

**A Survey of the Leafhoppers, Froghoppers, Butterflies,
Moths and Other Insects of the Illinois Beach State
Park and North Dunes Prairie Nature
Preserves, Lake County, Illinois**

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Conducted by

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Introduction

Illinois Beach State Park (IBSP) protects the last examples of Lake Michigan dune, foredune, panne, and northern sand prairie plant communities in Illinois. Not surprisingly, this unique natural area has been found to support a myriad of uncommon plants and animals. Many state-rare (or extirpated) insects have been recorded on or near this site within the past 60 years (DeLong 1948; Irwin & Downey, 1973). Examples would include the Olympic marble, the hoary elfin and the Indiana flower moth, just to name a few. We conducted a search for these and other important remnant-dependent (r-d) insects within the nature preserve (south unit) in 1990. We continued our survey in 1993, concentrating on moths in the south unit, and leafhoppers within both the south and north (North Dunes Prairie Preserve) units.

Methods

The following taxa, all of which include appreciable numbers of remnant-requiring species (hereafter referred to as "conservative" species), were the focus of this survey:

Leafhoppers and froghoppers (Homoptera, in part)

Butterflies (Lepidoptera, in part)

Moths (Noctuidae, especially *Papaipema spp.* and *Schinia spp.*)

Twenty-five surveys were conducted by 2 or more (usually 3 or 4) investigators in 1990. Twenty surveys were conducted by one or two investigators in 1993. Aerial nets and sweep nets were employed to capture adult specimens both years. Black lights and bait trails were used to attract moths in 1993.

Common, easily identified insects were captured, identified and released. Uncommon 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.

Specimens were identified using a variety of taxonomic manuals, keys and field guides, most 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.

Results

One hundred and ninety-six species representing 5 orders and 16 families were captured and identified to species. Whereas a majority of these animals have been determined to be wide-ranging species with broad ecological amplitudes, 76 were determined to be uncommon, prairie-dependent species (Table 1).

Discussion

IBSP supports an impressive number of conservative insects, many of which are either uncommon or rare in both Illinois and nearby Indiana (Tables 1-7). IBSP, by virtue of its habitat heterogeneity and large size, harbors considerably more conservative insect species than do most (perhaps all) of the smaller sites that persist in this region (Table 2). Nevertheless, there is reason to suspect that several species may have been extirpated from this site within the last several decades.

Butterflies (species abundance)

More than one third (54 species) of the butterflies known to occur in Illinois have been recorded at IBSP in 1993. Twenty prairie and/or savanna-dependent species have been recorded on this site thus far. The *Arctostaphylos*-feeding hoary elfin is restricted to this site only in Illinois. The olympic marble[†] is known to occur on less than 6 protected sites in this state. Both of these species should be considered to be rare elements (S1). The dreamy dusky wing is also known from less than 6 protected sites and should be treated as a very uncommon element (S2). Several other species, including, the dion skipper[†], the broadwing skipper[†], the silver bordered fritillary, the appalachian brown and the aphrodite are uncommon and tend to be restricted to larger remnants in this region. Species such as the long dash, the black dash[†], the mulberry wing[†], the bronze copper, and the acadian hairstreak are somewhat common but will likely become much less so as shrinking habitat islands become more isolated and local extinctions accelerate.

The r-d butterfly fauna of IBSP compares favorably with those recorded on a majority of the large, high quality prairie and savanna remnants in both Illinois and Indiana, and far surpasses, in diversity, the faunas of most of the smaller remnants in this area (Tables 3 & 4). This relative richness notwithstanding, IBSP has almost certainly experienced a significant decline in butterfly species abundance within the last several decades*. Many conservative, sand-associated butterfly species are apparently absent from this site. Surprisingly, few sand savannas support less conservative savanna species than does IBSP (see Table 5).

Seven species seem conspicuous in their absence from this site. Both the Ottoo skipper (Wyatt 1946) and the frosted elfin (1922) have been recorded from the IBSP area in the past. The Indian skipper was recorded in Evanston (1896) in what was almost certainly very similar habitat. Ottoo, dusted, and byssus skippers still fly within the Clark & Pine Savanna, a site that is very similar to IBSP (near the lake in Lake Co., Indiana). Dusted, mottled and cobweb skippers were all reported (Hoy) to be common along the lake in the Racine area near the turn of the century.

Butterflies (Population densities)

We have made no attempt to gauge either actual or relative population densities during this study. Nevertheless, we could not help but notice that most species were somewhat scarce. As examples, we recorded only 1 checkered white, 1 acadian hairstreak, 2 Aphrodites and 1 appalachian brown in 1990. Silver bordered fritillaries (threatened in Ohio) were also scarce, with seldom more than 2 or 3 sighted during each outing. These species were found to be equally as scarce in 1993, with the exception of the appalachian brown (see listing). No Aphrodites were recorded in 1993. A few species, namely hobomok skippers, hoary elfins and eyed browns have been found to occur in sizable numbers both years. The olympic marblewing, known to fluctuate dramatically (in abundance) from year to year, was found to occur in sizable numbers this year.

[†] Five IBSP butterflies are listed as Illinois watch species.

* This site has been grazed, sand mined, used to make a movie, and used by the US Army for tank and other military maneuvers during World War II (Large pits were reportedly dug in the nature preserve to house anti aircraft guns)!

Moths

Eighteen conservative moths have been recorded thus far. Chief among these have been several members of the genus *Papaipema*.

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 metropolis 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" 26 of these species, and have recorded 2 additional species within Illinois natural areas within the past 7 years.

The *Papaipema* moths of northeastern Illinois and northwestern Indiana can be categorized according to habitat requirements as follows: 17 prairie species; 4 fen species; 4 savanna/woodland species; and 4 wide-ranging, unrestricted species. A site as large as the IBSP complex should probably support 12 or more of the prairie species.

Forteen prairie-restricted *Papaipema* species have been recorded, establishing IBSP as the richest prairie *Papaipema* sanctuaries in either Illinois or Indiana, and probably in the entire Midwest (Table 6). Of equal importance, this site has been found to support 2 rare species, both of which are known to occur on 3 or less sites in Illinois. The loosestrife root borer, *P. lysimachiae*, is known only from IBSP (this is a new state record). The royal fern borer, *P. speciosissima*, is known from only 2 other Illinois sites. Both of these species should be treated as rare elements (S1).

The Ironweed root borer, *P. cerussata*, and the golden alexander root borer, *P. rigida*, although reportedly common to the north and east, have only been recorded on 6 or fewer sites in Illinois and may be very uncommon in this state. The Maritime root borer, *P. maritima*, has only been recorded on 4 sites in Michigan (Jim Bess, pers. com.) and seems to be uncommon in Illinois. The liatris root borer, *P. beeriana*, is known from only 4 sites in Michigan, is listed as endangered in Ohio, and is apparently very uncommon in Illinois and Indiana. The Culver's root stem borer, *P. sciata*, is equally as uncommon in Illinois and Indiana. These species should be treated as uncommon elements (S2).

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 (Table 6). The indigo stem borer, *P. baptisiae*, the sneezeweed borer, *P. impecuniosa*, and the sensitive fern borer, *P. inquisita*, are still relatively common, and can usually be found where their host plants occur.

Schinia (flower moths)

The North American genus *Schinia* is comprised of more than 100 species, with roughly 40 occurring in the East and/or Midwest (Covell, 1984). Most are restricted to native plant communities by narrow host plant requirements. As a consequence, many are uncommon or rare in large portions of their range. The rarest member of this genus, *Schinia indiana*, has been nominated for listing as a federally endangered species (category 2). This Savanna species is known from only 6 midwestern sites, 3 of these being Hessville Indiana, Palos Park, and IBSP (1936). We conducted an exhaustive search for this small purple moth throughout the *P. pilosa* blooming period (May 24 through June

20). Despite good weather conditions and a profusion of blooming *P. pilosa*, we failed to locate this elusive species (this tiny, cryptically colored moth sits motionless atop flowers and is very difficult to see). Although the habitat conditions seem ideal for *S. indiana* at IBSP, this species may (?) simply not be present (we expended more than 60 man-hours in our search for this "myth"). It is possible that this species has been extirpated from Illinois. It is equally likely that we simply failed to find this elusive species.

Three additional conservative flower moths have been recorded on this site within the past 50 years (by A. K. Wyatt and I. Leeuw); these include the liatris flower moth, *Schinia gloriosa*, the leadplant flower moth, *Schinia lucens*, and the goldenrod flower moth, *Schinia nundina*. We recorded *S. gloriosa* in 1990 and *S. lucens* in 1993. These prairie species are apparently very uncommon in Illinois (*S. lucens* is known from only 1 site in Michigan where it is listed as endangered) and should be treated as very uncommon elements (S2).

Additional r-d moths

Tricholita notata, listed as an endangered species in Ohio, is known from only 5 sites in Illinois and should be considered to be a very uncommon species (S2).

