2	1
	Chlorochroa sp.	4-Sep-11	2	2	1
	Eurygaster alternata (Say)	6-Jun-11	1	2	2
	Holcostethus limbolarius (Stal)	5-Sep-11	11	2	1
	Thyanta custator (Fabricius)	4-Sep-11	11	2	1
Psyllidae	Cacopsylla sp.	15-Jul-10	11	4	1
	Cacopsylla sp.	10-Jul-11	11	4	1
	Cacopsylla sp.	6-Aug-11	11	2	1
	Cacopsylla sp.	7-Aug-11	1	2	2
	Cacopsylla maculata (Crawford)	6-Aug-11	2	2	3
	Cacopsylla maculata (Crawford)	6-Aug-11	11	2	2
	Cacopsylla maculata (Crawford)	18-Sep-11	2	6	1
	Cacopsylla ribesiae (Crawford)	12-Jun-11	2	2	1
	Cacopsylla ribesiae (Crawford)	6-Aug-11	2	2	1
	Calcophya trizomina Swartz	6-Aug-11	2	2	5
	Calcophya trizomina Swartz	6-Aug-11	11	2	10
	Calcophya trizomina Swartz	7-Aug-11	1	2	1
	Calcophya trizomina Swartz	18-Sep-11	2	6	1
	Corythucha sp.	1-Jun-11	11	2	1

		Trioza sp.	7-Aug-11	2	6	3
		Trioza sp.	10-Jul-11	1	2	8
		Trioza sp.	2-Oct-11	1	2	1
		Trioza sp.	2-Oct-11	2	4	6
	Rhopalidae	Aryssus sp.	12-Jun-11	1	2	1
		Aryssus sp.	12-Jun-11	11	2	1
		Aryssus sp.	9-Jul-11	1	2	1
		Aryssus sp.	5-Sep-11	2	2	1
		Boisea trivitattus (Say)	6-Aug-11	2	2	1
		Harmostes reflexulus (Say)	12-Jun-11	11	2	1
		Harmostes reflexulus (Say)	5-Sep-11	2	2	1
	Saldulidae	Saldula pallipes (Fabricius)	7-Aug-11	2	2	2
		Saldula pallipes (Fabricius)	10-Jul-11	1	2	1
	Scutelleridae	Erygaster altenata (Say)	6-Aug-11	11	2	1
		Eurygaster alternatus (Say)	7-Aug-11	2	2	1
		Eurygaster alternatus (Say)	5-Sep-11	1	2	2
		Eurygaster alternatus (Say)	1-Jun-11	11	2	2
	Tingidae	Corythucha arcuata Say	6-Aug-11	2	2	1
	Thyrecoridae	Galgupha sp.	4-Sep-11	2	2	1
	Vellidae	Rhagovalia distincta Uhler	15-Jul-10	2	2	2
Hymenoptera	Andrenidae	Andrena sp.	31-Jul-10	2	2	1
		Andrena sp.	1-Jun-11	2	2	1
		Andrena sp.	16-Aug-10	2	4	1
		*Panurginus sp.	27-Aug-10	12	2	1
		*Pseudopanurgus sp.	25-Jul-10	2	2	1
	Apidae	Bombus griseocollis (DeGeer)	6-Aug-11	2	2	1
		Bombus griseocollis (DeGeer)	7-Aug-11	11	2	2
		Bombus griseocollis (DeGeer)	22-Jul-10	2	2	2
		Bombus huntii Greene	6-Aug-11	11	2	1
		Bombus huntii Greene	18-Sep-11	11	2	1
		Bombus huntii Greene	25-Jun-10	11	2	2
		Bombus nevadensis Cresson	1-Jun-11	2	2	1
		Bombus nevadensis Cresson	6-Aug-11	2	2	1
		Bombus nevadensis Cresson	12-Jul-10	11	2	1
		Bombus pensylvanicus (DeGeer)	6-Aug-11	2	2	1
		Bombus pensylvanicus (DeGeer)	31-Jun-10	2	2	1
		Bombus rufocinctus Cresson	7-Aug-11	2	2	1
		Bombus rufocinctus Cresson	4-Sep-11	11	4	1
		*Diadasia enavata (Cresson)	16-Aug-10	2	2	1
		Melissodes sp.	2-Oct-10	2	2	1
		Melissodes sp.	1-Jun-11	12	2	1
		Melissodes sp.	9-Jul-12	2	3	1
		Melissodes sp.	4-Sep-11	2	2	1
		Melissodes sp.	29-May-10	12	2	1
		Nomada sp.	1-Jun-11	2	2	3
		Nomada sp.	10-Jul-11	12	2	1
	Braconidae	sp.	31-Jul-10	2	2	2
		sp.	8-Aug-09	2	4	8
		Chelomus sp.	8-Aug-09	2	2	1
	Bethylidae	Epyris sp.	7-Aug-11	2	2	1

Chalcididae	sp.	1-Jun-11	2	2	2	
	sp.	6-Aug-11	11	4	1	
	sp.	7-Aug-11	2	2	1	
	sp.	6-Aug-11	2	2	1	
Colletidae	Chalcis sp.	21-Jul-10	11	4	1	
	Colletes sp.	25-Jul-10	2	2	1	
	Colletes sp.	25-Jul-10	2	4	1	
	Colletes sp.	28-Jul-10	2	2	2	
	Colletes sp.	31-Jul-10	2	4	4	
	Colletes sp.	9-Jul-11	2	4	1	
	Colletes sp.	2-Oct-11	2	2	3	
	Hylaeus sp.	7-Aug-11	2	2	1	
	*Hylaeus leptocephalus (Moran)	1-Jun-11	2	2	1	
	*Hylaeus mesilla (Cockerell)	28-Jul-10	1	2	1	
Formicidae	sp.	1-Jun-11	2	2	1	
	sp.	12-Jun-11	1	2	10	
	sp.	12-Jun-11	2	2	3	
	sp.	12-Jun-11	11	2	5	
	sp.	9-Jul-11	1	2	2	
	sp.	10-Jul-11	11	2	2	
	sp.	6-Aug-11	2	2	7	
	sp.	6-Aug-11	11	2	5	
	sp.	7-Aug-11	1	2	5	
	sp.	7-Aug-11	2	2	8	
	sp.	4-Sep-11	2	2	6	
	sp.	5-Sep-11	2	2	4	
	sp.	5-Sep-11	11	2	6	
	sp.	18-Sep-11	1	2	3	
	sp.	18-Sep-11	2	2	4	
	sp.	2-Oct-11	2	2	4	
	Formica sp.	31-Jul-10	2	4	3	
	Formica sp.	4-Sep-11	2	4	8	
	Formica sp.	6-Aug-11	11	4	1	
	Formica sp.	7-Aug-11	1	2	1	
	Formica sp.	2-Oct-11	11	2	2	
	Formica sp.	1-Jun-11	1	2	7	
	Halictidae	sp.	9-Jul-11	2	2	1
		sp.	7-Aug-11	2	2	1
		sp.	7-Aug-11	2	2	1
		sp.	27-Jul-10	1	2	3
		Agapostemon sp.	9-Jul-11	11	4	9
Agapostemon sp.		27-Jul-10	2	2	1	
Agapostemon sp.		28-Jul-10	2	3	2	
Agapostemon sp.		16-Aug-10	2	4	1	
Agapostemon sp.		23-Aug-10	2	4	1	
Agapostemon sp.		10-Oct-10	12	2	3	
Agapostemon sp.		4-Sep-10	2	3	2	
Agapostemon sp.		9-Sep-09	2	3	9	
Halictus sp.		15-Jul-10	2	2	1	
Halictus sp.		25-Jul-10	2	4	1	

