

A survey of the leafhoppers, planthoppers, froghoppers, grasshoppers, butterflies and moths of the Green River State Wildlife Area, Lee County, Illinois.

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1.0 INTRODUCTION

Roughly one-fifth of the insects found on Midwestern prairie and savanna remnants are restricted to these habitat islands by narrow habitat requirements. Sites as large as the Green River State Wildlife Area (GRSWA) have been found to harbor scores of these 'remnant dependent' (r-d) or 'conservative' species in this region (see table 1). We conducted a search for conservative insect species* at GRSWA in 1990-91 and again in 2002. John and Cynthia McKee conducted thorough butterfly monitoring studies in 2000-2002. Kurt Laurent conducted general insect surveys in 1997 and 1998. The results of these studies are combined in a region-wide analysis presented below.

2.0 METHODS (2002)

The following taxa, all of which include appreciable numbers of r-d species, were the primary focus of the 2002 survey:

- (1) **Leafhoppers, planthoppers and froghoppers** (Homoptera, in part) [1990-91 & 2002]
- (2) **Butterflies** (Lepidoptera) [1990-91 & 2002]
- (3) **Moths** (Lepidoptera) [2002]
- (4) **Grasshoppers and walking sticks** (Orthoptera) [2002]

Additional taxa surveyed included dragonflies and a modest number of beetles.

Five diurnal surveys were conducted by one or two investigators between April 15 and October 10. Aerial nets, sweep nets and vacuum collectors were employed to capture adult specimens during each visit.

Eight nocturnal moth surveys were conducted between April 15 and October 10. Generator-powered sodium vapor and black lights suspended in front of upright bedroom sheets were used to attract moths on 6 occasions between May 1 and October 1. In addition, five or more funnel-type light traps powered by 12 volt batteries were operated from 8 pm to 8 am on eight nights for a total of 50 trap nights.

* Many ecologically-tolerant prairie species occur more frequently and in greater numbers within remnants than they do in degraded systems. These "remnant-associated" species were targeted as well.

Butterflies, dragonflies, and other easily identified insects were captured, identified, and released. Difficult species were sacrificed and retained for further examination; these are currently housed as voucher specimens at Northeastern Illinois University and in the collection of the senior author (most will be donated to the Field Museum within the next 5 years).

Specimens were identified using a variety of taxonomic manuals, keys, and field guides, some of which are listed in the attached bibliography. In the case of the moths, specimens were compared with reference specimens from the collections of the Field Museum of Natural History, Chicago, IL, and the Illinois Natural History Survey, Champaign, IL. Difficult specimens were taken to the University of Ohio for identification in early December. A. K. Hamilton (Research Branch, Agricultural Canada) assisted in the identification of leafhoppers.

3.0 RESULTS

We recorded one hundred and twenty-six species representing 2 orders and 11 families in 1990-1991. Kurt Laurent added another 185 species in 1997-98. John and Cynthia McKee added yet another 5 butterfly species in 2000-02. We recorded 325 species in 2002, adding 289 new species to the site total. In summary, **601 species representing 63 families in 9 orders** have been identified at GRSWA to date (Appendix 1).

Whereas the bulk of the species we recorded in 1990-91 were determined to be wide-ranging species with broad ecological amplitudes, 41 were determined to be uncommon remnant-dependent species. Laurent and the McKees recorded an additional 3 conservatives within the past six years. We managed to add another 62 r-d species last year, bringing the total to 106 (Table 2).

4.0 DISCUSSION (see Appendix 2)

GRSWA supports an impressive number of conservative insects, many of which are either uncommon or rare in both Illinois and neighboring Indiana (See Appendix 1). Decades of field trials, food plot plowing and invasion by exotics (e.g., *Phalaris arundinacea*) has resulted in the degradation of much of the prairie on this site. Nevertheless, GRSWA, by virtue of its large size and rich upland habitats, harbors more remnant-restricted insect species than do a substantial majority of the higher quality (but smaller) reserves in this region (e.g., Tables 1 and 3)*.

4.1 Butterflies (species abundance)

Roughly one third of the butterflies known to occur in Illinois (60) have been recorded at GRSWA since 1989. Fourteen conservative species have been recorded on this site within the past 13 years (all but *L. eurydice*, *Lycaena helloides*, *Euphyes dion*, and *C. gorgone* were observed in 2002).

* A thorough moth survey cannot be completed in one year. An additional year of work will be required to match the exhaustive data presented in Table 1. If our results from year one are any indication, it is not unlikely that GRSWA will be found to match or exceed most or all of sites listed in terms of conservative species richness.

The purplish copper, the two-spotted skipper, the aphrodite, and the byssus skipper are known to occur on less than 20 protected sites in Illinois and should be considered to be very uncommon elements (S2). Several others, including, the Dion skipper, the silver bordered fritillary and the great copper are uncommon (S3) and tend to be restricted to larger remnants in this region. Species such as the crossline skipper, the black dash, the southern cloudy wing, the bronze copper, and the baltimore checkerspot are somewhat common but will likely become much less so as shrinking habitat islands become more isolated and local extinctions accelerate.

The gorgone checkerspot, *Chlosyne gorgone carlotta*, is a rare prairie species in northern Illinois but may be more common to the west and south. One regal fritillary was observed by the MacKees in 2002. This species is rare throughout its range and should be considered to be a rare element (S1). However, since this species has been seen only once in 10 years, we did not include it in our tally of resident conservative species.

4.2 Moths

Forty-eight conservative moth species have been recorded thus far. Chief among these were several members of the genus *Papaipema* . . .

4.2.1 Papaipema. The North American genus *Papaipema* is comprised of approximately 55 species (Quinter 1983), with roughly 40 occurring in the East and/or Midwest (Hessel 1954). Most are restricted to native plant communities by narrow host plant requirements. As a consequence, most are uncommon or rare in large portions of their range.

The Chicago region has long been considered the center of distribution for many of the members of this group. Twenty-seven species were recorded in and around Chicago between the years of 1915 and 1942 by A. K. Wyatt, E. Beer, and others (Wyatt 1915-1942). We have managed to "rediscover" 25 of these species, and have recorded 2 additional species within Illinois natural areas within the past 10 years.

The *Papaipema* moths of northeastern Illinois and northwestern Indiana can be categorized according to habitat requirements as follows: 19 prairie/fen species; 5 savanna/woodland species; and 5 wide-ranging, unrestricted species. A site as large as GRWSA should probably support 10 to 13 of the prairie species (the host plants of 14 prairie species occur on this site.).

Eleven remnant-restricted *Papaipema* species were recorded, establishing GRWSA as one of the richer prairie *Papaipema* sanctuaries in the northern Midwest (Illinois, Wisconsin, Michigan and Indiana (e.g., Table 3). The savanna species *Papaipema cerina* is currently known from less than 10 protected sites and should be considered to be a rare element (S1S2) in Illinois. The Maritime root borer, *P. maritima*, has only been recorded on 4 sites in Michigan (J. Bess, Pers. comm.) and seems to be nearly as rare in Illinois. The Liatris root borer, *P. beeriana*, also known from 4 sites in Michigan (J. Bess, Pers. comm.), is listed as endangered in Ohio, and is uncommon in Illinois and Indiana.

The Culver's root stem borer, *P. sciata* and the golden alexander root borer are equally as uncommon in Illinois and Indiana. These species should be treated as uncommon elements (S2S3).

The *Silphium* root borer, *P. silphii*, is listed in Michigan (T), Wisconsin (T), and Ohio (E), but is fortunately a somewhat common member of our upland prairie fauna in Illinois and Indiana. The sneeze weed borer, *P. impecuniosa*, and the sensitive fern borer, *P. inquisita*, are still relatively common, and can usually be found where their host plants occur (S3).

4.2.2 Additional moths. Many very uncommon or rare upland moth species (besides *Papaipema*'s) were recorded at GRSWA. *Apamea plutonia* and *Oncocnemis viridincta* are not known to inhabit any protected sites in Illinois, and are likely state records (S1). The *Amorpha*-feeding *Catocala whitneyi*, the sunflower feeder *Plagiomimicus spumosum* and the moths *Paectes abrostolella* and *Apamea lutosa* are known from eight or fewer sites in Illinois (S1-S2). The false boneset moth, *Loxagrotis grotei*, and the wetland species *Chortodes defecta* are known from only two other preserves in Illinois and should be considered to be rare elements (S1).

The Leadplant flower moth, *Schinia lucens*, is known from only one site in Michigan where it is listed as endangered. This *Amorpha*-feeder is apparently scarce in Illinois and should be treated as a very uncommon element (S2).

Capis curvata and *Tarachidia binocula* are clearly uncommon members of our wet prairie fauna in Illinois and Indiana (S2S3). *Platyperigea meralis*, *Eucoptocnemis fimbriaris*, *Euxoa niveilinea* and *Trichosilia manifesta* are very uncommon savanna species in both Illinois and Indiana. *Schinia saturata*, previously known only from west central Illinois, seems to be absent from most of northern Illinois.

Eucosma n.s. Brown, known only from the Gensburg Markham and Green River Prairies in Illinois and from the Haydon Prairie in Iowa, ranks with *P. eryngii* and *Papaipema* n.s. #10 in terms of both local and global rarity (G1, S1).

4.3 Leafhoppers, planthoppers, froghoppers

One hundred and two homopteran species have been recorded to date (Appendix 1). Whereas 61 are clearly common, wide-ranging species, 39 are considered to be uncommon, r-d species (Table 2).

Seven of the leafhopper species we recorded are very scarce in this region and should be considered to be of conservation concern. *Paraphlepsius maculosus* is known from less than 10 sites in North America. *Polyamia similaris* has been recorded on only one other site in Illinois. These species should be considered to be rare elements (G1G2S1). *Polyamia rossi*, *Destria fumidus* and *Flexamia atlantica* are known from fewer than 10 sites in the northern Midwest (Illinois, Wisconsin and Indiana) and

should be considered to be rare elements as well (S1). Focusing strictly on Illinois and Indiana, *Destria fumidus* (7 sites), *Flexamia pyrops* (4 sites) *Xerophloea peltata* (5 sites) and *Paraphlepsius solidaginis* (5 sites) are known from fewer than eight sites and should be considered to be very uncommon to rare (S1-S2).

