

86-68

Don McFall
Division of Natural Heritage
Illinois Department of Conservation
524 S. Second Street
Springfield Illinois 62706

October 10, 1986

Dear Don,

I have enclosed one copy of the Spring Hill Farm Fen Butterfly Survey for your review. Feel free to contact me if you have any questions regarding the content of this report. I hope my delay in mailing this report did not cause you any inconvenience.

Sincerely,

Ron Panzer
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P.S. Will IDOC have nongame funds available again next year? Do you have any information on submission deadlines?

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DIV. OF FOREST RESOURCES

**A SURVEY OF THE BUTTERFLIES OF THE SPRING HILL
FARM FEN, MCHENRY COUNTY, ILLINOIS**

**Conducted by: Ron Panzer and Don Stillwaugh,
Northeastern Illinois University
and Rich Gnaedinger
1986**

**Supported by a Mongane Wildlife Grant from the
Illinois Department of Conservation**

Introduction

This study was undertaken in an effort to provide a base line census of the butterflies of the Spring Hill Farm Fen (SHFF). The butterflies of the fen and sedge meadow habitats were the primary focus of this survey. We were especially interested to learn if either the Harris checkerspot (*Chlosyne harrisii*) or the Swamp metalmark (*Colephelis muticum*), two northern butterflies thought to be either very rare or extinct in Illinois, may have managed to survive on this apparently ideal site. (the host plants for both species are abundant) Also, we attempted to determine if either the Ottoo skipper (*Hesperia ottoe*) or the Dusted skipper (*Atrytonopsis hianna*), two rare upland prairie forms, occur on the somewhat degraded hill prairies that border the fen.

Methods

This site was visited by one or two investigators on 16 occasions between May 1 and October 1, 1986. The length of each visit ranged between 3 - 4 hours. Most of this time was spent within the fen and sedge meadow plant communities, especially in those areas supporting sizable populations of Flat topped asters (*Aster umbellatus*) and Swamp thistles (*Cirsium muticum*), the reported host plants of *C. harrisii* and *C. muticum*.

Easily identified species were captured, identified, and released. Individuals of questionable identity were sacrificed and retained for further examination.

Results

Forty-four species were recorded, 13 of which were determined to be uncommon habitat-restricted species (Table 1). None of the 4 rare butterfly species listed above were encountered. However, several uncommon or rare dragonflies, damselflies, grasshoppers, katydids, and moths were captured and identified, and are listed below.

Discussion

Notable Species

As unusual wetland habitats, fens are known to support a wide variety of specialized, habitat-restricted organisms, invertebrates included. SHFF is no exception. We recorded several uncommon, habitat-restricted species during the course of this study. Thirteen of these were butterflies, as shown in Table 1. Unfortunately, we failed to locate either *Chlosyne harrisii* or *Calephelis muticum*. We did, however, encounter several butterflies that are known to be very uncommon in Illinois. Examples would include The Broad winged skipper, *Poanes viator*, the Mulberry wing skipper, *Poanes massasoit*, the Long dash, *Polites mystic*, and the Baltimore checkerspot, *Euphydryas phaeton*. Examples of additional insects thought to be very uncommon in this region would include the Silphium tortricid, *Eucosma gigantea*, the Blue bell, *Mannotheis bella*, the Half banded topper, *Sympetrum semicinctum*, and the Nebraska conehead, *Neoconocephalus nebrascensis*.

Species Diversity

The SHFF fen/sedge meadow butterfly community compares favorably with those found on similarly sized Chicago area prairie/wetland remnants, as seen in Table 2. If the entire SHFF site (100 ha.) is considered, however, butterfly diversity is somewhat less than might be expected (Table 2). The predominantly degraded condition of the mesic and xeric habitats of SHFF almost certainly accounts for much of this disparity.

Study Thoroughness

Many butterflies known to occur in northern Illinois hill prairie and wetland habitats were not recorded at SHFF. This is especially true in the case of the xeric hill prairies, where several species, including *Polites origines*, *Thorybes bathyllus*, *Hesperia leonardus*, *Chlosyne gorgone*, and *Speyeria idalia* were found to be 'conspicuously absent'. It is very possible that past disturbances such as grazing, water table manipulation, and gravel mining have resulted in the loss of several species from SHFF. It is equally possible, however, that we simply failed to locate a number of localized populations on this large site. (we typically add from one to three new habitat-restricted species during the second year on sites of this size) We would recommend that the McHenry County Defenders continue the search in 1987, particularly in the case of the Swamp metalmark. This species tends to be very localized and is notoriously difficult to locate.