Halictus sp.	31-Jul-10	2	4	5
Halictus sp.	6-Aug-10	11	2	2
Halictus sp.	1-Jun-11	2	2	2
Halictus sp.	12-Jun-11	2	2	2
Halictus sp.	7-Aug-11	2	2	3
Halictus sp.	15-Jul-10	1	2	1
Halictus confusus Smith	10-Oct-10	11	4	1
Halictus confusus Smith	1-Jun-10	11	2	1
Halictus ligatus Say	25-Jul-10	2	3	13
Halictus ligatus Say	25-Jul-10	1	2	1
Halictus ligatus Say	1-Jun-11	1	2	1
Halictus ligatus Say	15-Jul-10	2	3	2
Halictus tripartitus Cockerell	25-Jul-10	2	2	1
Halictus tripartitus Cockerell	25-Jul-10	11	2	1
Halictus tripartitus Cockerell	28-Jul-10	11	2	1
Halictus tripartitus Cockerell	6-Aug-10	11	3	1
Lasioglossum sp.	6-Aug-10	2	3	1
Lasioglossum sp.	29-May-10	2	4	1
Lasioglossum sp.	2-Jun-10	11	4	1
Lasioglossum sp.	6-Jun-10	2	2	5
Lasioglossum sp.	6-Jun-10	2	2	2
Lasioglossum sp.	12-Jun-10	2	2	1
Lasioglossum sp.	12-Jun-10	12	2	2
Lasioglossum sp.	15-Jun-10	1	2	1
Lasioglossum sp.	25-Jul-10	2	2	4
Lasioglossum sp.	25-Jul-10	11	2	3
Lasioglossum sp.	25-Jul-10	2	2	5
Lasioglossum sp.	25-Jul-10	2	3	5
Lasioglossum sp.	28-Jul-10	11	2	5
Lasioglossum sp.	28-Jul-10	12	2	8
Lasioglossum sp.	16-Aug-10	2	3	2
Lasioglossum sp.	23-Aug-10	2	4	3
Lasioglossum sp.	27-Aug-10	12	2	1
Lasioglossum sp.	31-Jul-10	2	2	1
Lasioglossum sp.	31-Jul-10	2	2	2
Lasioglossum sp.	23-Aug-10	2	3	2
Lasioglossum sp.	10-Oct-10	11	4	4
Lasioglossum sp.	4-Sep-10	11	2	1
Lasioglossum sp.	5-Sep-10	2	3	27
Lasioglossum sp.	22-Sep-10	12	2	1
Lasioglossum sp.	1-Jun-11	2	4	1
Lasioglossum sp.	12-Jun-11	2	3	1
Lasioglossum sp.	12-Jun-11	2	2	2
Lasioglossum sp.	7-Aug-11	1	2	1
Lasioglossum sp.	7-Aug-11	2	2	5
Lasioglossum sp.	7-Aug-11	1	2	2
Lasioglossum sp.	7-Aug-11	2	2	5
Lasioglossum sp.	15-Jul-10	11	2	1
Lasioglossum (Dialictus) sp.	15-Jul-10	11	4	8
Lasioglossum (Dialictus) sp.	15-Jul-10	2	4	3

	Lasioglossum (Dialictus) sp.	25-Jul-10	11	4	1
	Lasioglossum (Dialictus) sp.	31-Jul-10	12	2	1
	Lasioglossum (Dialictus) sp.	31-Jul-10	11	2	1
	Lasioglossum (Dialictus) sp.	6-Aug-10	2	3	1
	Lasioglossum (Dialictus) sp.	18-Sep-10	11	4	1
	Lasioglossum (Dialictus) sp.	31-Jul-10	2	2	7
	Sphecodes sp.	12-Jul-10	2	2	1
	Sphecodes sp.	15-Jul-10	2	2	1
	Sphecodes sp.	15-Jul-10	1	2	1
	Sphecodes sp.	25-Jul-10	2	4	1
	Sphecodes sp.	25-Jul-10	1	2	2
	Sphecodes sp.	25-Jul-10	2	2	3
	Sphecodes sp.	25-Jul-10	2	3	5
	Sphecodes sp.	28-Jul-10	11	4	3
	Sphecodes sp.	28-Jul-10	2	3	1
	Sphecodes sp.	28-Jul-10	2	4	2
	Sphecodes sp.	31-Jul-10	11	2	6
	Sphecodes sp.	7-Aug-11	2	4	3
	Sphecodes sp.	4-Sep-11	2	4	7
	Sphecodes sp.	15-Jul-10	11	4	1
Ichneumonidae	sp.	12-Jun-11	2	4	1
	sp.	14-Jun-11	1	2	2
	sp.	9-Jul-11	2	2	3
	sp.	10-Jul-11	2	4	5
	sp.	7-Aug-11	1	2	8
	sp.	4-Sep-11	2	4	25
	sp.	5-Sep-11	1	2	1
	sp.	18-Sep-11	2	2	1
	sp.	2-Oct-11	2	2	2
	sp.	27-Jun-09	1	2	2
	*Banchus sp.	26-Jun-09	6	2	1
	*Diadegma sp.	1-Jul-09	2	4	1
	sp.	1-Jul-09	2	2	2
	sp.	8-Aug-09	2	4	1
	sp.	11-Jul-09	2	4	1
	sp.	7-Aug-11	2	2	1
Megachilidae	sp.	4-Sep-11	2	4	5
	sp.	2-Oct-11	11	2	6
	sp.	25-Jul-10	2	2	18
	Megachile sp.	25-Jul-10	2	2	1
	Megachile sp.	2-Oct-11	2	2	1
	Megachile sp.	12-Jun-09	11	2	1
Mutillidae	Dasymutilla vesta (Cresson)	4-Sep-09	2	3	1
	Dasymutilla vesta (Cresson)	9-Sep-09	2	3	1
	Dasymutilla vesta (Cresson)	26-Sep-09	2	3	3
	Monomorium minimum (Buckley)	2-Oct-11	2	2	1
	Pseudomethoca frigidus Smith	10-Jun-11	2	3	1
	Timulla subhylina Mickel	7-Aug-11	1	2	1
	Timulla subhylina Mickel	7-Aug-11	11	4	1
Pompilidae	Anoplius sp.	14-Jun-11	11	4	1

	Anoplius sp.	6-Aug-11	11	2	1	
	Anoplius sp.	6-Aug-11	2	4	2	
	Anoplius sp.	6-Aug-11	2	2	3	
	Anoplius marginatus Say	7-Aug-11	11	2	1	
	Anoplius marginatus Say	7-Aug-11	2	2	7	
	Anoplius marginatus Say	4-Sep-11	11	2	1	
	Anoplius marginatus Say	7-Aug-11	11	4	1	
	Ceropales brevicornis (Patton)	4-Sep-11	2	2	2	
	Ceropales brevicornis (Patton)	31-Jul-10	2	2	1	
*Sapygidae	*Sapyga sp.	10-Jul-11	2	2	1	
Scelionidae	sp.	10-Jul-11	11	4	6	
	sp.	31-Jul-10	2	4	1	
Sphecidae	Ammophila azteca Cameron	28-Jul-10	2	4	1	
	Ammophila azteca Cameron	4-Sep-11	2	3	1	
	Ammophila azteca Cameron	10-Jul-11	2	2	1	
	Astata sp.	9-Jul-11	11	2	1	
	Bembix sayii Cresson	6-Aug-11	2	2	8	
	Cerceris sp.	31-Jul-10	2	4	1	
	Ectemnis sp.	7-Aug-11	11	4	1	
	Ectemnius spiniferus (Fox)	4-Sep-11	2	2	2	
	Lindenius columbianus(Kohl)	4-Sep-11	2	3	1	
	Mimesa sp.	31-Jul-10	1	2	1	
	Mimesa cressoni (Packard)	25-Jul-10	2	2	2	
	Oxybelus sp.	28-Jul-10	2	2	1	
	Oxybelus sp.	18-Jun-11	2	3	1	
	Solierella sp.	19-Jun-10	2	4	1	
Tenthredinidae	sp.	15-Jul-10	11	4	1	
Tiphiidae	Acanthetropis aequalis (Fox)	25-Jul-10	11	4	1	
	Acanthetropis aequalis (Fox)	23-Aug-10	2	3	1	
	Acanthetropis aequalis (Fox)	31-Jul-10	2	4	2	
	Acanthetropis aequalis (Fox)	18-Sep-11	2	4	1	
	Acanthetropis aequalis (Fox)	23-Jul-09	2	2	1	
	Brachyistius sp.	7-Aug-11	2	2	6	
Vespidae	sp.	28-Jul-10	1	2	12	
	Euodynerus sp.	25-Jun-10	11	4	1	
	Polistes fuscatus (Fabricius)	9-Jul-11	2	4	1	
Lepidoptera	Lasciocampidae	Malcosoma californicum (Packard)	12-Jun-11	2	4	1
	Lycaenidae	Plebejus melissa (Edwards)	9-Jul-10	1	2	1
		Plebejus melissa (Edwards)	10-Jul-11	11	2	6
		Plebejus melissa (Edwards)	7-Aug-11	2	2	1
		Plebejus melissa (Edwards)	7-Aug-11	2	4	8
		Lucania sp.	7-Aug-11	2	4	1
		Lucania sp.	7-Aug-11	2	4	1
Noctuidae	sp.	25-Aug-11	11	4	3	
Nymphalidae	Cercyonis pegala Fabricius	12-Jun-11	1	2	9	
	Coenonympha tullia (Muller)	7-Aug-11	11	2	1	
	Phiciodes tharos (Drury)	25-Jul-11	2	2	1	
Pieridae	Colias eurytheme Boisduval	25-Aug-11	2	4	1	
	Colias philodice Godart	7-Aug-11	11	2	1	
	Pieris rapae (Linnaeus)	7-Aug-11	11	2	1	