The boreal species *Pendarus magnus* and *Cribrus shingwauki*, while generally uncommon throughout much of their ranges, are relatively secure within the Chicago Wilderness region (S3). The great plains species *Paraphlepsius lobatus* and *Scaphytopius cinereus* are likewise common in Illinois (S2).

The prairie-dependent leafhopper fauna of GRSWA compares favorably with those recorded on most of the high quality prairie remnants in this region (Table 1).

4.4 Other r-d insects

Kurt Laurent recorded a variety of grasshoppers, katydids, beetles, true bugs, wasps, beetles and flies, nearly all of which are common, wide-ranging generalist species. Among the species we recorded, The toothpick grasshopper, *Mermiria bivitata*, the spur throat *Hesperotettix viridis*, slant face *Eritettix simplex* and the prairie katydid *Conocephalus saltans* are uncommon sand prairie species in this region (S2S3). The prairie-associated beetle *Pachybrachis spumarius* has been recorded on only five other prairies within the Chicago Wilderness region and should be considered to be an uncommon element (S2) as well. Blatchley's walking stick, *Diapheromera blatchleyi*, was recorded within mesic and wet prairie habitats throughout the site. This is a somewhat common mesic and wet prairie species in this region (S3S4).

4.5 Distribution among habitats. GRSWA was found to support an impressive mix of xeric, mesic and wet prairie/ savanna species. Species characteristic of wetter, sedge meadow and marsh habitats, however, were least plentiful. Only 18% of the conservative species recorded are considered to be denizens of sedge meadow/marsh habitats (we sampled these areas rather heavily in 2002). Decades of field trials, food plot plowing and invasion by exotics (e.g., *Phalaris arundinacea*) have apparently taken their toll on these habitats. In sharp contrast, over 50% of the species recorded inhabit mesic and/or wet prairie habitats. GRSWA clearly ranks among the best (most intact) examples of xeric/mesic/wet prairie insect assemblages occurring east of the Mississippi River.

4.6 Spatial distribution

We found the insect species of conservation concern (both r-d and r-a species) to be distributed somewhat evenly between the high quality tract east of parking lot # 6 and the scattered remnant patches (taken in total) west of Pump Factory Road (PFR). As expected, the area east of PFR was found to support a subset of species that are scarce or absent from the remainder of the complex. Unexpectedly, an equal number of species were recorded solely (exclusively) in one or more areas west of PFR. Our results underscore the importance of protecting all of the remnant plant communities indicated in figure 1.

4.7 Survey Thoroughness

After three years of relatively intensive survey work, most (90-100%) of the butterflies, froghoppers and macro leafhoppers that occur on this site have likely been recorded. We estimate that 80% of the resident grasshoppers and katydids are known. In contrast, experience suggests that our one-year survey of the moths is far from complete (a minimum of two years are required to do a thorough job). Given the extent of the fluctuations in density that insect populations tend to undergo, the very localized populations of many species within what appear to be homogeneous habitats, the propensity of many species to flee well in advance of investigators, and the large size of the GRSWA site, further efforts can be expected to unearth scores of additional macro and micro moth species.

Recommendations

The prairie complex east of parking lot #6 ranks among the best sand prairie sites in Illinois (or Indiana) in terms of plant community quality and insect species richness and should be considered for nomination as an Illinois Nature Preserve.

The extensive swath of wetlands situated in the western sections of this site have been reduced to isolated remnant patches by invasive species (*Phalaris*, *Typha*). Despite their relatively small size and increasing isolation, these areas support rare elements (e.g., *Chortodes defecta*, *Capis curvata*, *Pseudeva purpurigera*, *Lycaena helloides* and *Eucosma* n.s. Brown). The protection and expansion of these biologically rich habitats should be considered a high priority management objective.

Despite their small size and somewhat degraded condition, the xeric areas situated in areas 3 and 5 (see Figure 1) continue to support a host of species known to be scarce within the eastern extension of the tallgrass prairie biome (Illinois, Indiana and Ohio). Excellent examples include *Schinia lucens*, *Catocala whitnei*, *Loxigrotus grotei*, *platyperigera meralis*, *Apamea plutonia*, and *Oncocnemis viridincta*, all of which should be listed as Endangered or Threatened in Illinois. As in the case of the beleaguered wetlands, an effort should be made to protect and expand these biologically rich habitats.

5.0 Bibliography

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Table 1. Distribution of insect species richness among 13 prairie reserves within the Chicago Wilderness region (2003)

Sites soil types	moths		butterflies		Homoptera		Other	TOTAL
	totals	r-d	totals	r-d	totals	r-d	r-d	r-d's
SAND								
Iroquois (800 ha) ¹	613	76	46	16	180	48	5	145
Illinois Beach State Park ¹	425	86	51	16	123	51	7	160
Chiwaukee (90 ha.)	380	71	39	10	82	41	2	124
GMP (70 ha.)	416	68	50	14	133	48	6	136
Dupont (50 ha.) ¹	331	38	37	13	101	38	2	91
C&P (50 ha.) ¹	303	44	47	15	78	31	3	93
Green River Prairie ¹	311	48	60	14	81	39	5	106 ²
DOLOMITE								
DesPlaines Cons Area	305	35	23	5	58	22	4	66
Lockport	242	35	32	8	70	30	5	77
Romeoville	221	28	30	7	62	23	5	58
SILT LOAM								
Goose Lake Prairie	400	60	46	15	85	42	3	120
Grant Creek (30 ha.)	329	51	37	9	72	26	4	90
Chicago Ridge (3 ha.)	120	17	22	2	53	20	2	41

¹ These sites include sand savanna habitats.

² This inventory has not been completed.

Table 2. Conservation status, host plant requirements, and habitat associations of the conservative and remnant-associated insects known to inhabit the Green River State Wildlife Area. (Panzer, Derkovitz & Gnaedingerr, 2003)

Taxon	Habitat associations			Host plants	Status northern IL ⁶	Capture locations ⁵
	xeric	mesic/wet	sedge meadow			
ODONATA: Anisoptera (dragonflies)						
Libullulidae						
<i>Sympetrum semicinctum</i>			r-a	N/A		4 6
ORTHOPTERA: grasshoppers, et al.						
Acrididae						
<i>Hesperotettix viridis pratensis</i>	r-d			oligophagous	C3	1 5
Melanoplinae						
<i>Eritettix simplex</i>	r-d			<i>Bouteloua</i> , <i>Stipa</i> , etc.	C5	1 3 5
<i>Mermeria bivittata</i>	r-d			native grasses	C3	3 5
<i>Trachyrachis kiowa fuscifrons</i>	r-a			grasses		
Acridinae						
<i>Arphia zanthoptera</i>	r-a					1 3 4 5 6
Tettigoniidae						
<i>Conocephalus saltans</i>	r-d				C3	1 5
Phasmatidae						
Heteronemlinae						
<i>Diapheromera blatchleyi blatcheyi</i>		r-d			C1	1 7
LEPIDOPTERA: butterflies						
Hesperidae						
<i>Atrytone delaware</i>	r-a			<i>Andropogon</i>		
<i>Erynnis baptisiae</i>		r-d		<i>Baptisia</i>		
<i>Euphyes bimacula</i>		r-d	r-d	<i>Carex</i>	C3	1
<i>Euphyes conspicua</i>			r-d	<i>Carex</i>	C1	1 4 7
<i>Euphyes dion</i>			r-d	<i>Carex</i>	C2	1
<i>Polites origines</i>	r-d	r-d		native grasses	C2	1 2 6
<i>Problema byssus</i>	r-d	r-d		<i>Andropogon</i>	C3	1 2
<i>Thorybes bathyllus</i>	r-d			legumes	C3	1 5
Lycaenidae						
<i>Harknclenus titus</i>	r-a	r-a		<i>Prunus</i>		1 5 6
<i>Lycaena helloides</i>		r-d	r-d	<i>Polygonum</i>	C4	1 6
<i>Lycaena thoe</i>		r-d	r-d	<i>Polygonum</i>	C2	1 7
Nymphalidae						
<i>Boloria selene myrina</i>		r-d		<i>Viola</i> spp.	C3	1 2 7
<i>Boloria belona</i>		r-d		<i>Viola</i> spp.	C3	
<i>Chlosyne gorgone carlotta</i>	r-d			<i>Helianthus laetiflorus</i>	C5	1 3

Taxon	Habitat associations			Host plants	Status northern IL ⁶	Capture locations ⁵
	xeric	mesic/wet	sedge meadow			
<i>Euphydryas phaeton</i>		r-d	r-d	<i>Chelone</i>	C2	1
<i>Speyeria aphrodite</i>		r-d		<i>Viola</i> spp.	C3	1 2
<i>Speyeria cybele</i>		r-a		<i>Viola</i> spp.		
<i>Speyeria idalia</i> ³				<i>Viola</i> spp.	C5	
Papilionidae						
<i>Papilio cresphontes</i> ²		r-a				
<i>Battus philenor</i> ³		r-a		<i>Arisolochia</i>		
Satyridae						
<i>Cercyonis pegala olympus</i>		r-a				1 2 3 4 5 6 7
<i>Lethe eurydice</i>		r-d	r-d	<i>Carex</i>	C2	1 7
LEPIDOPTERA: moths						
Cosmopterigidae						
Cosmopteriginae						
<i>Triclonella determinatella</i>		r-d		legumes, <i>Desmodium</i> , etc.	C5	1 2 5
Tortricidae						
Olethreutinae						
<i>Eucosma</i> n.s.		r-d		<i>Spartina</i> (?)	C5	1 7
<i>Eucosma giganteana</i>		r-d		<i>Silphium</i>	C1	1
<i>Eucosma bilineana</i>		r-a		<i>Helianthus</i>		1 4 6 7
<i>Eucosma paläbundana</i>		r-d			C4	1
<i>Epiblema tripartitana</i>		r-a		<i>Rudbeckia</i>		
Pyralidae						
(Crambiformes) Odontiinae						
<i>Nascia acutella</i>		r-d	r-d		C2	4 6 7
<i>Polygrammodes flavidalis</i>		r-d	r-d	<i>Vernonia</i> root-borer	C3	1 7
(Pyraliformes) Phycitinae						
<i>Nephoterix basilaris</i>		r-a	r-a	<i>Salix</i>		1 4 7
Geometridae						
Ennominae						
<i>Petrophora subaequaria</i>		r-a		ferns		
Notodontidae						
<i>Pheosia rimosa</i>		r-a	r-a	poplars, willows		4 5
Arctiidae						
Arctiinae						
<i>Pygarctia spraguei</i>	r-d			<i>Euphorbia corolata</i>	C4	1 2 3 5
<i>Grammia (Apantesis) virguncula</i>		r-d			C2	1 7
Noctuidae						
Hypeninae						

