

INSECT BIODIVERSITY ON  
PRAIRIES LACKING FIRE MANAGEMENT  
WITH FOCUS ON  
LEPIDOPTERA (MOTHS AND BUTTERFLIES)



Kyle Johnson

Honorary Fellow, University of Wisconsin-Madison

445 Russell Labs, 1630 Linden Drive, Madison, WI, 53706

[kejohnson4@wisc.edu](mailto:kejohnson4@wisc.edu)

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I thank Brad Herrick and the UW-Madison Arboretum for supporting my 2009 investigations of their lands which added additional records for Abraham's Woods and Prairie.

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## Introduction and Study Overview

The underlying purpose of this study was to document prairie insects which do poorly or are all together missing from prairie preserves heavily managed with prescribed fire. However, our knowledge of what insects might occur on prairies- much less their habitat needs and response to management- is woefully inadequate. Therefore the mission was to gather baseline biodiversity data from prairies lacking fire management; this could later be compared with other data to explore the questions of prairie dependency and management sensitivity. This data would also be helpful to further our understanding of Wisconsin's insect fauna and their habitats as a whole.

I sampled insects (emphasizing Lepidoptera) at eight remnant prairies across southern Wisconsin during the 2012-2013 field seasons. These sites supported stands of prairie vegetation (whole or in part) which lacked any prescribed fire management. The prairies (Figures 2-10) varied in type (wet-mesic to dry bluff) as well as their landscape surroundings.

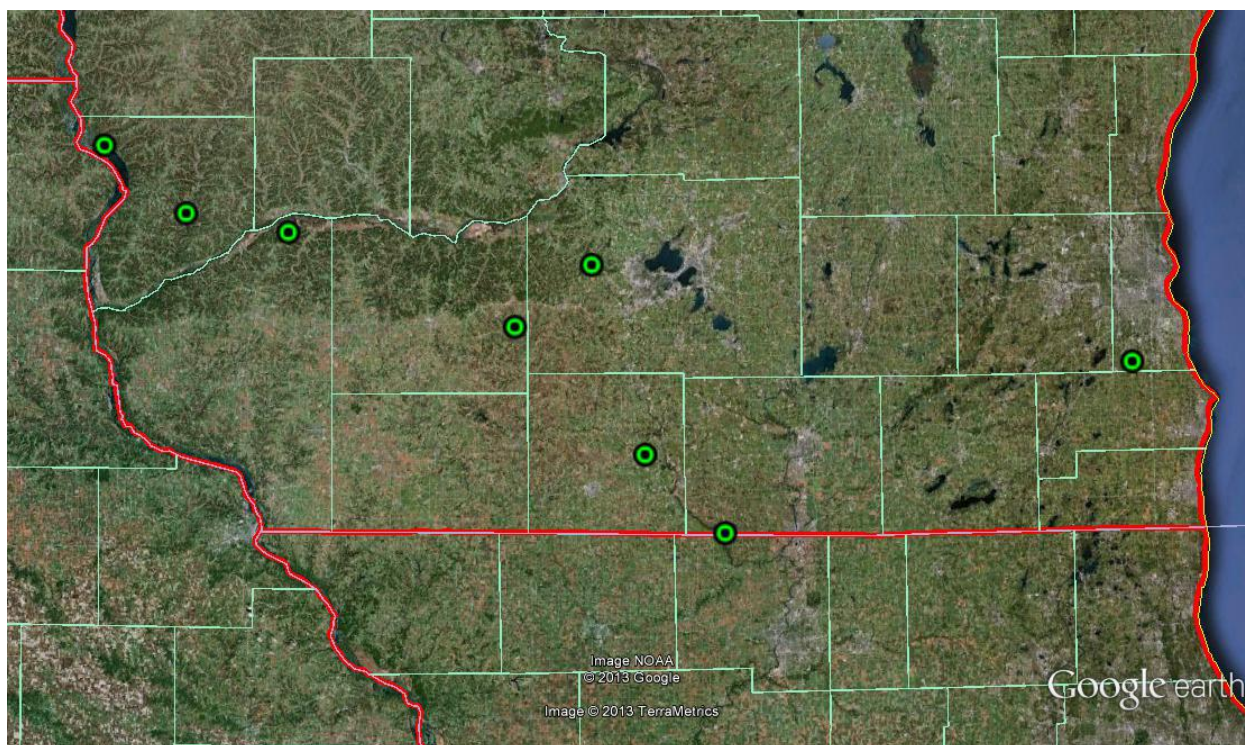
I made 24 diurnal visits and 24 nocturnal visits between the eight sites, from April to September. These efforts yielded 4665 specimens, 3187 of these Lepidoptera. The Lepidoptera represent at least 707 species but further identifications may increase this beyond 800 species. While these numbers may seem impressive, the efforts here merely give us a hint of what is really out there as the majority of species await discovery.

## Study Sites

Eight prairies were selected across southern Wisconsin (Table 1; Figures 2-10). These span seven counties, boast a diversity of prairie (and non-prairie) habitats, and represent the largest non-fire managed (whole or in part) prairie remnants in the southern part of the state excluding the extensive sand prairie/barrens along the lower Wisconsin River. These sites are also part of larger remnant prairie landscapes and thus hold promise for conservation efforts.

**Table 1.** Prairie Study Sites

| Site  | County    | Lat/Lon               | Ownership                                  |
|---|-----------|-----------------------|--|
| Root River Parkway  | Milwaukee | 42.86855°N 88.00540°W | Milwaukee County Parks                     |
| This site supports a mosaic of wet-mesic prairie, wet meadows, lowland brush, and ash woodland along the Root River.  |           |                       |  |
| Lawrence Prairie  | Rock      | 42.50729°N 89.24562°W | WI-DNR/various private                     |
| This site supports dry prairie on sand to limestone soils. Red cedar, cherry, and elm encroachment is moderate; the prairie borders dry-mesic deciduous woodland. Also included under this site is a small amount of data from nearby Raccoon Creek which supports floodplain deciduous woodland and wet meadow openings with prairie elements. Some portions have been burned. |           |                       |  |
| Abraham's Woods Prairie   | Green     | 42.68050°N 89.48176°W | WI-DNR                                     |
| This site supports hilltop dry prairie strips on limestone soils. The prairie openings border a particularly rich dry-mesic to mesic deciduous woodland and forest. A small portion of the prairie was previously burned.   |           |                       |  |
| Stagecoach Prairie  | Dane      | 43.09950°N 89.63918°W | private (Frederick Festge)                 |
| This site supports dry hill prairie on limestone soils. Red cedar, cherry, and buckthorn encroachment is moderate. The hill overlooks a stream course wet meadow complex. Previous livestock grazing history.   |           |                       |  |
| Mueller Prairie   | Iowa      | 42.96389°N 89.87069°W | The Prairie Enthusiasts                    |
| This supports dry-mesic prairie on a gently rolling hillside. The prairie overlooks a stream course wet meadow complex.   |           |                       |  |
| Doyle Road Prairies   | Grant     | 43.17016°N 90.55785°W | private (Laura Coglin)                     |
| This site supports dry bluff prairie on limestone and sandstone soils. The prairies border deciduous woodland/forest and overlook a valley bottom mesic prairie restoration. Much of the prairie area surveyed has been burned but unburned portions occur nearby.  |           |                       |  |
| Hogback Prairie   | Crawford  | 43.21717°N 90.87444°W | WI-DNR                                     |
| This site supports extensive dry to dry-mesic prairie on limestone and sandstone soils along a ridgeline. Much of the southern portion has been burned in rotation. Previous livestock grazing history; goat grazing now resuming   |           |                       |  |
| Hanson Prairies   | Crawford  | 43.36283°N 91.12408°W | private (Matt McPherson-new owner)/ WI-DNR |
| This site supports dry bluff prairie on limestone and sandstone soils. The prairie borders diverse dry-mesic deciduous forest and overlooks the Mississippi River. A small portion was previously burned.   |           |                       |  |



**Figure 2.** Prairie study sites in southern Wisconsin



**Figure 3.** Root River Parkway, Milwaukee County (July 1, 2012).



**Figure 4.** Lawrence Prairie, Rock County (June 25, 2012).



**Figure 5.** Abraham's Woods Prairie, Green County (June 26, 2012).



**Figure 6.** Stagecoach Prairie, Dane County (June 22, 2012).



**Figure 7.** Mueller Prairie, Iowa County (June 21, 2012).



**Figure 8.** Doyle Road Prairies, Grant County (July 8, 2012).



**Figure 9.** Hogback Prairie, Crawford County (July 11, 2012).





**Figure 10.** Hanson Prairies, Crawford County (July 9, 2012).

## Methods

Each site was visited 2-4 times by day and 0-4 times at night (Tables 2-3) resulting in 24 diurnal visits and 24 nocturnal visits. A small amount of previously gathered data was also included for three sites (primarily Abraham's Woods; less for Stagecoach and Hogback prairies).

Methods included general diurnal/nocturnal searching, UV (ultraviolet) sheets (Figure 11-12), UV traps, MV (mercury vapor) sheets, rotten banana-brown sugar bait (Figures 13, 47, 49, 54, 56), and vegetation sweeps. Sesiid moth pheromone traps were used once at Root River Parkway.

Lepidoptera sampling was essentially synoptic (except on a few diurnal visits for efficiency sake); i.e. at least one voucher specimen was taken of every species per method per visit. More were taken for difficult groups or significant records, as long as it was deemed not to harm the population (an unlikely scenario). Insects other than Lepidoptera were sampled as able, but the overwhelming Lepidoptera workload prevented anything more than a cursory investigation.

Since the full diversity of habitats at each site was not sampled with every method on every visit (and under ideal conditions) the phenological coverage displayed in Tables 2-3 is much weaker when applied to individual sites, habitats, and methods. The sampling gaps are therefore larger than they appear.

The 2012 field season (when most of this study was conducted) was extremely advanced phenologically by nearly a month ahead of normal in spring and still well advanced by the first field outing in late June. Warm and dry weather continued for most of the season, with severe drought prevailing from mid-summer onward. The 2013 field season was essentially the opposite. Phenology was approximately a month behind 2012 during the spring and this trend continuing through the end of this study in early June. The weather extremes of both seasons undoubtedly affected the sampling efforts and resulting species compositions.

Specimens were prepared as soon as possible after capture (Figure 14) to increase their utility in DNA studies, particularly CO1. Vouchers reside in the University of Wisconsin-Madison Insect Research Collection (WIRC).

Specimen data was entered into a Microsoft Excel dataset maintained by the author; this data will also be incorporated into larger collaborative databases such as BIOTA; the intent is to make the information as useful as possible.





**Figure 11.** Blacklighting (UV sheet) at Mueller Prairie (21 June 2012).



**Figure 12.** Blacklighting at the Hogback Prairie; setup requires more creativity in open habitats (28 May 2012).



**Figure 13.** Rope and rope strips soaked in rotten banana-brown sugar bait at the Hogback Prairie (10 July 2012). Bait is normally pasted on tree trunks and shrubs (Figures 48, 49, 54, 56) but in open habitats rope can expand baiting potential.



**Figure 14.** Many specimens were prepared directly in the field, here is a cozy setup at Lawrence Prairie (8 August 2012). Such methods allow for superior quality specimens which are more useable in certain DNA studies.

## Results

This study yielded 4665 specimens, 3187 of these Lepidoptera. The Lepidoptera represent at least 707 species but further identifications may increase this beyond 800 species. The remaining 1478 specimens are primarily Hemiptera (193 specimens), Coleoptera (432 specimens), Hymenoptera (266 specimens), Diptera (361 specimens), and Trichoptera (119 specimens). The vast majority still require species level identification so diversity totals and discussion are not yet meaningful.

Tables 4-6 provide species lists and site level biodiversity data. Further details are available in the appended specimen datasets. Figures 15-56 illustrate many species.