		<i>Pieris rapae</i> (Linnaeus)	25-Aug-11	2	4	2
		<i>Pieris rapae</i> (Linnaeus)	14-Jun-11	11	4	2
Neuroptera	Chrysopidae	<i>Chrysopa nigricornis</i> Burmeister	9-Jul-11	11	2	1
		<i>Chrysopa nigricornis</i> Burmeister	7-Aug-11	2	4	4
	Hemerobiidae	* <i>Symphorobius perparvus</i> (McLachlan)	7-Aug-11	1	2	1
		sp.	9-Jul-11	2	4	3
Odonata	Coenagrionidae	<i>Amphiagrion abbreviatum</i> Selys	12-Jul-11	2	4	1
		<i>Amphiagrion abbreviatum</i> Selys	6-Aug-11	2	2	8
		<i>Amphiagrion abbreviatum</i> Selys	9-Jul-11	2	2	39
		<i>Enallagma anna</i> Willianson	11-Jul-09	2	2	6
		<i>Ischnura perparva</i> McLachlan and Selys	9-Jul-11	2	2	30
		<i>Ischnura perparva</i> McLachlan and Selys	8-Aug-09	1	2	5
		<i>Ischnura verticalis</i> Say	4-Sep-09	2	2	1
		<i>Ischnura verticalis</i> Say	6-Aug-11	2	2	1
	Libellulidae	<i>Sympetrum semicinctum</i> (Say)	18-Sep-11	11	2	2
		<i>Sympetrum semicinctum</i> (Say)	21-Aug-09	2	2	1
	Lestidae	<i>Lestes disjunctus</i> Selys	4-Sep-11	2	2	2
Orthoptera	Acrididae	<i>Ageneotettix decorum</i> (Scudder)	4-Sep-11	1	2	1
		<i>Camnula pellucida</i> (Scudder)	4-Sep-11	2	2	3
		<i>Chordillacris crenulata</i> (Bruner)	4-Sep-11	2	2	2
		<i>Chorthippus curtipennis</i> (Harris)	4-Sep-11	2	2	1
		<i>Dissosteira carolina</i> (Linnaeus)	4-Sep-11	2	2	1
		<i>Encoptolophus costalis</i> (Scudder)	4-Sep-11	2	2	8
		<i>Hesperotettix viridis</i> (Thomas)	4-Sep-11	2	2	2
		<i>Melanoplus agustipennis</i> (Dodge)	4-Sep-11	2	2	4
		<i>Melanoplus infantilis</i> Scudder	4-Sep-11	2	2	5
		<i>Opeia obscura</i> (Thomas)	4-Sep-11	2	2	4
		<i>Paropomala wyomingensis</i> (Thomas)	4-Sep-11	2	2	7
		<i>Spharagemon equale</i> (Say)	4-Sep-11	2	2	4
		<i>Trachyrhachys aspera</i> Scudder	1-Jun-11	2	2	1
Plecoptera	Perlodidae	* <i>Isoperla quinquepunctata</i> complex	1-Jun-11	2	8	8
Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i> sp.	1-Jun-11	2	6	5
		* <i>Cheumatopsyche campyla</i> Ross	7-Aug-11	2	2	2
	Limnephilidae	<i>Anobolia bimaculatus</i> (Walker)	4-Sep-11	2	2	1
		* <i>Anobolia consocius</i> (Walker)	1-Jun-11	1	2	6
		* <i>Clistoronia maculata</i> (Banks)	1-Jun-11	2	2	3
		<i>Hesperophylax occidentalis</i> (Banks)	1-Jun-11	1	2	9
		<i>Hesperophylax</i> sp.	14-Jun-11	2	7	2
		<i>Hesperophylax</i> sp.	14-Jun-11	1	6	3
		<i>Hesperophylax</i> sp.	10-Jul-11	2	6	10
		<i>Hesperophylax</i> sp.	7-Aug-11	1	6	5
		<i>Hesperophylax</i> sp.	7-Aug-11	1	6	17
		<i>Hesperophylax</i> sp.	4-Sep-11	2	6	1
		<i>Hesperophylax</i> sp.	4-Sep-11	1	10	41
		<i>Hesperophylax</i> sp.	4-Sep-11	2	2	4
		<i>Hesperophylax</i> sp.	1-Jun-11	2	6	1
		* <i>Limnephilus acnestus</i> Ross	4-Sep-11	2	2	2
		<i>Limnephilus spinatus</i> Banks	7-Aug-11	2	4	1
Thysanoptera	Phlaeothripidae	<i>Hapothrips</i> sp.	7-Aug-11	2	2	2

Appendix 2. Insect Species List Soapstone Prairie Natural Area, Larimer Co., Colorado, 2009 -2011.

Order	Family	Scientific Name	Author
Coleoptera	Anobiidae	sp.	
		Ptinus sp.	
	Anthicidae	sp.	
		Anthicus sp.	
		Notoxus sp.	
	Anthribidae	Trigonorhinus sticticus	(Boheman)
	*Apionidae	sp.	
		*Apion sp.	
		*Apion punctinatum	Smith
		*Apion wickhami	Kissinger
	Brachypteridae	Brachypterolus pulicarius	(Linnaeus)
	Buprestidae	sp.	
		Agrilus cyanescens	(Ratzeburg)
		Taphrocerus chevrolati	Obenberger
		Taphrocerus schaefferi	Nicolay and Weiss
	*Byrrhidae	*Byrrhus eximius	LeConte
		*Cytillus alternatus	(Say)
	Cantharidae	sp.	
		Cantharis sp.	
		Chauliognathus basalis	(LeConte)
		Podabrus sp.	
	Carabidae	sp.	
		Agonum sp.	
		Agonum extensicollis	Say
		Agonum placidum	Say
		Amara sp.	
		Amara capinata	LeConte
Amara confusa		LeConte	
Amara convexa		LeConte	
Amara cupreolata		Putzeys	
Amara quenseli		Schönherr	
Amara rubica		Haldeman	
Axinopalpus sp.			
Bembidion sp.			

	<i>Bembidion carinata</i>	(Leconte)
	<i>Bembidion impotens</i>	Casey
	<i>Bembidion quadrimaculata</i>	Linnaeus
	<i>Bembidion rapidum</i>	(LeConte)
	<i>Bembidion rupicola</i>	(Kirby)
	<i>Bradycellus congener</i>	LeConte
	<i>Cratacanthus dubius</i>	(Beauvois)
	<i>Chlaenius</i> sp.	
	<i>Chlaenius nebraskensis</i>	LeConte
	<i>Chlaenius sericeus</i>	Foster
	<i>Clivina impressifrons</i>	LeConte
	<i>Cratacanthus dubius</i>	(Beauvois)
	<i>Cymindis planipennis</i>	LeConte
	<i>Euryderus grossa</i>	(Say)
	<i>Discoderus parallelus</i>	LeConte
	<i>Harpalus</i> sp.	
	<i>Harpalus amputatus</i>	(Say)
	<i>Harpalus compar</i>	LeConte
	<i>Harpalus desertus</i>	De Jean
	<i>Lebia viridis</i>	Say
	<i>Microlestes linearis</i>	(LeConte)
	<i>Pasimachus elongatus</i>	LeConte
	<i>Piosoma setosum</i>	(Fabricius)
	<i>Platynus extensicollis</i>	(Say)
	<i>Poecilus scitulus</i>	LeConte
	<i>Stenolophus comma</i>	(Fabricius)
	<i>Stenolophus conjunctus</i>	Say
	<i>Tachys anceps</i>	LeConte
Cerambycidae	<i>Crossidius discoideus</i>	(Say)
	<i>Prionus emarginatus</i>	Say
	<i>Moneilema annulata</i>	
	<i>Tetraopes annulatus</i>	LeConte
Chrysomelidae	sp.	
	<i>Acanthoscelides</i> sp.	
	<i>Altica</i> sp.	
	<i>Brachypnoea leonti</i>	LeConte
	<i>Chaetocnema opulenta</i>	Horn
	<i>Chaetocnema subviridis</i>	LeConte
	<i>Chrysolina flavomarginata</i>	(Say)
	<i>Coleothorpa dominicana franciscana</i>	(LeConte)
	<i>Coleothorpa</i> v. <i>vittigera</i>	(Say)
	<i>Cryptocephalus</i> c. <i>confluentus</i>	Say
	<i>Cryptocephalus notatus</i>	Barber
	<i>Diabrotica undecimpunctata howardi</i>	Barber

	<i>Diabrotica v. virgifera</i>	LeConte
	<i>Dibolia borealis</i>	Blake
	<i>Disonycha alternata</i>	Illiger
	<i>Disonycha triangularis</i>	(Say)
	<i>Epitrix</i> sp.	
	<i>Exema</i> sp.	
	<i>Exochomus aethiops</i>	(Bland)
	<i>Gastrophysa cyanea</i>	Horn
	<i>Glyptina</i> sp.	
	<i>Glyptina atriventris</i>	Horn
	<i>Longitarsus</i> sp.	
	<i>Monoxia</i> sp.	
	<i>Ophraella americana</i>	(Fabricius)
	<i>Ophraella bilineata</i>	Kirby
	<i>Neochlamisus</i> sp.	(Say)
	<i>Pachybrachis</i> sp.	
	<i>Pachybrachis h. hepatica</i>	Melscheimer
	<i>Phylliodes</i> sp.	
	<i>Phyllotrea</i> sp.	
	<i>Phyllotrea conjuncta</i>	Gentner
	<i>Phyllotreta armipes</i>	(Koch)
	<i>Physonota unipunctata</i>	(Schaeffer)
	<i>Plateumaris robusta</i>	(Schaeffer)
	<i>Trirhabda nitidicollis</i>	LeConte
	<i>Zygogramma conjuncta</i>	(Rogers)
	<i>Zygogramma heterothecae</i>	Linell
Cicindelidae	<i>Cicindela punctulata</i>	Olivier
	<i>Cicindela purpurea audubonii</i>	LeConte
Cleridae	<i>Enoclerus cordifer</i>	LeConte
	<i>Phyllobaenus</i> sp.	
Coccinellidae	sp.	
	<i>Anatis lecontei</i>	Casey
	<i>Anisosticta bitriangularis</i>	Say
	<i>Brachiacantha</i> sp.	
	<i>Brachiacantha decora</i>	Casey
	<i>Brachiacantha tau</i>	LeConte
	<i>Coccidula lepida</i>	LeConte
	<i>Coccinella novemnotata</i>	Herbst
	<i>Coccinella (C.) septempunctata</i>	Linnaeus
	<i>Coccinella transversoguttata</i>	Falderman
	<i>Coccinella richardsoni</i>	Brown
	<i>Coleomegilla maculata</i>	(DeGeer)
	<i>Hippodamia apicalis</i>	Casey
	<i>Hippodamia convergens</i>	Guerin-Meneville