Lemmeria digitalis is reportedly an uncommon, sedge meadow-associated species in Michigan. This is only our fourth record for this species.

Leafhoppers and Froghoppers

Seventy-five leafhopper and 6 froghopper species have been recorded to date. Whereas the bulk of these are clearly common, wide-ranging species, 34 are considered to be uncommon conservative species (Table 1, 7 & 9).

The critically imperiled dropseed leafhopper, *Aflexia rubranura*, has been nominated for listing (C2) as a federally endangered species, and should be considered to be a rare element (S1) here in Illinois. We have documented substantial populations on both sides of the Dead River, and within the North Dunes Prairie complex. Three species *Texananus cumulatus*, *Paraphlepsius lupalus*, and *Amplicephalus kansiensis*, are known (in Illinois) only from IBSP and should be treated as rare elements (S1). (This is the only known site for *P. lupalus* in the world . . . *A. kansiensis* represents a new state record) Twelve species, *Xerophloea major*, *Prairiana kansana*, *Dorydiella kansana*, *Hecalus grandis*, *Paraphlepsius solidagensis*, *P. nebulosus*, *Hebecephalus cruciatus*, *Graminella oquaka*, *Graminella morhi*, *Polyamia herbida*, *Pandarus magnus*, and *Limotettix bisoni* seem to be very scarce in this region, and should be considered to be very uncommon elements (S2).

The prairie-dependent leafhopper fauna of IBSP compares favorably with those recorded on the highest quality prairie remnants in Illinois and Indiana (Table 7).

DeLong surveyed the leafhoppers of this area in the early 30's and recorded an impressive total of 24 conservative species. We have managed to produce comparable results, recording 16 of DeLong's species, as well as an additional 16 species. The disparity between our "catch" and DeLong's may be

attributable to the considerable disturbances that have taken place[†] or, more likely, our failure to comprehensively survey this very large site. We hope to continue our search for the "missing 8" next year.

Bumblebees

Bumblebees play an important role in the pollination of prairie and savanna plants (see Table 11)*. Five of the 9 species that inhabit this region were recorded on this site (Table 10).

Other r-d insects

Dawson's grasshopper (*Melanoplus dawsoni*), first recorded in IBSP in 1906, was recorded throughout the savanna and sand prairie in both years. This is one of 3 records for this flightless grasshopper in Illinois. This insect is near the southern edge of its range in northern Illinois.

The Seaside grasshopper (*Trimerotropis maritima interior*), once common along the lake from Chicago through Zion, was found to be common in loose sand habitats near the lake. This is probably the only protected population of this species in Illinois.

Blatchley's walking stick (*Diaperomera blatchleyi*), first recorded in IBSP by Hart in 1906, was recorded within a good wet-mesic section of sand prairie just west of the Nature Center. This seems to be an uncommon mesic and wet prairie species in this region.

Survey Thoroughness

Whereas we have likely recorded 90-99% of the leafhoppers, froghoppers, butterflies, Papaipema moths, and bumblebees that occur on this site, we have probably recorded less than 66% of the Schinia moths. The other insect groups listed below were treated very superficially. 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 IBSP site, further efforts can be expected to produce additional species.

Prescribed burning

Fires can represent a threat to r-d leafhoppers, butterflies, and Papaipema moths, all of which are present as either eggs or larvae within the prairie litter during the spring and fall (Bird 1934, Swietzer 1988, Panzer 1988). A growing body of anecdotal evidence suggests, however, that fire-sensitive insects can routinely survive partial burns that leave sizable portions of their habitat unburned (Panzer 1988). We would suggest that 2/3 of each site (especially the xeric plant communities) be spared from burning each year to provide sanctuary for fire-sensitive insects.

* These "huge" insects are the only beasts that can force their way into our closed gentians.

† Delong's survey occurred 7 - 8 years before IBSP was purchased. Since that time, a hotel has been built near the beach, a nuclear power plant has been built to the north, the park has been used to make a movie, and 500 acres of what is now nature preserve was turned over to the US Army for tank and other military maneuvers during World War II! Large pits were reportedly dug in the nature preserve to house anti aircraft guns and the entire area may have been treated for mosquitoes!

The Prairie phlox moth, *Schinia indiana*, ranks among the rarest grassland insects in North America. Currently known from single sites in Michigan and Wisconsin (both of which are unprotected), this savanna species was once present in Palos Park and IBSP (1936). It is possible that this illusive moth still flies at IBSP, despite our failure to find it last year. We would suggest that IDOC consider distributing the enclosed "Animal Alert" circular to interested Stewardship Network volunteers in an attempt to stimulate interest in this "Unicorn".

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Table 1. Host plants and habitat associations of the conservative insects of the Illinois Beach State Park Nature Preserve *

Species:	Host plants	wet prairie sedge meadow	mesic/xeric prairie	sand savanna
<i>Prairiana kansana</i>	grasses		x	x
<i>Xerophloea major</i>	grasses	x		
<i>Neohecalus lineatus</i>	<i>Spartina</i>	x		
<i>Hecalus flavidus</i>	prairie grasses		x	
<i>Hecalus grandis</i>	<i>Sporobolus</i>		x	
<i>Dorydiella kansana</i>	<i>Scleria</i>	x		
<i>Scaphytopius cinereus</i>	<i>Amorpha</i> ?		x	x
<i>Flexamia prairiana</i>	<i>Andropogon</i>		x	
<i>Flexamia delongi</i>	<i>Andropogon</i>		x	x
<i>Hebecephalus cruciatus</i>	<i>Koeleria</i> ?			x
<i>Aflexia rubramura</i>	<i>Sporobolus</i>		x	
<i>Deltocephalus caperatus</i>	<i>Andropogon</i>		x	
<i>Cribrus shingwauki</i>	wet prairie grasses or sedges	x		
<i>Polyamia herbida</i>	grasses		x	
<i>Palus marginatus</i>	sedges	x		
<i>Laevacephalus unicoloratus</i>	<i>Andropogon</i>		x	
<i>Laevicephalus acus</i>	grasses		x	
<i>Graminella oquaka</i>	<i>Panicum virgatum</i>	x	x	
<i>Graminella mohri</i>	<i>Panicum virgatum</i>	x	x	
<i>Limotettix bisoni</i>	sedges	x		
<i>Pandarus magnus</i>	<i>Spartina</i>	x		
<i>Amplicephalus osborni</i>	sedges	x		
<i>Amplicephalus kansiensis</i>	sedges	x		
<i>Ophiola osbornii</i>	-	x		
<i>Paraphlepsius solidagensis</i>	<i>Solidago</i>		x	
<i>Paraphlepsius nebulosus</i>	-		x	
<i>Paraphlepsius lobatus</i>	<i>A. scoparius</i>		x	
<i>Paraphlepsius lupalus</i>	-	x		
<i>Texanus cumulatus</i>	<i>Arctostaphylus</i>		x	x
<i>Chlorotettix spatulatus</i>	wet prairie grasses	x	x	
<i>Chlorotettix brevidis</i>		x	x	
<i>Cicadula melanogaster</i>	wet prairie grasses	x		
<i>Cicadula smithii</i>	sedges	x		
<i>Philaenarcys killa</i>	prairie grasses		x	
<i>Prosapia ignipectus</i>	<i>Andropogon</i>		x	
<i>Euphyes dion</i>	<i>Carex</i>	x		
<i>Euphyes conspicua</i>	<i>Carex</i>	x		
<i>Poanes massasoit</i>	<i>Carex</i>	x		
<i>Poanes viator</i>	<i>Carex</i>	x		
<i>Polites mystic</i>	<i>Carex</i>	x		
<i>Polites origines</i>	grasses		x	
<i>Atrytone delaware</i>	<i>Andropogon, Panicum</i>		x	
<i>Erynnis icelus</i>	<i>Salix</i>		x	x
<i>Erynnis baptisia</i>	<i>Baptisia</i>			x