**Table 4.** Non-Lepidoptera insects documented during the study. Species in **BOLD** are figured.

| Order      | Family        | Species                             | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|------------|---------------|-------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| Blattodea  | Blattellidae  | <i>Parcoblatta</i> spp.             |                    |                  |                           | X                  |                 |                     |                 |                 |
| Coleoptera | Anthicidae    | Unidentified Anthicidae             | X                  |                  |                           |                    |                 |                     | X               | X               |
| Coleoptera | Anthribidae   | Unidentified Anthribidae            |                    |                  |                           | X                  |                 |                     |                 |                 |
| Coleoptera | Bostrichidae  | Unidentified Bostrichidae           |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera | Buprestidae   | <i>Agrilus putillus</i>             |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Cantharidae   | <i>Chauliognathus pensylvanicus</i> |                    |                  | X                         | X                  |                 |                     |                 |                 |
| Coleoptera | Cantharidae   | Unidentified Cantharidae            | X                  |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera | Carabidae     | <i>Chlaenius tricolor</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | <i>Cicindela punctulata</i>         | X                  |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | <i>Cicindela splendida</i>          |                    |                  |                           |                    |                 | X                   |                 | X               |
| Coleoptera | Carabidae     | <i>Clivina bipustulata</i>          |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | <i>Cymindis platicollis</i>         |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | <i>Lebia solea</i>                  |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | <i>Stenolophus ochropezus</i>       |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | <i>Trichotichnus vulpeculus</i>     |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Carabidae     | Unidentified Carabidae              | X                  | X                | X                         | X                  | X               |                     | X               |                 |
| Coleoptera | Cerambycidae  | <i>Orthosoma brunneum</i>           |                    |                  |                           |                    |                 |                     |                 | X               |
| Coleoptera | Cerambycidae  | <i>Tetraopes</i> spp.               |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera | Cerambycidae  | Unidentified Cerambycidae           |                    |                  |                           |                    |                 |                     |                 | X               |
| Coleoptera | Chrysomelidae | <i>Diabrotica undecimpunctata</i>   | X                  |                  | X                         | X                  | X               |                     | X               |                 |
| Coleoptera | Chrysomelidae | Unidentified Chrysomelidae          | X                  | X                | X                         | X                  | X               | X                   | X               | X               |
| Coleoptera | Cleridae      | Unidentified Cleridae               |                    |                  |                           |                    | X               |                     |                 |                 |
| Coleoptera | Coccinellidae | <i>Harmonia axyridis</i>            |                    |                  |                           | X                  |                 |                     | X               |                 |
| Coleoptera | Coccinellidae | Unidentified Coccinellidae          |                    |                  | X                         |                    | X               |                     |                 | X               |
| Coleoptera | Cupedidae     | <i>Tenomerga cinereus</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera | Curculionidae | Unidentified Curculionidae          | X                  | X                | X                         | X                  | X               | X                   | X               | X               |
| Coleoptera | Dytiscidae    | Unidentified Dytiscidae             | X                  |                  |                           |                    | X               |                     |                 |                 |
| Coleoptera | Elateridae    | Unidentified Elateridae             | X                  |                  | X                         | X                  | X               | X                   | X               | X               |
| Coleoptera | Eucnemidae    | <i>Microrhagus triangularis</i>     | X                  |                  |                           |                    |                 |                     |                 |                 |

| Order             | Family              | Species                               | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------------|---------------------|---------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| Coleoptera        | Geotrupidae         | <i>Eucanthus lazarus</i>              |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Gyrinidae           | Unidentified Gyrinidae                |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Halipidae           | Unidentified Halipidae                | X                  |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera        | Heteroceridae       | Unidentified Heteroceridae            | X                  |                  | X                         | X                  | X               |                     | X               |                 |
| Coleoptera        | Hydrophilidae       | <i>Hydrophilus triangularis</i>       |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Hydrophilidae       | Unidentified Hydrophilidae            | X                  |                  | X                         | X                  | X               |                     | X               |                 |
| Coleoptera        | Lampyridae          | Unidentified Lampyridae               | X                  | X                | X                         | X                  | X               |                     | X               |                 |
| Coleoptera        | Latridiidae         | Unidentified Latridiidae              |                    | X                | X                         |                    | X               |                     | X               |                 |
| Coleoptera        | Lucanidae           | <i>Lucanus capreolus</i>              |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera        | Lycidae             | Unidentified Lycidae                  |                    | X                |                           |                    |                 |                     |                 |                 |
| <b>Coleoptera</b> | <b>Meloidae</b>     | <b><i>Epicauta atrata</i></b>         |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera        | Meloidae            | Unidentified Meloidae                 |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera        | Melyridae           | Unidentified Melyridae                |                    |                  | X                         | X                  |                 |                     |                 |                 |
| Coleoptera        | Mordellidae         | Unidentified Mordellidae              | X                  | X                | X                         | X                  |                 | X                   | X               | X               |
| <b>Coleoptera</b> | <b>Nitidulidae</b>  | <b>Unidentified Nitidulidae</b>       |                    | X                | X                         |                    |                 |                     |                 |                 |
| Coleoptera        | Phalacridae         | Unidentified Phalacridae              |                    |                  | X                         |                    | X               |                     |                 |                 |
| <b>Coleoptera</b> | <b>Pyrochroidae</b> | <b><i>Neopyrochroa flabellata</i></b> |                    |                  | X                         |                    |                 |                     |                 |                 |
| Coleoptera        | Pyrochroidae        | <i>Pedilus elegans</i>                | X                  |                  |                           |                    |                 |                     |                 |                 |
| Coleoptera        | Pyrochroidae        | <i>Pedilus lugubris</i>               |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Pyrochroidae        | <i>Pedilus terminalis</i>             |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Ripiphoridae        | Unidentified Ripiphoridae             |                    |                  |                           | X                  |                 | X                   |                 |                 |
| Coleoptera        | Scarabaeidae        | <i>Copris fricator</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Scarabaeidae        | <i>Osmoderma eremicola</i>            |                    | X                |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Scarabaeidae        | <i>Phyllophaga</i> spp.               |                    |                  |                           |                    |                 |                     |                 | X               |
| Coleoptera        | Scarabaeidae        | Unidentified Scarabaeidae             | X                  |                  |                           | X                  | X               |                     | X               | X               |
| Coleoptera        | Scirtidae           | Unidentified Scirtidae                |                    |                  |                           |                    | X               |                     |                 |                 |
| Coleoptera        | Silphidae           | <i>Necrodes surinamensis</i>          |                    |                  |                           |                    |                 |                     | X               | X               |
| Coleoptera        | Silphidae           | <i>Nicrophorus</i> spp.               |                    |                  |                           |                    |                 |                     | X               |                 |
| Coleoptera        | Staphylinidae       | Unidentified Staphylinidae            | X                  |                  | X                         | X                  | X               |                     | X               |                 |
| Coleoptera        | Tenebrionidae       | Unidentified Tenebrionidae            |                    |                  | X                         |                    |                 | X                   | X               | X               |
| Coleoptera        | Trogidae            | Unidentified Trogidae                 |                    | X                | X                         |                    |                 |                     | X               |                 |
| Coleoptera        |                     | Unidentified Coleoptera               | X                  |                  | X                         | X                  | X               |                     | X               | X               |
| Dermaptera        | Forficulidae        | <i>Forficula auricularia</i>          |                    | X                | X                         | X                  | X               |                     |                 |                 |
| Dermaptera        |                     | Unidentified Dermaptera               |                    | X                |                           |                    |                 |                     |                 |                 |
| Diptera           | Asilidae            | <i>Leptogaster</i> spp.               |                    |                  | X                         |                    |                 |                     |                 |                 |
| Diptera           | Asilidae            | <i>Promachus vertebratus</i>          |                    |                  |                           |                    | X               |                     |                 |                 |
| Diptera           | Asilidae            | Unidentified Asilidae                 |                    |                  |                           |                    |                 |                     |                 | X               |
| Diptera           | Bombyliidae         | Unidentified Bombyliidae              |                    | X                | X                         | X                  | X               |                     | X               |                 |
| Diptera           | Calliphoridae       | Unidentified Calliphoridae            |                    | X                |                           | X                  |                 |                     |                 |                 |
| Diptera           | Chironomidae        | Unidentified Chironomidae             | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| Diptera           | Culicidae           | Unidentified Culicidae                |                    |                  |                           |                    | X               |                     |                 |                 |
| Diptera           | Dolichopodidae      | Unidentified Dolichopodidae           | X                  |                  |                           |                    | X               |                     |                 |                 |
| Diptera           | Limoniidae          | Unidentified Limoniidae               | X                  |                  |                           |                    |                 |                     |                 |                 |

| Order     | Family         | Species                                     | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-----------|----------------|---|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| Diptera   | Mydidae        | <i>Mydas clavatus</i>                       |                    | X                |                           |                    |                 |                     |                 |                 |
| Diptera   | Pipunculidae   | Unidentified Pipunculidae                   | X                  |                  |                           |                    |                 |                     |                 |                 |
| Diptera   | Scathophagidae | Unidentified Scathophagidae                 |                    |                  |                           | X                  |                 |                     |                 |                 |
| Diptera   | Sciomyzidae    | Unidentified Sciomyzidae                    |                    | X                |                           |                    | X               |                     |                 |                 |
| Diptera   | Sepsidae       | Unidentified Sepsidae                       |                    |                  |                           | X                  | X               |                     |                 |                 |
| Diptera   | Simuliidae     | Unidentified Simuliidae                     |                    |                  |                           |                    |                 |                     | X               | X               |
| Diptera   | Syrphidae      | Unidentified Syrphidae                      | X                  |                  |                           | X                  |                 |                     |                 |                 |
| Diptera   | Tabanidae      | Unidentified Tabanidae                      |                    | X                |                           |                    |                 |                     |                 | X               |
| Diptera   | Tachinidae     | Unidentified Tachinidae                     | X                  | X                | X                         |                    | X               | X                   | X               |                 |
| Diptera   | Tephritidae    | Unidentified Tephritidae                    |                    |                  |                           |                    | X               |                     |                 |                 |
| Diptera   | Tipulidae      | Unidentified Tipulidae                      | X                  | X                | X                         |                    |                 |                     | X               |                 |
| Diptera   | Trichoceridae  | <i>Trichocera garretti vs. regelationis</i> |                    |                  | X                         |                    |                 |                     |                 |                 |
| Diptera   |                | Unidentified Diptera                        | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| Hemiptera | Alydidae       | Unidentified Alydidae                       |                    |                  |                           | X                  | X               |                     |                 |                 |
| Hemiptera | Anthocoridae   | Unidentified Anthocoridae                   |                    |                  | X                         |                    | X               |                     |                 |                 |
| Hemiptera | Belastomatidae | <i>Lethocerus americanus</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| Hemiptera | Caliscelidae   | <i>Bruchomorpha</i> spp.                    |                    |                  |                           |                    | X               |                     |                 |                 |
| Hemiptera | Caliscelidae   | Unidentified Caliscelidae                   |                    | X                |                           |                    |                 |                     |                 |                 |
| Hemiptera | Cercopidae     | <i>Philaenarcys killa</i>                   |                    | X                |                           |                    |                 |                     | X               |                 |
| Hemiptera | Cercopidae     | Unidentified Cercopidae                     | X                  | X                |                           |                    | X               |                     |                 |                 |
| Hemiptera | Cicadellidae   | Unidentified Cicadellidae                   | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| Hemiptera | Cicadidae      | <i>Tibicen canicularis</i>                  |                    |                  | X                         |                    | X               |                     |                 | X               |
| Hemiptera | Cixiidae       | <i>Oliarus ecologus</i>                     |                    |                  |                           |                    |                 |                     | X               |                 |
| Hemiptera | Coreidae       | Unidentified Coreidae                       |                    | X                |                           | X                  |                 |                     |                 |                 |
| Hemiptera | Corixidae      | Unidentified Corixidae                      |                    |                  | X                         |                    | X               |                     | X               |                 |
| Hemiptera | Derbidae       | <i>Cedusa</i> spp.                          | X                  |                  |                           |                    |                 |                     |                 |                 |
| Hemiptera | Dictyopharidae | <i>Scolops sulcipes</i>                     | X                  |                  | X                         |                    |                 |                     |                 |                 |
| Hemiptera | Lygaeidae      | <i>Neacoryphus bicrucis</i>                 |                    |                  |                           | X                  |                 |                     |                 |                 |
| Hemiptera | Membracidae    | <i>Acutalis tartarea</i>                    | X                  |                  |                           |                    |                 |                     |                 |                 |
| Hemiptera | Membracidae    | <i>Campylenchia latipes</i>                 | X                  |                  |                           |                    |                 |                     |                 | X               |
| Hemiptera | Membracidae    | Unidentified Membracidae                    | X                  |                  |                           | X                  |                 |                     |                 |                 |
| Hemiptera | Membracidae    | <i>Vanduzea triguttata</i>                  |                    |                  | X                         |                    |                 |                     |                 |                 |
| Hemiptera | Miridae        | Unidentified Miridae                        | X                  |                  |                           | X                  | X               |                     | X               |                 |
| Hemiptera | Nabidae        | Unidentified Nabidae                        | X                  |                  |                           |                    |                 |                     |                 |                 |
| Hemiptera | Pentatomidae   | Unidentified Pentatomidae                   | X                  | X                | X                         | X                  | X               |                     | X               |                 |
| Hemiptera | Psyllidae      | Unidentified Psyllidae                      |                    |                  |                           | X                  |                 |                     |                 |                 |
| Hemiptera | Reduviidae     | <i>Phymata</i> spp.                         |                    |                  | X                         |                    |                 |                     | X               |                 |
| Hemiptera | Reduviidae     | Unidentified Reduviidae                     |                    |                  |                           |                    |                 |                     | X               |                 |
| Hemiptera | Rhopalidae     | Unidentified Rhopalidae                     |                    | X                |                           |                    | X               |                     | X               |                 |
| Hemiptera | Scutelleridae  | Unidentified Scutelleridae                  |                    | X                |                           |                    |                 |                     |                 |                 |
| Hemiptera | Tingidae       | Unidentified Tingidae                       | X                  |                  |                           |                    |                 |                     |                 |                 |
| Hemiptera |                | Unidentified Hemiptera                      | X                  | X                | X                         | X                  | X               |                     | X               | X               |