Taxon	Habitat associations			Host plants	Status northern IL ⁶	Capture locations ⁵
	xeric	mesic/wet	sedge meadow			
<i>Phytometra ernestiana</i>	r-d	r-d		unknown	C4	1 5
<i>Phytometra rhodarialis</i>	r-a	r-a		unknown		
Catocalinae						
<i>Lesmone detrahens</i>	r-d	r-d		unknown	C3	1 2 3
<i>Catocala habilis</i> ²	r-a			<i>Amorpha, Robinia</i>		
<i>Catocala whitneyi</i>	r-d			<i>Amorpha</i>	C5	3
Eutellinae						
<i>Paectes abrostolella</i> ²	r-d				C5	1
Plusiinae						
<i>Pseudeva purpurigera</i>		r-d		<i>Thalictrum</i>	C4	1 4
Acontiinae						
<i>Capis curvata</i>		r-d	r-d		C4	1 6 7
<i>Lithacodia albidula</i>			r-a	grasses		1 4 6 7
<i>Lithacodia musta</i>		r-a		Unrecorded		
<i>Tarachidia binocula</i>	r-d	r-d		unknown	C3	1 2
Acronictinae						
<i>Agriopodes teratophora</i>			r-d	mint + <i>monarda</i>	C3	1 4
Amphipyryinae						
<i>Apamea burgessi</i>	r-d	r-d			C3	1 5 7
<i>Apamea lutosa</i>		r-d			C5	1 7
<i>Apamea plutonia</i>	r-d				C5	5
<i>Chortodes defecta</i>		r-d	r-d		C5	6 7
<i>Cirrhophanus triangulifer</i>		r-d	r-d	<i>Bidens</i>		1 2 4 5
<i>Crambodes talidiformis</i>		r-d		<i>Verbena</i> spp		1 2 3 4 5 6 7
<i>Luperina stipata</i>		r-d		<i>Spartina</i>	C2	1 4
<i>Meropleon ambifusca</i>		r-d		unknown	C2	1 2 4 5
<i>Meropleon diversicolor</i>			r-d	sedges	C3	1 2
<i>Nedra ramosula</i>		r-a		possibly <i>Hypericum</i>		4 6 7
<i>Oligia modica</i>			r-a	grasses, sedges		
<i>Papaipema baptisiae</i>		r-a		<i>Apocynum</i>		1 3 4 5
<i>Papaipema beeriana</i>		r-d		<i>Liatris</i>	C2	1 2
<i>Papaipema birdi</i>		r-d	r-d	<i>Cicuta maculata</i>	C3	1
<i>Papaipema cerina</i>		r-d		<i>Hystrix patula</i>	C5	1
<i>Papaipema impecuniosa</i>		r-d	r-d	<i>Helenium, aster</i>	C2	1 7
<i>Papaipema inquaesita</i>		r-d	r-d	<i>Onoclea</i>	C3	1 6
<i>Papaipema maritima</i>		r-d		<i>Cacalia, Helianthus</i>	C3	1 2 5
<i>Papaipema nepheleptena</i>		r-d	r-d	<i>Chelone glabra</i>	C3	1
<i>Papaipema rigida</i>		r-d		<i>Zizia</i>	C4	1 2
<i>Papaipema sciata</i>		r-d		<i>Veronicastrum</i>	C3	1 2

Taxon	Habitat associations			Host plants	Status northern IL ⁶	Capture locations ⁵
	xeric	mesic/wet	sedge meadow			
<i>Papaipema silphii</i>	r-d			<i>Silphium</i>	C1	1
<i>Papaipema unimoda</i>	r-d			<i>Thalictrum</i>	C2	1 4 7
<i>Plagiomimicus spumosum</i>		r-d			C5	5
<i>Platyperigea meralis</i>	r-d				C4	3 5
<i>Spartiniphaga inops</i>		r-d		<i>Spartina</i>	C3	1 4 6 7
<i>Trachea delicata</i>		r-a				1 2 4 5 6
Cuculliinae						
<i>Oncocnemis viriditincta</i>	r-d			<i>Penstemon</i>	C5	1 5
Hadeninae						
<i>Faronta rubripennis</i>		r-d		<i>P. virgatum</i>	C2	1 2 3
<i>Lacanobia (Polia) legitima</i>		r-a		<i>A. umbellatus, Salix,</i>		4 6
<i>Leucania multilinea</i> ²		r-a				
<i>Leucania phragmatidicola</i>			r-a	grasses		1 2 4 6 7
<i>Protorthodes incincta</i>	r-d				C4	3
<i>Ulolonche modesta</i>	r-d				C4	1
Noctuinae						
<i>Agrotis venerabilis</i>		r-a				4 7
<i>Agrotis vetusta</i>	r-a			unknown		1 5
<i>Eucptocnemis fimbriaris</i>	r-d				C4	1 3
<i>Euxoa detersa</i>	r-a					1 3 5
<i>Euxoa messoria</i>		r-a				
<i>Euxoa niveilinea</i>	r-d				C4	1 3 5
<i>Euxoa velleripennis</i>		r-a		unknown		1 4 6 7
<i>Loxagrotis grotei</i>		r-d		<i>Khunia</i>	C5	1 5
<i>Trichosilia manifesta</i>	r-d				C4	1 5
Heliothinae						
<i>Pyrrhia umbra</i>	r-a					1 5
<i>Schinia arcigera</i>		r-a		<i>Aster</i>		1 2
<i>Schinia lucens</i>	r-d	r-d		<i>Amorpha, SL</i>	C5	3
<i>Schinia saturata</i>	r-d			golden aster	C5	1 3 5
HOMOPTERA: leafhoppers, planthoppers, treehoppers, and froghoppers						
Cicadellidae						
Athysaninae						
<i>Amplicephalus osborni</i>		r-d	r-d		C2	1 4 6 7
<i>Chlorotettix fallax</i>		r-d		native grasses	C2	1 3 5
<i>Chlorotettix spatulatus</i>	r-d	r-d		<i>Andropogon scoparius</i>	C1	1 5
<i>Cicadula cyperacea</i>		r-d	r-d	sedges	C4	4 6 7
<i>Cicadula saliens (melanogaster)</i>		r-d	r-d	sedges	C1	1 4 6 7
<i>Cicadula straminea</i>		r-d	r-d	sedges	C4	1 4 6 7

Taxon	Habitat associations			Host plants	Status northern IL ⁶	Capture locations ⁵
	xeric	mesic/wet	sedge meadow			
<i>Cribrus shingwauki</i>		r-d		<i>Calamagrostis</i>	C2	1 4 6
<i>Destria fumidus</i>		r-d			C4	1 4
<i>Driotura gammaroides</i>	r-a			<i>Eragrostis spectabilis</i>	C4	1 5
<i>Flexamia areolata</i>	r-d				C5	3
<i>Flexamia atlantica</i>		r-d		<i>Sorghastrum nutans</i>	C3	1 2
<i>Flexamia prairiana</i>	r-d	r-d			C2	1 2 3 5
<i>Flexamia delongi</i>	r-d	r-d		<i>Aristida</i>	C5	1
<i>Flexamia pyrops</i>	r-d			<i>Andropogon</i>	C3	1 2 4
<i>Flexamia reflexa</i>		r-d		<i>Panicum virgatum</i>	C2	1 2 4 6
<i>Graminella aureovittata</i>		r-d		<i>Panicum virgatum</i>	C3	1 3
<i>Graminella mohri</i>		r-d			C3	1
<i>Graminella pallidula</i>		r-d		<i>Panicum virgatum</i>	C4	1 2
<i>Graminella oquaka</i>		r-d		<i>Andropogon</i>	C1	1 2
<i>Laevicephalus unicoloratus</i>	r-d	r-d		<i>Helianthus</i>	C1	1 4 6 7
<i>Mesamia nigradorsum</i>		r-d		<i>Carex</i>	C4	1 4 6 7
<i>Ophiola osborni</i>	r-a	r-a		<i>Carex</i>	C5	6
<i>Palus bilineatus</i>		r-d	r-d	<i>Carex</i>	C3	1
<i>Palus delector</i>		r-d	r-d		C3	1
<i>Palus luteocephalus</i>		r-d	r-d	<i>Andropogon scoparius</i>	C2	1 3
<i>Paraphlepsius fulvidorsum</i>	r-d	r-d			C3	1 4 7
<i>Paraphlepsius altus</i>		r-d		<i>Solidago</i>	C5	1
<i>Paraphlepsius lobatus</i>		r-d			C5	1 5
<i>Paraphlepsius luxuria</i>		r-d	r-d	<i>Spartina pectinata</i>	C3	1 4
<i>Paraphlepsius solidaginis</i>		r-d			C3	1 3 5
<i>Paraphlepsius maculosus</i>	r-d			<i>Andropogon</i>	C1	1 2 3 5
<i>Pendarus (Remadosus) magnus</i>		r-d		<i>Panicum</i>	C5	1 2
<i>Polyamia apicata</i>	r-a				C5	1 3 5
<i>Polyamia compacta</i>	r-d				C5	1 3 5
<i>Polyamia (Deltocephalus) caperata</i>	r-d	r-d		<i>Amorpha ?</i>	C3	1
<i>Polyamia rossi</i>	r-d				C3	3
<i>Polyamia similaris</i>	r-d				C5	1 2 3 4 5 6 7
<i>Rosenus cruciatus</i>	r-d				C5	1 5
<i>Sanctanus cruciatus</i>	r-a	r-a			C3	1
<i>Scaphytopius rubellus</i>		r-d			C3	3
<i>Scaphytopius cinereus</i>	r-d	r-d			C3	1 2 3 4 5 6 7
<i>Scaphytopius frontalis</i>		r-a			C3	1 2
<i>Stirellus bicolor</i>		r-a			C3	1
Ledrinae						
<i>Xerophloea major</i>			r-d		C3	1

Taxon	Habitat associations			Host plants	Status northern IL ⁶	Capture locations ⁵
	xeric	mesic/wet	sedge meadow			
<i>Xerophloea peltata</i>	r-d				C4	1 3 4
Dorydiinae						
<i>Hecalus viridis</i>	r-a					
<i>Hecalus major</i>		r-d		<i>Calamagrostis</i>	C1	1 4
Issidae (Caliscelidae)						
<i>Bruchomorpha dorsata</i>	r-d	r-d		<i>Andropogon</i>	C3	1 2 3 5
<i>Bruchomorpha occulata</i>	r-d			<i>Sorgastrm nutans</i>	C4	5
COLEOPTERA						
Cicindelidae						
Cryptocephalinae						
<i>Pachybrachis spumarius</i> group	r-d				C3	1 5

² Species reported by Kurt Laurent (2002).