Table 1, continued

Species:	Host plants	wet prairie sedge meadow	mesic/xeric prairie	sand savanna
<i>Euchloe olympia</i>	<i>Arabis lyrata</i>			x
<i>Incisalia polios</i>	<i>Arctostaphylos</i>		x	
<i>Lycaeides melissa samuelis</i>	<i>Lupinus</i>			x
<i>Satyrium acadica</i>	<i>Salix</i>	x		
<i>Satyrium edwardsii</i>	<i>Quercus</i>			x
<i>Harkenclenus titus</i>	<i>Prunus</i>		x	
<i>Lycaena thoe</i>	<i>Polygonum</i>	x		
<i>Boloria selene myrina</i>	<i>Viola</i>	x		
<i>Speyeria aphrodite</i>	<i>Viola</i>		x	
<i>Lethe eurydice</i>	<i>Carex stricta</i> & <i>C. atheroides</i>	x		
<i>Lethe appalachia</i>	<i>Carex</i>			x
<i>Schinia gloriosa</i>	<i>Liatris</i>		x	
<i>Schinia lucens</i>	<i>Amorpha</i>		x	x
<i>Tricolita notata</i>	<i>S. rigida</i>		x	
<i>Lithocodia bellicula</i>	-		x	
<i>Papaipema baptisiae</i>	<i>Baptisia</i>		x	x
<i>Papaipema beeriana</i>	<i>Liatris</i>		x	
<i>Papaipema cerussata</i>	<i>Vernonia</i>	x	x	
<i>Papaipema impecuniosa</i>	<i>Helenium</i>	x	x	
<i>Papaipema nelita</i>	<i>R. laciniata</i>	x	x	
<i>Papaipema maritima</i>	<i>Helianthus</i>		x	
<i>Papaipema unimoda</i>	<i>Thalictrum</i>	x	x	
<i>Papaipema eupatorii</i>	<i>Eupatorium</i>	x		
<i>Papaipema sciata</i>	<i>Veronicastrum</i>		x	
<i>Papaipema silphii</i>	<i>Silphium</i>		x	
<i>Papaipema inquisita</i>	<i>Onoclea</i>	x	x	
<i>Papaipema speciosissima</i>	<i>Osmunda</i>		x	x
<i>Papaipema lysimachiae</i>	<i>Lysimachia</i>	x		
<i>Papaipema rigida</i>	<i>Zizia</i>		x	
<i>Hesperotettix viridis</i>	Composites		x	x
<i>Melanoplus dawsoni</i>			x	x
<i>Trimerotropis maritima interior</i>	<i>Ammophila</i>		x	
<i>Diapheromera blatchleyi</i>		x	x	

* This listing includes species that are seldom encountered in old field settings. This listing does not include several prairie-associated species (e.g. Wood nymph, Wild rye leafhopper) that can be found, with regularity, in badly degraded areas.

9-15-93

Table 2. The number of conservative prairie butterflies and leafhoppers known to occur on a variety prairie remnants in the Chicago region.

Sites: Area (Ha)	IBSP 600	GLP 600	NACH 100	LOCK 75	GMP 60	C&P 50	WCP 50	CP 16	LP 6	CRP 3	SHOE 2	VCP 1
Butterflies	14	17	14	12	15	14	16	13	10	3	2	1
Leafhoppers	32	25	14	17	29	13	14	11	10	12	8	5
Totals	46	42	28	29	44	27	30	24	20	15	10	6

GLP = Goose Lake Prairie; IBSP = Illinois Beach State Park; GMP=Gensburg Markham Prairie; WCP= West Chicago Prairie; VCP= Vermont Cemetery Prairie; SHOE= Shoe Factory Road Prairie; LOCK= Lockport; CRP = Chicago Ridge Prairie; CP = Cook Prairie; C & P = Clark and Pine; LP = Liberty Prairie; NACH = Nachusa Grasslands.

Table 3 . Distribution of butterfly species abundance on 30 grassland remnants in northern Illinois and Indiana.

Remnant	Prairie area [†] (ha)	Species number		Total species
		Prairie-dependent species*	Other species	
IL Beach State Park	600.0	14	40	54
Goose Lake Prairie	600.0	17	31	48
Iroquois County SWA	250.0	15	37	52
Nachusa Grasslands	100.0	14	41	55
Lockport Prairie	75.0	12	25	37
Lake in the HillsFen	70.0	13	32	45
Romeoville Prairie	60.0	12	25	37
G. M. Prairie	60.0	15	35	50
West Chicago Prairie	60.0	16	26	42
Clark and Pine Prairie	50.0	14	33	47
Green River	40.0	15	31	46
Pratts Wayne Marsh	40.0	9	22	31
Grant Creek Prairie	35.0	7	26	33
Toll-road Prairie	30.0	6	17	23
Sun Drop Prairie	28.0	8	24	32
Cook Prairie	16.0	12	25	37
Paintbrush Prairie	15.0	8	23	31
Somme Prairie	14.0	8	18	26
Rock Run	12.0	7	25	32
Long Run Seep	7.0	9	20	29
Buffalo Grove Prairie	6.4	6	16	22
Liberty Prairie	6.0	9	19	28
I- 57 Prairie	4.5	5	19	24
Belmont Prairie	4.2	6	27	33
Chicago Ridge Prairie	3.6	3	18	21
Shoe Factory Prairie	3.5	3	17	20
Santa Fe Prairie	3.0	4	18	22
Cary Prairie	2.0	3	19	22
Main Street Prairie	2.0	2	19	21
Vermont Cemetery Prairie	1.0	1	14	15

* This category includes those prairie species that are seldom encountered outside native prairie/wetland remnants. This figure does not include savanna/woodland restricted species such as *L. m. samuelis*, *C. irus*, *E. brizo*, etc. This figure does not include single sightings of conspicuous species from multiple year samples.

† Area estimates exclude savanna and old field habitats.

TABLE 4. The prairie and savanna-dependent butterflies of 15 prairie/savanna complexes in Illinois and Indiana

Species:	Illinois silt loam				Illinois sand						Indiana sand					
	Site:	Somm	Fork	Wads	Oak	SRSF	IBSP	Iroq	Grn	Nach	B'wd	Tft	Hoos	C&P	Gibs	Spin
<i>Atrytonopsis hianna</i>												(*)		(*)		
<i>Euphyes dion</i>			X		X		X		X		X			X	X	
<i>Euphyes conspicua</i>	X		X	X	X		X	X	X	X	X	X	X	X	X	X
<i>Euphyes bimacula</i>								*	*	*	*					
<i>Poanes viator</i>							*				*					
<i>Poanes massasoit</i>	X		X	X	X		X	X		X			X			
<i>Problema byssus</i>						*		*	*	*	*			*	*	
<i>Atrytone delaware</i>	X		X		X	X	X	X	X	X	X	X	X	X	X	X
<i>Polites origines</i>	X					X	X	X	X	X	X	X	X	X	X	
<i>Polites mystic</i>					X		X						X			
<i>Hesperia metea</i>						(*)						(*)				
<i>Hesperia sassacus</i>								(*)				(*)				
<i>Hesperia ottoe</i>						(*)								(*)		
<i>Hesperia leonardus</i>														(*)		
<i>Amblyscirtes vialis</i>						X		X			X	X				
<i>Erynnis icelus</i>							X				X	X	X	X	X	
<i>Erynnis brizo</i>						X		X			X	X				
<i>Erynnis baptisiae</i>							X	X	X	X	X	X	X			X
<i>Erynnis martialis</i>						(*)		(*)			(*)	(*)				
<i>Thorybes bathyllus</i>						X		X	X	X	X	X		X	X	
<i>Thorybes pyllades</i>						X					X			X		
<i>Euchloe olympia</i>						(*)	(*)					(*)				(*)
<i>Harkenclenus titus</i>	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
<i>Strymon acadica</i>	X	X	X			X	X	X		X	X	X	X		X	X
<i>Satyrium edwardsii</i>	X	X			X	X	X				X	X	X		X	
<i>Lycaena thoe</i>		X		X		X		X	X	X	X	X	X	X		
<i>Lycaena helloides</i>								X	X		X		X			
<i>Lycaena xanthoides</i>														*		
<i>Lycaeides m. samuelis</i>								(*)								(*)
<i>Incisalia polios</i>							(*)									
<i>Callophrys irus</i>												(*)				
<i>Glaucopsyche lygdamus</i>				(*)												
<i>Polygonia progne</i>					X					X						
<i>Chlosyne nycteis</i>	X	X	X			*					*					
<i>Chlosyne gorgone</i>																
<i>Euphydryas p. phaeton</i>			X					X		X						
<i>Boloria selene myrina</i>							X	X	X	X	X	X				
<i>Boloria bellona</i>						X		X	X	X	X					
<i>Speyeria idalia</i>						*		*	*	*	*					
<i>Speyeria aphrodite</i>							X	X	X	X	X	X	X			
<i>Lethe appalachia</i>	*	*	*				*									
<i>Lethe eurydice</i>	X	X	X	X		X		X	X	X		X	X	X	X	
<i>Lethe portlandia anthedon</i>	X	X	X	X							X					
Totals:	11	12	10	10	17	20	18	15	17	21	23	15	15	13	4	

Somm = Somme Woods; Fork = Middlefork Savanna; Wads = Wadsworth Prairie; Oak = Oak Openings Savanna; IBSP = IL Beach State Park; Iroq = Iroquois County State Wildlife Area; B'wd = Braidwood Dune & Savanna; Tft = Tefft Savanna; C&P = Clarke & Pine Nature Preserve; Hoos = Hoosier Prairie; Nach = Nachusa Grasslands; Spin = Spinn Prairie; Grn = Green River State Shooting Area; Gibs = Gibson Woods; SRSF = Sand Ridge State Forest (data from Hess et al)

* = Very uncommon species in this region. (*) = Rare prairie/savanna species (<12 sites in Illinois and Indiana combined).

TABLE 5. Distribution of conservative savanna-associated butterflies within a system of 10 sand prairie/savanna complexes in Illinois and Indiana.