| Order       | Family         | Species                                  | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------|----------------|--|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| Hymenoptera | Andrenidae     | <i>Andrena</i> spp.                      |                    |                  |                           |                    | X               |                     |                 |                 |
| Hymenoptera | Andrenidae     | <i>Pseudopanurgus</i> spp.               |                    | X                |                           |                    |                 |                     |                 |                 |
| Hymenoptera | Apidae         | <i>Apis mellifera</i>                    |                    |                  |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Apidae         | <i>Bombus auricomus</i>                  |                    |                  |                           |                    | X               |                     |                 |                 |
| Hymenoptera | Apidae         | <i>Bombus bimaculatus</i>                |                    |                  |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Apidae         | <i>Bombus griseocollis</i>               |                    |                  | X                         |                    |                 | X                   | X               |                 |
| Hymenoptera | Apidae         | <i>Bombus impatiens</i>                  |                    |                  | X                         |                    |                 |                     |                 | X               |
| Hymenoptera | Apidae         | <i>Bombus vagans</i>                     |                    |                  |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Apidae         | <i>Ceratina</i> spp.                     |                    |                  | X                         |                    |                 |                     |                 |                 |
| Hymenoptera | Chalcididae    | Unidentified Chalcididae                 |                    |                  |                           |                    | X               |                     |                 |                 |
| Hymenoptera | Colletidae     | <i>Colletes</i> spp.                     |                    |                  |                           |                    | X               | X                   |                 |                 |
| Hymenoptera | Colletidae     | <i>Hylaeus</i> spp.                      |                    |                  | X                         |                    |                 |                     |                 |                 |
| Hymenoptera | Formicidae     | Unidentified Formicidae                  | X                  | X                | X                         | X                  | X               | X                   | X               | X               |
| Hymenoptera | Halictidae     | <i>Augochlorella</i> spp.                |                    |                  |                           |                    |                 | X                   | X               |                 |
| Hymenoptera | Halictidae     | <i>Halictus</i> spp.                     |                    |                  |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Halictidae     | <i>Lasioglossum (Dialictus) anomalum</i> |                    |                  |                           | X                  |                 |                     |                 |                 |
| Hymenoptera | Halictidae     | <i>Lasioglossum (Dialictus)</i> spp.     |                    | X                | X                         | X                  |                 | X                   |                 |                 |
| Hymenoptera | Ichneumonidae  | <i>Ophion</i> spp.                       |                    |                  |                           | X                  | X               |                     | X               |                 |
| Hymenoptera | Ichneumonidae  | Unidentified Ichneumonidae               |                    |                  | X                         |                    |                 |                     |                 | X               |
| Hymenoptera | Megachilidae   | <i>Anthidium manicatum</i>               |                    |                  |                           |                    | X               |                     |                 |                 |
| Hymenoptera | Megachilidae   | <i>Megachile</i> spp.                    |                    |                  |                           |                    | X               | X                   |                 |                 |
| Hymenoptera | Mutillidae     | <i>Dasymutilla nigripes</i>              |                    |                  |                           |                    |                 |                     | X               |                 |
| Hymenoptera | Mutillidae     | <i>Dasymutilla vesta</i>                 |                    | X                |                           |                    |                 | X                   |                 | X               |
| Hymenoptera | Mutillidae     | Unidentified Mutillidae                  |                    |                  |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Pompilidae     | Unidentified Pompilidae                  |                    |                  |                           |                    | X               | X                   | X               |                 |
| Hymenoptera | Scoliidae      | Unidentified Scoliidae                   |                    | X                |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Siricidae      | <i>Tremex columba</i>                    |                    |                  |                           |                    |                 | X                   |                 |                 |
| Hymenoptera | Sphecidae      | <i>Sphex pennsylvanicus</i>              |                    |                  | X                         |                    | X               |                     | X               |                 |
| Hymenoptera | Sphecidae      | Unidentified Sphecidae                   |                    |                  | X                         |                    |                 | X                   | X               |                 |
| Hymenoptera | Torymidae      | Unidentified Torymidae                   | X                  |                  |                           |                    | X               |                     |                 |                 |
| Hymenoptera | Vespidae       | <i>Dolichovespula maculata</i>           |                    | X                |                           |                    |                 |                     |                 |                 |
| Hymenoptera | Vespidae       | <i>Polistes fuscatus</i>                 |                    |                  |                           |                    | X               | X                   | X               |                 |
| Hymenoptera | Vespidae       | Unidentified Vespidae                    |                    | X                | X                         | X                  |                 | X                   | X               | X               |
| Hymenoptera |                | Unidentified Hymenoptera                 | X                  | X                | X                         | X                  | X               | X                   | X               | X               |
| Mantodea    | Mantidae       | <i>Tenodera sinensis</i>                 | X                  | X                |                           |                    |                 |                     |                 |                 |
| Mecoptera   | Bittacidae     | <i>Bittacus</i> spp.                     |                    |                  | X                         |                    |                 |                     |                 |                 |
| Megaloptera | Corydalidae    | Unidentified Corydalidae                 |                    |                  |                           |                    |                 |                     |                 | X               |
| Neuroptera  | Chrysopidae    | Unidentified Chrysopidae                 |                    | X                |                           | X                  | X               |                     |                 |                 |
| Neuroptera  | Mantispidae    | <i>Dicromantispa sayi</i>                |                    |                  |                           |                    |                 |                     |                 | X               |
| Neuroptera  | Myrmeleontidae | Unidentified Myrmeleontidae              |                    | X                |                           |                    |                 | X                   | X               |                 |
| Odonata     | Coenagrionidae | Unidentified Coenagrionidae              | X                  |                  |                           |                    |                 |                     |                 | X               |
| Orthoptera  | Acrididae      | <i>Dissosteira carolina</i>              |                    | X                |                           |                    | X               |                     |                 |                 |

| Order       | Family          | Species                                    | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------|-----------------|--|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| Orthoptera  | Acrididae       | Unidentified Acrididae                     |                    | X                | X                         | X                  | X               | X                   | X               | X               |
| Orthoptera  | Gryllidae       | <i>Oecanthus fultoni</i>                   |                    |                  |                           | X                  | X               |                     |                 |                 |
| Orthoptera  | Gryllidae       | <i>Oecanthus nigricornis/forbesi</i> group | X                  |                  |                           |                    |                 |                     |                 |                 |
| Orthoptera  | Gryllidae       | <i>Oecanthus niveus</i>                    |                    |                  | X                         | X                  | X               |                     |                 |                 |
| Orthoptera  | Gryllidae       | <i>Oecanthus pini</i>                      |                    | X                |                           |                    | X               |                     |                 |                 |
| Orthoptera  | Gryllidae       | <i>Oecanthus quadripunctatus</i>           |                    |                  |                           |                    |                 |                     | X               |                 |
| Orthoptera  | Tettigoniidae   | Unidentified Tettigoniidae                 | X                  | X                |                           |                    | X               | X                   | X               |                 |
| Phasmida    | Diapheromeridae | <i>Diapheromera femorata</i>               | X                  |                  |                           |                    |                 |                     |                 |                 |
| Phasmida    | Diapheromeridae | Unidentified Diapheromeridae               |                    | X                |                           |                    |                 |                     |                 |                 |
| Trichoptera | Hydroptilidae   | Unidentified Hydroptilidae                 |                    |                  | X                         |                    | X               |                     |                 | X               |
| Trichoptera | Leptoceridae    | <i>Ceraclea</i> spp.                       |                    |                  | X                         |                    |                 |                     |                 |                 |
| Trichoptera | Leptoceridae    | <i>Nectopsyche</i> spp.                    |                    | X                | X                         |                    | X               |                     |                 | X               |
| Trichoptera | Leptoceridae    | <i>Triaenodes</i> spp.                     | X                  | X                |                           |                    | X               |                     |                 |                 |
| Trichoptera | Leptoceridae    | Unidentified Leptoceridae                  | X                  | X                | X                         |                    | X               |                     | X               | X               |
| Trichoptera |                 | Unidentified Trichoptera                   | X                  | X                | X                         | X                  | X               |                     | X               | X               |

**Table 5.** Lepidoptera documented during the study. Species in **BOLD** are figured; species with **GREEN FILL** are discussed in Metzler et al (2005); species with **ORANGE FILL** are additional ones with potential prairie affiliation (of varying degree) based on the author's experience or opinions of other researchers (see discussion); additional species on this list will probably be added with further research, particularly in the micro Lepidoptera.

| Hodges #   | Family          | Species                          | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|------------|-----------------|----------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 118.99     | Nepticulidae    | Unidentified Nepticulidae        | X                  |                  | X                         | X                  |                 |                     |                 |                 |
| 119        | Opostegidae     | <i>Pseudopostega cretea</i>      |                    |                  | X                         |                    |                 |                     |                 |                 |
| 263        | Tineidae        | <i>Nemapogon auropulvella</i>    | X                  |                  |                           |                    |                 |                     |                 |                 |
| <b>300</b> | <b>Tineidae</b> | <b><i>Hybroma servulella</i></b> |                    |                  | X                         |                    |                 |                     |                 |                 |
| 317        | Tineidae        | <i>Xylesthia pruniramiella</i>   |                    | X                |                           |                    |                 |                     |                 |                 |
| 334        | Acrolophidae    | <i>Amydria effrentella</i>       |                    |                  |                           | X                  | X               |                     |                 |                 |
| 340        | Acrolophidae    | <i>Acrolophus arcanella</i>      | X                  |                  |                           | X                  | X               |                     |                 |                 |
| 392        | Tineidae        | <i>Tinea apicimaculella</i>      | X                  |                  |                           |                    |                 |                     |                 |                 |

| Hodges #   | Family                | Species   | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|------------|-----------------------|---|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 416        | Tineidae              | <i>Monopis dorsistrigella</i>                   |                    |                  | X                         |                    |                 |                     |                 |                 |
| 417        | Tineidae              | <i>Monopis marginistrigella</i>                 | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 421        | Tineidae              | <i>Monopis spilotella</i>                       |                    |                  |                           |                    | X               |                     |                 |                 |
| 422        | Tineidae              | <i>Eccritothrix trimaculella</i>                |                    | X                |                           |                    |                 |                     |                 |                 |
| 434.99     | Tineidae              | Unidentified Tineidae                           |                    |                  | X                         |                    |                 |                     | X               |                 |
| 437        | Psychidae             | <i>Psyche casta</i>                             |                    |                  | X                         |                    |                 |                     | X               |                 |
| 462        | Bucculatricidae       | <i>Philonome clemensella</i>                    |                    |                  | X                         |                    |                 |                     |                 |                 |
| 582.9      | Bucculatricidae       | <i>Bucculatrix</i> spp.                         | X                  |                  | X                         |                    |                 |                     | X               |                 |
| 594        | Gracillariidae        | <i>Caloptilia belfragella</i>                   |                    |                  | X                         |                    |                 |                     |                 |                 |
| <b>596</b> | <b>Gracillariidae</b> | <b><i>Caloptilia blandella</i></b>              |                    | X                | X                         |                    |                 |                     |                 | X               |
| 620        | Gracillariidae        | <i>Caloptilia packardella</i>                   |                    |                  | X                         |                    |                 |                     |                 |                 |
| 642        | Gracillariidae        | <i>Caloptilia umbratella</i> complex            |                    |                  |                           |                    |                 |                     | X               |                 |
| 644.9      | Gracillariidae        | <i>Caloptilia</i> spp.                          | X                  |                  |                           |                    | X               |                     |                 |                 |
| 658.9      | Gracillariidae        | <i>Parectopa</i> spp.                           | X                  |                  |                           |                    |                 |                     |                 |                 |
| 686.9      | Gracillariidae        | <i>Parornix</i> spp.                            |                    | X                |                           |                    |                 |                     |                 |                 |
| 692        | Gracillariidae        | <i>Acrocercops astericola</i>                   |                    |                  |                           |                    | X               |                     |                 |                 |
| 718.9      | Gracillariidae        | <i>Marmara</i> spp.                             |                    |                  | X                         |                    |                 |                     |                 |                 |
| 742        | Gracillariidae        | <i>Phyllonorycter celtifoliella</i>             |                    |                  |                           |                    |                 |                     | X               |                 |
| 744        | Gracillariidae        | <i>Phyllonorycter clemensella</i>               |                    |                  | X                         |                    |                 |                     |                 |                 |
| 797        | Gracillariidae        | <i>Phyllonorycter tiliacella</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 802.9      | Gracillariidae        | <i>Phyllonorycter</i> spp.                      | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 803        | Gracillariidae        | <i>Cameraria aceriella</i>                      |                    |                  | X                         |                    |                 |                     |                 |                 |
| 811        | Gracillariidae        | <i>Cameraria caryaefoliella</i>                 |                    |                  | X                         |                    |                 |                     |                 |                 |
| 842        | Gracillariidae        | <i>Chrysaster ostensackenella</i>               |                    |                  |                           | X                  |                 |                     |                 |                 |
| 854.9      | Gracillariidae        | <i>Phyllocnistis</i> spp. (white species group) |                    |                  |                           |                    |                 |                     | X               |                 |
| 859        | Elachistidae          | <i>Agonopterix curvilineella</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 862        | Elachistidae          | <i>Agonopterix clemensella</i>                  |                    |                  | X                         |                    |                 |                     | X               | X               |
| 867        | Elachistidae          | <i>Agonopterix pulvipennella</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 868        | Elachistidae          | <i>Agonopterix nigrinotella</i>                 |                    |                  | X                         |                    |                 |                     | X               |                 |
| 874.1      | Elachistidae          | <i>Agonopterix alstroemeriana</i>               |                    |                  |                           |                    |                 |                     |                 | X               |
| 916        | Elachistidae          | <i>Semioscopis aureorella</i>                   |                    |                  | X                         |                    |                 |                     |                 |                 |
| 921        | Elachistidae          | <i>Depressaria cinereocostella</i>              |                    |                  |                           |                    |                 |                     |                 | X               |
| 951        | Elachistidae          | <i>Machimia tentoriferella</i>                  | X                  |                  |                           |                    |                 |                     |                 |                 |
| 1014       | Elachistidae          | <i>Antaeotricha leucillana</i>                  |                    |                  |                           | X                  |                 |                     |                 | X               |
| 1032       | Elachistidae          | <i>Gonioterma mistrella</i>                     |                    |                  | X                         |                    | X               |                     | X               |                 |