³ Species reported by John and Cynthia McKee.

⁵ See Figure 1

⁶ Restoration sites must ultimately be assessed in terms of their contributions to the protection of imperiled species. To facilitate this assessment, each species has been assigned a 'conservation value' reflective of its local, and, in some cases, regional rarity. Briefly, species assigned conservation values of 1 are known to inhabit 20 or more sites within the Chicago region and are presumed to be secure. At the other extreme, species with conservation values of 5 are known to inhabit four or fewer sites and are considered to be potentially imperiled. Species considered to be globally rare (e.g., *Papaipema eryngii*) are included in this category, irrespective of their local abundance. (≤ 5 occurrences=C5; 6-10 = C4; 11-15 = C3; 16-20 = C2; >20 = C1).

Table. 3 Distribution of *Papaipema* species diversity on seventeen prairie/wetland remnants in the Chicago region ¹

Site Site size (Acres) ²	IROQ 1600	GLP 1500	IBSP 1200	GRSWA 300?	LHF 200	CHIW 200	GMP 150	DCA 100	GCP 80	SP 60	BP 40	LRS 18	DP 12	CRP 8	OFP 2	VMNT 1	GMTH 1
Species																	
<i>aerata</i>																	
new species # 10		1							1								
<i>eryngii</i>		1					1	1	1								
<i>cerussata</i>	1	1			1				1								
<i>cerina</i>			1	1		1											
<i>eupatorii</i>	1		1		1	1						1					
<i>harrisi</i>					1												
<i>nelita</i>			1									1					
<i>necopina</i>	1				1						1						
<i>rigida</i>			1	1		1	1	1	1	1							
<i>speciosissima</i>	1		1				1										
<i>nepheleptena</i>	1	1		1	1	1		1			1						
<i>lysimachiae</i>			1			1											
<i>leucostigma</i>			1														
<i>maritima</i>		1		1	1	1	1	1	1			1	1				
<i>inquaesita</i>	1	1	1	1		1											
<i>limpida</i>	1	?					1		1	1			1		1		
<i>pterisii</i>	1																
<i>beeriana</i>	1	1		1		1	1	1	1	1	1	1					
<i>sciata</i>	1	1	1	1	1	1	1	1	1		1						1
<i>birdi</i>	1	1		1	1		1		1	1		1					
<i>unimoda</i>	1		1	1	1	1	1	1	1	1	1	1					
<i>impecuniosa</i>	1	1		1	1	1	1	1	1	1	1	1					
<i>silphii</i>		1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
Totals	13	11	11	11	11	12	11	8	12	7	7	8	3	1	2	1	2

BP = Biesecker Prairie (IN)

CHIW = Chiwaukee Prairie (WS)

CRP = Chicago Ridge Prairie

DCA = Desplaines Conservation Area

DP = Dropseed Prairie

GCP = Grant Creek Prairie

GLP = Goose Lake Prairie

GMP = Gensburg Markham Prairie

GMTH = German Methodist Prairie (IN)

IBSP = Illinois-Beach State Park

IROQ = Iroquois County State Wildlife Area

LHF = Lake in the Hills Fen

LRS = Long Run Seep

OFP = Oak Forest Prairie

SP = Sundrop Prairie

VMNT = Vermont Cemetery Prairie

GRSWA = Green River State Wildlife Area

¹ Five "weedy" species (*P. baptisiae*, *P. arctivorens*, *P. cataphracta*, *P. furcata*, and *P. nebris*) are not included in this comparison.

² Acreage does not include heavily wooded or old field habitats.

Appendix 1. A listing of the butterflies, moths, leafhoppers, froghoppers, planthoppers, grasshoppers, dragonflies and assorted beetles known to inhabit the Green River State Wildlife Area in Green County, Illinois. 2002

Taxon	Authors	Host plants
ODONATA: Anisoptera (dragonflies)		
Aeshnidae: the darners		
<i>Anax junius</i>	Drury	N/A
<i>Aeshna umbrosa</i>	Walker	N/A
<i>Aeshna constricta</i>	Say	N/A
<i>Cotyphaeschna ingens</i> ²		N/A
Libellulidae		
<i>Celithemis eponina</i>	Drury	N/A
<i>Erythemis simplicicollis</i>	Say	N/A
<i>Leucorrhinia intacta</i>	Hagen	N/A
<i>Pantala flavescens</i>	(F.)	N/A
<i>Libellula pulchella</i>	Drury	N/A
<i>Libellula luctuosa</i>	Burmeister	N/A
<i>Sympetrum rubicundulum</i>	Say	N/A
<i>Sympetrum semicinctum</i>	Say	N/A
<i>Sympetrum vicinum</i>	Hagen	N/A
<i>Sympetrum obtrusum</i>		N/A
<i>Tramea onusta</i>	(Drury)	N/A
<i>Perithemis tenera</i>	Say	N/A
<i>Plathemis lydia</i>	(Drury)	N/A
<i>Pachydiplax longipennis</i>	(Burmeister)	N/A
Gomphidae		
<i>Stylurus annicola</i> ²		N/A
<i>Dromogomphus spoliatus</i>	Hagen	N/A
ORTHOPTERA: grasshoppers, et al.		
Acrididae		
<i>Hesperotettix viridis pratensis</i>	Scudder	oligophagous
Melanoplinae		
<i>Melanoplus angustipennis</i>	(Dodge)	
<i>Melanoplus bivittatus</i>	(Say)	oligophagous
<i>Melanoplus confusus</i>	Scudder	prefers forbes
<i>Melanoplus differentialis</i>	(Thomas)	prefers grasses
<i>Melanoplus femurrubrum</i>	(DeGeer)	grasses, sedges, forbes
<i>Melanoplus ponderosus</i> ²	(Thomas)	
<i>Melanoplus viridipes</i>	Scudder	
<i>Campylacantha olivacea</i> ²		
<i>Schistocerca alutacea</i>	(Harris)	forbes
<i>Agenotettix deorum</i>	(Scudder)	grasses and sedges
<i>Dichromorpha viridis</i>	(Scudder)	
<i>Eritettix simplex</i>	(Scudder)	grasses inc. <i>Bouteloua</i> , <i>Stipa</i>
<i>Mermeria bivittata</i>	(Serville)	native grasses
<i>Dissosteira carolina</i>	(Linnaeus)	grasses and forbes
<i>Encoptolophus sordidus</i>	(Burmeister)	
<i>Psinidia fenestralis</i>	(Serville)	
<i>Spharagemon bolli</i>	Scudder	

Taxon	Authors	Host plants
<i>Spharagemon collare</i>	(Scudder)	grasses
<i>Trachyrachis kiowa fuscifrons</i>	(Stahl)	grasses
Acridinae		
<i>Arphia zanthoptera</i>	(Burmeister)	
Tettigoniidae		
<i>Amblycorypha oblongifolia</i>	(DeGeer)	
<i>Scudderia furcata furcata</i>	Brunner	
<i>Scudderia curvicauda</i>	(DeGeer)	
<i>Neoconocephalus robustus</i>	(Scudder)	
<i>Neoconocephalus ensiger</i>	(Harris)	
<i>Neoconocephalus retusus</i>	(Scudder)	
<i>Conocephalus saltans</i>		
<i>Conocephalus strictus</i>	(Scudder)	
<i>Orchelimum vulgare</i>	Harris	
<i>Pterophylla camellifolia</i> ²	(Fabricius)	
Gryllidae		
<i>Gryllus pennsylvanicus</i> ²		
<i>Nemobius fasciatus</i> ²		
Phasmidae		
Heteronemiinae		
<i>Diapheromera blatchleyi blatchleyi</i>	(Caudell)	
DERMAPTERA		
<i>Forficula auricularia</i>		
LEPIDOPTERA: butterflies		
Danaidae		
<i>Danaus plexippus</i>	(Linnaeus)	<i>Asclepias</i>
Hesperiidae		
<i>Ancyloxypha numitor</i>	(Fabricius)	
<i>Atalopedes campestris</i>	(Boisduval)	
<i>Atrytone delaware</i>	(Edwards)	<i>Andropogon</i>
<i>Epargyreus clarus</i>	(Cramer)	
<i>Erynnis baptisiae</i>	(Forbes)	<i>Baptisia</i>
<i>Erynnis horatius</i> ³		
<i>Euphyes bimacula</i>	(Grote & Robinson)	<i>Carex</i>
<i>Euphyes conspicua</i>	(Edwards)	<i>Carex</i>
<i>Euphyes dion</i>	(Edwards)	<i>Carex</i>
<i>Hylephila phyleus</i>	(Drury)	
<i>Pholisora catullus</i>	(Fabricius)	
<i>Poanes hobomok</i>	(Harris)	
<i>Polites coras</i>	(Cramer)	
<i>Polites themistocles</i>		grasses
<i>Polites origines</i>	(Fabricius)	native grasses
<i>Problema byssus</i>	(Edwards)	<i>Andropogon</i>
<i>Thorybes bathyllus</i>	(J.E. Smith)	legumes
<i>Wallengrenia egeremet</i>	(Scudder)	
Pieridae:		
<i>Pieris protodice</i>	Boisduval and LaConte	
<i>Pieris rapae</i>	Linnaeus	