	<i>Hippodamia expurgata</i>	Casey
	<i>Hippodamia parenthesis</i>	(Say)
	<i>Hippodamia sinuata crotochi</i>	Casey
	<i>Hyperaspidius</i> sp.	
	<i>Hyperaspidius minus</i>	Casey
	<i>Mulsantina</i> (c.) <i>picta</i>	(Randall)
	<i>Multitina picta</i>	(Randall)
	<i>Scymus</i> sp	
Curculionidae	sp.	
	<i>Anthonomus</i> sp.	
	<i>Anthonomus sphaeralciae</i>	Fall
	<i>Anthonomus squamosus</i>	LeConte
	<i>Calandrinus obsoletus</i>	Casey
	<i>Ceutorhynchus</i> sp.	
	<i>Ceutorhynchus americanus</i>	Buchanan
	<i>Dorytomus</i> sp.	
	<i>Dyslobus luteus</i>	(Horn)
	<i>Epimechus</i> sp.	
	<i>Gerstaeckeria basalis</i>	(LeConte)
	<i>Hylurgops pinifex</i>	(Finch)
	<i>Hylurgops porosus</i>	(LeConte)
	<i>Hypera postica</i>	(Gyllenhal)
	<i>Larinus plannus</i>	(Fabricius)
	<i>Listronotus grypidioides</i>	(Dietz)
	<i>Notiodes</i> sp.	
	<i>Orchestes alni</i>	(Linnaeus)
	<i>Pityogenes</i> sp.	
	<i>Pityogenes knechteli</i>	Swaine
	<i>Rhinocyllus conicus</i>	(Froelich)
	<i>Rhinusa tetrum</i>	(Fabricius)
	<i>Scaphomorphus trivittatus</i>	(Say)
	<i>Scolytus schevyrewi</i>	Semenov
	<i>Sitona cylindricollus</i>	(Fabricius)
	<i>Sphenophorus cicatristriatus</i>	Fahraeus
	<i>Tachypterellus</i> sp.	
	<i>Tychius</i> sp.	
	<i>Tychius lineellus</i>	LeConte
	<i>Tychius stephensi</i>	Schönherr
Dermestidae	<i>Dermestes caninus</i>	Germar
	<i>Dermestes fasciatus</i>	LeConte
	<i>Orphilus</i> sp.	
	<i>Trogoderma variabilis</i>	Ballion
Dryopidae	<i>Helichus striatus</i>	LeConte

Dytiscidae	Agabus sp.	
	Agabus affinis	Paykull
	Agabus ambiguus	Say
	Agabus disintegratus	(Crotch)
	Agabus griseipennis	LeConte
	Agabus semivittatus	LeConte
	Agabus seriatus	Say
	Colymbetes extaratus incognitus	Zimmerman
	Coptotomus l. longulus	LeConte
	Hydroporus notabilis	LeConte
	Hygrotus impressopunctatus	(Schaller)
	Hygrotus marklini	(Gyllenthal)
	Hygrotus nubilis	(LeConte)
	Hygrotus patruelis	(LeConte)
	Ilybius biguttulus	(Germar)
	Laccophilus maculosus decipiens	LeConte
	*Liodessus abjectus	(Sharp)
	Liodessus obscurellus	(LeConte) (Gemminger and Harold)
	Neoporus dimidiatus	(LeConte)
	Neoporus obscurellus	(LeConte)
Rhantus binotatus	Harris	
Rhantus gutticollis	(Say)	
Stictotarsus striatellus	(LeConte)	
Elateridae	Aeolus sp.	
	Ampedus sp.	
	Ctenicera sp.	
	Dalopius sp.	
	Hadromorphus sp.	
	Hadromorphus glaucus	(Germar)
*Paradonus pectoralis	(Say)	
Elmidae	Optioservus sp.	
	Optioservus castanipennis	(Fall)
	Optioservus divergens	(LeConte)
Halipidae	Halipus sp.	
	Halipus deceptus	Matheson
	Halipus fulvus	(Fabricius)
	Halipus immaculicollis	Harris
	Peltodytes callosus	(LeConte)
Heteroceridae	Neoheterocerus gnathos	LeConte
*Histeridae	*Xerosaprinus sp.	

Hydrophilidae	Anacaena sp.	
	Berosus fraternus	LeConte
	Berosus stylifer	Horn
	Cercyon sp.	
	Cymbiodyta sp.	
	Cymbiodyta b. beckeri	Smetana
	Enochrus hamiltoni	(Horn)
	Helophorus sp.	
	Helophorus orientalis	Motschulsky
	*Helophorus robertsi	Smetana
	Hydrobius fucipes	(Linnaeus)
	Laccobius sp.	
	Laccobius agilis	Randall
	*Laccobius mexicanus	Orchymont
	Sphaeridium scarabaeoides	(Linnaeus)
	Tropisternus affinis	Motschusky
	Tropisternus columbianus	Brown
	Tropisternus ellipticus	LeConte
	Tropisternus lateralis limbalis	(LeConte)
	Tropisternus lateralis nimbatus	(Say)
Tropisternus sublaevis	(LeConte)	
Lampyridae	Ellychina corrusca complex	
	*Photinus sp.	
	Pyropyga minuta	LeConte
Latridiidae	sp.	
Meloidae	Epicauta sp.	
	Epicauta ferruginea	(Say)
	Epicauta pensylvanica	DeGeer
	Epicauta sericans	LeConte
	Epicauta stuarti	Leconte
	Lytta viridana	LeConte
	Nemognatha lurida	LeConte
	Pyrota insulata	(LeConte)
	Zontis sayi	Wickham
Melyridae	sp.	
	Amecocerus sp.	
	Amecoscerus coloradensis	Blaisdell
	Amecoscerus senilis	LeConte
	Collops sp.	
	Collops bipunctatus	(Say)
	Collops viridis	LeConte
Cradytes serricollis	(LeConte)	

	<i>Malachius aeneus</i>	(Linnaeus)
Mordellidae	sp. <i>Mordella</i> sp. <i>Mordellistena</i> sp.	
Nitidulidae	<i>Carpophilus</i> sp. <i>Epuraea</i> sp. <i>Meligethes</i> sp. <i>Nitidula</i> sp.	
Orsodacnidae	<i>Orsodachne atra</i>	(Ahrens)
Phalacritidae	sp.	
Ptilinidae	<i>Ptenidium</i> sp.	
Pyrrochroidae	<i>Pedilus lewisii</i>	Horn
Scarabaeidae	sp. <i>Aphodius</i> sp. <i>Copris minutus</i> <i>Diplotaxis haydeni</i> <i>Euphoria inda</i> <i>Phyllophaga crassissima</i> <i>Rhyssenus sonatus</i>	(Drury) LeConte (Linnaeus) (Blanchard) LeConte and Horn
Scraptidae	sp. <i>Anaspis</i> sp. <i>Anaspis rufa</i>	Say
Silphidae	<i>Aclypea bituberosa</i> <i>Heterosilpha ramosa</i> <i>Nicrophorus guttula</i> <i>Nicrophorus marginatus</i> <i>Nicrophorus obscurus</i> <i>Thanatophilus lapponicus</i> <i>Thanatophilus sagax</i>	(LeConte) (Say) Motschulsky Fabricius Kirby (Herbst) (Mannerheim)
Staphylinidae	sp.	
Tenebrionidae	<i>Blapstinus substriatus</i> <i>Bothrotes plumbeus</i> <i>Eleodes carbonaria obsoleta</i> <i>Eleodes extricata</i> <i>Eleodes hispilabris</i> <i>Eleodes longicollis</i>	Champion LeConte (Say) (Say) (Say) LeConte