| Hodges #      | Family               | Species                                   | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|---------------|----------------------|---|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 1042          | Oecophoridae         | <i>Decantha boreasella</i>                |                    |                  | X                         |                    |                 |                     |                 |                 |
| <b>1046</b>   | <b>Oecophoridae</b>  | <b><i>Epicallima argenticinctella</i></b> |                    |                  | X                         | X                  | X               |                     |                 |                 |
| <b>1123.9</b> | <b>Elachistidae</b>  | <b><i>Elachista</i> spp.</b>              | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 1136.1        | Glyphidoceridae      | <i>Glyphidocera juniperella</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| 1142          | Glyphidoceridae      | <i>Glyphidocera septentrionella</i>       |                    |                  | X                         |                    |                 |                     |                 |                 |
| 1169.9        | Coleophoridae        | <i>Calosima</i> spp.                      |                    |                  |                           | X                  |                 |                     |                 |                 |
| 1253.99       | Coleophoridae        | Unidentified Blastobasinae                | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 1388          | Coleophoridae        | <i>Coleophora trifolii</i>                | X                  |                  |                           |                    |                 |                     |                 |                 |
| <b>1398.9</b> | <b>Coleophoridae</b> | <b><i>Coleophora</i> spp.</b>             | X                  | X                | X                         | X                  | X               |                     | X               |                 |
| 1443          | Coleophoridae        | <i>Mompha eloisella</i>                   | X                  |                  |                           |                    |                 |                     |                 |                 |
| 1445          | Coleophoridae        | <i>Mompha luciferella</i>                 |                    |                  | X                         |                    |                 |                     |                 |                 |
| <b>1448</b>   | <b>Coleophoridae</b> | <b><i>Mompha murtfeldtella</i></b>        | X                  |                  |                           |                    |                 |                     |                 |                 |
| 1472          | Cosmopterigidae      | <i>Cosmopterix pulchrimella</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| 1515          | Cosmopterigidae      | <i>Limnaecia phragmitella</i>             | X                  |                  |                           | X                  |                 |                     |                 |                 |
| 1615          | Cosmopterigidae      | <i>Walshia miscecolorella</i>             |                    | X                |                           |                    |                 |                     | X               |                 |
| 1632.9        | Cosmopterigidae      | <i>Perimede</i> spp.                      | X                  |                  | X                         |                    |                 |                     |                 | X               |
| <b>1679.9</b> | <b>Xyloryctidae</b>  | <b><i>Scythris</i> spp.</b>               |                    |                  | X                         | X                  | X               |                     |                 |                 |
| 1685          | Gelechiidae          | <i>Metzneria lappella</i>                 |                    |                  | X                         |                    | X               |                     |                 |                 |
| 1761          | Gelechiidae          | <i>Aristotelia roseosuffusella</i>        |                    | X                |                           |                    | X               |                     |                 |                 |
| <b>1762</b>   | <b>Gelechiidae</b>   | <b><i>Aristotelia rubidella</i></b>       |                    | X                | X                         |                    |                 |                     |                 |                 |
| 1764.9        | Gelechiidae          | <i>Aristotelia</i> spp.                   | X                  |                  |                           |                    |                 |                     |                 |                 |
| 1771          | Gelechiidae          | <i>Agnippe prunifoliella</i>              |                    |                  |                           | X                  |                 |                     |                 |                 |
| 1852          | Gelechiidae          | <i>Athrips mouffetella</i>                | X                  |                  |                           |                    |                 |                     |                 |                 |
| 1858          | Gelechiidae          | <i>Telphusa longifasciella</i>            |                    |                  |                           |                    |                 |                     | X               |                 |
| 2010.9        | Gelechiidae          | <i>Gnorimoschema</i> spp.                 | X                  |                  |                           |                    |                 |                     |                 |                 |
| 2076          | Gelechiidae          | <i>Chionodes fondella</i>                 | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 2093          | Gelechiidae          | <i>Chionodes mediofuscella</i>            |                    |                  |                           |                    |                 |                     | X               |                 |
| 2099          | Gelechiidae          | <i>Chionodes obscurusella</i>             |                    |                  |                           |                    |                 |                     |                 | X               |
| 2110          | Gelechiidae          | <i>Chionodes pseudofondella</i>           | X                  |                  | X                         |                    |                 |                     | X               |                 |
| 2119          | Gelechiidae          | <i>Chionodes thoraceochrella</i>          |                    |                  | X                         |                    |                 |                     |                 | X               |
| 2267          | Gelechiidae          | <i>Helcystogramma fernaldella</i>         |                    |                  |                           |                    |                 |                     | X               |                 |
| 2268          | Gelechiidae          | <i>Helcystogramma hystricella</i>         |                    |                  |                           |                    |                 |                     | X               |                 |
| 2278          | Gelechiidae          | <i>Dichomeris glenni</i>                  |                    |                  |                           |                    | X               |                     | X               |                 |
| 2281          | Gelechiidae          | <i>Dichomeris ligulella</i>               |                    |                  | X                         |                    |                 |                     |                 |                 |
| 2289          | Gelechiidae          | <i>Dichomeris ochripalpella</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |

| Hodges #    | Family                  | Species                                 | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------|-------------------------|---|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 2291.2      | Gelechiidae             | <i>Dichomeris copa</i>                  | X                  |                  |                           |                    |                 |                     |                 |                 |
| 2295        | Gelechiidae             | <i>Dichomeris flavocostella</i>         | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 2301.2      | Gelechiidae             | <i>Dichomeris isa</i>                   | X                  |                  |                           |                    |                 |                     |                 |                 |
| 2311.99     | Gelechiidae             | Unidentified Gelechiidae                | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| <b>2346</b> | <b>Glyphipterigidae</b> | <b><i>Diploschizia impigritella</i></b> |                    | X                |                           |                    |                 |                     |                 |                 |
| 2366        | Plutellidae             | <i>Plutella xylostella</i>              |                    | X                |                           |                    |                 |                     | X               | X               |
| 2375        | Ypsolophidae            | <i>Ypsolopha dentella</i>               |                    |                  | X                         |                    |                 |                     |                 |                 |
| 2401        | Yponomeutidae           | <i>Atteva aurea</i>                     |                    |                  |                           |                    |                 |                     | X               | X               |
| 2414.9      | Yponomeutidae           | <i>Swammerdamia</i> spp.                |                    |                  |                           | X                  |                 |                     |                 |                 |
| 2427        | Yponomeutidae           | <i>Zelleria haimbachi</i>               |                    |                  |                           |                    |                 |                     | X               |                 |
| 2467        | Yponomeutidae           | <i>Argyresthia oreasella</i>            |                    |                  | X                         |                    |                 |                     |                 |                 |
| <b>2552</b> | <b>Sesiidae</b>         | <b><i>Synanthedon rileyana</i></b>      |                    |                  |                           |                    |                 |                     | X               |                 |
| 2589        | Sesiidae                | <i>Podosesia syringae</i>               | X                  |                  |                           |                    |                 |                     |                 |                 |
| 2693        | Cossidae                | <i>Prionoxystus robiniae</i>            |                    |                  | X                         |                    |                 |                     |                 |                 |
| 2707        | Tortricidae             | <i>Bactra verutana</i>                  | X                  | X                | X                         |                    |                 |                     | X               |                 |
| <b>2729</b> | <b>Tortricidae</b>      | <b><i>Lobesia bicinctana</i></b>        | X                  |                  |                           |                    |                 |                     |                 |                 |
| 2743        | Tortricidae             | <i>Endothenia nubilana</i>              |                    | X                |                           |                    |                 |                     |                 |                 |
| 2820        | Tortricidae             | <i>Olethreutes malana</i>               |                    |                  |                           |                    | X               |                     |                 |                 |
| 2908        | Tortricidae             | <i>Phaneta radiatana</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 2926        | Tortricidae             | <i>Phaneta verna</i>                    |                    |                  |                           |                    |                 |                     | X               |                 |
| 2927        | Tortricidae             | <i>Phaneta ochrocephala</i>             | X                  | X                |                           |                    |                 |                     | X               |                 |
| 2928        | Tortricidae             | <i>Phaneta rarcana</i>                  |                    | X                |                           |                    |                 |                     | X               |                 |
| 2933        | Tortricidae             | <i>Phaneta marmontana</i>               |                    |                  |                           |                    |                 |                     | X               |                 |
| 2937        | Tortricidae             | <i>Phaneta parmatana</i>                | X                  |                  |                           |                    |                 |                     | X               | X               |
| 2951        | Tortricidae             | <i>Phaneta ornatula</i>                 |                    | X                | X                         |                    |                 |                     | X               | X               |
| 2973        | Tortricidae             | <i>Phaneta striatana</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 3037        | Tortricidae             | <i>Eucosma agricolana</i>               |                    | X                |                           |                    |                 |                     |                 |                 |
| <b>3043</b> | <b>Tortricidae</b>      | <b><i>Eucosma albiguttana</i></b>       |                    | X                |                           |                    |                 |                     |                 |                 |
| 3051        | Tortricidae             | <i>Eucosma glomerana</i>                | X                  |                  |                           |                    |                 |                     |                 | X               |
| 3091        | Tortricidae             | <i>Eucosma matutina</i>                 | X                  | X                |                           |                    | X               |                     | X               |                 |
| 3100        | Tortricidae             | <i>Eucosma bilineana</i>                | X                  |                  |                           |                    |                 |                     |                 |                 |
| <b>3112</b> | <b>Tortricidae</b>      | <b><i>Eucosma nandana</i></b>           | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3116        | Tortricidae             | <i>Eucosma dorsisignatana</i>           | X                  | X                |                           |                    | X               |                     |                 |                 |
| 3116.1      | Tortricidae             | <i>Eucosma similliana</i>               | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3120        | Tortricidae             | <i>Eucosma derelicta</i>                | X                  | X                |                           | X                  |                 |                     | X               |                 |

| Hodges # | Family      | Species                            | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-------------|------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 3127     | Tortricidae | <i>Eucosma sombreana</i>           | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3142     | Tortricidae | <i>Eucosma cataclystiana</i>       | X                  | X                |                           | X                  | X               |                     |                 |                 |
| 3186     | Tortricidae | <i>Epiblema scudderiana</i>        |                    |                  |                           |                    |                 |                     | X               |                 |
| 3192     | Tortricidae | <i>Epiblema carolinana</i>         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3203     | Tortricidae | <i>Epiblema brightonana</i>        | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 3217     | Tortricidae | <i>Suleima cinerodorsana</i>       | X                  |                  |                           |                    |                 |                     |                 | X               |
| 3219     | Tortricidae | <i>Sonia canadana</i>              | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3235     | Tortricidae | <i>Proteoteras moffatiana</i>      |                    |                  | X                         |                    |                 |                     |                 |                 |
| 3246     | Tortricidae | <i>Pseudexentera cressoniana</i>   |                    |                  |                           |                    |                 |                     |                 | X               |
| 3251     | Tortricidae | <i>Pseudexentera spoliata</i>      |                    |                  |                           |                    |                 |                     |                 | X               |
| 3291.1   | Tortricidae | <i>Epinotia sotipena</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| 3351     | Tortricidae | <i>Epinotia lindana</i>            | X                  | X                |                           | X                  |                 |                     |                 |                 |
| 3359     | Tortricidae | <i>Ancylis metamelana</i>          |                    |                  |                           |                    | X               |                     | X               |                 |
| 3367     | Tortricidae | <i>Ancylis burgessiana</i>         |                    |                  |                           |                    |                 |                     | X               |                 |
| 3379     | Tortricidae | <i>Ancylis diminutana</i>          | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3388.9   | Tortricidae | <i>Ancylis</i> spp.                | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3494     | Tortricidae | <i>Cydia latiferreana</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 3502     | Tortricidae | <i>Acleris albicomana</i>          | X                  |                  |                           |                    | X               |                     |                 |                 |
| 3510     | Tortricidae | <i>Acleris nivisellana</i>         |                    |                  |                           |                    | X               |                     |                 |                 |
| 3517     | Tortricidae | <i>Acleris subnivana</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| 3531     | Tortricidae | <i>Acleris hastiana</i>            |                    |                  | X                         |                    |                 |                     |                 |                 |
| 3536     | Tortricidae | <i>Acleris robinsoniana</i>        | X                  |                  |                           | X                  |                 |                     |                 |                 |
| 3539     | Tortricidae | <i>Acleris chalybeana</i>          |                    |                  | X                         |                    |                 |                     |                 | X               |
| 3540     | Tortricidae | <i>Acleris logiana</i>             |                    |                  |                           |                    |                 |                     |                 | X               |
| 3556     | Tortricidae | <i>Acleris nigrolinea</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 3563.9   | Tortricidae | <i>Acleris</i> spp.                | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3573     | Tortricidae | <i>Decodes basiplagana</i>         |                    | X                |                           |                    |                 |                     |                 |                 |
| 3593     | Tortricidae | <i>Pandemis lamprosana</i>         |                    |                  | X                         |                    |                 |                     |                 |                 |
| 3597     | Tortricidae | <i>Argyrotaenia velutinana</i>     | X                  | X                | X                         | X                  | X               |                     |                 |                 |
| 3621     | Tortricidae | <i>Argyrotaenia quadrifasciana</i> |                    |                  |                           |                    | X               |                     |                 |                 |
| 3622     | Tortricidae | <i>Argyrotaenia juglandana</i>     |                    |                  | X                         |                    |                 |                     |                 |                 |
| 3630     | Tortricidae | <i>Diedra cockerellana</i>         |                    | X                | X                         |                    |                 |                     |                 |                 |
| 3658     | Tortricidae | <i>Archips purpurana</i>           | X                  |                  |                           | X                  | X               |                     |                 |                 |
| 3672     | Tortricidae | <i>Syndemis afflictana</i>         |                    |                  |                           |                    |                 |                     | X               |                 |
| 3684     | Tortricidae | <i>Clepsis clemensiana</i>         | X                  |                  |                           |                    | X               |                     |                 |                 |