Species:	Site:	Illinois sand savannas					Indiana sand savannas				
		SRSF 600 ⁺ ha.	IBSP 600 ⁺ ha	Iroq 600 ⁺ ha	Gm 50 ha.	Nach 60ha.	B'wd 100ha.	Teft 600 ⁺ ha	Hoos 200ha.	C&P 50ha.	Gibs 100ha.
<i>Atrytonopsis hianna</i>							(*)		(*)		
<i>Problema byssus</i>		*		*	*		*		*	*	
<i>Hesperia metea</i>		(*)					(*)				
<i>Hesperia sassacus</i>				(*)			(*)				
<i>Hesperia ottoe</i>		(*)							(*)		
<i>Hesperia leonardus</i>									(*)		
<i>Erynnis martialis</i>		(*)		(*)			(*)	(*)			
<i>Euchloe olympia</i>		(*)	(*)				(*)			(*)	
<i>Lycaeides m. samuelis</i>			(*)							(*)	
<i>Callophrys irus</i>							(*)				
<i>Incisalia polios</i>			(*)								
<i>Glaucopsyche lygdamus</i>								(*)			
<i>Speyeria idalia</i>		*		*		*	*				
Totals:		6	3	4	1	1	2	7	2	4	3

IBSP = IL Beach State Park; Iroq = Iroquois County State Wildlife Area; B'wd = Braidwood Dune & Savanna; Teft = Tefft Savanna; C&P = Clarke & Pine Nature Preserve; Hoos = Hoosier Prairie; Nach = Nachusa Grasslands; Gm = Green River State Shooting Area; Gibs = Gibson woods; SRSF = Sand Ridge State Forest (data from Hess et al)

* = Very uncommon prairie/savanna species in Illinois (S2-S3); (*) = Rare prairie/savanna species in Illinois (S1-S2).

Table 6 Distribution of *Papaipema* species diversity on seventeen prairie/wetland remnants in the Chicago region *

Species	IBSP	GLP	Iroq	Chi [†]	LHF	GMP	WCP	GCP	SP	CP	McM	LRS	DP	CRP	OFP	Vmnt	GMth
Site size (acres)**	1,500	1,500	900	250	200	150	120	80	60	40	20	15	12	8	3	2	1
<i>aerata</i> (0)																	
new species #10 (2)		X						X									
<i>lysimachiae</i> (2)	X			X													
<i>eryngii</i> (2)		X						X									
<i>harrisii</i> (2)					X												
<i>rigida</i> (4)	X			X		X		X									
<i>nelita</i> (4)	X										X	X					
<i>speciosissima</i> (4)	X		X														
<i>eupatorii</i> (5)	X			X	X						X	X					
<i>necopina</i> (5)					X					X	X						
<i>nepheleptena</i> (6)	-	X	X	X	X					X							
<i>cerussata</i> (6)	X	X	X			X		X			X						
<i>limpida</i> (7)			X			X		X	X						X		
<i>inquaesita</i> (8)	X	X	X								X						
<i>sciata</i> (9)	X	X	X	X	X	X	X	X		X							X
<i>birdi</i> (9)		X				X	X	X	X								
<i>maritima</i> (10)	X	X		X	X	X	X	X			X	X	?				
<i>beeriana</i> (11)	X	X	X	X		X	X	X	X	X	X	X	?				
<i>unimoda</i> (14)	X			X	X	X	X	X	X	X		X			X		
<i>impecuniosa</i> (20)	X	X	X	X	X	X	X	X	X	X	X	X					
<i>baptisiae</i> (23)	X	X	X	X		X	X	X	X	X			X	X		X	X
<i>ilphii</i> (26)	X	X		X	X	X	X	X	X	X			X	X	X	X	X
Totals	14	12	9	11	9	11	8	13	7	8	8	6	4	2	3	2	3

GLP = Goose Lake Prairie; Iroq = Iroquois County State Wildlife Area ; GMP = Gensburg Markham Prairie; WCP = West Chicago Prairie; GCP = Grant Creek Prairie; SP Sundrop Prairie; CP = Cook Prairie (IN); ; DP = Dropseed Prairie; CRP = Chicago Ridge Prairie; OFP = Oak Forest Prairie; Vmnt = Vermont Cemetery; GMth = German Methodist Prairie (IN); LHF = Lake in the Hills Fen; McM = McMahon Fen; LRS = Long Run Seep. IBSP= Illinois Beach State Park; Chi = Chiwaukee Prairie

* Four "weedy" species (*P. arctivorens*, *P. cataphracta*, *P. furcata*, and *P. nebris*) and 4 savanna species (*P. leucostigma*, *P. rutila*, *P. cerina*, and *P. pierisii*) are not included in this comparison.

(n) = Numbers in parenthesis after species names indicate total number of known sites for each species in northern Illinois and Nw Indiana.

** Acreage does not include wooded or old field habitats.

† Data from L. Ferge, 1989.

Log transformed linear regression: slope 0.303; y intercept 0.273; r = 0.88

Table 7. Distribution of macro leafhopper species abundance on 14 prairie remnants in the Chicago region**. (Panzer et al 1993)

Site:	Conservative prairie species	Other species*	Total species
Gooselake Prairie (600 ha.)	25	35	60
IL Beach State Park (500 ha.)	32	45	77
Iroquois County SWA (400 ha.)	30	47	77†
Gensburg Markham Prairie(60 ha.)	29	35	64
Green River Cons. Area (50 ha.)	25	33	58
West Chicago Prairie (50 ha.)	14	30	44
Clark and Pine Prairie(40 ha.)	13	26	39
Grant Creek Prairie (30 ha.)	11	31	42
Cook Prairie (16 ha.)	11	56	67†
Somme Prairie (12 ha.)	10	21	31
Liberty Prairie (6 ha.)	10	23	33
Shoe Factory Road Prairie (4 ha.)	8	21	29
Chicago Ridge Prairie (3 ha.)	12	18	30
Vermont Cemetery (1 ha.)	5	20	25

* "other species" include savanna/woodland species as well as wide-ranging species with wide ecological amplitudes.

† Prairie/savanna complexes have appreciably higher species counts than do prairies.

** Site size estimates exclude old field and wooded areas.

Table 8. Conservative prairie leafhoppers recorded within (or near) Illinois Beach State Park from 1936 through 1993

Recorded by:	DeLong* 1930's	Panzer et al 1993
<i>Prairiana kansana</i>		x
<i>Xerophloea major</i>		x
<i>Dorydiella kansana</i>	x	x
<i>Neohecalus lineatus</i>	x	x
<i>Hecalus rotundus</i>	x	
<i>Hecalus viridis</i>	x	
<i>Hecalus flavidus</i>		x
<i>Hecalus grandis</i>		x
<i>Scaphytopius cinereus</i>	x	x
<i>Texananus cumulatus</i>	x	x
<i>Flexamia reflexa</i>	x	x
<i>Flexamia delongi</i>	x	x
<i>Aflexia rubramura</i>		x
<i>Palus bilineatus</i>		x
<i>Polyamia compacta</i>	x	
<i>Polyamia herbida</i>		x
<i>Hebecephalus signatifrons</i>	x	
<i>Rosenus (Hebecephalus) cruciatus</i>	x	x
<i>Deltocephalus caperatus</i>		x
<i>Cribrus schingwauki</i>	x	x
<i>Laevicephalus unicoloratus</i>	x	x
<i>Laevicephalus acus</i>		x
<i>Graminella mohri</i>	x	x
<i>Graminella oquaka</i>	x	x
<i>Euscelis sahlbergi</i>	x	
<i>Limotettix urnura</i>	x	
<i>Limotettix bisoni</i>		x
<i>Amplicephalus osborni</i>		x
<i>Amplicephalus kansiensis</i>		x
<i>Pandarus magnus</i>		x
<i>Paraphlepsius lupalus (turpiculus sensu DeLong)</i>	x	x
<i>Paraphlepsius altus</i>	x	
<i>Paraphlepsius solidagensis</i>	x	x
<i>Paraphlepsius nebulosus</i>		x
<i>Paraphlepsius lobatus</i>	?	x
<i>Mesamia nigradorsum</i>	x	
<i>Chlorotettix spatulatus</i>	x	x
<i>Chlorotettix brevidis</i>	x	x
<i>Cicadula melanogaster</i>	x	x
<i>Cicadula smithii</i>		x
Totals (40 species)	24	32 [†]

* DeLong, 1948. Leafhoppers of Illinois.

† 8 species recorded by DeLong were not encountered in this study. . . . 16 species recorded in this study were not recorded by DeLong.

TABLE 9. The distribution of froghopper diversity on nine prairie/savanna complexes in northern Illinois.