		Eleodes obscura	Say
		Embaphion contusum LeConte	LeConte
		Embaphion fusiformis	Casey
		Eusattus convexus	(LeConte)
	Zopheridae	Glyptasida sordidus	(LeConte)
Collembola	Entomobryiidae	sp.	
	Sminthuridae	sp.	
Dermaptera	Forficulidae	Forficula auricularia	Linnaeus
Diptera	*Acroceridae	sp.	
		*Acrocera sp.	
		Ogcodes sp.	
		*Ogcodes pallidipennis	(Loew)
		Pterodontia missela	Osten Sacken
	Agromyzidae	sp.	
		Liriomyza sp.	
	Anthomyiidae	sp.	
		spp.	
		Acrostilpna sp.	
		Calythea sp.	
		Calythea pratincola	(Panzer)
		Calythea micropteryx	Thompson
		Chelisia elegans	Stein
		Circia tinctipennis	Malloch
		Coenosopia prima	Malloch
		Crinurina sp.	
		Eummesomyia sp.	
		Eustalomyia sp.	
		Eustalomyia vittipes	Zetterstedt
		Fuscillia sp.	
		Hydrophoria sp.	
		Hydrophoria ambigua	Malloch
		*Hydrophoria borealis	Malloch
		Hydrophoria flavohaltera	Malloch
		*Hydrophoria frontata	(Zetterstedt)
		Hydrophoria subpellucida	Malloch
		Hydrophoria uniformis	Malloch
		*Hydrophoria wiezejskii	Mik
		Hylemyza partita	(Meigan)
		Leucophora fusca	Huckett
		Paregle sp.	
		Pegomya palposa	Stein

Asilidae	Asilus sp.	
	Backomyia limpidipennis	Wilcox
	Dicropaltum pawneeae	Martin
	Efferia sp.	
	Efferia staminea	(Williston)
	Holopogon atripennis	Back
	Holopogon seniculus	Loew
	Leptogaster alticola	Kieffer
	Leptogaster aridus	Cole
	Machimus sp.	
Machimus prairensis	(Tucker)	
Scleropogon picticornis	(Loew)	
Athericidae	Atherix pachypus	Bigot
Bibionidae	Bibio sp.	
	Bibio albipennis	Say
	Bibio xanthopus	Wiedemann
	Dilophus sp.	
Bombyliidae	Bombylius sp.	
	Exprosopa dorcadion	Osten Sacken
	Exprosopa decora	Loew
	Geron argutus	Painter
	Hemipenthes jaennickeana	Osten Sacken
	Phthiria sp.	
	Poecilanthrax alcyon	Say
	Poecilognathus scolopax	Osten Sacken
	Stoechus sp.	
	Toxophora sp.	
Villa sp.		
Calliphoridae	Calliphora vincina	(Robineau-Desvoidy)
	Cochliomya hominivorax	Fabricius
	Lucilia silvarum	(Meigen)
	Phormia regina	(Meigen)
	Pollenia pediculata	Macquart
	Protophormia terraenovae	(Robineau-Desvoidy)
Cecidomyiidae	sp.	
Ceratopogonidae	sp.	
	*Atrichopogon fuscus	Coquillett
	Culicoides sp.	
	*Culicoides cockerellii	Coquillett
	*Dasyhelea sp.	
	*Forcipomyia sp.	

Chamaemyiidae	sp.	
Chironomidae	sp.	
	spp.	
	Apedilum sp.	
	Chironomus sp.	
	Cricotopus sp.	
	Diamesa sp.	
	Dicrotendipes sp.	
	Eukiefferiella sp.	
	Micropsecta sp.	
	Odontomesa sp.	
	Orthocladius sp.	
	Paracladius sp.	
	Parametriacnemus sp.	
	Paraphaenocladius sp.	
	Psectrocladius sp.	
	Psectrotanypus sp.	
	Pseudochironomus sp.	
	Rhadotanypus sp.	
Chloropidae	sp.	
	Atropina sp. or near	
	Chlorops sp.	
	Meromyza sp.	
	Meromyza americana	Fitch
	Oscinella sp.	
	Pseudopachychaeta sp.	
	Thaumatomyia sp.	
Conopidae	Physocephala sp.	
	*Physocephala texana	(Williston)
	Thecophora sp.	
	Thecophora nigripes	(Camras)
	Thecophora occidentalis	(Walker)
	Thecophora propinqua	(Adams)
	Zodion cinereiventre	Van Duzee
	Zodion fulvifrons	Say
Culicidae	sp.	
	Aedes sp.	
	Aedes dorsalis	(Meigen)
	Aedes increpitus	Dyar
	Aedes nigromaculis	(Ludlow)
	Culiseta sp.	
	Culiseta impatiens	(Walker)
	Culiseta inornata	(Williston)

	Culiseta morsitans	(Theobald)
*Diopsidae	*Sphyracephala subbifasciata	Fitch
Dixidae	sp. Dixa sp. Dixella sp.	
Dolichopodidae	sp. Chrysotus leucostoma Diaphous sp. Dolichopus sp. Dolichopus bifractus Dolichopus cuprinus Dolichopus obcordatus Dolichopus palustrus Dolichopus plumipes Dolichopus ramifer Hercostomus sp. *Hydrophorus sp. Medetera sp. Medetera veles Paraclius sp. Pelastoneurus vagans Rhapium sp. Rhapium near but not exile Rhapium effilatum Scellus exustus Scellus monstrosus Scutellus sp. Syntomon clavatum	(Loew) Loew Wiedemann Aldrich Melander and Brues Scolopi Loew Loew Loew Curran Wheeler (Walker) Osten-Saken Van Duzee
Empedidae	sp. Platypalpus sp.	
Ephydriidae	sp. Athroglossa sp. or near Callinapaea sp. or near Calocoenia sp. Coenia sp. Ephydra sp. Ephydra (Hydropyrus) sp. Mosilius sp. Mosillus sp. or near Notiphila sp. Notiphila (Dichaeta) sp. Notiphila (Notiphila) sp. Ochthera sp.	

	Oedenops nuda	(Coquette)
	Paralimna sp.	
	Paralimna (Parylimna) sp.	
	Parydra (Parydra) sp.	
	Parydra (P.) sp.	
	Pelina sp.	
	*Philotelma alaskense	Becker
	Scatophila sp.	
Heleomyzidae	Heleomyza sp.	
	Pseudoleria sp.	
	Trixoscelis fumipennis	Melander
*Hippoboscidae	*Lipoptena depressa	(Say)
Lauxanidae	sp.	
	Camproprosopella sp.	
Lonchopteridae	Lonchoptera sp.	
	Lonchoptera furcata	Fallen
Micropezidae	Compsobata pallipes	(Say)
	Micropezia sp.	
	Micropezia turcana	Townsend
Milichiidae	sp.	
	Madiza glabra	Fallen
Muscidae	spp.	
	Caricea erythrocerata	Robineau-Desvoidy
	Coenosia sp.	
	Haemotobia irritans	(Linnaeus)
	Helina negropennis	(Walker)
	Lispe sp.	
	Musca sp.	
	Stomoxys calcitrans	(Linnaeus)
	Thricops sp.	
Mycetophilidae	sp.	
	Diadacidia sp.	
Phoridae	sp.	
	Diplonerva funebris	(Meigen)
	*Megaselia longiseta	Wood
	*Megaselia n. sp. 1 near folliculorum	
	*Megaselia n. sp. 2	
Pipunculidae	Tomosvaryella sp.	

*Psilidae	*Loxocera fumipennis	Coquillett
Ptychopteridae	*Ptychoptera n. sp. Ptychoptera lentis	Osten Sacken
Rhagionidae	Chrysophilus flavibarbis Chrysophilus flavifrons Chrysophilus testaceipes	Adams Marquart Bigot
Sarcophagidae	sp. Neosarcophaga sp. Ravinia sp. Sarcofahrtiopsis sp. or near Sarcophaga sp.	
Scathophagidae	sp. Ceratinostoma cf. ostiorum Cordillura sp. Cordilura (Pseudacicephala) pilocella Cordillura (Scoliaphieps) cf. ustulata Scathophaga sp. Scathophaga stercoraria Stenotania rubiventris	(Curtis) Malloch Becker (Linnaeus) (Maquart)
Sciaridae	Bradysia sp. Lycoriella sp. *Schwenkfeldina sp.	
Sciomyzidae	sp. Dictya sp. Dictya texensis Eurygaster alternata Limnia ottawensis Sepedon sp. Sepedon armipes Tetanocera sp. Tetanocera ferruginea Tetanocera plebeja	Curran (Say) Melandner Loew Fallen Loew
Sepsidae	sp. Saltella sphondylli Sepsis sp. Sepsidimorpha sp. Themira sp.	(Schank)
Simuliidae	sp. Prosimulium fulvum Simulium sp.	(Coquillett)