Acknowledgments

We would express our appreciation to the site owners, Material Services, for allowing us to conduct this study. This project would not have been possible without the assistance of the McHenry County Defenders, for which we are equally grateful.

TABLE 2
DISTRIBUTION OF BUTTERFLY DIVERSITY ON 18 PRAIRIE AND
WETLAND REMNANTS IN THE CHICAGO REGION

Remnant:	Area (ha.)	Species number:		
		Restricted species**	Nonrestricted species	Total species
SHFF, total site	120.0*	13	31	44
Braidwood Dunes/Savanna	100.0	18	29	47
Gensburg Markham Prairie	90.0	16	35	51
Lockport Prairie	86.0	10	22	32
West Chicago Prairie	70.0	14	25	39
Romeoville Prairie	62.0	10	24	34
SHFF, Fen/sedge meadow	60.0	13	31	44
Pratts Wayne Marsh	44.0	10	20	30
Midlothian Prairie	29.0	8	24	32
Paintbrush Prairie	17.0	7	22	29
Somme Prairie	14.0	8	18	26
Cook Prairie	14.0	13	25	38
Buffalo Grove Prairie	6.4	5	16	21
I- 57 Prairie	4.5	3	17	20
Belmont Prairie	4.1	6	27	33
Chicago Ridge Prairie	3.6	3	17	20
Cary Prairie	2.0	3	19	22
Main Street Prairie	2.0	2	19	21
Vermont Cemetery Prairie	1.0	1	14	15

* this rough size estimate includes the fens & sedge meadows, the gravel hill prairies, and the degraded intervening areas.

** includes prairie & wetland restricted species.

AN ANNOTATED LISTING OF THE BUTTERFLIES AND SKIPPERS
(LEPIDOPTERA; RHOPHALOCERA) OF THE SPRING HILL
FARM FEN, LAKE COUNTY, ILLINOIS

Taxon*:	(rarity index)**	Dates = earliest sightings
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HESPERIIDAE: The skippers

Euphyes conspicua (Edwards) **Black dash** (8)

Local in wet prairies and sedge meadows. Host plants are sedges (*Carex* spp.). 7-17-86

Paanes massasoit (Scudder) **Mulberry wing** (15)

This is a very uncommon, wet prairie/sedge meadow species. 7-1-86

Paanes viator (Edwards) **Broad winged skipper** (20)

This species is reported to be uncommon or rare throughout its entire range. Host plants of this sedge meadow species are sedges. 8-1-86

Paanes hobomok (Harris) **Hobomok skipper** (7)

This is an uncommon, savanna/ecotonal species. 6-24-86

Atrytone delaware (Edwards) **Delaware skipper** (6)

Host plants are grasses and include *Panicum virgatum* and *Andropogon* spp. 7-22-86.

Hallengrenia egeremet (Scudder) **Broken dash**

This is reported to be a common, wide ranging species. 7-28-86

Polites carus (Cramer) **Peck's skipper**

A common skipper that occurs with regularity in both prairie and old field habitats. Host plants are grasses. 6-20-86

HESPERIIDAE, continued.

Polites themistocles (Latreille) **Tawny edged skipper** 6-20-86
Another common, wide ranging species with a wide ecological amplitude.

Polites mystic (Edwards) **Long dash** (10)
This very uncommon wet prairie/sedge meadow species is limited in distribution to the northern counties in Illinois.

Thymelicus lineola (Ochsenheimer) **European skipper** (-)
This exotic species was found to occur in sizable numbers on the degraded hill prairies.

Ancyloxypha numitor (Fabricius) **Least skipper**
This is a somewhat common, wide ranging wetland species. 6-10-86

Epargyreus clarus (Cramer) **Silver-spotted skipper**
This is a common, wide ranging skipper that feeds on *Amarpha*, *Lespedeza*, *Desmodium*, and other legumes, including *Robinia pseudo-acacia*, an introduced species.

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. 6-1-86

Papilio glaucus Linnaeus **Tiger swallowtail**
This is a wide ranging, common ecotonal/savanna species. Host plant species include *Prunus*. spp. 6-25-86

PIERIDAE: The Sulfurs and Whites

Pieris rapae Linnaeus **Cabbage butterfly (-)**

This is a ubiquitous, wide ranging exotic species that may have contributed to the decline of *P. protodice* throughout much of its range. Surprisingly few individuals were observed during the course of this study. 5-16-86

Colias eurytheme Boisduval **Alfalfa**

A very common, wide ranging species.