Taxon	Authors	Host plants
<i>Colias eurytheme</i> <i>Colias philodice</i> <i>Eurema lisa</i> <i>Nathalis iole</i> ³	Boisduval Godart (Boisduval & LeConte) Boisduval	<i>Cassia</i>
Lycaenidae		
<i>Callophrys gryneus</i> ³		
<i>Celastrina argiolus pseudargiolus</i>	(Boisduval & LeConte)	
<i>Everes comyntas</i>	(Godart)	
<i>Harkenclenus titus</i>	(Fabricius)	<i>Prunus</i>
<i>Lycaena helloides</i>	(Boisduval)	<i>Polygonum</i>
<i>Lycaena phlaeas americana</i>	Harris	<i>Rumex acetocella</i>
<i>Lycaena thoe</i>	(Guerin-Meneville)	<i>Polygonum</i>
<i>Strymon melinus</i>		
Nymphalidae		
<i>Agillias milberti</i> ²		
<i>Boloria selene myrina</i>	(Cramer)	<i>Viola</i> spp.
<i>Boloria belona</i>	(Fabricius)	<i>Viola</i> spp.
<i>Chlosyne gorgone carlotta</i>	(Rekirt)	<i>Helianthus laetiflorus</i>
<i>Cynthia virginicensis</i>	(Drury)	<i>Antennaria</i>
<i>Euphydryas phaeton</i>		<i>Chelone</i>
<i>Euptoieta claudia</i>	(Cramer)	
<i>Limenitis archippus</i>	(Cramer)	<i>Salix</i>
<i>Limenitis arthemis astyanax</i>	(Fabricius)	
<i>Libytheana carinenta</i>	(Kirtland)	<i>Celtis</i>
<i>Nymphalis antiopa</i>	(Linnaeus)	<i>Salix</i>
<i>Phyciodes tharos</i>	(Drury)	<i>Aster</i>
<i>Polygonia interragationis</i>	(Fabricius)	
<i>Precis coenia</i>	(Hubner)	
<i>Speyeria aphrodite</i>	(Fabricius)	<i>Viola</i> spp.
<i>Speyeria cybele</i>	(Fabricius)	<i>Viola</i> spp.
<i>Speyeria idalia</i> ³	(Drury)	<i>Viola</i> spp.
<i>Vanessa atalanta</i>	(Fruhstorfer)	
<i>Vanessa cardui</i>		
Papilionidae		
<i>Papilio cressphontes</i> ²		
<i>Papilio polyxenes</i>	Stoll	<i>Umbelliferae</i>
<i>Papilio glaucus</i>	Linnaeus	
<i>Papilio marcellus</i> ²		
<i>Battus philenor</i> ³	(Linnaeus)	
<i>Papilio troilus</i>	Linnaeus	
Satyridae		
<i>Cercyonis pegala olympus</i>	(Edwards)	
<i>Lethe eurydice</i>	(Johansson)	<i>Carex</i>
LEPIDOPTERA: moths		
Oecophoridae		
Depressariinae		
<i>Depressaria pastinacella</i>	(Duponchel)	<i>Pastinaca</i>
Cosmopterigidae		

Taxon	Authors	Host plants
Cosmopteriginae		
<i>Triclonella determinatella</i>	(Zeller)	legumes, <i>Desmodium</i> , etc.
<i>Limnaecia phragmitella</i>	Stainton	<i>Typha</i> flowerheads
Gelechiidae		
Gelechiinae		
<i>Chionodes pseudofondella</i>	(Busck)	<i>Pycnanthemum?</i> , <i>Eupatorium?</i>
Dichomeridinae		
<i>Dichomeris ochripalpella</i>	(Zeller)	<i>Aster</i> , <i>Solidago</i>
Sesiidae		
<i>Pennisetia marginata</i> ²	(Harris)	
Tortricidae		
Olethreutinae		
<i>Bactra maiorina</i>	Heinrich	<i>Scirpus</i>
<i>Phaneta olivaceana</i>	(Riley)	<i>Solidago</i>
<i>Eucosma</i> n.s.	(R.L. Brown)	<i>Spartina</i> (?)
<i>Eucosma giganteana</i>	Riley	<i>Silphium</i>
<i>Eucosma bilineana</i>	Kearfott	<i>Helianthus</i>
<i>Eucosma dorsisignatana</i>	(Clemens)	
<i>Eucosma ridingsana</i>	(Robinson)	
<i>Ecdyolopha punctadiscana</i>	(Dyar)	
<i>Eucosma palabundana</i>	Heinrich	
<i>Epiblema tripartitana</i>	(Zeller)	<i>Rudbeckia</i>
<i>Epiblema boxcana</i>	(Kearfott)	
<i>Pseudosciagraphilia duplex</i>	(Walsingham)	<i>Populus</i> , <i>Betula</i> , <i>Salix</i>
<i>Ancylis burgessiana</i>	(Zellar)	Shrubs
Tortricinae		
<i>Choristoneura rosaceana</i> ²		
<i>Argyrotaenia velutinana</i>	(Walker)	
<i>Ptychloma peritana</i>	(Clemens)	<i>Fragaria</i>
<i>Sparganothis xanthoides</i>	(Walker)	
Limacodidae		
<i>Lithacodes fasciola</i>	(H.-S.)	willows oaks elms etc
<i>Euclea delphinii</i>	(Bdv.)	
Pyralidae		
(Crambiformes) Nymphulinae		
<i>Synclita oblitalis</i>	(Walker)	Aquatic plants
(Crambiformes) Odontiinae		
<i>Microtheoris ophionalis lacustris</i>	Hodges	
<i>Nascia acutella</i>	(Walker)	
<i>Ostrinia nubilalis</i>	(Hubner)	
<i>Achyra rantalas</i>	(Guenee)	
<i>Lineodes integra</i>	(Zeller)	
<i>Loxostege sticticalis</i>	(Linnaeus)	
<i>Pyrausta (Cindaphia) bicoloralis</i>	(Guenee)	
<i>Pyrausta rubricalis</i>	(Hubner)	
<i>Udea rubigalis</i>	(Guenee)	
<i>Nomophila nearctica</i>	Mun.	
<i>Desmia maculalis</i>	Westwood	
<i>Polygrammodes flavidalis</i>	(Guenee)	<i>Vernonia</i> root-borer

Taxon	Authors	Host plants
<i>Pantographa limata</i>	(G. & R.)	Basswoods, Oaks
<i>Phylactania coronata</i>	(Hufnagel)	<i>Sambucus</i> , many others
(Crambiformes) Crambinae		
<i>Chrysoteuchia topiaria</i>	(Zell.)	
<i>Agriphila vulgivagella</i>	(Clemens)	
<i>Pediasia trisecta</i>	(Walker)	
(Pyraliformes) Pyralinae		
<i>Hypsopygia costalis</i>	(F.)	
(Pyraliformes) Chrysauginae		
<i>Condylolomia participalis</i>	Grote	
(Pyraliformes) Phycitinae		
<i>Nephoterix basilaris</i>	Zeller	<i>Salix</i>
Geometridae		
Ennominae		
<i>Anacamptis humnaria</i>	(Guenee)	
<i>Anavitrinella pampinaria</i>	(Guenee)	
<i>Antepione thisoria</i>	(Guenee)	
<i>Besma quercivoriara</i> ²		
<i>Biston betularia</i>	(Linnaeus)	
<i>Campaea perlata</i> ²	(Guenee)	
<i>Ectropis crepuscularia</i> ²	(D. & S.)	
<i>Ennomos magnaria</i>	Guenee	trees
<i>Erannis tiliaria</i> ²	(Harr.)	
<i>Euchlaena johnsonaria</i>	(Fitch)	
<i>Euchlaena serrata</i>	(Drury)	apple & maple
<i>Euchlaena obtusaria</i> ²		
<i>Eumacaria latiferrugata</i>	(Wik)	cherry, plum
<i>Eusarca confusaria</i>	Hbn.	Composites
<i>Eutrapela clemataria</i>	(J. E. Smith)	
<i>Exelis pyrolaria</i>	Guenee	
<i>Heliomata cycladata</i>	Grote & Rob.	
<i>Hypagyrtis unipunctata</i> ²	(Haworth)	
<i>Itame ribearia</i>	Fitch	<i>Ribes</i>
<i>Mellilla xanthometata</i>	(Walker)	
<i>Metanema inatomaria</i>	Guenee	
<i>Nematocampa limbata</i>	(Haworth)	trees
<i>Pero honestaria</i>	(Wik)	
<i>Petrophora subaequaria</i>	(Walker)	Ferns
<i>Tetracis crocallata</i>	Guenee	
<i>Xanthotype urticaria</i>	Swett	
Geometrinae		
<i>Synchlora aerata</i> ²	(Fabricius)	Composites
Sterrhinae		
<i>Haematopis grataria</i>	(Fabricius)	chickweed, clover
<i>Calothysanis amaturaria</i>	(Walker)	<i>Polygonum</i>
<i>Lobocleta plemaria</i>	(Guenee)	
<i>Scopula limboundata</i>	(Haworth)	
Larentiinae		