	<i>Simulium decorum</i>	Walker
	<i>Simulium piperi</i>	Dyar and Shannon
Sphaeroceridae	<i>Leptocera</i> sp.	
Stratiomyidae	sp.	
	<i>Anoplodonta nigrirostris</i> Loew	
	<i>Euparyphus cictus</i>	(Osten Sacken)
	<i>Euparyphus mutabilis</i>	Adams
	<i>Hedriodiscus binotatus</i>	Loew
	<i>Microchrysa polita</i>	Linnaeus
	<i>Nemotelus</i> sp.	
	<i>Nemotelus beameri</i>	James
	<i>Nemotelus nigriventris</i>	Loew
	<i>Ocyptamus lemur</i>	Osten Sacken
	<i>Odontomyia</i> sp.	
	<i>Odontomyia cincta</i> Oliver	
	<i>Sargus cuprarius</i>	(Linnaeus)
	<i>Stratiomys barbata</i>	Loew
	<i>Stratiomys normuba</i>	Loew
	<i>Zabrachia</i> sp.	
Synuridae	<i>Synneura decepiens</i>	Hutson
Syrphidae	sp.	
	<i>Allographa exotica</i>	(Wiedemann)
	<i>Cheilosia</i> sp.	
	<i>Copestylum</i> sp.	
	<i>Copestylum caudatum</i>	Curran
	<i>Copestylum fasciata</i>	Maquart
	<i>Copestylum lentum</i>	Williston
	<i>Copestylum marginatum</i>	(Say)
	<i>Copestylum satr</i>	Osten Sacken
	<i>Copestylum vittatum</i>	Thompson
	<i>Eristalis hirtus</i>	Loew
	<i>Eumerus</i> sp.	
	<i>Eupeodes</i> sp.	
	<i>Eupeodes volucris</i>	Osten Sacken
	<i>Helophilus</i> sp.	
	<i>Helophilus latifrons</i>	Loew
	<i>Neoascia metallica</i>	(Williston)
	<i>Ocyptamus lemur</i>	Osten Sacken
	<i>Orthonevra</i> sp.	
	<i>Orthonevra parva</i>	Shannon
	<i>Orthonevra pictipennis</i>	(Loew)
	<i>Orthonevra robusta</i>	(Shannon)
	<i>Paragus</i> sp.	

	Paragus bicolor	(Fabricius)
	Paragus haemorrhous	Meigen
	Paragus variabilis	Vockeroth
	Phytoptera sp. or near	
	Platycheirus sp.	
	Platycheirus quadratus	(Say)
	Platycheirus immarginatus	(Curran)
	Platycheirus luteipennis	(Curran)
	Polydontomyia curvipes	(Wiedeman)
	Sphaerophoria contigua	Macquart
	Spherophoria philanthus	(Meigen)
	Syrirta pipens	(Linnaeus)
	Toxomerus marginatus	(Say)
Tabanidae	Chrysops sp.	
	Chrysops fulvaster	Osten Sacken
	Chrysops mitis	Osten Sacken
	Hybomitra phaenops	(Osten Sacken)
Tachinidae	sp.	
	spp.	
	Admontia sp.	
	Archytas sp.	
	Arctophyto sp.	
	Atactopis reinhardi	Sabrosky and Arnaud
	Carcelia sp.	
	Ceracia dentata	(Coquillett)
	Chaetocrania antennalis	(Coquillett)
	*Coloradomyia eucosmaphaga	Arnaud
	Copecrypta sp.	
	Cylindromyia sp.	
	Deopalpus sp.	
	Dinera sp.	
	Exorista sp.	
	Gonia sp.	
	Gymnochaeta occidentalis	Townsend
	Gymnoclydia sp.	
	Gymnosoma fulginosa	Desvoidy
	Gymnosoma fuliginosum	Robineau-Desvoidy
	Hemdra aurata	Robineau-Desvoidy
	Leskia sp.	
	Lydina sp.	
	Microchaetina sp.	
	Ochrocera vaginalis	Townsend
	Paradidyma sp. or near	
	Peleteria sp.	
	Phasia sp.	
	Phasia aldrechii	(Townsend)
	Phasia sp. near aldrechi	(Townsend)

	Phytomyptera sp.	
	Ptilodexia sp.	
	Tachina sp.	
	Thelaria americana	Brooks
	Trochiloleskia loriola	(Reinhard)
	Vanderwulpia sp.	
	Xanthomelodes sp.	
Tephritidae	Dioxya sororcula	(Weidmann)
	Euaresta sp.	
	Euaresta bella	(Lowe)
	Evarestoides acutangulus	(Thompson)
	Neaspilota appendulata	Freiberg and Mathis
	Neotephritis finalis	(Loew)
	Paracantha cultaris	Coquillette
	Paracantha gentilis	Hering
	Paroxyna clathrata	(Loew)
	Paroxyna pygmaea	Novak
	Procecidochares minuta	(Snow)
	Trupanea sp.	
	Trupanea actinobola (Lowe)	
	Trupanea jonesi Curran	
	Urophora cardui	(Linnaeus)
Therevidae	Ozodiceromyia sp.	
Tethinidae	*Tethina sp.	
Tipulidae	sp.	
	Erioptera sp.	
	Limonius sp.	
	Nephrotoma sp.	
	Pseudolimnophila sp.	
	Tipula sp.	
Trioxsceleridae	sp.	
Ulidiidae	Chaetopsis sp.	
	*Euxesta sp.	
	Euxesta notata	Weidemann
	Meliera cana	Loew
	Otites sp.	
	Physiphora sp.	
	Tritoxa cuneata	Loew
	Tritoxa incurva	Loew
Ephemeroptera	Baetidae	
	Baetis magnus	McCafferty & Waltz

		Baetis tricaudatus	Dodds
		Callibaetis ferrugineus hageni	Eaton
		Fallceon quilleri	(Dodds)
	Caenidae	Caenis bajaensis	Allen and Murvosh
	Leptohyphidae	Tricorythodes explicatus	(Eaton)
Hemiptera	Alydidae	Alydus eurinus	(Say)
	Anthocoridae	Anthocoris sp.	
	Aphalaridae	Craspedolepta angustipennis	Crawford
		Livia sp.	
		*Livia caricis	Crawford
		*Livia maculipennis	Fitch
	Aphididae	sp.	
	Belostomatidae	Belostoma fluminea	Say
	Berytidae	Jalysus spinosus	(Say)
		Jalysus wickhami	Van Duzee
		Jalysus wickhami	Van Duzee
		*Neoneides muticus	(Say)
	Blissidae	Blissus sp.	
	Caliscelidae	Aphelonema rugosa	Ball
		Brucomorpha sp.	
		Brucomorpha sututuralis	Melichar
	Cercopidae	Clastoptera sp.	
		*Clastophora lineatocollis group	
		Philaenarcys bilineata	(Say)
	Cicadellidae	Aceratagallia sp.	
		Anoscopus serratulae	(Fabricius)
		Athysanella sp.	
		Athysanella (A.) argenteola	(Uhler)
		Athysanella attenuata	Baker
		Athysanella (A.) magdalena	Baker
		*Attenuipyga (Dorycara) minor	Osborn
		Balclutha neglecta	DeLong and Davidson
		Cuerna striata	(Walker)
		Dikraneura carneola	(Stal)
		Dracunculus noveboracensis	(Fitch)

	Draeculacephala sp.	
	Draeculacephala noveboracensis	Fitch
	*Driotura gammoides	(Van Duzee)
	Empoasca sp	
	Endria inimica	(Say)
	Gilletteiella labiata	(Gillette)
	Graphocephala sp.	
	Gypona sp or near	
	Gyponana hasta	DeLong
	Hebecephalus sp.	
	Hebecephalus occidentalis	Beamer and Tuthill
	Hebecephalus rostratus	Beamer and Tuthill
	Hecalus sp.	
	Hecallus near curtis	(Shaw)
	Hecalus vindis	(Uhler)
	Helochara communis	Fitch
	Idiocerus sp.	
	Idiocerus amabilis	(Ball)
	Laccocera obesa	Van Duzee
	Laevicephalus or near	
	Limotettix frigidus	(Ball)
	Macropsis sp.	
	Macrosteles sp.	
	Macrosteles quadrilineatus	(Forbes)
	Mocuellus caprillus	Ross and Hamilton
	*Prairiana subta	(Ball)
	Psammotettix lividellus	(Zetterstedt)
	Rosenus sp.	
	Streptanus sp.	
Cicadidae	Okanagana synodica	(Say)
Cixiidae	Cixius sp.	
	Oliarius sp.	
Coreidae	Catorintha mendica	Stal
	Chelinidea vittiger	Uhler
	Leptoglossus clypealis	Heidemann
Corixidae	Cenocorixa sp.	
	Cenocorixa utahensis	(Hungerford)
	Hesperocorixa sp.	
	Hesperocorixa laevigata	(Uhler)
	Sigara alternata	(Say)
	Sigara grossolineata	Hungerford
	Trichocorixa borealis	Sailer
*Cydnidae	*Pangaeus sp.	