Colias philodice Godart **Common sulphur**

Another very common, wide ranging species. 5-13-86

Eurema lisa (Boisduval & LeConte) **Little sulphur**

Host plants are legumes and include *Cassia*. This uncommon species apparently migrates northward regularly from stable populations to the south. 9-29-86

LYCAENIDAE: The Gossamer-Winged Butterflies

Harknessclenus titus (Fabricius) **Coral hairstreak (8)**

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. 7-12-86

Satyrus calanus falacer (Godart) **Banded hairstreak (7)**

This is a somewhat uncommon savanna/woodland species. 6-20-86

Satyrus liparops strigosa (Harris) **Striped hairstreak (9)**

This is an uncommon savanna/woodland species. Host plants are oaks.

Satyrus acadica (Edwards) **Acadian hairstreak (9)**

This northern, wet prairie species feeds on willows (*Salix*). 6-20-86

LYCAENIDAE, continued.

Lycaena thoe (Guerin-Meneville) **Bronze copper (?)**

This northern, wet prairie/sedge meadow species feeds on water dock, *Rumex orbiculatus*. 7-22-86

Lycaena phlaeas americana Harris **American copper (?)**

The reported food plant of this uncommon species is *Rumex acetosella*, an exotic weed. This species occurs throughout Europe and ranges into North Africa and Asia, and may be an introduced species.

Everes caryntos (Godart) **Eastern-tailed blue**

The host plants of this very common species are legumes and include *Lespedeza*, *Desmodium*, *Baptisia*, and the exotic *Trifolium*.
5-13-86

Celastrina argiolus pseudargiolus (Boisduval & LeConte) **Spring
Azure**

This is another common, wide ranging species. Host plants include willows (*Salix spp.*).

NYMPHALIDAE: The Brush Footed Butterflies

Limenitis arthemis astyanax (Fabricius) **Red-spotted purple**

This somewhat common, woodland species is reported to feed on a wide variety of woody host plant species. 7-22-86

Limenitis archippus (Cramer) **Viceroy**

Host plants for this common species include *Salix* and *Populus spp.*
5-20-86

Vanessa atalanta rubria (Fruhstorfer) **Red admiral**

Host plants include nettles (Urticaceae). This is a common, wide ranging species. 5-13-86

NYMPHALIDAE, continued.

Cynthia cardui (Linnaeus) **Painted lady**

The host plants of this very common, migratory species are composites, and include *Cirsium* spp. 6-10-86

Cynthia virginiana (Drury) **American painted lady**

This is a common, wide ranging species. 5-26-86

Precis coenia (Hubner) **Buckeye**

This is an uncommon, southern grassland species that is apparently unable to survive the harsh winters at this latitude. 7-14-86

Nymphalis antiopa (Linnaeus) **Mourning cloak**

This common, wide ranging species feeds on willows (*Salix*) and overwinters as an adult. 5-13-86

Polygonia interrogationis (Fabricius) **Questionmark**

This is a common woodland species. 7-7-86

Chlosyne nycteis (Doubleday) **Silvery checkerspot (8)**

This uncommon species was seen with regularity. Host plants are reported to be sunflowers (*Helianthus* spp.).

Phyciodes tharos (Drury) **Pearl crescent**

The host plants of this very common species are asters, especially *A. novae-angliae*. 5-26-86

Euphydryas phaeton phaeton (Drury) **Baltimore checkerspot (15)**

This very uncommon species feeds on *Chelone glabra*. Larvae were observed on both *Valeriana ciliata* and *Eupatorium maculatum* during this survey.

Boloria selene myrina (Cramer) **Silver bordered fritillary (10)**

The host plants for this uncommon, wet prairie species are violets. Only 3 individuals were sighted this year. 6-10-86

NYMPHALIDAE, continued.

Speyeria cybele (Fabricius) **Great spangled fritillary (7)**
The host plants of this savanna/prairie edge species are violets. We found this to be the most common fritillary on this site. 7-4-86

Speyeria aphrodite (Fabricius) **Aphrodite (9)**
The host plants of this uncommon, savanna/prairie species are violets and include *V. lanceolata* and *V. fibriatula* (New York). The Aphrodite population on this site is presumably very small as only 2 individuals were seen. 7-14-86

DANAIDAE: The Monarchs

Danaus plexippus (Linnaeus) **Monarch**
This is a very common, migratory species. 6-29-86.