Taxon	Authors	Host plants
<i>Anticlea multiferrata</i>	(Walker)	<i>Vitis</i>
<i>Coryphista meadii</i> ²	(Packard)	
<i>Eulithis diversilineata</i>	(Hubner)	
<i>Hydriomena renunciata</i> ²		
<i>Orthonama obstipata</i>	F.	<i>Polygonum</i> spp
<i>Orthonama centrostrigaria</i>	(Wollaston)	
<i>Eubaphe mendica</i>	(Walker)	
<i>Euphyia unangulata</i> ²	(Haworth)	
<i>Xanthorhoe ferrugata</i>	(Clerck)	
Apatelodidae		
<i>Apatelodes torrefacta</i>	(J. E. Smith)	
Lasiocampidae		trees & shrubs esp. rose family
Lasiocampinae		
<i>Malacosoma americanum</i>	(Fabricious)	
Saturniidae		many woody & herbaceous plants
Citheroniinae		
<i>Eacles imperialis</i>	(Drury)	
<i>Dryocampa rubicunda</i>	(Fabricius)	
Hemileucinae		
<i>Automeris io</i>	(F.)	
Saturniinae		
<i>Arctias luna</i>		
<i>Callosamia promethia</i> ²		
Sphingidae		
Sphinginae		
<i>Manduca sexta</i> ²	(Linnaeus)	
<i>Ceratomia hageni</i>	Grote	
<i>Ceratomia undulosa</i>	(Walker)	
<i>Ceratomia amyntor</i>	(Walker)	
<i>Sphinx kalmiae</i>	(J.E. Smith)	
<i>Sphinx gordius</i>	Cramer	
<i>Smerinthus jamaicensis</i>	(Drury)	
<i>Pachysphinx modesta</i>	(Harr.)	
<i>Paonias excaecatus</i>	(J.E. Smith)	
<i>Paonias myops</i>	(J.E. Smith)	
Macroglossinae		
<i>Darapsa myron</i>	(Cramer)	
<i>Deidamia iunscripta</i>	(Harr.)	
<i>Sphecodina abbottii</i>	(Swainson)	
<i>Hyles lineata</i>	(F.)	
Notodontidae		poplars ,willows
<i>Clostera albstigmata</i>	Fitch	
<i>Datana ministra</i>	(Drury)	
<i>Datana perspicua</i>	(Grote & Robinson)	
<i>Datana contracta</i> ²		
<i>Peridea angulosa</i> ²	(J.E. Smith)	
<i>Pheosia rimosa</i>	Packard	
<i>Nadata gibbosa</i> ²	(J. E. Smith)	

Taxon	Authors	Host plants
<i>Gluphisia septentrionis</i>	Walker	
<i>Hyperaeschra georgica</i> ²		
<i>Dasylophia anguina</i>	(J.E. Smith)	<i>Desmodium, Baptisia, etc.</i>
<i>Heterocampa leucostigma</i> ²		
<i>Heterocampa obliqua</i>	(Packard)	
Arctiidae		
Lithosiinae		
<i>Hypoprepia miniata</i>	(Kirby)	
<i>Hypoprepia fucosa</i>	Hubner	
Arctiinae		
<i>Haploa reversa</i>	(Brown)	<i>Eupatorium, oaks, willows ++</i>
<i>Haploa lecontei</i>	(Guer. - Meneville)	
<i>Holomelina</i> sp.		
<i>Isia (Pyrrharctia) isabella</i>	(J.E. Smith)	
<i>Estigmene acrea</i>	(Drü.)	many herbs
<i>Spilosoma virginica</i>	(Fabricious)	
<i>Hyphantria cunea</i>	(Drury)	trees
<i>Phragmatobia fulginosa</i>	(Linnaeus)	
<i>Phragmatobia lineata</i>	Neuman & Donahue	<i>Eupatorium</i>
<i>Pygarctia spraguei</i>	(Grote)	<i>Euphorbia corolata</i>
<i>Apantesis phalerata</i> ²	(Harr.)	many herbs
<i>Grammia (Apantesis) oithona</i>		
<i>Grammia (Apantesis) virguncula</i>	Kirby	
<i>Grammia (Apantesis) virgo</i>	(Linnaeus)	
<i>Grammia (Apantesis) arge</i>	(Drury)	
<i>Halysidota caryae</i> ²		
<i>Halysidota tessellaris</i>	(J.E. Smith)	
<i>Cycnia tenera</i>	Hubner	Indian hemp & milkweeds
<i>Euchaetes egle</i>	(Drury)	
Ctenuchinae		
<i>Cisseps (Scepsis) fulvicollis</i>	(Hubner)	
Noctuidae		
Herminiinae		
<i>Idia americalis</i>	(Guenee)	
<i>Idia lubricans</i>	(Geyer)	
<i>Idia aemula</i>	Hubner	
<i>Phalaenophana pyramusalis</i>	(Walker)	
<i>Macrochilo absorbtalis</i>	(Walker)	
<i>Macrochilo (Hormisa) orciferalis</i>	(Walker)	
<i>Phalaenostola metonalis</i>	(Walker)	bluegrass duff OH
<i>Phalaenostola larentioides</i>	Grote	
<i>Tetanolita floridana</i>	(Smith)	
<i>Bleptina caradrinalis</i>	Guenee	
<i>Renia flavipunctalis</i>	(Geyer)	
<i>Palthis angulalis</i>	(Hubner)	
Rivuliinae		
<i>Lascoria ambigualis</i>	Wlk.	
<i>Rivula propinqualis</i>	Guenee	
<i>Zanclognatha ochreipennis</i>	(Grote)	

Taxon	Authors	Host plants
<i>Zanclognatha pedipilalis</i>	(Guenee)	
Hypeninae		
<i>Bomolocha baltimorealis</i> ²		
<i>Bomolocha madefactalis</i>	(Guenee)	Walnut
<i>Plathypena scabra</i>	(Fabricius)	leguminosae
<i>Spargaloma sexpunctata</i>	Grote	
<i>Phytometra ernestiana</i>	(Blanchard)	unknown
<i>Phytometra rhodarialis</i>	(Walker)	unknown
Catocalinae		
<i>Lesmone detrahens</i>	(Walker)	unknown
<i>Zale lunata</i>	(Drury)	many trees & shrubs
<i>Zale minerea</i>	(Guenee)	trees inc. maples & poplars
<i>Zale unilineata</i>	(Grote)	
<i>Caenurgia chloropha</i>	(Hubner)	
<i>Caenurgina crassica</i>	(Haworth)	
<i>Caenurgina erechtea</i>	(Cramer)	alfalfa, clover, grasses, ragweed
<i>Calyptra canadensis</i>	(Bethune)	<i>Thalictrum</i>
<i>Cissusa spadix</i>	(Cramer)	
<i>Euparthenos nubilis</i>	(Hubner)	
<i>Mocis texana</i>	(Morrison)	grasses
<i>Catocala palaeogama</i> ²	Guenee	poplars & willows
<i>Catocala concumbens</i> ,	Walker	poplars & willows
<i>Catocala amatrix</i>	(Hubner)	poplars & willows
<i>Catocala cara</i>	Guenee	
<i>Catocala habilis</i> ²	Walker	<i>Amorpha, Robinia</i>
<i>Catocala piatrix</i>	Grote	walnut, pecans
<i>Catocala ultronia</i>	(Hubner)	Roseacea such as apple & cherry
<i>Catocala whitneyi</i>	Dodge	<i>Amorpha</i>
<i>Panapoda carneicosta</i> ²	Guenee	
Eutellinae		
<i>Paectes abrostolella</i> ²	(Walker)	
Plusiinae		
<i>Abrostola urentis</i>	Guenee	stinging nettles
<i>Trichoplusia ni</i> ²	(Hubner)	
<i>Plusia balluca</i> ²	(Geyer)	<i>Rubus</i> spp
<i>Allagrapha aerea</i>	(Hubner)	stinging nettle, aster, soybean
<i>Pseudeva purpurigera</i>	(Walker)	<i>Thalictrum</i>
<i>Autographa precatationis</i>	(Guenee)	
<i>Autographa biloba</i>	(Steph.)	
<i>Anagrapha falcifera</i>	(Kirby)	herbaceous plants & crops
<i>Plusia contexta</i>	Grote	
Acontiinae		
<i>Capis curvata</i>	Grote	
<i>Thioptera nigrofimbria</i>	(Guenee)	crabgrass, morning glories
<i>Lithacodia muscosula</i>	(Guenee)	Grasses
<i>Lithacodia albidula</i>	(Guenee)	grasses
<i>Lithacodia (Maliattha) synochitis</i>		<i>Polygonum</i> spp.
<i>Lithacodia musta</i>	(G&R)	Unrecorded

Taxon	Authors	Host plants
<i>Lithacodia carneola</i>	(Guenee)	<i>Dock, Solidago, Poygonum</i>
<i>Homophoberia apicosa</i>	(Haworth)	<i>Polygonum</i> spp
<i>Cerma cerintha</i>	(Treitschke)	apple, plum, peach, cherry
<i>Leuconycta diphteroides</i>	(Guenee)	goldenrods
<i>Tarachidia binocula</i>	(Grote,1875)	unknown
<i>Tarachidia candefacta</i>	(Hubner)	<i>Ambrosia</i>
<i>Tarachidia erastrioides</i> ²	(Guenee)	<i>Ambrosia</i>
<i>Tarachidia semiflava</i>	(Guenee)	
Pantheinae		
<i>Raphia abrupta</i>	Grote	
Acronictinae		
<i>Acronicta lobeliae</i>	Guenee	black cherry, Oak trees
<i>Acronicta americana</i>	(Harr.)	
<i>Acronicta dactylina</i>	(Grote)	willow, poplar
<i>Acronicta morula</i>	Grote & Robinson	
<i>Acronicta lithospila</i>	Grote	hickory, oak
<i>Acronicta interrupta</i>	Guenee	
<i>Acronicta oblinita</i>	(J.E. Smith)	<i>Polygonum</i> spp.
<i>Simyra henrici</i>	(Grote)	<i>Typha</i> spp., grasses & sedges
<i>Agriopodes teratophora</i>	(Herrich-Schaffer)	mint + <i>monarda</i>
Agaristinae		
<i>Eudryas unio</i>	(Hubner)	
<i>Eudryas grata</i> ²	(Fabricius)	
<i>Ellipia octomaculata</i> ²	(Fabricius)	
Amphipyriinae		
<i>Achatodes zaeae</i>	(Harr.)	elderberry
<i>Amolita fessa</i>	Grt.,1874	grasses
<i>Amhipoea americana</i>	(Speyer)	grasses, sedges
<i>Amhipoea velata</i>	(Walker)	grasses
<i>Amhipyra pyramidoides</i>	Guenee	wide variety of broad-leaved trees
<i>Apamea helva</i>	(Grote)	
<i>Apamea burgessi</i>	Morrison	
<i>Apamea lutosa</i>	(Andrews)	
<i>Apamea ophiogramma</i>	(Esp.)	<i>Phalarus</i>
<i>Apamea plutonia</i>	(Grote)	
<i>Archanara oblonga</i>	(Grote)	cattails and bulrushes
<i>Chortodes defecta</i>	(Grote)	
<i>Chytonix palliatricula</i>	(Guenee)	<i>Aster smut</i>
<i>Cirrhophanus triangulifer</i>	Grote	<i>Bidens</i>
<i>Condica (Platysenta) vecors</i>	(Guenee)	
<i>Condica (Platysenta) videns</i>	(Guenee)	<i>Aster</i> spp., <i>Solidago</i> spp.
<i>Cosmia calami</i>	(Harvey)	Oaks
<i>Crambodes talidiformis</i>	Guenee	<i>Verbena</i> spp
<i>Dypterygia rozmani</i>	Berio	<i>Polygonum</i> ?????
<i>Elaphria festivoides</i>	(Guenee)	
<i>Elaphria grata</i>	Hubner	
<i>Euplexia benesimilis</i>	McDunnough	
<i>Galgula partita</i>	Guenee	
<i>Luperina stipata</i>	(Morrison)	<i>Spartina</i>