Species:	Site:	IBSP	Iroq	Somme	M'fork	W'worth	Fermi	Nachusa	LibPr	LibSav
<i>Philaenus spumarius</i>		(e)								
<i>Paraphilaenus paralellus</i>								(*)	(*)	
<i>Philaenarcys killa</i>		*						*		
<i>Aphrophora quadrinotata</i>		X	X	X		X		X	X	
<i>Aphrophora cribrata</i>								(e)		
<i>Aphrophora saratogensis</i>			(e)					(e)		
<i>Clastoptera obtusa</i>		X		X	X		X	X		X
<i>Clastoptera proteus</i>		X		X	X	X			X	X
<i>Clastoptera arborina</i>								X		
<i>Prosapia ignipectus</i>		*			*	*			*	
<i>Lepyronia quadrangularis</i>			X							
<i>Lepyronia gibbosa</i>								(re)		
Total indigenous species:		5	3	3	3	3	1	6	4	2

Somme = Somme Woods Prairie; M'fork = Middlefork Savanna; W'worth = Wadsworth Prairie; Fermi = Fermilab Prairie; Nachusa = Nachusa Grasslands; IBSP = IL Beach State Park; Iroq = Iroquois County State Wildlife Area; LibPr = Liberty Prairie; LibSav = Liberty Savanna.

* = uncommon, prairie-dependent species.

(*) = rare, prairie-dependent species.

(e) = exotic

(re) = Very uncommon prairie-dependent species; reestablished on this site in 1989.

Table 10. Bumblebee species known to occur on eight prairies in northern Illinois.

Taxon:	Sites:	IL Beach 600 ha	Fermilab† 200 ha	Nachusa 200 ha	PopCr 200 ha	GMP 60 ha	WCP 50 ha	Lib'ville 120 ha	VCP 1 ha
<i>Bombus affinis</i>		x			x	x	x	x	
<i>Bombus bimaculatus</i>		x	x	x	x	x	x		x
<i>Bombus fervidus</i>		x	x			x	x	x	x
<i>Bombus fraternus</i>									
<i>Bombus griseocolis</i>			x						
<i>Bombus impatiens</i>		x	x	x	x	x	x	x	x
<i>Bombus nevadensis</i>			x	x	x	x	x		
<i>Bombus pennsylvanicus</i>		x	x	x	x	x	x	x	
<i>Bombus vagans</i>				x					
Totals:		5	6	5	5	6	6	4	3

† = Restoration

Table 11. A partial listing of prairie plant species visited by bumblebees in northern Illinois*.

Plant species	
<i>Allium cernuum</i>	<i>Gentiana saponaria</i>
<i>Amorpha canescens</i>	<i>Gentiana andrewsii</i>
<i>Apocynum sibiricum</i>	<i>Liatris spicata</i>
<i>Arabis lyrata</i>	<i>Liatris cylindracea</i>
<i>Arctostaphylos uvi-ursi</i>	<i>Lupinus perennis</i>
<i>Asclepias tuberosa</i>	<i>Lithospermum canadensis</i>
<i>Asclepias hirtella</i>	<i>Lithospermum croceum</i>
<i>Asclepias incarnata</i>	<i>Monarda fistulosa</i>
<i>Aster novae-anglea</i>	<i>Opuntia humifusa</i>
<i>Baptisia leucantha</i>	<i>Pedicularis canadensis</i>
<i>Baptisia leucophea</i>	<i>Penstemon</i> sp.
<i>Castilleja coccinea</i>	<i>Petalostemum purpureum</i>
<i>Cicuta maculata</i>	<i>Pycnanthemum virginianum</i>
<i>Commandra richardsiana</i>	<i>Pysostegia virginiana</i>
<i>Coreopsis lanceolata</i>	<i>Rosa carolina</i>
<i>Coreopsis palmata</i>	<i>Silphium integrifolium</i>
<i>Dodecatheon meadii</i>	<i>S. terebinthimaceum</i>
<i>Echinacea pallida</i>	<i>Veronicastrum virginicum</i>
<i>Eupatorium maculatum</i>	<i>Viola pedata</i>
<i>Gaylussacia bacatta</i>	

* Data gathered by Panzer & Stillwaugh, 1980-1990.

An Annotated Listing of the Leafhoppers, Froghoppers, Butterflies, and Other Insects of the Illinois Beach State Park Nature Preserve, Lake County, Illinois

Dates = earliest sightings

North Dunes Prairie = north unit

† = conservative prairie species

Watch = Illinois watch species; Endangered = State endangered

Order ODONATA
suborder Anisoptera: dragonflies

family Aeshnidae

Anax junius (Drury)

green darner

This is a very common, migratory species. 5-20-90

Aeshna constricta Say

autumn darner

This common migratory species was recorded on 9-6-90.

family Libellulidae

Sympetrum rubicundulum (Say)

red topper

This is a common, early summer species. Members of this genus breed in the temporary waters of wet prairies, sedge meadows, and marshes. 7- 22-90

Sympetrum semicinctum (Say)

half banded topper

This is an uncommon species in Northern IL. 9-6-90

Libellula pulchella Drury

ten-spotted skimmer

This very common, wide-ranging species breeds in the permanent waters of ponds and ditches.

Libellula luctuosa Burmeister

the widow

This is a common, wide-ranging species. 7-3-90

Tramea lacerata Hagen

saddle bags

This is a very common, wide-ranging species. 7-3-90

Order ORTHOPTERA

family Acrididae
subfamily Acridinae

Chorthippus curtipennis (Harris)

slant-faced grasshopper

This is a very common wetland species. 7-3-90

Agenotettix deorum (Scudder)

sand grasshopper

This sand-loving species was first recorded in Zion in 1906. This seems to be a common species in Illinois. 8-16-90

subfamily **Oedipodinae**

Encoptolophus sordidus (Burmeister)

sordid grasshopper

This is a common, dry prairie species. 8-1-90

Psinidia fenestralis (Serville)

sand longhorn

This is a common open sand species in this region. 8-1-90

Trimerotropis maritima interior E. M. Walker

seaside grasshopper†

This uncommon species is restricted in distribution to the shores of the great lakes in the Midwest. IBSP may be the only protected location for this species in Illinois. 7-22-90

subfamily **Cyrtacanthacridinae**

Melanoplus bivittatus (Say)

two-striped grasshopper

This common, bimodal species occurs both in wet prairies and on xeric hill prairies. 8-1-90

Melanoplus dawsoni (Scudder)

Dawson's grasshopper†

This northern species is at the southern edge of its range in the Chicago region. This is only our second record for this apparently rare, Chicago Lake Plain species. 8-11-90

Hesperotettix viridis pratensis Scudder

purple striped grasshopper†

This uncommon, sand prairie species reportedly feeds on forbs, especially composites. Blatchley found this species to be rare in Indiana. Hart recorded this species in Zion near the turn of the century. 8-9-90

family **Phasmatidae**

Monomera blatchleyi (Caudell)

Blatchley's walking stick†

This uncommon prairie species inhabits wet and mesic prairies in this region. 7-3-90

family **Gryllotalpidae**

Gryllotalpa hexadactyla Perty

northern mole cricket

This huge species was captured south of the Dead River on 6-5-93.

Order **HOMOPTERA**: leafhoppers & froghoppers

family **Cicadellidae**

Idiocerus rotundens DeLong and Cauldwell

leafhopper

This is a common shrub-feeding species.

Draeculacephala portola paludosa Ball and China

leafhopper

This common species occurs on *Scirpus fluviatilis*.

- Draeculacephala prasina* (Walker) **leafhopper**
This species is reportedly common.
- Draeculacephala constricta* D & D **leafhopper**
Common in the East and Midwest. + North Dunes Prairie
- Draeculacephala mollipes* (Say) **leafhopper**
Common in the East and Midwest. 7-9-90
- Gypona melanota* Spangberg **leafhopper**
This seems to be a somewhat common prairie species. 8-8-90
- Gyponana octolineata serpenta* DeLong **leafhopper**
A widely distributed species in eastern and midwestern U.S. 8-8-90
- Gyponana serpenta* DeLong **leafhopper**
A widely distributed species in the East and Midwest. 8-15-93
- Gyponana ortha* DeLong **leafhopper**
A widely distributed species in the East and Midwest. + North Dunes Prairie
- Gyponana turbina* DeLong **leafhopper**
A widely distributed species in the East and Midwest.
- Dorycephalus platyrhynchus* Osborn **leafhopper** + North Dunes Prairie
This western grass-feeding prairie species is uncommon in the Chicago region.
- Prairiana kansana* Ball **leafhopper†**
This is a very uncommon sand prairie species in this region. 8-19-90
- Xerophloea major* Baker **leafhopper†** 8-19-90
This species ranges from the east coast to Kansas, but seems to be rare in northern Illinois.
- Neohecalus lineatus* (Uhler) **leafhopper†**
This is a somewhat common, *Spartina*-feeding prairie species. 8-13-90
- Hecalus flavidus* Signoret **leafhopper†**
This is an uncommon prairie species in northern Illinois. 8-8-90
- Hecalus major* Osborn **leafhopper**
This prairie species is common in this region. 7-9-90 + North Dunes Prairie
- Hecalus grandis* Watch **leafhopper†**
This is a very uncommon *Sporobolus*-feeding species. 7-1-92 + North Dunes Prairie
- Dorydiella kansana* Beamer **leafhopper†**
This is apparently a rare wet prairie/sewage meadow species in this region. 8-19-90
- Aphrodes bicincta* (Panzer) **leafhopper**
This common species is apparently introduced from Europe. 7-9-90 + North Dunes Prairie