SATYRIDAE: The Satyrs and Wood Nymphs

Lethe eurydice (Johansson) **Eyed brown (7)**
Host plants of this wet prairie species are sedges (*Carex spp.*). This species was found to occur in large numbers on this site. 6-20-86

Euptychia cybele (Cramer) **Little wood satyr (5)**
This butterfly of the prairie/woodland ecotone feeds on grasses. 6-27-86

Cercyonis pegala olympus (Edwards) **Wood nymph (5)**
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. 6-28-86.

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

** We have tentatively assigned numerical rarity values based on the scale and rationale outlined in "A Method of Environmental Assessment of Open Land" in Slink F., and G. Wilhelm. Plants of the Chicago Region. Morton Arboretum, Lisle, Illinois. These ratings are intended to reflect the apparent status of habitat-restricted butterfly species on the prairie and savanna remnants of the Chicago region.

ADDITIONAL UNCOMMON INSECTS RECORDED ON SPRING HILL FARM FEN

**Order Odonata
family Aeshnidae**

Anax longipes Hagen. **dragonfly**

We may have seen this locally rare, large red species hunting high overhead within the seep areas on 6-11-86 ???

family Libellulidae

Hannaethemis bella Uhler 6-11-86 **Blue bell**

This small fen damselfly is apparently very uncommon or rare in Illinois; it is presently known to occur only on this site and in the Bluff Spring Fen in Elgin. We found the population at SHFF to be very large and concentrated in the eastern seep area.

Sympetrum semicinctum Say. **Half banded topper**

This species would appear to be very uncommon in the Chicago region.

family Calopterygidae

Calopteryx maculata (Beauvois) **Black winged damselfly**

This somewhat uncommon species inhabits the creek that flows through this site. 6-21-86

Hetaerina americana (F.) **Ruby spot**

This somewhat uncommon species inhabits the creek that flows through this site. 7-1-86

family Coenagrionidae

Argia violacea fumipennis (Hagen) 6-21-86 **Violet dancer**

This somewhat uncommon species inhabits the man-made lake on this site.

Aphiagrion saucium (Burmeister) 7-17-86 **Red fen damselfly**

This uncommon fen species occurs within the seep areas on this site.

Enallagma aspersum (Hagen) **Damselfly**

This uncommon species inhabits spring-fed ponds.

Enallagma exulans (Hagen) **Damselfly**

This uncommon species inhabits quiet streams and ponds.

Order Lepidoptera
family Tortricidae

Eucosma gigantea Riley **Prairie tortricid**

This very uncommon tall grass prairie species was captured on *Silphium terebinthinaceum* on 8-1-86. Host plants are *Silphium* spp.

family Noctuidae

Schinia septentrionalis (Walker) **Northern flower moth**

The host plant for this uncommon prairie species would appear to be *Aster azureus* in this region.

Order Orthoptera
family Acrididae

Melanopus keeleri luridus (Dodge) Grasshopper

This uncommon xeric prairie species inhabits the hill prairies surrounding the fen. 9-17-86

Melanoplus mexicanus mexicanus (Saussure) Grasshopper

This uncommon xeric prairie species inhabits the hill prairies surrounding the fen. 9-17-86

Trachyrachis kiowa (Caudell) 8-1-86 Kiowa range grasshopper

This uncommon xeric prairie species inhabits the hill prairies surrounding the fen.

family Tettigoniidae

Meconocephalus nebrascensis (Bruner) Nebraska conehead

This species appears to be rare within the Chicago region. One individual was captured while singing within the fen. Two more common species, *M. ensiger* and *M. retusus*, were recorded as well. 9-17-86

Scudderia texensis Saussure & Picket Texas katydid

This is a somewhat uncommon, wet prairie katydid.

Conocephalus nigropleurus (Bruner) Black meadow katydid

This very uncommon marsh species was captured on 3 occasions. Several more common meadow katydids, including *Conocephalus brevipennis*, *C. strictus*, *Orchelimum vulgare*, and *O. nigripes* were recorded as well. 8-1-86

Order Homoptera
family Cicadellidae

Hecalus lineatus (Uhler) Cordgrass leafhopper

This uncommon wet prairie species feeds on *Spartina pectinata*.