| Hodges # | Family      | Species                         | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-------------|---------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 3688     | Tortricidae | <i>Clepsis peritana</i>         |                    | X                |                           |                    |                 |                     |                 |                 |
| 3693     | Tortricidae | <i>Xenotemna pallorana</i>      | X                  |                  |                           |                    | X               |                     |                 |                 |
| 3695     | Tortricidae | <i>Sparganothis sulfureana</i>  | X                  | X                | X                         |                    | X               |                     |                 |                 |
| 3711     | Tortricidae | <i>Sparganothis unifasciana</i> |                    |                  |                           | X                  | X               |                     |                 |                 |
| 3716     | Tortricidae | <i>Cenopis diluticostana</i>    |                    |                  |                           | X                  |                 |                     |                 |                 |
| 3720     | Tortricidae | <i>Cenopis reticulatana</i>     |                    |                  | X                         |                    | X               |                     |                 |                 |
| 3740     | Tortricidae | <i>Platynota idaeusalis</i>     |                    |                  |                           |                    | X               |                     |                 |                 |
| 3754.1   | Tortricidae | <i>Aethes angustana</i>         |                    |                  |                           |                    |                 |                     |                 | X               |
| 3759.1   | Tortricidae | <i>Aethes promptana</i>         |                    | X                |                           |                    |                 |                     |                 |                 |
| 3759.3   | Tortricidae | <i>Aethes razowskii</i>         | X                  |                  |                           |                    |                 |                     | X               |                 |
| 3761.1   | Tortricidae | <i>Aethes spartinana</i>        | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3766     | Tortricidae | <i>Cochylis arthuri</i>         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3769     | Tortricidae | <i>Cochylis bucera</i>          | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 3771     | Tortricidae | <i>Cochylis caulocatax</i>      | X                  |                  |                           |                    |                 |                     |                 |                 |
| 3777     | Tortricidae | <i>Cochylis hospes</i>          | X                  | X                |                           |                    |                 |                     |                 |                 |
| 3780     | Tortricidae | <i>Cochylis ringsi</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 3827.9   | Tortricidae | <i>Phtheochroa</i> spp.         | X                  | X                |                           |                    |                 |                     |                 |                 |
| 3833     | Tortricidae | <i>Platphalonidia lavana</i>    |                    |                  |                           |                    |                 |                     | X               |                 |
| 3863.99  | Tortricidae | Unidentified Tortricidae        | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 3870     | Hesperiidae | <i>Epargyreus clarus</i>        |                    | X                | X                         |                    |                 | X                   | X               | X               |
| 3909     | Hesperiidae | <i>Thorybes bathyllus</i>       |                    | X                |                           |                    |                 |                     |                 |                 |
| 3910     | Hesperiidae | <i>Thorybes pylades</i>         |                    |                  |                           | X                  |                 |                     |                 |                 |
| 3958     | Hesperiidae | <i>Erynnis lucilius</i>         |                    |                  |                           | X                  |                 | X                   | X               | X               |
| 3966     | Hesperiidae | <i>Pyrgus communis</i>          |                    | X                | X                         |                    | X               |                     |                 |                 |
| 3977     | Hesperiidae | <i>Pholisora catullus</i>       |                    |                  | X                         |                    | X               | X                   |                 |                 |
| 4004     | Hesperiidae | <i>Ancyloxypha numitor</i>      |                    |                  |                           |                    | X               |                     |                 |                 |
| 4012     | Hesperiidae | <i>Thymelicus lineola</i>       |                    |                  |                           |                    | X               |                     |                 |                 |
| 4013     | Hesperiidae | <i>Hylephila phyleus</i>        |                    |                  | X                         | X                  | X               |                     | X               |                 |
| 4022     | Hesperiidae | <i>Hesperia ottoe</i>           |                    |                  |                           |                    |                 |                     |                 | X               |
| 4023     | Hesperiidae | <i>Hesperia leonardus</i>       |                    |                  |                           | X                  |                 |                     |                 |                 |
| 4036     | Hesperiidae | <i>Polites peckius</i>          |                    |                  |                           | X                  |                 |                     |                 | X               |
| 4041     | Hesperiidae | <i>Polites themistocles</i>     |                    |                  | X                         |                    |                 |                     |                 | X               |
| 4042     | Hesperiidae | <i>Polites origenes</i>         |                    | X                | X                         |                    |                 |                     |                 | X               |
| 4047     | Hesperiidae | <i>Wallengrenia egeremet</i>    |                    | X                | X                         |                    |                 |                     |                 |                 |
| 4048     | Hesperiidae | <i>Pompeius verna</i>           |                    | X                |                           |                    |                 |                     |                 |                 |

| Hodges #    | Family             | Species                           | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------|--------------------|-----------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 4049        | Hesperiidae        | <i>Atalopedes campestris</i>      | X                  |                  | X                         | X                  |                 |                     | X               | X               |
| 4051        | Hesperiidae        | <i>Anatrytone logan</i>           |                    | X                | X                         |                    | X               | X                   | X               |                 |
| 4072        | Hesperiidae        | <i>Euphyes dion</i>               | X                  |                  |                           |                    |                 |                     |                 |                 |
| 4075        | Hesperiidae        | <i>Euphyes conspicua</i>          | X                  |                  |                           |                    |                 |                     |                 |                 |
| 4078        | Hesperiidae        | <i>Euphyes vestris</i>            |                    | X                |                           |                    |                 |                     |                 |                 |
| <b>4080</b> | <b>Hesperiidae</b> | <b><i>Atrytonopsis hianna</i></b> |                    |                  |                           |                    |                 |                     | X               |                 |
| 4105        | Hesperiidae        | <i>Amblyscirtes vialis</i>        |                    |                  |                           |                    |                 | X                   |                 | X               |
| 4159        | Papilionidae       | <i>Papilio polyxenes</i>          |                    |                  |                           | X                  | X               |                     | X               |                 |
| 4170        | Papilionidae       | <i>Papilio cresphontes</i>        |                    | X                | X                         | X                  |                 | X                   | X               | X               |
| 4176        | Papilionidae       | <i>Papilio glaucus</i>            |                    |                  |                           | X                  |                 |                     | X               | X               |
| 4193        | Pieridae           | <i>Pontia protodice</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| 4197        | Pieridae           | <i>Pieris rapae</i>               |                    |                  | X                         |                    | X               |                     |                 | X               |
| 4202        | Pieridae           | <i>Euchloe olympia</i>            |                    |                  |                           |                    |                 | X                   |                 |                 |
| 4209        | Pieridae           | <i>Colias philodice</i>           | X                  |                  |                           | X                  | X               | X                   | X               |                 |
| 4209.1      | Pieridae           | <i>Colias eurytheme</i>           | X                  | X                | X                         | X                  | X               | X                   | X               |                 |
| 4237        | Pieridae           | <i>Pyrisitia lisa</i>             |                    |                  |                           |                    | X               |                     |                 |                 |
| 4248        | Pieridae           | <i>Nathalis iole</i>              | X                  | X                | X                         |                    |                 |                     |                 | X               |
| 4251        | Lycaenidae         | <i>Lycaena phlaeas</i>            |                    | X                |                           |                    |                 |                     |                 |                 |
| 4275        | Lycaenidae         | <i>Satyrium titus</i>             |                    | X                | X                         | X                  | X               |                     | X               |                 |
| 4281        | Lycaenidae         | <i>Satyrium edwardsii</i>         |                    | X                |                           |                    |                 | X                   |                 |                 |
| <b>4318</b> | <b>Lycaenidae</b>  | <b><i>Callophrys gryneus</i></b>  |                    |                  | X                         |                    |                 | X                   |                 |                 |
| 4336        | Lycaenidae         | <i>Strymon melinus</i>            |                    | X                | X                         | X                  |                 |                     | X               |                 |
| 4361        | Lycaenidae         | <i>Cupido comyntas</i>            | X                  | X                | X                         | X                  | X               | X                   | X               | X               |
| 4363.2      | Lycaenidae         | <i>Celastrina ladon</i> complex   | X                  |                  | X                         | X                  |                 |                     |                 |                 |
| 4411        | Nymphalidae        | <i>Libytheana carinenta</i>       |                    |                  | X                         |                    |                 |                     |                 |                 |
| 4420        | Nymphalidae        | <i>Polygonia interrogationis</i>  | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 4421        | Nymphalidae        | <i>Polygonia comma</i>            |                    |                  |                           |                    |                 |                     |                 | X               |
| 4429        | Nymphalidae        | <i>Polygonia progne</i>           |                    |                  |                           |                    |                 |                     |                 | X               |
| 4430        | Nymphalidae        | <i>Nymphalis l-album</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 4432        | Nymphalidae        | <i>Nymphalis antiopa</i>          |                    |                  | X                         |                    | X               |                     |                 | X               |
| 4434        | Nymphalidae        | <i>Vanessa virginiensis</i>       |                    | X                | X                         | X                  | X               |                     | X               |                 |
| 4435        | Nymphalidae        | <i>Vanessa cardui</i>             |                    |                  | X                         | X                  | X               |                     | X               |                 |
| 4437        | Nymphalidae        | <i>Vanessa atalanta</i>           |                    | X                | X                         |                    | X               |                     |                 |                 |
| 4440        | Nymphalidae        | <i>Junonia coenia</i>             |                    | X                | X                         |                    | X               | X                   | X               |                 |
| 4447        | Nymphalidae        | <i>Euptoieta claudia</i>          |                    |                  | X                         |                    | X               |                     | X               |                 |



| Hodges #    | Family             | Species                        | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------|--------------------|--------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 4450        | Nymphalidae        | <i>Speyeria cybele</i>         |                    | X                | X                         |                    | X               |                     |                 |                 |
| 4451        | Nymphalidae        | <i>Speyeria aphrodite</i>      |                    | X                |                           |                    | X               | X                   |                 |                 |
| <b>4452</b> | <b>Nymphalidae</b> | <b><i>Speyeria idalia</i></b>  |                    |                  |                           |                    | X               |                     | X               |                 |
| 4464        | Nymphalidae        | <i>Boloria selene</i>          |                    |                  |                           |                    | X               |                     |                 |                 |
| 4465        | Nymphalidae        | <i>Boloria bellona</i>         |                    |                  |                           |                    | X               |                     | X               |                 |
| 4481        | Nymphalidae        | <i>Phyciodes tharos</i>        |                    |                  | X                         | X                  | X               | X                   | X               |                 |
| 4481.1      | Nymphalidae        | <i>Phyciodes cocyta</i>        |                    | X                |                           |                    |                 |                     |                 |                 |
| 4523        | Nymphalidae        | <i>Limenitis archippus</i>     | X                  |                  |                           |                    | X               | X                   |                 |                 |
| 4557        | Nymphalidae        | <i>Asterocampa celtis</i>      |                    | X                | X                         |                    |                 |                     |                 |                 |
| 4562.1      | Nymphalidae        | <i>Asterocampa clyton</i>      |                    |                  | X                         | X                  |                 |                     |                 |                 |
| 4568.1      | Nymphalidae        | <i>Lethe anthedon</i>          |                    |                  | X                         |                    |                 |                     |                 | X               |
| 4568.3      | Nymphalidae        | <i>Lethe eurydice</i>          | X                  |                  |                           |                    | X               |                     |                 |                 |
| 4578        | Nymphalidae        | <i>Megisto cymela</i>          |                    | X                |                           |                    |                 |                     |                 |                 |
| 4587        | Nymphalidae        | <i>Cercyonis pegala</i>        | X                  | X                | X                         | X                  | X               | X                   | X               |                 |
| 4614        | Nymphalidae        | <i>Danaus plexippus</i>        |                    |                  | X                         |                    | X               |                     | X               |                 |
| 4624        | Zygaenidae         | <i>Harrisina americana</i>     |                    |                  | X                         |                    |                 |                     |                 |                 |
| 4667        | Limacodidae        | <i>Apoda y-inversum</i>        |                    |                  |                           |                    |                 |                     |                 | X               |
| 4671        | Limacodidae        | <i>Prolimacodes badia</i>      |                    |                  |                           |                    |                 |                     |                 | X               |
| 4716        | Crambidae          | <i>Scoparia biplagialis</i>    | X                  |                  | X                         | X                  | X               |                     | X               | X               |
| 4739        | Crambidae          | <i>Eudonia heterosalis</i>     | X                  |                  |                           | X                  |                 |                     |                 |                 |
| 4755        | Crambidae          | <i>Elophila oblitalis</i>      | X                  |                  | X                         | X                  | X               |                     | X               | X               |
| 4761        | Crambidae          | <i>Parapoynx badiusalis</i>    |                    | X                | X                         | X                  |                 |                     | X               | X               |
| 4794        | Crambidae          | <i>Eustixia pupula</i>         |                    | X                | X                         |                    |                 |                     |                 |                 |
| 4870        | Crambidae          | <i>Glaphyria sequistrialis</i> |                    |                  | X                         | X                  | X               |                     | X               | X               |
| 4889        | Crambidae          | <i>Dicymolomia julianalis</i>  |                    | X                |                           |                    |                 |                     |                 |                 |
| 4936        | Crambidae          | <i>Saucrobotys futilalis</i>   | X                  |                  |                           |                    |                 |                     | X               |                 |
| 4937        | Crambidae          | <i>Nascia acutella</i>         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 4946        | Crambidae          | <i>Ostrinia penitalis</i>      |                    |                  |                           |                    |                 |                     |                 | X               |
| 4949        | Crambidae          | <i>Ostrinia nubilalis</i>      |                    |                  |                           | X                  |                 |                     |                 | X               |
| 4950        | Crambidae          | <i>Fumibotys fumalis</i>       | X                  | X                |                           |                    |                 |                     |                 |                 |
| 4956        | Crambidae          | <i>Anania extricalis</i>       | X                  |                  |                           |                    |                 |                     |                 |                 |
| 4957        | Crambidae          | <i>Anania mysippusalis</i>     |                    |                  |                           |                    |                 |                     |                 | X               |
| 4962        | Crambidae          | <i>Hahncappsia marculenta</i>  |                    |                  |                           | X                  | X               |                     | X               | X               |
| 4975        | Crambidae          | <i>Achyra rantalis</i>         | X                  |                  | X                         |                    | X               |                     | X               |                 |
| 4986.1      | Crambidae          | <i>Sitochroa palealis</i>      |                    |                  |                           | X                  | X               |                     | X               | X               |