- Xestocephalus superbis* (Provancher) **leafhopper**
Reported to be common on herbaceous growth in open woodlands. 8-25-89
- Xestocephalus pulicarius* Van Duzee **leafhopper**
This common, wide-ranging species was taken on 8-1-90.
- Scaphoideus curvatus* DeLong & Mohr **leafhopper**
This is a southern, woodland-inhabiting species.
- Anosopus serratulae* (L.) **leafhopper**
This is apparently another exotic species. 8-19-90
- Lonenus intricatus* (Uhler) **leafhopper**
This seems to be a somewhat uncommon savanna species. 8-13-90
- Platymetopius vitellinus* (Fitch) **leafhopper**
This wide-ranging species reportedly occurs in 'open woods'. 8-13-90
- Scaphytopius acutus* (Say) **leafhopper**
This is a wide-ranging ubiquitous species. + North Dunes Prairie
- Scaphytopius cinereus* (Osborn & Ball) **leafhopper†**
This uncommon prairie species was taken on *Amorpha.canescens*. 8-3-92
- Flexamia prairiana* (Osborn & Ball) + North Dunes Prairie **leafhopper†**
This *Andropogon*-feeder is uncommon on the prairies in this region. 7-9-90
- Flexamia delongi* (Osborn) **leafhopper†**
This *A. scoparius*-feeder is uncommon on the prairies of this region.
- Aflexia rubranura* (DeLong)^{Endangered} **leafhopper†**
This rare, category 2 species was described from specimens taken in Evergreen Park in the 30's. Four known sites in Illinois. Host plant is *Sporobolus heterolepis*. 6-15-92 + North Dunes Prairie
- Latalus missellus* (Ball) + North Dunes Prairie **leafhopper**
A northern species reportedly found in meadows and open woodlands. 8-19-90
- Hebecephalus cruciatus* (Osborn and Ball) **leafhopper†**
This seems to be a rare *Koeleria*-feeding (?) species in Illinois. 8-3-93
- Endria inimica* (Say) **leafhopper**
A very common transcontinental grass-feeder. 8-13-90 + North Dunes Prairie
- Polyamia apicata* (Osborn) **leafhopper**
This sand prairie species is uncommon in this region. Host plants are reportedly panic grasses (*Panicum* spp.).
- Polyamia herbida* DeLong **leafhopper†**
This seems to be a rare sand prairie species in this region. 9-17-93
- Palus marginatus* (DeLong) **leafhopper†**
This uncommon wetland species is known from less than 6 sites in Illinois. 8-14-90

- Deltocephalus caperatus* Ball leafhopper†
This uncommon *Andropogon*-feeder was captured on 8-15-90.
- Cribrus shingwauki* Beamer & Tuthill leafhopper†
This is an uncommon, northern wet prairie/marsh (grass-feeding) species. 8-13-90
- Laevicephalus acus* (Sanders & DeLong) leafhopper†
This is an uncommon wet prairie species. 7-9-90
- Laevicephalus unicoloratus*. (Gillette & Baker) + North Dunes Prairie leafhopper†
This *Andropogon*-feeder is somewhat common on the prairies in this area. 8-19-90
- Amplicephalus osborni* (Van Duzee) leafhopper†
This is reportedly a northern, marsh species. 8-8-90
- Amplicephalus kansiensis* Hamilton + North Dunes Prairie leafhopper†
This is a state record for this great plains species. Host plants may be sedges. 7-31-93
- Psammotettix striatus* (L.) leafhopper
A common transcontinental grass-feeder. 6-17-90 + North Dunes Prairie
- Arthaldeus pascuellus* (Fall.) leafhopper
This is a very common weed. Nomenclature follows Beirne (1956). + North Dunes Prairie
- Amblysellus curtisii* (Fitch) leafhopper
This northeastern species reportedly feeds on *Calamagrostis*. 8-15-90
- Graminella nigrifrons* (Forbes) leafhopper
Reportedly a common grass-feeder in the eastern USA. 8-10-90
- Graminella oquaka* DeLong leafhopper†
This is a very uncommon *Panicum*-feeding species. 8-7-92.
- Graminella mohri* DeLong leafhopper†
This is another very uncommon *Panicum*-feeding species. 8-13-93
- Commellus comma* (Van Duzee) leafhopper
This uncommon, *Elymus* - feeding prairie species, has recently begun to feed on *Agropyron* in this region. + North Dunes Prairie
- Driotura gammaroides* (Van Duzee) leafhopper
This is a common, grass-feeding species in this region.
- Athysanus argentarius* Metcalf leafhopper
A ubiquitous introduction from Europe. 7-9-90 + North Dunes Prairie
- Exitianus obscurinervis* (Stal) leafhopper
This species is reportedly common and widespread. 8-15-90 + North Dunes Prairie
- Ophiola osborni* Ball leafhopper
This is an uncommon, dry prairie species. 8-19-90

- Limotettix bisoni* (Lawson) **leafhopper†**
A very uncommon sedge meadow species. 8-1-93
- Limotettix striolus* (Fallen) **leafhopper**
This is a common sedge meadow species in this area. Host plants include rice cut grass
- Pandarus magnus* (Osborn and Ball) **leafhopper†**
This is a very uncommon *Spartina*-feeding species.
- Paraphlepsius irroratus* (Say) **leafhopper**
This is a very common transcontinental species. + North Dunes Prairie
- Paraphlepsius lobatus* (Osborn) **leafhopper†**
This uncommon prairie species reportedly feeds on *A. scoparius*. 8-31-93
- Paraphlepsius nebulosus* (Walker) **leafhopper†**
This beautiful mesic prairie species seems to be rare in this region. 8-5-93 + North Dunes Prairie
- Paraphlepsius solidagensis* (Walker) **leafhopper†**
This beautiful mesic prairie species seems to be rare in this region. 8-15-90
- Paraphlepsius lupalus* Hamilton **Endangered** **leafhopper†**
This is the only known site for this Lake Plain endemic. Recorded on both sides of the Dead River on 8-21-91.
- Texananus cumulatus* Ball **leafhopper†**
This is the only Illinois location for this *Arctostaphylus*-feeding species.
- Eutettix variabilis* Hepner (?) **leafhopper**
This seems to be an uncommon savanna species in Illinois. 8-15-90
- Iowanus borrori* (DeLong) **leafhopper**
This may be a rare savanna-restricted species in this region.
- Menosoma cincta* (Osborn & Ball) Taken at lights on 9-4-93 **leafhopper**
This somewhat common, shade-loving species is distributed from the east coast to Colorado.
- Orientus ishidae* (Matzumura) **leafhopper**
This is becoming a common exotic in this area (?)
- Chlorotettix tergatus* (Fitch) **leafhopper**
This seems to be an uncommon wetland species. 8-19-90 + North Dunes Prairie
- Chlorotettix unicoloratus* (Fitch) **leafhopper**
This wetland species is very common in this region. 8-8-90 + North Dunes Prairie
- Chlorotettix spatulatus* Osborn and Ball **leafhopper†**
This wet prairie species is somewhat common in this region. 8-13-90 + North Dunes Prairie

Chlorotettix brevidus DeLong + North Dunes Prairie leafhopper†
This seems to be a rare sand prairie species in Illinois and Indiana. 8-13-93

Chlorotettix viridius Van Duzee leafhopper
This species is somewhat common in this region. 8-13-90

Cicadula melanogaster (Provancher) leafhopper†
This would appear to be a somewhat common, wet prairie species. 6-28-90

Cicadula smithii (Van Duzee) leafhopper†
This is an uncommon wet prairie species.

Macrosteles fascifrons (Uhler) leafhopper
A common species on crops. 8-19-90 + North Dunes Prairie

Jassus olitorius Say leafhopper
Common on oaks from mid July onward. 8-13-90 + North Dunes Prairie

Balclutha punctata (Thunberg) 8-19-90 leafhopper
This is a common, wide-ranging species.

Nesosteles divisa Davidson leafhopper
This is reportedly a common, wide-ranging species. 8-1-90

family **Cercropidae**: the froghoppers

Philaenus spumarius (L.) meadow spittlebug
This is a very common, wide-ranging species. + North Dunes Prairie

Aphrophora quadrinotata Say four spotted spittlebug
This is a common grassland species.

Philaenarcys killa (Say) + North Dunes Prairie prairie spittlebug†
This uncommon xeric prairie species inhabits both sand and gravel hill prairies in this region.