Cymidae	Cymus angustatus	Stal
	Cymus lurida	Stal
Delphacidae	sp.	
	Delphacodes or near	
	Delphacodes sp.	
	Delphacodes sp.	
	Laccocera obesa	Van Duzee
	Mocuellus caprillus	Ross and Hamilton
	Pentagramma longistylata	Penner
Geocoridae	Geocoris sp.	
	Geocoris uliginosa	Say
Gerridae	Aquarius remigis	(Say)
	Gerris gillettei	Lethierry & Severin
Issidae	Aphelonema rugosus	(Ball)
	Bruchomorpha suturalis	Melichar
Lygaeidae	Emblethis vicarius	Horvath
	Lygaeus kalmii	Stal
	Melanopleurus pyrrhopterus	Stål
	Nysius sp.	
	Phlegyas abbreviatus	(Uhler)
	Slaterobius insignis	(Uhler)
	Sphragisticus nebulosus	Fallen
	Xyonysius californicus	Stål
Macroveliidae	Macrovelia horni	Uhler
Membracidae	sp.	
	Campylenchia latipes	(Say)
	Publilia modesta	(Uhler)
	Stictocephala sp.	
	Stictocephala bisonia	Kapp and Yonke
	Tortistilus cinermis	
	Tortistilus collina	Van Duzee
Tortistilus inermis	Fabricius	
Miridae	sp.	
	Coquillettia insignis	Uhler
	Cyrtopeltocoris albofasciatus	Reuter
	Hadronema sp.	
	Hadronema militaris	Uhler
	Irbisia sp.	
	Irbisia brachycerus	(Uhler)

	Labops sp.	
	Labops hesperius	Uhler
	Lygus sp.	
	Lygus elisus	Van Duzee
	Metriorrhynchomiris sp.	
	Metriorrhynchomiris dislocatus	(Say)
	Mimoceps insignis	Uhler
	Phytocoris sp.	
	Prepops sp.	
	Stenodema sp.	
	Stenodema pilosipes	Kelton
	Stenodema vicinus	(Provancher)
Nabiidae	Nabica nigrovittata nearctica	Kerzhner
	Nabica subcoleoptrata	(Kirby)
	Nabis alternatus	Parchley
	Nabis amerocoferus	Carayon
Notonectidae	Notonecta kirbyi	(Hungerford)
	Notonecta undulata	Say
Oxycarenidae	Crophius sp.	
Pentatomidae	Anthemina remota	Horvath
	Chinavia hilaris	(Say)
	Chlorochroa sp.	
	Chlorochroa viridicata	(Walker)
	Cosmopepla lintneriana	Kirkaldy
	Holcostethus limbolarius	Stal
	Murgantia histrionica	Hahn
	Thyanta custator	(Fabricius)
Psyllidae	sp.	
	Cacopsylla sp.	
	Cacopsylla maculata	(Crawford)
	Cacopsylla ribesiae	(Crawford)
	Calophya trizomina	Swartz
	Corythucha sp.	
	Trioza sp.	
Reduviidae	Rhynocoris ventralis	Say
	Zelus luridus	Stahl
Rhopalidae	Aryssus sp.	
	Arhyssus lateralis	(Say)
	Boisea trivitattus	(Say)
	Harmostes reflexulus	(Say)
	Liorhyssus hyalinus	(Fabricius)

		Rhopalus tigrinus	Schilling
	Salididae	Saldula sp. Saldula pallipes	(Fabricius)
	Scutelleridae	Eurygaster alternatus Homaemus bijugis Homaemus parvulus	(Say) Uhler (Germar)
	Thyreocoreidae	Galgupha sp.	
	Tingidae	Corythucha arcuata Corythucha areutus Corythaica venusta	Say Say (Champion)
	Thyrecoridae	Galgupha sp.	
	Vellidae	Rhagovelia sp.	
Hymenoptera	Andrenidae	Andrena sp. Calliopsis sp. Perdita sp. *Panurginus sp. *Pseudopanurgus sp.	
	Apidae	Anthophora sp. Anthophora montana Anthophora walshii Bombus sp. Bombus appositus Bombus fervidus Bombus griseocollis Bombus huntii Bombus fraternus Bombus huntii Bombus nevadensis Bombus pensylvanicus Bombus rufocinctus Ceratina neomexicana Diadasia sp. *Diadasia enavata Epeolus sp. Melissodes sp. Nomada sp. Triepeolus sp.	Cresson Cresson Cresson (Fabricius) (DeGeer) Greene (Smith) Greene Cresson (DeGeer) Cresson Cockerell (Cresson)
	Bethylidae	sp.	

	*Epyris sp.	
Braconidae	sp.	
Cephidae	Cephus sp.	
	Cephus cinctus	Norton
	Hartigia trimaculata	(Say)
Chalcidae	sp.	
	Brachymeria sp.	
	Chalcis sp.	
	Chalcis megalomis	Burks
Chrysididae	sp.	
	Stenodyneris abnormis	Say
Colletidae	Colletes sp.	
	Hylaeus sp.	
	*Hylaeus leptocephalus	(Moran)
	*Hylaeus mesilla	(Cockerell)
Cynipidae	sp.	
*Diapriidae	sp.	
Eulophidae	sp.	
Eupelmidae	sp.	
Formicidae	sp.	
	Crematogaster sp.	
	Formica sp.	
	Formica coloradensis rufa	Creighton
	Formica neoclara	Emery
	Formica obscuripes	Forel
	Formica pallidefulva group	
	Lasius sp.	
	*Lasius (Acanthomyops) latipes	(Walsh)
	Lasius niger	(Linnaeus)
	Lasius latipes	(Walch)
	Lasius sp.	
	Monomorium minimum	(Buckley)
	Myrmica sp.	
	Myrmica brevinodis	Emery
	Pheidole sp.	
	Solenopsis molesta	(Say)
	Tapinoma sessile	(Say)

Halictidae	sp.	
	Agapostemon sp.	
	Agapostemon angelicus	Cockerell
	Agapostemon texanus	Cresson
	Agapostemon virescens	(Fabricius)
	Dialictus sp.	
	Halictus sp.	
	Halictus confusus	Smith
	Halictus ligatus	Say
	Halictus tripartitus	Cockerell
	Lasioglossum sp.	
	Lasioglossum (Dialictus) sp.	
	Lasioglossum pavonotus	Cockerell
	Sphecodes sp.	
Ichneumonidae	sp.	
	*Banchus sp.	
	Coccygomimus pedalis	Cresson
	*Diadegma sp.	
	Ichneumon laetus	Brulle
	Ophion bilineata	Say
	Therion longipes	Provancher
Megachilidae	sp.	
	Anthidium sp.	
	Ceratina sp.	
	Dianthidium sp.	
	Hoplitis sp.	
	*Hoplitis fulgida	Cresson
	Lithurge apicalis	Cresson
	Megachile sp.	
	Osmia sp.	
*Stelis sp.		
Mutillidae	sp.	
	Dasymutilla occidentalis	(Linneaus)
	Dasymutilla vesta	(Cresson)
	Dasymutilla vestita	(Lepeleiter)
	Monomorium minimum	(Buckley)
	Pseudomethoca frigidus	Smith
	Pseudomethoca propinqua	(Cresson)
	Timulla subhyalina	Mickel
Mymaridae	Mymarinae sp.	
Pompilidae	Anoplius sp.	

	Anophilus (ss) dreisbachi	Evans
	Anophillus (A.) marginatus	(Say)
	Arachnispila cf dakota	(Dreisbach)
	Arachnospila arcta	(Cresson)
	Arachnospila (D.) dakota	(Dreisbach)
	Ceropales brevicornis	Patton
	Cryptocheilus idoneum	Banks
	Cryptocheilus terminatus	Say
	Episyron oregon	Evans
Pteromalidae	sp.	
*Sapygidae	*Sapyga sp.	
Scelionidae	sp.	
Sphecidae	sp.	
	Ammophila sp.	
	Ammophila azteca	Cameron
	Ammophila kennedyi	(Murray)
	Ammophila placida	Smith
	Ammophila varipes	Cresson
	Astata sp.	
	Astata nubecula	Cresson
	Bembix sp.	
	Bembix spinolae	Lepeletier
	Bembix sayi	Mickel
	Cerceris nigrescens	Smith
	Crabro lacteipennis	Rohwer
	Crossocerus impressifrons	Smith
	Didineis peculiaris	Fox
	Ectemnius sp.	
	*Ectemnius dilectus	Cresson
	Ectemnius rufifemur	Packard
	Ectemnius spiniferus	(Fox)
	Eucerceris sp.	
	Eucerceris cressoni	Schetterer
	Eucerceris fulvipes	Cresson
	Lindenius columbianus	(Kohl)
	Mimesa sp.	
	Mimesa sp. near cheyenne or uncinata	
	Mimesa cressoni	Packard
	Oxybelus sp.	
	Philanthus crabroniformis	Smith
	Podalonia argentifrons	Cresson
	Podalonia atriceps	(Smith)
	Podalonia luctuosa	Smith
	Podalonia mickeli	Murray

		Podalonia valida	(Cresson)
		Prionyx canadensis	(Provencher)
		Scolierella sp.	
Tenthredinidae		sp.	
		Aphilodyctium fidus	(Cresson)
		Dolerus sp.	
		Pachynematus aurantiacus	Marlatt
		Pachynematus jamesi	Ross
		Pachynematus kirbyi	(Dahlbom)
Tiphiidae		Acanthetropis aequalis	Fox
		Brachyistius sp.	
Vespidae		sp.	
		Euodynerus sp.	
		Euodynerus annulatus	(Say)
		Euodynerus auranus	(Cameron)
		Leptochilus rufinodus	(Cresson)
		Polistes fuscata	Fabricius
		Stenodynerus anormis	(Say)
Lepidoptera	Crambidae	sp.	
		Jocara trabalis	(Grote)
	Coleophoridae	sp.	
	Gelechiidae	spp.	
	Geometridae	Macariini	
		Hesperumia sulphuraria	Packard
	Hesperiidae	Hesperia leonardus pawnee	Harris
		Hesperia colorado ochracea	(Scudder)
		Hesperia juba	(Scudder)
		Hesperia uncas	Edwards
		Pyrgus communis	Grote
	Lasiocampidae	Malacosoma californicum	(Packard)
		Tolyte sp.	
	Lycaenidae	Echinargus isola	(Reakirt)
		Euphilotes ancilla barnsi	(Barnes, McDunnough)
		Leucania sp.	
		Plebejus melissa	(Edwards)
		Strymon melinus	(Hubner)
	Noctuidae	sp.	