Taxon	Authors	Host plants
<i>Magusa orbifera</i>	(Walker)	
<i>Meropleon ambifusca</i>	(Newman)	unknown
<i>Meropleon diversicolor</i>	(Morrison)	sedges
<i>Nedra ramosula</i>	(Guenee)	possibly <i>Hypericum</i>
<i>Ogdoconta cinereola</i>	(Guenee)	<i>Ambrosia</i> spp.
<i>Oligia modica</i>	(Guenee)	grasses, sedges
<i>Papaipema arctivorens</i>	Hampson	thistle, burdock, teasel,
<i>Papaipema baptisiae</i>	(Bird)	<i>Apocynum</i>
<i>Papaipema beeriana</i>	Bird	<i>Liatris</i>
<i>Papaipema birdi</i>	(Dyar)	<i>Cicuta maculata</i>
<i>Papaipema cerina</i>	(Grote)	<i>Hystrix patula</i>
<i>Papaipema impecuniosa</i>	(Grote)	<i>Helenium</i> , aster
<i>Papaipema inquaesita</i>	Grote & Robinson	<i>Onoclea</i> (Sensitive fern)
<i>Papaipema maritima</i>	Bird	<i>Cacalia</i> , <i>Helianthus</i>
<i>Papaipema nebris</i>	(Guenee)	plants
<i>Papaipema nepheleptena</i>	(Dyar)	<i>Chelone glabra</i>
<i>Papaipema rigida</i>	Grote	Zizia
<i>Papaipema sciata</i>	Bird	<i>Veronicastrum</i>
<i>Papaipema silphii</i>	Bird	<i>Silphium</i>
<i>Papaipema pterisii</i> ²		
<i>Papaipema unimoda</i>	(J.E. Smith)	<i>Thalictrum</i>
<i>Plagiomimicus pityochromus</i>	(Grote)	Ragweed
<i>Plagiomimicus spumosum</i>	(Grote)	
<i>Platyperigea meralis</i>	(Morrison)	
<i>Proxenus miranda</i>	(Grote)	dandelion
<i>Spartiniphaga inops</i>	(Grote)	<i>Spartina</i>
<i>Spodoptera exigua</i>	(Hubner)	plants
<i>Spodoptera frugiperda</i>	(Smith)	Polyphagous
<i>Spodoptera ornithogalli</i>	(Guenee)	Polyphagous
<i>Trachea delicata</i>	(Grote)	
<i>Xylomoia chagnoni</i>	Barnes and McDunnough	
Cucullinae		
<i>Eucirroedia pampina</i>	(Guenee)	
<i>Cucullia asteroides</i> ²	Guenee	
<i>Oncocnemis viriditincta</i>	Small	<i>Penstemon</i>
Hadeninae		
<i>Achatia distincta</i>	Hubner	crabapple, Oaks
<i>Aletia oxygala</i>	(Grote)	grasses
<i>Crocigrapta normani</i>	(Grote)	
<i>Discestra (Scotogramma) trifolii</i>	(Hufnagel)	many crops
<i>Faronta diffusa</i>	(Walker)	corn, grasses
<i>Faronta rubripennis</i>	(G. & R.)	<i>P. virgatum</i>
<i>Lacanobia (Polia) legitima</i>	(Grote)	<i>A. umbellatus</i> , <i>Salix</i> ,
<i>Lacinipolia lorea</i>	(Guenee, 1852)	many herbs
<i>Lacinipolia meditata</i>	(Grote)	many herbs
<i>Lacinipolia renigera</i>	(Stephens)	many herbs
<i>Leucania lapidaria</i>	(Grote)	grasses
<i>Leucania multilinea</i> ²		
<i>Leucania phragmatidicola</i>	Guenee	grasses

Taxon	Authors	Host plants
<i>Melanchra adjuncta</i>	(Guenee)	
<i>Morrisonia confusa</i>	(Hubner)	
<i>Morrisonia evicta</i>	(Grote)	
<i>Nephelodes minians</i>	Guenee	corn & various grasses
<i>Orthodes crenulata</i>	(Butler)	many herbs
<i>Orthodes cynica</i>	Guenee	
<i>Protorthodes incincta</i>	(Morrison)	
<i>Protorthodes oviducta</i>	(Guenee)	
<i>Pseudaletia unipuncta</i>	(Haworth)	many crops & wild plants too
<i>Tricholita signata</i>	(Walker)	many herbs
<i>Ulolonche modesta</i>	(Morrison)	
Noctuidae		
<i>Abagrotis alternata</i>	(Grote)	
<i>Agrotis gladiaria</i>	Morrison	many herbs
<i>Agrotis ipsilon</i>	(Hufnagel)	"almost any field or garden plant"
<i>Agrotis venerabilis</i>	Walker	
<i>Agrotis vetusta</i>	(Walker)	unknown
<i>Eucoptocnemis fimbriaris</i>	(Guenee)	
<i>Euxoa detersa</i>	(Walker)	
<i>Euxoa messoria</i>	(Harr.)	
<i>Euxoa niveilinea</i>	(Grote)	
<i>Euxoa tessellata</i>	(Harris)	
<i>Euxoa velleripennis</i>	Grote	unknown
<i>Feltia jaculifera</i>	(Gn., 1852)	many herbs
<i>Loxagrotis grotei</i>	Franclemont & Todd	<i>Khunia</i>
<i>Noctua pronuba</i>	(Linnaeus)	
<i>Ochropleura plecta</i>	(Linnaeus)	
<i>Peridroma saucia</i>	(Hubner)	Polyphagous
<i>Protolampra brunneicollis</i>	(Grote)	
<i>Rhynchagrotis cupida</i>	(Grote)	
<i>Spaelotis clandestina</i>	(Harris)	woody & herbaceous plants
<i>Trichosilia manifesta</i>	(Morrison)	
<i>Xestia (Amathes) bicarnea</i>	(Guenee)	
<i>Xestia (Amathes) smithii</i>	(Snellen)	
<i>Xestia dolosa</i>	Franclemont	
Heliethinae		
<i>Helicoverpa (Heliopsis) zea</i>	(Boddie)	wide variety of plants inc. crops
<i>Heliopsis paradoxus</i>	(Grote)	
<i>Heliopsis phloxiphagus</i>	G. & R.	
<i>Pyrrhia umbra</i>	(Hufnagel)	
<i>Schinia arcigera</i>	(Guenee)	Aster
<i>Schinia lucens</i>	(Morrison)	<i>Amorpha</i> , SL
<i>Schinia lynx</i>	(Guenee)	<i>Erigeron</i>
<i>Schinia rivulosa</i>	(Guenee)	<i>ambrosia</i>
<i>Schinia saturata</i>	(Grote)	golden aster
HOMOPTERA: leafhoppers, planthoppers, treehoppers, and froghoppers		
Cercopidae		
<i>Aphrophora quadrinotata</i>	Say	
<i>Philaenus spumarius</i>	(L.)	
Cicadellidae		

Taxon	Authors	Host plants
Agalliinae		
<i>Agallia constricta</i>	Van Duzee	
<i>Ceratagallia near sanguinolenta</i>	(Provancher)	
Aphrodinae		
<i>Xestocephalus superbus</i>	(Provancher)	
<i>Aphrodes bicincta</i>	(Von Shrank)	
Athysaninae		
<i>Amplicephalus osborni</i>	Van Duzee	
<i>Arthaldeus pascuellus</i>	(Fallen)	
<i>Athysanus argentarius</i>	Metcalf	
<i>Chlorotettix fallax</i>	Sanders & DeLong	native grasses
<i>Chlorotettix spatulatus</i>	Osborn & Ball	<i>Andropogon scoparius</i>
<i>Chlorotettix tunicatus</i>	Ball	
<i>Chlorotettix unicolor</i>	(Fitch)	
<i>Chlorotettix galbanatus</i>	Van Duzee	
<i>Cicadula cyperacea</i>	(Osborn)	sedges
<i>Cicadula saliens (melanogaster)</i>	Hamilton	sedges
<i>Cicadula straminea</i>	(Osborn)	sedges
<i>Colladonis clitellarius</i>	(Say)	
<i>Cribrus shingwauki</i>	(Beamer & Tuthill)	<i>Calamagrostis</i>
<i>Deltocephalus balli</i>	Van Duzee	
<i>Deltocephalus flavicostus</i>	Stal	
<i>Destria fumidus</i>	Sanders & DeLong	
<i>Driotura gammaroides</i>	(Van Duzee)	
<i>Endria (Amplicephalus) inimica</i>	(Say)	
<i>Exitianus obscurinervis</i>	(Stal)	
<i>Flexamia areolata</i>	(Ball)	<i>Eragrostis spectabilis</i>
<i>Flexamia atlantica</i>		
<i>Flexamia prairiana</i>	(Osborn & Ball)	<i>Sorghastrum nutans</i>
<i>Flexamia delongi</i>	Ross & Cooley	
<i>Flexamia pyrops</i>	(Crumb)	<i>Aristida</i>
<i>Flexamia reflexa</i>	(Osborn & Ball)	<i>Andropogon</i>
<i>Graminella aureovittata</i>	Sanders & DeLong	<i>Panicum virgatum</i>
<i>Graminella mohri</i>	DeLong	<i>Panicum virgatum</i>
<i>Graminella nigrifrons</i>	(Forbes)	
<i>Graminella pallidula</i>	(Gillette & Baker)	
<i>Graminella oquaka</i>	DeLong	<i>Panicum virgatum</i>
<i>Graphocephala coccinea</i>	(Forster)	
<i>Jassus olitorius</i>	Say	
<i>Laevicephalus unicoloratus</i>	(Gillette & Baker)	<i>Andropogon</i>
<i>Latalus sayi</i>	(Fitch)	
<i>Latulus missellus</i>	(Ball)	
<i>Limotettix ferganensis (striolus)</i>	[(Fallen)]	<i>Eleocharis</i>
<i>Macrosteles fascifrons</i>	(Stål)	sedges
<i>Menosoma cincta</i>	(Osborn & Ball)	
<i>Mesamia nigridorsum</i>	Ball	<i>Helianthus</i>
<i>Neocola hieroglyphica</i>	(Say)	
<i>Ophiola anthracina</i>		
<i>Ophiola osborni</i>	Ball	
<i>Palus bilineatus</i>	(Gillette & Baker)	Carex