Clastoptera obtusa (Say) alder spittlebug
This somewhat uncommon species feeds on a variety of native woody species. 8-23-87

Clastoptera proteus Fitch dogwood spittlebug
This common species feeds on *Cornus* spp. 7-20-90 .

Prosapia ignipectus (Fitch) prairie froghopper†
This uncommon prairie species feeds, as a nymph, on the roots of *Andropogon scoparius*.

Order **Lepidoptera**: the Butterflies

* Order and nomenclature follow Irwin, R. R. and Downey, J. C. 1973. Annotated Checklist of the Butterflies of Illinois. Illinois Natural History Survey, Urbana, Il.

family **Hesperiidae**

Euphyes dion (Edwards)^{Watch}

dion skipper†

This is a very uncommon sedge meadow species. Hosts include *Carex laucustris*. 7-6-90

Euphyes conspicua (Edwards)^{Watch}

black dash†

Local in wet prairies and sedge meadows. Host plants are sedges (*Carex*). Found in both pannes and in sedge meadows to the west. Abundant on 7-17-90.

Poanes hobomok (Harris)

hobomok skipper

This is a somewhat common savanna species in northern Illinois. 6-6-90

Poanes massasoit (Scudder)^{Watch}

7-6-90

mulberry wing skipper†

This is an uncommon sedge meadow species in northern Illinois. Host plants are sedges (*Carex*).

Poanes viator Edwards^{Watch}

broadwing skipper†

This very uncommon sedge meadow species was recorded in the swales near the R.R. tracks south of Old Beach Road on 7-20-93. Host plants are sedges (*Carex* spp.).

Atrytone delaware (Edwards)

Delaware skipper†

Host plants are grasses and include *Panicum virgatum* and *Andropogon* spp. 7-12-90

Wallengrenia egeremet (Scudder)

broken dash

This common butterfly was recorded nectaring on *Asclepias tuberosa*. 7-4-90

Polites coras (Cramer)

Peck's skipper

This is a common skipper that occurs with regularity in both prairie and degraded habitats. Host plants are grasses. 6-21-90

Polites origines (Fabricus)

cross line skipper†

This species seems to exhibit a high fidelity for upland prairie in this region. Host plants are grasses. 7-6-90

Polites themistocles (Latreille)

tawny edge

This is another common skipper that occurs with regularity in both prairie and degraded habitats. Host plants are grasses. 6-12-90

Polites mystic (Edwards) 6-25-90

long dash†

This species is somewhat common in wet prairies and sedge meadows in northern Illinois. Host plants are sedges (*Carex*). Recorded in the sedge meadows at the western edge of the park.

Thymelicus lineola (Ochsenheimer)

European skipper

This exotic species was found to occur in small numbers throughout the nature preserve. 6-25-90

Ancyloxypha numitor (F.)

least skipper

This common species has been recorded along the edges of several swales. 6-25-90

Erynnis baptisiae (Forbes) **baptisia dusky wing†**
This uncommon upland butterfly occurs on both savannas and open prairies in this region. It is interesting to note that this dusky wing has recently begun to feed on Crown vetch and is expanding into degraded areas. 5-18-90 through 6-21-90

Erynnis icelus (Scudder & Burgess) **dreamy dusky wing†**
This very uncommon dusky wing shows a high fidelity to larger, high quality sand prairies and savannas in the Chicago region. Wyatt reported this species from Zion in 1922. Host plants include willows. 6-10-90

Erynnis horatius (Scudder & Burgess) 8-15-90 **Horace's dusky wing**
This oak-feeder is still somewhat common in Illinois but is never abundant in northern Illinois.

Erynnis juvenalis (F.) 5-8-90 **Juvenal's dusky wing**
This oak-feeder is still somewhat common in Illinois but is never abundant in northern Illinois.

Epargyreus clarus (Cramer) **silver-spotted skipper**
This is a common skipper that feeds on legumes, including *Robinia pseudo-acacia*, an introduced southern species. 7-6-90

family **Papilionidae**: the swallowtails

Papilio polyxenes asterius Stoll **black swallowtail**
Host plants are members of the family Umbelliferae and include *Zizia aurea* and the exotic *Daucus carota*. This is a common, wide-ranging species. 5-18-90.

Papilio glaucus Linnaeus **tiger swallowtail**
This wide-ranging, common ecotonal/savanna species is very common on this site. Host plant species include *Prunus* spp. Sixteen individuals on 6-25-90

family **Pieridae**: the sulphurs and whites

Euchloe olympia (Edwards)^{Watch} **olympic marble**
This is a rare sand savanna species in Illinois. Host plant is *Arabis lyrata*. 12 sighting on 5-8-90.

Pieris protodice Boisduval and La Conte **checkered white**
This uncommon species was recorded within the foredunes. One individual on 6-21-90

Pieris rapae Linnaeus **cabbage butterfly**
This ubiquitous, wide-ranging exotic species was found to be common on this site. 5-18-90

Colias eurytheme Boisduval **alfalfa**
A very common, wide-ranging species. 6-13-90

Colias philodice Godart **common sulphur**
Another very common, wide-ranging species. 6-13-90

Colias cesonia (Stoll) **dog face**
Host plants are *Amorpha* and *Petalostemum*. This uncommon species migrates northward regularly from stable populations to the south. One individual on 8-15-90.

Eurema lisa (Boisduval & LeConte) **little sulphur**
Host plants include *Cassia*. This uncommon species migrates northward regularly from stable populations to the south. 8-24-90

family **Lycaenidae**: the gossamer-winged butterflies

Strymon melinus humuli (Harris) **gray hairstreak**
This is a common migratory species in this region. 8-21-93.

Satyrium acadica (Edwards) **acadian hairstreak†**
This somewhat uncommon wetland species is restricted to the northern third of Illinois. 7-9-90

Satyrium edwardsii (Saunders) **Edwards' hairstreak**
This is an uncommon, oak-feeding savanna species in northern Illinois. 8 individuals on 7-6-90.

Harkenclenus titus (Fabricius) **coral hairstreak†**
This species exhibits a high fidelity for upland prairies in this region. *Titus* seldom occurs in old field situations, despite its reported reliance on members of the genus *Prunus* as host plant species. Nine sightings on 7-6-90; 7 on 7-17-90.

Lycaena thoe (Guerin-Meneville) **bronze copper†**
This northern, wet prairie/sedge meadow species feeds on water dock, *Rumex orbiculatus*. This somewhat uncommon butterfly was recorded throughout this site and was abundant on 6-25-90.

Callophrys polios (F.) **hoary elfin**
Recorded in Chicago in 1911, this rare, *Arctostaphylus*-feeding elfin is now restricted in Illinois to IBSP. Five individuals on 5-8-90.

Lycaeides melissa samuelis Nabokov **Endangered** **Karner blue**
This Federally endangered savanna species was recorded by J. Wiker *et al* on 8-18-92. Five individuals were encountered and killed. No additional individuals were recorded during eighteen subsequent visits in 1993.

Leptotes marina (Reakirt) **marine blue**
The last record for this species in the Chicago region was apparently 60 years ago! This southern species strays from Texas and southward. Several sightings on 8-14 and 8-17-93.

Everes comyntas (Godart) **eastern tailed blue**
The host plants of this very common species include *Lespedeza*, *Desmodium*, *Baptisia*, and the exotic *Trifolium*. 6-6-90

Celastrina argiolus pseudargiolus (B. & L.) **spring azure**
This is a very common, wide-ranging species. 6-21-90

family **Nymphalidae**

Limenitis arthemis astyanax (Fabricius) **red-spotted purple**
This common, woodland edge species is reported to feed on a wide variety of woody host plant species. One sighting on 6-9-90.

Limenitis archippus (Cramer)

viceroy

Host plants for this common wetland species include *Salix* and *Populus*. 7-6-90

Vanessa atalanta rubria (Fruhstorfer)

red admiral

Host plants include nettles (Urticaceae). This is a very common, wide-ranging species. 5-18-90

Cynthia virginiensis (Drury)

American painted lady

This common, wide-ranging species feeds on pussy toes (*Antennaria*). 5-8-90

Precis coenia (Hubner)

buckeye

This is a common, southern grassland species that is apparently unable to survive the harsh winters at this latitude. Five individuals recorded on 6-25-90

Nymphalis antiopa (Linnaeus)

mourning cloak

This common, wide-ranging species feeds on willows (*Salix*) and overwinters as an adult. Five individuals on 6-6-90.

Polygonia interrogationis (F.)

questionmark

This is a very common species throughout Illinois. 6-6-90

Phycoides tharos (Drury)

pearl crescent

The host plants of this very common species are asters. 5-29-90

Boloria selene myrina (Cramer)

silver bordered fritillary†

Host plants for this uncommon, wet prairie species are violets. 5-18-90; 10 sightings on 6-12-90.