| Hodges # | Family    | Species                               | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-----------|---------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 4987     | Crambidae | <i>Sitochroa chortalis</i>            |                    |                  |                           |                    | X               |                     |                 | X               |
| 5017     | Crambidae | <i>Loxostege cereralis</i>            |                    |                  | X                         |                    | X               |                     |                 |                 |
| 5034     | Crambidae | <i>Pyrausta signatalis</i>            |                    |                  | X                         |                    |                 |                     |                 |                 |
| 5042     | Crambidae | <i>Pyrausta onythesalis</i>           |                    |                  |                           | X                  |                 |                     | X               |                 |
| 5070     | Crambidae | <i>Pyrausta laticlavia</i>            |                    |                  |                           |                    |                 |                     | X               |                 |
| 5079     | Crambidae | <i>Udea rubigalis</i>                 | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 5156     | Crambidae | <i>Nomophila nearctica</i>            | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 5167.9   | Crambidae | <i>Desmia</i> spp.                    |                    | X                | X                         | X                  |                 |                     |                 | X               |
| 5169     | Crambidae | <i>Hymenia perspectalis</i>           | X                  |                  |                           |                    |                 |                     |                 |                 |
| 5174     | Crambidae | <i>Diathrausta reconditalis</i>       |                    |                  | X                         |                    |                 |                     |                 |                 |
| 5182     | Crambidae | <i>Blepharomastix ranalis</i>         |                    |                  | X                         |                    |                 |                     |                 |                 |
| 5226     | Crambidae | <i>Palpita magniferalis</i>           |                    |                  |                           |                    |                 |                     |                 | X               |
| 5241     | Crambidae | <i>Pantographa limata</i>             |                    |                  | X                         |                    |                 |                     |                 | X               |
| 5250     | Crambidae | <i>Lygropia rivulalis</i>             | X                  |                  |                           |                    |                 |                     |                 |                 |
| 5253     | Crambidae | <i>Diastictis argyralis</i>           |                    |                  |                           |                    |                 |                     | X               |                 |
| 5255     | Crambidae | <i>Diastictis ventralis</i>           |                    |                  |                           |                    |                 |                     | X               |                 |
| 5276     | Crambidae | <i>Herpetogramma abdominalis</i>      |                    |                  | X                         | X                  |                 |                     |                 | X               |
| 5280     | Crambidae | <i>Herpetogramma aeglealis</i>        |                    |                  | X                         |                    |                 |                     |                 | X               |
| 5299.1   | Crambidae | <i>Acentria ephemerella</i>           |                    |                  |                           | X                  |                 |                     |                 |                 |
| 5355     | Crambidae | <i>Crambus praefectellus</i>          |                    | X                |                           | X                  | X               |                     |                 | X               |
| 5357     | Crambidae | <i>Crambus leachellus</i>             |                    | X                | X                         | X                  | X               |                     |                 | X               |
| 5362     | Crambidae | <i>Crambus agitatellus</i>            | X                  |                  | X                         | X                  | X               |                     | X               | X               |
| 5363     | Crambidae | <i>Crambus saltuellus</i>             |                    | X                | X                         | X                  |                 |                     |                 |                 |
| 5379     | Crambidae | <i>Neodactria luteolellus</i> complex | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 5391     | Crambidae | <i>Chrysoteuchia topiarius</i>        | X                  |                  | X                         | X                  |                 |                     | X               |                 |
| 5399     | Crambidae | <i>Agriphila ruricolellus</i>         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 5403     | Crambidae | <i>Agriphila vulgivagellus</i>        | X                  | X                | X                         |                    |                 |                     |                 | X               |
| 5413     | Crambidae | <i>Pediasia trisecta</i>              |                    | X                | X                         |                    | X               |                     | X               |                 |
| 5420     | Crambidae | <i>Microcrambus elegans</i>           | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 5422     | Crambidae | <i>Microcrambus minor</i>             |                    |                  |                           | X                  |                 |                     |                 |                 |
| 5435     | Crambidae | <i>Fissicrambus mutabilis</i>         | X                  | X                | X                         |                    |                 |                     | X               | X               |
| 5450     | Crambidae | <i>Parapediasia decorellus</i>        |                    |                  | X                         |                    |                 |                     | X               |                 |
| 5451     | Crambidae | <i>Parapediasia teterrella</i>        | X                  |                  |                           |                    |                 |                     |                 |                 |
| 5464     | Crambidae | <i>Urola nivalis</i>                  |                    |                  |                           | X                  | X               |                     | X               | X               |
| 5465     | Crambidae | <i>Argyria auratella</i>              | X                  |                  |                           |                    |                 |                     |                 |                 |

| Hodges # | Family        | Species                               | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|---------------|---------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 5482     | Crambidae     | <i>Haimbachia squamulella</i>         |                    | X                |                           |                    |                 |                     |                 |                 |
| 5492     | Crambidae     | <i>Eoreuma densella</i>               | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 5498     | Crambidae     | <i>Eoreuma crawfordi</i>              |                    |                  |                           |                    |                 |                     | X               | X               |
| 5509.99  | Crambidae     | Unidentified Crambidae                | X                  | X                |                           | X                  |                 |                     | X               |                 |
| 5512     | Pyralidae     | <i>Aglossa disciferalis</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |
| 5518     | Pyralidae     | <i>Aglossa cuprina</i>                |                    |                  | X                         |                    |                 |                     |                 | X               |
| 5524     | Pyralidae     | <i>Hypsopygia costalis</i>            |                    |                  |                           | X                  |                 |                     |                 | X               |
| 5533     | Pyralidae     | <i>Dolichomia olinalis</i>            |                    | X                | X                         |                    |                 |                     |                 | X               |
| 5552     | Pyralidae     | <i>Galasa nigrinodis</i>              |                    |                  | X                         |                    |                 |                     |                 |                 |
| 5566     | Pyralidae     | <i>Arta statalis</i>                  |                    |                  | X                         | X                  |                 |                     | X               | X               |
| 5571     | Pyralidae     | <i>Condylolomia participalis</i>      |                    |                  | X                         |                    |                 |                     |                 |                 |
| 5608     | Pyralidae     | <i>Pococera expandens</i>             |                    |                  |                           | X                  |                 |                     |                 |                 |
| 5620.9   | Pyralidae     | <i>Pococera</i> spp.                  |                    |                  | X                         |                    |                 |                     |                 | X               |
| 5661     | Pyralidae     | <i>Acrobasis juglandis</i>            |                    |                  | X                         | X                  |                 |                     | X               | X               |
| 5694.9   | Pyralidae     | <i>Acrobasis</i> spp.                 |                    |                  |                           |                    |                 |                     |                 | X               |
| 5791     | Pyralidae     | <i>Sciota rubescentella</i>           |                    |                  |                           | X                  |                 |                     |                 |                 |
| 5794     | Pyralidae     | <i>Sciota vetustella</i>              |                    |                  |                           |                    |                 |                     |                 | X               |
| 5968     | Pyralidae     | <i>Zophodia grossulariella</i>        |                    |                  |                           |                    |                 |                     | X               |                 |
| 5999     | Pyralidae     | <i>Eulogia ochrifrontella</i>         |                    | X                | X                         | X                  |                 |                     | X               |                 |
| 6005     | Pyralidae     | <i>Moodna ostrinella</i>              |                    |                  |                           |                    |                 |                     | X               |                 |
| 6043     | Pyralidae     | <i>Peoria bipartitella</i>            |                    |                  | X                         | X                  |                 |                     |                 |                 |
| 6067     | Pyralidae     | <i>Atascosa glareosella</i>           |                    | X                |                           | X                  |                 |                     |                 |                 |
| 6075.99  | Pyralidae     | Unidentified Pyralidae                |                    | X                |                           | X                  | X               |                     | X               | X               |
| 6076     | Thyrididae    | <i>Thyris maculata</i>                |                    | X                |                           |                    |                 |                     |                 |                 |
| 6109     | Pterophoridae | <i>Platyptilia carduidactylus</i>     |                    | X                |                           |                    | X               |                     |                 | X               |
| 6204     | Pterophoridae | <i>Hellinsia elliottii</i>            | X                  |                  |                           |                    |                 |                     |                 |                 |
| 6213     | Pterophoridae | <i>Hellinsia lacteodactylus</i>       |                    |                  |                           | X                  |                 |                     |                 |                 |
| 6234     | Pterophoridae | <i>Emmelina monodactyla</i>           |                    |                  |                           |                    | X               |                     |                 |                 |
| 6234.99  | Pterophoridae | Unidentified Pterophoridae            |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6237     | Drepanidae    | <i>Pseudothyatira cymatophoroides</i> |                    |                  |                           |                    |                 |                     |                 | X               |
| 6253     | Drepanidae    | <i>Eudellinia herminiata</i>          | X                  |                  |                           |                    |                 |                     |                 |                 |
| 6272     | Geometridae   | <i>Eumacaria madopata</i>             |                    |                  |                           |                    |                 |                     | X               |                 |
| 6273     | Geometridae   | <i>Speranza pustularia</i>            |                    |                  |                           |                    |                 |                     |                 | X               |
| 6274     | Geometridae   | <i>Speranza ribearia</i>              | X                  |                  | X                         |                    | X               |                     |                 |                 |
| 6303     | Geometridae   | <i>Speranza subcessaria</i>           |                    |                  | X                         |                    |                 |                     |                 |                 |

| Hodges # | Family      | Species                         | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-------------|---------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 6326     | Geometridae | <i>Macaria aemulataria</i>      |                    |                  |                           | X                  |                 |                     | X               |                 |
| 6353     | Geometridae | <i>Macaria multilineata</i>     |                    |                  |                           |                    |                 |                     | X               |                 |
| 6358     | Geometridae | <i>Digrammia ordinata</i>       |                    |                  |                           |                    |                 |                     | X               | X               |
| 6362     | Geometridae | <i>Digrammia continuata</i>     |                    | X                | X                         | X                  |                 |                     |                 | X               |
| 6386     | Geometridae | <i>Digrammia ocellinata</i>     |                    |                  |                           | X                  |                 |                     |                 |                 |
| 6405     | Geometridae | <i>Digrammia gnophosaria</i>    | X                  | X                |                           |                    |                 |                     |                 |                 |
| 6419     | Geometridae | <i>Isturgia dislocaria</i>      |                    |                  |                           |                    |                 |                     | X               |                 |
| 6443     | Geometridae | <i>Glenoides texanaria</i>      |                    | X                |                           |                    |                 |                     |                 |                 |
| 6584     | Geometridae | <i>Iridopsis humaria</i>        |                    |                  | X                         | X                  | X               |                     |                 |                 |
| 6588     | Geometridae | <i>Iridopsis larvaria</i>       |                    |                  | X                         |                    |                 |                     |                 | X               |
| 6590     | Geometridae | <i>Anavitrinella pampinaria</i> |                    | X                | X                         | X                  |                 |                     | X               | X               |
| 6597     | Geometridae | <i>Ectropis crepuscularia</i>   |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6620     | Geometridae | <i>Melanolophia canadaria</i>   |                    |                  |                           |                    |                 |                     |                 | X               |
| 6621     | Geometridae | <i>Melanolophia signataria</i>  |                    |                  |                           |                    |                 |                     | X               |                 |
| 6640     | Geometridae | <i>Biston betularia</i>         |                    |                  |                           |                    |                 |                     | X               | X               |
| 6654     | Geometridae | <i>Hypagyrtis unipunctata</i>   |                    |                  |                           |                    |                 |                     |                 | X               |
| 6658     | Geometridae | <i>Phigalia titea</i>           |                    |                  | X                         |                    |                 |                     |                 | X               |
| 6660     | Geometridae | <i>Phigalia strigataria</i>     |                    |                  | X                         |                    |                 |                     |                 | X               |
| 6662     | Geometridae | <i>Paleacrita vernata</i>       |                    |                  |                           | X                  |                 |                     |                 | X               |
| 6665     | Geometridae | <i>Erannis tiliaria</i>         |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6677     | Geometridae | <i>Cabera erythemaria</i>       | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 6678     | Geometridae | <i>Cabera variolaria</i>        | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 6724     | Geometridae | <i>Euchlaena serrata</i>        |                    |                  | X                         |                    | X               |                     |                 |                 |
| 6731     | Geometridae | <i>Euchlaena madusaria</i>      |                    |                  |                           |                    |                 |                     |                 | X               |
| 6748     | Geometridae | <i>Pero anctaria</i>            |                    |                  | X                         | X                  |                 |                     | X               | X               |
| 6753     | Geometridae | <i>Pero honestaria</i>          | X                  |                  |                           |                    |                 |                     | X               |                 |
| 6763     | Geometridae | <i>Phaeoura quernaria</i>       |                    |                  |                           |                    |                 |                     | X               |                 |
| 6796     | Geometridae | <i>Campaea perlata</i>          |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6797     | Geometridae | <i>Ennomos magnaria</i>         |                    |                  |                           |                    |                 |                     |                 | X               |
| 6798     | Geometridae | <i>Ennomos subsignaria</i>      |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6819     | Geometridae | <i>Metanema inatomaria</i>      |                    |                  |                           |                    |                 |                     | X               | X               |
| 6822     | Geometridae | <i>Metarranthis duaria</i>      |                    |                  |                           |                    |                 |                     | X               |                 |
| 6841     | Geometridae | <i>Plagodis kuetzingi</i>       |                    |                  |                           |                    |                 |                     |                 | X               |
| 6842     | Geometridae | <i>Plagodis phlogosaria</i>     |                    |                  |                           |                    |                 |                     |                 | X               |
| 6941     | Geometridae | <i>Eusarca confusaria</i>       | X                  | X                | X                         | X                  | X               |                     | X               | X               |