Taxon	Authors	Host plants
<i>Palus delector</i>	(Sanders & DeLong)	Carex
<i>Palus luteocephalus</i>	(Sanders & DeLong)	Carex
<i>Paramesus nervosus</i>	(Fallen)	
<i>Paraphlepsius irroratus</i>	(Say)	
<i>Paraphlepsius tullahomi</i>	(DeLong)	
<i>Paraphlepsius collitus</i>	(Ball)	
<i>Paraphlepsius fulvidorsum</i>	(Fitch)	
<i>Paraphlepsius altus</i>	(Osborn & Ball)	
<i>Paraphlepsius lobatus</i>	(Osborn)	<i>Andropogon scoparius</i>
<i>Paraphlepsius luxuria</i>	Hamilton	
<i>Paraphlepsius solidaginis</i>	(Walker)	<i>Solidago</i>
<i>Paraphlepsius maculosus</i>	(Osborn)	
<i>Pendarus (Remadosus) magnus</i>	(Osborn & Ball)	<i>Spartina pectinata</i>
<i>Polyamia apicata</i>	(Osborn)	
<i>Polyamia compacta</i>	(Osborn & Ball)	
<i>Polyamia (Deltocephalus) caperata</i>	Ball	<i>Andropogon</i>
<i>Polyamia rossi</i>	DeLong	<i>Panicum</i>
<i>Polyamia weedi</i>	(Van Duzee)	
<i>Polyamia similaris</i>	Davidson & DeLong	
<i>Prescottia lobata</i>		
<i>Psammotettix knullae(striatus)</i>	Greene	
<i>Rosenus cruciatus</i>	(Osborn & Ball)	
<i>Sanctanus cruciatus</i>	(Osborn)	
<i>Scaphytopius argutus</i>	DeLong	
<i>Scaphytopius acutus</i>	(Say)	
<i>Scaphytopius rubellus</i>	(Sanders & DeLong)	
<i>Scaphytopius cinereus</i>	(Osborn & Ball)	<i>Amorpha ?</i>
<i>Scaphytopius frontalis</i>	(Van Duzee)	
<i>Stirellus bicolor</i>	(Van Duzee)	
Ledrinae		
<i>Xerophloea major</i>		
<i>Xerophloea peltata</i>	(Uhler)	
Dorydiinae		
<i>Hecalus viridis</i>		
<i>Hecalus major</i>	Osborn	<i>Calamagrostis</i>
<i>Neocola hieroglyphica</i>	(Say)	
<i>Tylozygus bifida</i>	(Say)	
<i>Draeculacephala antica</i>	(Walker)	
<i>Draeculacephala constricta</i>	Davidson & DeLong	
<i>Draeculacephala novaboracensis</i>	(Walker)	
<i>Helochara communis</i>	Fitch	
Balcluthinae		
<i>Balclutha neglecta</i>	(DeLong & Davidson)	
<i>Balclutha punctata</i>	(Thunberg)	
<i>Balclutha sp.</i>		
Membracidae		
Smiliinae		
<i>Stictocephala lutea</i>	(Walker)	
<i>Stictocephala brevitylus</i>	(Van Duzee)	
Acanaloniidae		

Taxon	Authors	Host plants
<i>Acanalonia bivittata</i>		
Delphacidae		
<i>Liburniella ornata</i>		
Issidae (Caliscelidae)		
<i>Bruchomorpha dorsata</i>	Fitch	<i>Andropogon</i>
<i>Bruchomorpha oculata</i>	Ball	<i>Sorghastrum nutans</i>
Derbidae		
<i>Cedusa</i> sp.		
Dictyopharidae		
<i>Scolops angustatus</i>		
<i>Scolops pungens</i>		
<i>Scolops sulcipes</i>		
Flatiidae		
<i>Anormenis septentrionalis</i>	(Spinola)	
<i>Metcalfia pruinosa</i>	(Say)	
HEMIPTERA		
Miridae		
<i>Lygus lineolaris</i>	(Palisot de Beauvois)	
Coreidae		
<i>Anasa tristis</i> ²	(DeGeer)	
<i>Leptocoris trivittatus</i> ²		
COLEOPTERA		
Cicindelidae		
<i>Cicindella formosa</i>	Dejean	
<i>Cicindella repanda</i> ²	Dejean	
Scarabaeidae		
<i>Bothynus gibbosus</i> ²	(DeGeer)	
<i>Euphoria linda</i> ²	(Linnaeus)	
<i>Osmoderma eremicola</i> ²	(Knoch)	
<i>Pelidnota punctata</i> ²	(Linnaeus)	
Meloidae		
<i>Epicautta pennsylvannica</i> ²		
Cantharidae		
<i>Chauliognathus pennsylvanicus</i>	(DeGeer)	
Dytiscidae		
<i>Cybister fimbriolatus</i> ²	Say	
Lampyridae		
<i>Ellychnia californica</i> ²		
Cerambycidae		
<i>Parandra b. Brunnea</i> ²	(Fabricius)	
<i>Prionus imbricornus</i> ²	(Linnaeus)	
<i>Psyrassa unicolor</i>	(Randall)	
<i>Tetraopes basalis</i> ²		
<i>Xylotrechus colonus</i>	(Fabricius)	
<i>Orthosoma brunneum</i>	(Forster)	
Chrysomelidae		

Taxon	Authors	Host plants
Galerucinae		
<i>Diabrotica longicornus</i>		
Empolinae		
<i>Chrysochus auratus</i>	(Fabricius)	
Cryptocephalinae		
<i>Pachybrachis spumarius</i> group		
Erotylidae		
<i>Megalodacne heros</i> 2	(Say)	
Silphidae		
<i>Nicrophorus marginatus</i> 2		
<i>Nicrophorus tomentosus</i> 2		
<i>Nicrophorus orbicollis</i>		
DIPTERA		
Syrphidae		
<i>Anthrax analis</i> ²		
<i>Tubifera tenax</i> ²		
<i>Allograpta obliqua</i> ²		
Calliphoridae		
<i>Phaenicia sericata</i> ²		
Sarcophagidae		
<i>Sarcophaga haemorrhoidalis</i> ²		
Tachinidae		
<i>Archytas apicifer</i> ²		
Scathophagidae		
<i>Scatophaga stercoraria</i> ²		
Tabanidae		
<i>Tabanus astratus</i> 2		
Tephritidae		
<i>Rhagoletis completa</i> 2		
HYMENOPTERA		
Ichneumonidae		
<i>Scambus hispae</i> 2		
Sphecidae		
<i>Bembex spinolae</i> 2		
<i>Chalybion californicum</i> 2		
<i>Chlorion aerarium</i> 2		
<i>Sceliphron caementarium</i> 2		
<i>Sphex ichneumonius</i> 2		
Vespidae		
<i>Mischocyttarus flavitarsus</i> 2		
<i>Vespula maculifrons</i> 2		
<i>Vespula maculata</i> 2		
Pelecinidae		
<i>Pelecinus polyturator</i> 2		
Siricidae		
<i>Tremex columba</i> 2	(Linnaeus)	

Taxon	Authors	Host plants
Apidae <i>Bombus pennsylvanicus</i> <i>Apis mellifera</i> ² Halictidae <i>Agapostemon virescens</i> ²		

² Species reported by Kurt Laurent (2002).

³ Species reported by John and Cynthia McKee.

Appendix 2. Conservation Status Designations.

The Natural Heritage Network and The Nature Conservancy have developed a method for evaluating the health and condition of both species and ecological communities. This assessment leads to the designation of a conservation status rank; for species this provides an approximation of their risk of extinction.

Rare species are particularly vulnerable to both human-induced and natural hazards. As a result, rarity is a key predictor of a species' risk for extinction. Although rarity may seem a straightforward concept, it is complex to characterize. For this reason, Natural Heritage biologists evaluate four distinct characteristics of rarity for each species when assessing its conservation status: the total population size, or number of individuals of the species; the number of different populations or occurrences of the species; the extent of its habitat; and the breadth of the species' geographic range. Scientists also factor in other considerations to determine conservation status. For example, population trend - whether a species' numbers are increasing, stable or declining - is a key factor. Extinction, after all, is simply the ultimate decline in population numbers. We must also consider threats to the species - human and natural - since these are important in predicting their future decline.

Conservation status ranks are based on a one-to-five scale, ranging from critically imperiled (G1) to demonstrably secure (G5). Species known to be extinct, or missing and possibly extinct, also are recorded. In general, species classified as vulnerable (G3) or rarer may be considered to be "at risk". (This system is also used at the state level to produce status ranks ranging from S1 through S5)

Conservation status assessments must be continually reviewed, refined and updated. During 1998 alone, Colorado Natural Heritage Program and Nature Conservancy scientists re-appraised and updated the status of almost 1,400 species. Natural Heritage biologists rely on the best available information in making and documenting conservation status determinations, including such sources as natural history museum collections, scientific literature, previously published reports, and documented sightings by knowledgeable biologists. To augment this knowledge, Heritage biologists conduct extensive field inventories and population censuses, especially targeting those species thought to be imperiled or for which few existing data are available. Most changes in status assessments tend to reflect this improved scientific understanding of the condition of the species.

Designed to assist in setting research and protection priorities, these conservation status ranks are biological assessments rather than legal categories. They do not confer legal protection, as do listings under the U.S. Endangered Species Act.

Figure 1. Green River State Wildlife Area