Speyeria cybele (Fabricius)

great spangled fritillary

The host plants of this savanna/prairie edge species are violets. 7-24-90

Speyeria aphrodite (Fabricius)

Aphrodite†

The host plants of this uncommon prairie species are violets. 6-20-90

Euptoieta claudia (Cramer)

variagated fritillary

This uncommon species migrates northward regularly from stable populations to the south. 6-12-90

family **Danaidae**: The Monarchs

Danaus plexippus (Linnaeus)

monarch

This is a very common, migratory species. 8-1-90

family **Satyridae**: The Satyrs and Wood Nymphs

Lethe eurydice (Johansson)

eyed brown†

Host plants of this wet prairie species are sedges (*Carex*). Common in the sedge meadows near the tracks on 6-25-90.

Lethe appalachia Chermock

appalachian eyed brown

This is a very uncommon, shade-loving sedge meadow species in Illinois. 7-17-90. Several individuals were recorded in the campground area and near the maintenance building in 93.

Euptychia cymela (Cramer) **little wood satyr**
This butterfly of the prairie/woodland ecotone feeds on grasses. 6-12-90

Cercyonis pegala olympus (Edwards) **wood nymph**
This inhabitant of the prairie/woodland ecotone is less restricted to edges than the preceding species and in fact ventures well out into open prairies. Host plants are grasses. Many sightings on 7-17-90 through 8-24-90.

family **Noctuidae**
subfamily **Acronictinae**

Simyra henrici (Grote) **Henry's marsh moth**
Caterpillar recorded on cattails in June.

subfamily **Hadeninae**

Pseudaletia unipunctata (Haw.) **armyworm moth**
This ubiquitous species is a pest on many crops.

Nephelodes minians Guenee **bronzed cutworm moth**
This is an exceedingly common, wide-ranging species.

Tricholita notata Strecker **rigid goldenrod moth**[†]
This very uncommon, prairie-restricted species is listed in Ohio. Host plants are *Solidago rigida* and *Silphium terebinthinaceum* (data from Wyatt's specimen labels.).

subfamily **Amphipyriinae**

Amphipyra pyramidoides Gn. **copper underwing**
This is a very common tree-feeder.

Amphipoea americana (Speyer) **American ear moth**
Host plants are grasses and sedges. 10-1-90

Papaipema baptisiae (Bird) **indigo stem borer**[†]
This somewhat common species is known to feed on both Indigos (*Baptisea* spp.) and dogbanes (*Apocynum* spp.) We reared 4 individuals from Lupines this year!

Papaipema beeriana Bird **gayfeather stem borer**[†]
This uncommon species feeds on blazing stars on mesic and wet mesic prairies. 9-7-92

Papaipema cerussata (Grote) **ironweed stem borer**[†]
This ironweed feeder, first recorded in Joliet in 1915 (A. K. Wyatt), is uncommon in northern Illinois. 8-28-93

- Papaipema arctivorens* Hampton **thistle root borer**
This very common species is known to feed on thistles (*Cirsium* spp.) in this region.
- Papaipema impecuniosa* Grote **sneezeweed borer†**
This somewhat uncommon species is known to feed on *Helianthemum* spp. 9-20-90
- Papaipema nelita* (Stecker) **golden glow borer†**
This very uncommon (?) species was reared from *Rudbeckia laciniata*, is only host plant.
- Papaipema maritima* Bird **maritime root borer†**
The host plants for this very uncommon species are sunflowers (*Helianthus* spp.), and include *H. laetiflorus* and *H. mollis* in this region. 9-11-93.
- Papaipema nebris* (Guenee) **root borer**
This very common species feeds on a variety of forbs.
- Papaipema unimoda* (Smith) **meadow rue borer†**
This is a somewhat uncommon prairie species in this region. Reared from *Thalictrum*.
- Papaipema eupatorii* (Lymon) **Joe Pye root borer†**
This seems to be an uncommon wetland species in northern Illinois. Reared from *Eupatorium*.
- Papaipema sciata* Bird **Culver's root borer†**
This very uncommon species feeds on *Veronicastrum virginicum*.. 9-11-93
- Papaipema silphii* Bird **silphium root borer†**
This somewhat common prairie species feeds on *Silphium* spp. Reared from larvae taken in *S. terribinthinaceum*.
- Papaipema inquisita* Grote and Robinson **sensitive fern root borer†**
This is an uncommon wet prairie species. One adult emerged from a larva taken from sensitive fern.
- Papaipema speciosissima* (Grote & Robinson)^{Watch} **royal fern root borer†**
This is a rare *Osmunda* -feeding species in northern Illinois. 9-2-92.
- Papaipema lysimachiae* Bird **loosestrife root borer†**
This is a state record for this northern sedge meadow/marsh species. Numerous individuals recorded on 8-10-93. Two individuals were reared from *Lysimachia thrysifolia*.
- Papaipema rigida* (Grote) **golden alexander root borer†**
This species, while reported to be common in other regions, is very uncommon in northern Illinois. Reared from larvae taken in *Zizia aurea*.

subfamily **Heliothinae**

- Heliothis zea* (Boddie) **corn earworm moth**
This very common, wide-ranging species was found throughout this site.

Schinia lynx (Guenee)

lynx flower moth

This is a somewhat common sand prairie/savanna species in this region. The caterpillar host plants are fleabanes. 7-30-93

Schinia gloriosa (Stecker)

glorious flower moth†

This is a very uncommon prairie species in Illinois. Host plants include *Liatris cylindracea* and *L. spicata*. Schinia moths overwinter within earthen cells and are apparently well protected from both spring and fall fires.

Schinia lucens (Morrison)

leadplant flower moth†

This is a very uncommon prairie species in Illinois. Host plant is *Amorpha canescens*. Recorded in the Lupine-supporting savanna west of the campground. 7-20-93

subfamily Acontiinae

Lithacodia bellicula Hubner

bog lithocodia†

This is a somewhat common species on bogs and prairies in our region. 6-20-93

subfamily Catocalinae

Catocala amica (Hubner)

girlfriend underwing

Host plants of this somewhat common species include *Quercus velutina*. Several individuals recorded in late August.

Catocala ilia (Cramer)

Ilia underwing

This is a very common oak-feeding species. 9-12-90

Catocala concumbens Walker

pink underwing

Host plants are Poplars and willows. 8-25-90

Calocala relict Walker

the relict

This uncommon species feeds on cottonwoods and aspens. Taken at bait on 9-5-93.

Catocala cara Gn.

darling underwing

Host plants are poplars and willows. Captured in a trap on 9-5-93.

Zale lunata (Drury)

lunate zale

The host plants of this common species include willows and plums.

Caenurgina erechtea (Crammer)

forage looper moth

This may be the most common moth in this region. Host plants are weeds.

Scoliopteryx libratrix (L)

the herald

Taken at bait on 9-5-92. Host plants of this uncommon species are reportedly poplars and willows.

subfamily Plusiinae

Plusia contexta Grote

connected looper

This grass-feeding moth may be uncommon in this region. 7-31-93

subfamily **Agaristinae***Eudryas unio* (Hubner)

This is a somewhat common species in this region. 7-31-93

pearly wood nymph**Order Hymenoptera**family **Apidae***Bombus fervidus* (F.)This is a common, wide-ranging species in this region. Recorded visiting *C. palmata* (7-17-90), *C. lanceolata*, and *Opuntia humifusa*.**bumblebee***Bombus affinis* (Cresson)This is a common, wide-ranging species. Recorded visiting *Baptisia* on 7-17-90.**bumblebee***Bombus impatiens* CressonRecorded visiting *Arctostaphalos* on 5-3-90.**bumblebee***Bombus pennsylvanicus*This is a common, wide-ranging species in this region. Recorded visiting *Liatris cylindracea* on 8-8-90.**bumblebee***Bombus bimaculatus*Recorded visiting *Liatris spicata* on 8-8-90.**bumblebee**

VOLUNTEER STEWARDSHIP NETWORK ANIMAL ALERT

INSECT OF SPECIAL CONCERN

Areas to search: Illinois Beach State Park, Lake County, IL.

Species: The Indiana Flower Moth, *Schinia indiana*.

Status: Proposed federal endangered species (C2), last seen in Illinois in 1936. Only 2 modern records for this species in North America.

Host Plant: prairie phlox, *Phlox pilosa*.

Description: Fore wings crimson, a bit darker than Phlox flower pedals. The hind wings are blackish. (see illustration attached). Head and body are olive to black. The wingspan of this tiny moth is roughly two-thirds of an inch (16mm).

Life History: One generation appears each year with adults first seen about May 25. Females deposit eggs on flowers and flower buds in June. Young caterpillars emerge within 2-3 weeks and feed on flowers, pupating within the soil in the fall .

Guidelines: Search for this species (sitting motionless with wings folded over its back) on prairie phlox flowers from late May through June 20. Adults will be found sitting motionless on flowers, flower buds, or on nearby plants. These moths rely heavily on their cryptic coloration and are very easy to approach and photograph (Get as close as you like!)

Photograph only. Do not attempt to handle this rare and delicate savanna animal.

Report sightings to:
The Nature Conservancy
79 W. Monroe
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