| Hodges # | Family        | Species                             | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|---------------|-------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 6963     | Geometridae   | <i>Tetracis crocallata</i>          |                    |                  |                           |                    |                 |                     | X               |                 |
| 6965     | Geometridae   | <i>Eugonobapta nivosaria</i>        |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6966     | Geometridae   | <i>Eutrapela clemataria</i>         |                    |                  | X                         |                    |                 |                     |                 |                 |
| 6982     | Geometridae   | <i>Prochoerodes lineola</i>         |                    |                  |                           | X                  |                 |                     |                 |                 |
| 6987     | Geometridae   | <i>Antepione thisoaria</i>          |                    |                  |                           |                    |                 |                     | X               | X               |
| 7058     | Geometridae   | <i>Synchlora aerata</i>             |                    | X                | X                         |                    | X               |                     |                 |                 |
| 7071     | Geometridae   | <i>Chlorochlamys chloroleucaria</i> |                    |                  |                           |                    |                 |                     | X               |                 |
| 7114     | Geometridae   | <i>Idaea demissaria</i>             |                    | X                |                           | X                  |                 |                     | X               | X               |
| 7132     | Geometridae   | <i>Pleuroprucha insulsaria</i>      |                    | X                |                           | X                  |                 |                     |                 | X               |
| 7136     | Geometridae   | <i>Cyclophora packardi</i>          |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7146     | Geometridae   | <i>Haematopis grataria</i>          |                    |                  |                           |                    |                 |                     | X               |                 |
| 7159     | Geometridae   | <i>Scopula limboundata</i>          | X                  |                  |                           | X                  | X               |                     |                 | X               |
| 7169     | Geometridae   | <i>Scopula inductata</i>            |                    |                  | X                         |                    | X               |                     | X               |                 |
| 7196     | Geometridae   | <i>Eulithis diversilineata</i>      |                    |                  |                           |                    | X               |                     |                 | X               |
| 7197     | Geometridae   | <i>Eulithis gracilineata</i>        |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7203     | Geometridae   | <i>Eulithis molliculata</i>         |                    |                  |                           |                    |                 |                     |                 | X               |
| 7237     | Geometridae   | <i>Hydriomena transfigurata</i>     |                    |                  |                           |                    |                 |                     | X               |                 |
| 7291     | Geometridae   | <i>Rheumaptera</i> spp.             |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7333     | Geometridae   | <i>Stamnodes gibbicostata</i>       |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7388     | Geometridae   | <i>Xanthorhoe ferrugata</i>         |                    |                  |                           | X                  |                 |                     | X               |                 |
| 7390     | Geometridae   | <i>Xanthorhoe lacustrata</i>        |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7414     | Geometridae   | <i>Orthonama obstipata</i>          | X                  | X                |                           | X                  |                 |                     | X               |                 |
| 7416     | Geometridae   | <i>Costaconvexa centrostrigaria</i> | X                  | X                | X                         | X                  | X               |                     |                 |                 |
| 7417     | Geometridae   | <i>Disclisioprocta stellata</i>     |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7419     | Geometridae   | <i>Hydrelia lucata</i>              |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7440     | Geometridae   | <i>Eubaphe mendica</i>              | X                  |                  | X                         | X                  |                 |                     |                 |                 |
| 7445     | Geometridae   | <i>Horisme intestinata</i>          | X                  |                  | X                         |                    |                 |                     | X               | X               |
| 7605.9   | Geometridae   | <i>Eupithecia</i> spp.              |                    | X                | X                         | X                  | X               |                     | X               |                 |
| 7645     | Geometridae   | <i>Heterophleps refusaria</i>       |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7647     | Geometridae   | <i>Heterophleps triguttaria</i>     |                    | X                |                           |                    |                 |                     |                 | X               |
| 7648.99  | Geometridae   | Unidentified Geometridae            |                    |                  |                           | X                  |                 |                     | X               | X               |
| 7670     | Lasiocampidae | <i>Tolype vellea</i>                | X                  |                  |                           |                    |                 |                     |                 |                 |
| 7687     | Lasiocampidae | <i>Phyllodesma americana</i>        |                    |                  | X                         |                    |                 |                     |                 | X               |
| 7698     | Lasiocampidae | <i>Malacosoma disstria</i>          |                    |                  |                           |                    | X               |                     |                 | X               |
| 7701     | Lasiocampidae | <i>Malacosoma americana</i>         |                    |                  |                           |                    | X               |                     |                 |                 |

| Hodges # | Family       | Species                        | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|--------------|--------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 7758     | Saturniidae  | <i>Actias luna</i>             |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7764     | Saturniidae  | <i>Callosamia promethea</i>    |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7775     | Sphingidae   | <i>Manduca sexta</i>           |                    |                  |                           |                    | X               |                     | X               |                 |
| 7786     | Sphingidae   | <i>Ceratomia amyntor</i>       |                    |                  | X                         | X                  |                 |                     |                 | X               |
| 7796     | Sphingidae   | <i>Lintneria eremitus</i>      |                    |                  |                           |                    | X               |                     |                 |                 |
| 7807     | Sphingidae   | <i>Sphinx canadensis</i>       |                    |                  |                           |                    |                 |                     |                 | X               |
| 7821     | Sphingidae   | <i>Smerinthus jamaicensis</i>  | X                  |                  |                           |                    |                 |                     | X               |                 |
| 7824     | Sphingidae   | <i>Paonias excaecata</i>       | X                  |                  |                           |                    |                 |                     |                 |                 |
| 7825     | Sphingidae   | <i>Paonias myops</i>           |                    |                  | X                         |                    |                 |                     |                 | X               |
| 7827     | Sphingidae   | <i>Laothoe juglandis</i>       |                    |                  | X                         | X                  |                 |                     | X               |                 |
| 7855     | Sphingidae   | <i>Hemaris diffinis</i>        |                    |                  |                           |                    |                 | X                   | X               |                 |
| 7859     | Sphingidae   | <i>Eumorpha pandorus</i>       |                    |                  |                           |                    |                 |                     | X               |                 |
| 7873     | Sphingidae   | <i>Amphion floridensis</i>     |                    | X                | X                         |                    |                 |                     |                 |                 |
| 7885     | Sphingidae   | <i>Darapsa myron</i>           |                    |                  | X                         | X                  |                 |                     |                 | X               |
| 7894     | Sphingidae   | <i>Hyles lineata</i>           |                    |                  |                           |                    |                 |                     | X               |                 |
| 7895     | Notodontidae | <i>Clostera albosigma</i>      | X                  |                  |                           |                    |                 |                     |                 |                 |
| 7902     | Notodontidae | <i>Datana ministra</i>         |                    |                  |                           |                    |                 |                     |                 | X               |
| 7903     | Notodontidae | <i>Datana angusii</i>          |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7906     | Notodontidae | <i>Datana contracta</i>        |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7908     | Notodontidae | <i>Datana perspicua</i>        |                    |                  |                           | X                  |                 |                     |                 | X               |
| 7915     | Notodontidae | <i>Nadata gibbosa</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 7917     | Notodontidae | <i>Hyperaeschra georgica</i>   |                    |                  |                           | X                  |                 |                     |                 | X               |
| 7920     | Notodontidae | <i>Peridea angulosa</i>        |                    |                  |                           |                    |                 |                     |                 | X               |
| 7922     | Notodontidae | <i>Pheosia rimosa</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 7930     | Notodontidae | <i>Ellida caniplaga</i>        |                    |                  | X                         | X                  |                 |                     |                 |                 |
| 7931     | Notodontidae | <i>Gluphisia septentrionis</i> |                    |                  |                           |                    |                 |                     | X               |                 |
| 7936     | Notodontidae | <i>Furcula borealis</i>        |                    |                  |                           |                    |                 |                     | X               | X               |
| 7939     | Notodontidae | <i>Furcula occidentalis</i>    |                    |                  |                           | X                  |                 |                     |                 |                 |
| 7975     | Notodontidae | <i>Macrurocampa marthesia</i>  |                    |                  | X                         |                    |                 |                     |                 |                 |
| 7985     | Notodontidae | <i>Heterocampa subrotata</i>   |                    |                  |                           | X                  |                 |                     |                 |                 |
| 8005     | Notodontidae | <i>Schizura ipomoeae</i>       |                    |                  |                           | X                  |                 |                     |                 |                 |
| 8011     | Notodontidae | <i>Schizura leptinoides</i>    |                    |                  | X                         |                    |                 |                     | X               | X               |
| 8017     | Notodontidae | <i>Oligocentria lignicolor</i> |                    |                  |                           |                    |                 |                     |                 | X               |
| 8045.1   | Noctuidae    | <i>Crambidia pallida</i>       | X                  | X                | X                         |                    |                 |                     | X               |                 |
| 8089     | Noctuidae    | <i>Hypoprepia miniata</i>      |                    |                  | X                         | X                  |                 |                     | X               |                 |

| Hodges #    | Family           | Species                          | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|-------------|------------------|----------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 8090        | Noctuidae        | <i>Hypoprepia fucosa</i>         |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 8098        | Noctuidae        | <i>Clemensia albata</i>          |                    |                  | X                         |                    |                 |                     |                 |                 |
| 8109        | Noctuidae        | <i>Haploa reversa</i>            |                    | X                | X                         |                    | X               |                     | X               | X               |
| 8121        | Noctuidae        | <i>Virbia aurantiaca</i>         |                    | X                |                           | X                  | X               |                     | X               |                 |
| <b>8131</b> | <b>Noctuidae</b> | <b><i>Estigmene acrea</i></b>    |                    |                  |                           |                    |                 |                     | X               |                 |
| 8134        | Noctuidae        | <i>Spilosoma congrua</i>         |                    | X                |                           |                    |                 |                     |                 | X               |
| 8137        | Noctuidae        | <i>Spilosoma virginica</i>       |                    |                  |                           |                    |                 |                     | X               |                 |
| 8140        | Noctuidae        | <i>Hyphantria cunea</i>          |                    |                  |                           |                    |                 |                     | X               | X               |
| 8146        | Noctuidae        | <i>Hypercompe scribonia</i>      |                    |                  |                           |                    | X               |                     |                 |                 |
| 8156        | Noctuidae        | <i>Phragmatobia fuliginosa</i>   | X                  |                  |                           | X                  |                 |                     |                 |                 |
| 8169        | Noctuidae        | <i>Apantesis phalerata</i>       |                    |                  |                           |                    | X               |                     | X               | X               |
| 8171        | Noctuidae        | <i>Apantesis nais</i>            |                    |                  |                           |                    |                 |                     | X               |                 |
| 8171.1      | Noctuidae        | <i>Apantesis carlotta</i>        |                    |                  |                           |                    |                 |                     |                 | X               |
| 8175        | Noctuidae        | <i>Grammia virguncula</i>        |                    |                  |                           |                    | X               |                     |                 |                 |
| 8188        | Noctuidae        | <i>Grammia figurata</i>          |                    | X                |                           |                    |                 |                     |                 |                 |
| 8197        | Noctuidae        | <i>Grammia virgo</i>             | X                  |                  |                           |                    |                 |                     |                 |                 |
| 8199        | Noctuidae        | <i>Grammia arge</i>              |                    |                  |                           |                    | X               |                     | X               |                 |
| 8203        | Noctuidae        | <i>Halysidota tessellaris</i>    |                    |                  | X                         | X                  | X               |                     | X               | X               |
| <b>8228</b> | <b>Noctuidae</b> | <b><i>Cycnia inopinatus</i></b>  |                    |                  | P                         |                    |                 |                     | X               |                 |
| 8231        | Noctuidae        | <i>Cycnia oregonensis</i>        |                    |                  |                           |                    |                 |                     | X               |                 |
| 8238        | Noctuidae        | <i>Euchaetes egle</i>            |                    |                  |                           |                    | X               |                     |                 | X               |
| 8262        | Noctuidae        | <i>Ctenucha virginica</i>        |                    |                  |                           | X                  | X               |                     |                 |                 |
| 8267        | Noctuidae        | <i>Ciseps fulvicollis</i>        |                    |                  |                           |                    |                 |                     | X               |                 |
| 8296        | Noctuidae        | <i>Dasychira basiflava</i>       |                    |                  |                           |                    |                 |                     |                 | X               |
| 8314        | Noctuidae        | <i>Orgyia definita</i>           | X                  |                  |                           |                    |                 |                     |                 |                 |
| 8316        | Noctuidae        | <i>Orgyia leucostigma</i>        |                    |                  | X                         | X                  |                 |                     |                 |                 |
| 8318        | Noctuidae        | <i>Lymantria dispar</i>          |                    |                  | X                         |                    |                 |                     |                 |                 |
| 8322        | Noctuidae        | <i>Idia americalis</i>           |                    | X                | X                         | X                  | X               |                     |                 | X               |
| 8323        | Noctuidae        | <i>Idia aemula</i>               |                    | X                | X                         |                    |                 |                     |                 | X               |
| 8323.1      | Noctuidae        | <i>Idia concisa</i>              | X                  |                  |                           |                    |                 |                     |                 |                 |
| 8324        | Noctuidae        | <i>Idia majoralis</i>            |                    |                  | X                         |                    |                 |                     |                 |                 |
| <b>8329</b> | <b>Noctuidae</b> | <b><i>Idia diminuendis</i></b>   |                    |                  |                           |                    |                 |                     |                 | X               |
| 8334        | Noctuidae        | <i>Idia lubricalis</i>           |                    | X                | X                         |                    |                 |                     |                 | X               |
| 8338        | Noctuidae        | <i>Phalaenophana pyramusalis</i> |                    |                  |                           |                    |                 |                     | X               |                 |
| 8345        | Noctuidae        | <i>Zanclognatha laevigata</i>    |                    |                  | X                         |                    |                 |                     |                 | X               |