	<i>Agrotis ipsilon</i>	(Hunagel)
	<i>Apamea</i> sp.	
	<i>Apamea devastator</i>	(Brace)
	<i>Caenurgina erechtea</i>	(Cramer)
	<i>Condica discistriga</i>	(Smith)
	<i>Copablepharon</i> sp.	
	<i>Cucullia</i> sp.	
	<i>Discestra oregonia</i>	(Grote)
	<i>Drasteria howlandi</i>	(Grote)
	<i>Drasteria inepta</i>	Henry Edwards
	<i>Drasteria pallescens</i>	Grote and Robinson
	<i>Eucosma fernaldana</i>	(Grote)
	<i>Euxoa auxiliaris</i>	(Grote)
	<i>Euxoa linefrons/annulipes</i>	
	<i>Euxoa obeliscoides</i>	(Grote)
	<i>Euxoa ridingsiana</i>	Grote
	<i>Euxoa servitus</i>	(Smith)
	<i>Feltia jaculifera</i>	Guenee
	<i>Faronta diffusa</i>	(Walker)
	<i>Hypercompe permaculata</i>	(Packard)
	<i>Lacanobia</i> sp.	
	<i>Leucania insuet</i>	Guenee
	<i>Naphelodes minians</i>	Guenee
	<i>Neleucania patricia</i>	(Grote)
	<i>Noctua pronuba</i>	(Linnaeus)
	<i>Paectes abrostoloides</i>	(Grote)
	<i>Spaelotis clandestina</i>	(Harris)
	<i>Tarachidia</i> sp.	
	<i>Thersea agustipennis</i>	(Grote)
	<i>Ulonche disticha</i>	(Morrison)
	<i>Virbia fragilis</i>	(Strecker)
Nymphalidae	<i>Cercyonis pegala</i>	Fabricius
	<i>Chlosyne gorgone</i>	(Huber)
	<i>Coenonympha tullia</i>	(Muller)
	<i>Euphydryas anicia</i>	Doubleday
	<i>Euptoieta claudia</i>	(Cramer)
	<i>Phiciodes tharos</i>	(Drury)
	<i>Vanessa cardui</i>	(Linnaeus)
Pieridae	<i>Colias alexandra</i>	Edwards
	<i>Colias eurytheme</i>	Boisduval
	<i>Colias philodice</i>	(Godart)
	<i>Euchloe olympia</i>	W.H. Edwards
	<i>Pieris rapae</i>	(Linnaeus)
	<i>Pontia occidentalis</i>	Reakirt
	<i>Pontia protodice</i>	(Boisduval, LeConte)
Prodoxidae	<i>Tegeticula yuccasella</i>	(Rieley)

	Pterophoridae	sp.	
	Pyralidae	Diatraea sp. Loxostege sticticollis Melitara dentata Prorasea sp.	(Linnaeus) (Grote)
	Sphingidae	Hyles lineata Paonias myops Sphinx vashti	Fabricius (J.E. Smith) Strecker
	Tortricidae	Archips argyrospila Eucosma ragonoti Olethreutinae	(Walker) (Walsingham)
Mantodea	Mantidae	Litaneutria minor Mantis religiosus	(Scudder) Linnaeus
Neuroptera	Chrysopidae	Chrysopa sp. Chrysopa nigricornis Chrysopa plorabunda Eremochrysa sp. Eremochrysa puntinervis Eremochrysa sabulosa	Burmeister (Fitch) (McLachlan) (Banks)
	Hemerobiidae	sp. Hemerobius sp. *Sympherobius perparvus *Wesmaelius sp.	 (McLachlan)
	Myrmeleonitidae	Brachynemurus abdominalis Brachynemurus nigrilabras	(Say) Hagen
Odonata	Aeshnidae	Aeshna palmata	Hagen
	Coenagrionidae	Amphiagrion abbreviatum Amphiagrion palmata Argia alberta Argia immundum Argia vivida Enallagma anna Enallagma civile Ischnura sp. Ischnura damula Ischnura perparva Ischnura verticalis	Selys Hagen (Hagen) Kennedy Hagen Williamson (Hagen) Calvert Selys Say
	Lestidae	Lestes congener	Hagen

		<i>Lestes disjunctus</i>	Selys
	Libellulidae	<i>Libellula pulchella</i>	Drury
		* <i>Plathemis subornata</i>	(Hagen)
		<i>Sympetrum corruptum</i>	Hagen
		<i>Sympetrium obtrusum</i>	(Hagen)
		<i>Sympetrium semicinctum</i>	(Say)
	Lestidae	<i>Lestes disjunctus</i>	Selys
Orthoptera	Acrididae	<i>Aeropedellus clavatus</i>	(Thomas)
		<i>Ageneotetix decorum</i>	(Scudder)
		<i>Arphia conspersa</i>	Scudder
		<i>Arphia pseudonietana</i>	Bruner
		<i>Camnula pellucida</i>	Scudder
		<i>Chorthippus curtipennis</i>	Harris
		<i>Cordillacris crenulata</i>	(Bruner)
		<i>Dissosteira carolina</i>	(Linnaeus)
		<i>Encoptolophus costalis</i>	(Thomas)
		<i>Encoptolophus subgracilus</i>	Caudell
		<i>Eritettix simplex</i>	(Scudder)
		<i>Hesperotettix viridis</i>	(Scudder)
		<i>Melanoplus</i> sp.	
		<i>Melanoplus agustipennis</i>	(Dodge)
		<i>Melanoplus bivittatus</i>	(Say)
		<i>Melanoplus femurrubrum</i>	(DeGeer)
		<i>Melanoplus gladstoni</i>	Scudder
		<i>Melanoplus infantilis</i>	(Scudder)
		<i>Melanoplus sanguinipes</i>	(Fabricius)
		<i>Opeia obscura</i>	(Thomas)
		<i>Paropomala wyomingensis</i>	(Thomas)
		<i>Psoloessa delicatula</i>	(Scudder)
		<i>Spharagemon equale</i>	(Say)
		<i>Trachyrhachys aspera</i>	Scudder
		<i>Xanthippus corallipes</i>	(Haldeman)
	Gryllidae	<i>Gryllus</i> sp.	
	Oecanthidae	<i>Oecanthus quadripunctatus</i>	Beutenmuller
	Tetrigidae	<i>Tettix ornata</i>	(Say)
		<i>Tetrix subulata</i>	(Linnaeus)
	Tettigoniidae	<i>Conocephalus fasciata</i>	De Geer
		<i>Orchelimum gladiator</i>	Brunner
Phasmatodea	Phasmatidae	<i>Parabacillus hesperus</i>	Hebard
		<i>Parabacillus coloradus</i>	(Scudder)

Plecoptera	Perlodidae	<i>Isoperla quinquepunctata</i>	(Banks)
	Nemouridae	* <i>Malenka coloradensis</i>	(Banks)
Psocoptera	Psocidae	sp.	
Trichoptera	Hydropsychidae	<i>Cheumatopsyche analis</i>	Banks
		<i>Cheumatopsyche campyla</i>	Ross
	Helicopsychidae	* <i>Helicopsyche</i> n. sp.	
	Hydropsychidae	<i>Cheumatopsyche analis</i>	Banks
	Leptoceridae	<i>Oecetis disjuncta</i>	(Banks)
		<i>Trienodes frontalis</i>	(Banks)
	Limnephilidae	<i>Anobolia bimaculatus</i>	(Walker)
		* <i>Anobolia consocius</i>	(Walker)
		* <i>Clistoronia maculata</i>	(Banks)
		<i>Hesperophylax</i> sp.	
		<i>Hesperophylax designatus</i>	(Walker)
		<i>Hesperophylax magnus</i>	Banks
		<i>Hesperophylax occidentalis</i>	(Banks)
		* <i>Limnephilus acnestus</i>	Ross
		<i>Limnephilus castor</i>	Ross & Merkeley
<i>Limnephilus diversus</i>		(Banks)	
<i>Limnephilus frijole</i>	Ross		
<i>Limnephilus spinatus</i>	Banks		
<i>Limnephilus taloga</i>	Ross		
	Philopotamidae	<i>Chimera utahensis</i>	Ross
Thysanoptera	Phlaeothipidae	<i>Haplothrips</i> sp.	
		*Uncommonly collected	