| Hodges # | Family    | Species                            | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-----------|------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 8349.1   | Noctuidae | <i>Zanclognatha dentata</i>        |                    |                  |                           | X                  |                 |                     |                 |                 |
| 8352     | Noctuidae | <i>Zanclognatha marcidilinea</i>   |                    |                  | X                         |                    |                 |                     |                 |                 |
| 8353     | Noctuidae | <i>Zanclognatha jacchusalis</i>    |                    | X                | X                         |                    |                 |                     |                 | X               |
| 8357.1   | Noctuidae | <i>Macrochilo hypocriticalis</i>   | X                  |                  |                           |                    |                 |                     |                 |                 |
| 8362     | Noctuidae | <i>Phalaenostola metonalis</i>     | X                  |                  |                           |                    | X               |                     |                 |                 |
| 8363     | Noctuidae | <i>Phalaenostola eumelusalis</i>   |                    |                  |                           |                    | X               |                     |                 |                 |
| 8364     | Noctuidae | <i>Phalaenostola larentioides</i>  |                    |                  | X                         |                    |                 |                     | X               |                 |
| 8370     | Noctuidae | <i>Bleptina caradrinalis</i>       |                    |                  | X                         | X                  | X               |                     |                 |                 |
| 8379     | Noctuidae | <i>Renia factiosalis</i>           |                    |                  | X                         |                    |                 |                     |                 | X               |
| 8384.1   | Noctuidae | <i>Renia flavipunctalis</i>        |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 8393     | Noctuidae | <i>Lascoria ambigualis</i>         |                    |                  |                           |                    |                 |                     | X               |                 |
| 8397     | Noctuidae | <i>Palthis angulalis</i>           |                    |                  |                           |                    |                 |                     | X               | X               |
| 8421     | Noctuidae | <i>Hypenodes fractilinea</i>       | X                  |                  |                           |                    |                 |                     |                 |                 |
| 8447     | Noctuidae | <i>Hypena madefactalis</i>         |                    |                  | X                         |                    |                 |                     |                 | X               |
| 8452     | Noctuidae | <i>Hypena edictalis</i>            |                    |                  | X                         |                    |                 |                     |                 |                 |
| 8461     | Noctuidae | <i>Hypena humuli</i>               |                    |                  | X                         |                    | X               |                     |                 |                 |
| 8465     | Noctuidae | <i>Hypena scabra</i>               | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 8479     | Noctuidae | <i>Spargaloma sexpunctata</i>      |                    |                  |                           |                    | X               |                     |                 |                 |
| 8500     | Noctuidae | <i>Metalectra quadrisignata</i>    |                    |                  |                           |                    |                 |                     |                 | X               |
| 8534     | Noctuidae | <i>Plusiodonta compressipalpis</i> | X                  | X                | X                         |                    |                 |                     |                 | X               |
| 8536     | Noctuidae | <i>Calyptra canadensis</i>         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 8587     | Noctuidae | <i>Panopoda rufimargo</i>          |                    |                  |                           |                    |                 |                     |                 | X               |
| 8689     | Noctuidae | <i>Zale lunata</i>                 |                    | X                | X                         |                    | X               |                     |                 | X               |
| 8692     | Noctuidae | <i>Zale galbanata</i>              |                    | X                | X                         |                    |                 |                     |                 |                 |
| 8727     | Noctuidae | <i>Parallelia bistris</i>          |                    | X                |                           |                    |                 |                     |                 |                 |
| 8738     | Noctuidae | <i>Caenurgina crassiuscula</i>     |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 8739     | Noctuidae | <i>Caenurgina erechtea</i>         |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 8745     | Noctuidae | <i>Mocis texana</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 8764     | Noctuidae | <i>Argyrostromis anilis</i>        |                    |                  |                           | X                  |                 |                     |                 |                 |
| 8771     | Noctuidae | <i>Catocala piatrix</i>            |                    | X                |                           |                    |                 |                     |                 | X               |
| 8778     | Noctuidae | <i>Catocala habilis</i>            |                    |                  |                           |                    |                 |                     |                 | X               |
| 8788     | Noctuidae | <i>Catocala resecta</i>            |                    |                  |                           |                    |                 |                     |                 | X               |
| 8795     | Noctuidae | <i>Catocala palaeogama</i>         |                    |                  |                           |                    |                 |                     |                 | X               |
| 8798     | Noctuidae | <i>Catocala neogama</i>            |                    |                  | X                         |                    |                 |                     |                 | X               |
| 8801     | Noctuidae | <i>Catocala ilia</i>               |                    | X                | X                         |                    |                 |                     |                 | X               |





| Hodges # | Family    | Species   | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-----------|---|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 9193     | Noctuidae | <i>Raphia frater</i>                            |                    | X                | X                         |                    |                 |                     | X               | X               |
| 9199     | Noctuidae | <i>Acronicta rubricoma</i>                      |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9200     | Noctuidae | <i>Acronicta americana</i>                      |                    |                  |                           | X                  | X               |                     |                 | X               |
| 9203     | Noctuidae | <i>Acronicta dactylina</i>                      |                    |                  |                           | X                  |                 |                     |                 |                 |
| 9229     | Noctuidae | <i>Acronicta hasta</i>                          |                    |                  |                           | X                  |                 |                     | X               |                 |
| 9235     | Noctuidae | <i>Acronicta spinigera</i>                      |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9238     | Noctuidae | <i>Acronicta lobeliae</i>                       |                    |                  |                           | X                  |                 |                     |                 | X               |
| 9249     | Noctuidae | <i>Acronicta increta</i>                        |                    |                  |                           |                    |                 |                     |                 | X               |
| 9280     | Noctuidae | <i>Simyra insularis</i>                         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9284     | Noctuidae | <i>Anterastra teratophora</i>                   |                    |                  |                           | X                  |                 |                     | X               | X               |
| 9367     | Noctuidae | <i>Apamea dubitans</i>                          |                    |                  |                           |                    |                 |                     | X               | X               |
| 9372     | Noctuidae | <i>Apamea lutosa</i>                            |                    |                  |                           |                    | X               |                     |                 |                 |
| 9373     | Noctuidae | <i>Apamea helva</i>                             |                    |                  |                           |                    |                 |                     | X               |                 |
| 9378     | Noctuidae | <i>Apamea burgessi</i>                          |                    |                  | X                         |                    |                 |                     |                 |                 |
| 9380     | Noctuidae | <i>Apamea relicina</i>                          |                    |                  |                           | X                  |                 |                     |                 |                 |
| 9382     | Noctuidae | <i>Apamea devastator</i>                        |                    |                  | X                         |                    |                 |                     |                 |                 |
| 9385.1   | Noctuidae | <i>Lateroligia ophiogramma</i>                  | X                  |                  |                           | X                  |                 |                     |                 | X               |
| 9391     | Noctuidae | <i>Resapamea passer</i>                         | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9393     | Noctuidae | <i>Resapamea stipata</i>                        | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9402     | Noctuidae | <i>Oligia chlorostigma</i>                      |                    |                  |                           | X                  |                 |                     |                 |                 |
| 9404     | Noctuidae | <i>Oligia modica</i>                            | X                  | X                |                           |                    |                 |                     |                 |                 |
| 9406     | Noctuidae | <i>Mesapamea fractilinea</i>                    |                    |                  | X                         |                    |                 |                     |                 |                 |
| 9408     | Noctuidae | <i>Neoligia exhausta</i>                        |                    |                  |                           |                    | X               |                     |                 |                 |
| 9419     | Noctuidae | <i>Platypolia mactata</i>                       |                    | X                | X                         |                    | X               |                     |                 | X               |
| 9428     | Noctuidae | <i>Meropleon ambifusca</i>                      | X                  |                  | X                         |                    | X               |                     | X               |                 |
| 9433     | Noctuidae | <i>Xylomoia chagnoni</i>                        | X                  |                  | X                         |                    |                 |                     |                 |                 |
| 9435     | Noctuidae | <i>Photedes inops</i>                           | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9453     | Noctuidae | <i>Helotropha reniformis</i>                    | X                  |                  |                           |                    |                 |                     |                 | X               |
| 9454     | Noctuidae | <i>Loscopia velata</i>                          |                    | X                |                           | X                  | X               |                     |                 |                 |
| 9457.9   | Noctuidae | <i>Amphipoea</i> spp. ( <i>americana</i> group) | X                  |                  |                           |                    |                 |                     | X               |                 |
| 9464     | Noctuidae | <i>Papaipema cerina</i>                         |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9473     | Noctuidae | <i>Papaipema impecuniosa</i>                    | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9484     | Noctuidae | <i>Papaipema rutila</i>                         |                    |                  | X                         | X                  |                 |                     |                 |                 |
| 9492     | Noctuidae | <i>Papaipema marginidens</i>                    |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9495     | Noctuidae | <i>Papaipema furcata</i>                        | X                  |                  |                           |                    |                 |                     |                 |                 |

| Hodges # | Family    | Species                                     | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|-----------|---|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 9497     | Noctuidae | <i>Papaipema necopina</i>                   | X                  | X                |                           |                    | X               |                     |                 |                 |
| 9500     | Noctuidae | <i>Papaipema maritima</i>                   |                    |                  |                           |                    |                 |                     |                 | X               |
| 9501     | Noctuidae | <i>Papaipema eupatorii</i>                  |                    |                  |                           |                    | X               |                     |                 |                 |
| 9503     | Noctuidae | <i>Papaipema rigida</i>                     | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9513     | Noctuidae | <i>Hydraecia immanis</i>                    | X                  |                  |                           |                    |                 |                     |                 | X               |
| 9516     | Noctuidae | <i>Hydraecia stramentosa</i>                |                    |                  |                           |                    | X               |                     |                 | X               |
| 9547     | Noctuidae | <i>Phlogophora periculosa</i>               |                    |                  |                           |                    |                 |                     |                 | X               |
| 9556     | Noctuidae | <i>Chytonix palliatricula</i>               |                    |                  |                           |                    |                 |                     |                 | X               |
| 9560     | Noctuidae | <i>Dypterygia rozmani</i>                   |                    | X                | X                         | X                  | X               |                     |                 |                 |
| 9578     | Noctuidae | <i>Hyppa xylinoides</i>                     |                    |                  |                           | X                  |                 |                     |                 |                 |
| 9582     | Noctuidae | <i>Nedra ramosula</i>                       |                    |                  |                           |                    | X               |                     | X               | X               |
| 9638     | Noctuidae | <i>Amphipyra pyramidoides</i>               |                    | X                | X                         |                    |                 |                     | X               | X               |
| 9639     | Noctuidae | <i>Amphipyra tragopoginis</i>               |                    |                  |                           |                    | X               |                     | X               |                 |
| 9647     | Noctuidae | <i>Proxenus miranda</i>                     |                    | X                |                           | X                  | X               |                     | X               | X               |
| 9661     | Noctuidae | <i>Crambodes talidiformis</i>               |                    |                  |                           |                    |                 |                     | X               | X               |
| 9662     | Noctuidae | <i>Balsa malana</i>                         |                    |                  |                           |                    |                 |                     | X               |                 |
| 9665     | Noctuidae | <i>Spodoptera exigua</i>                    | X                  | X                | X                         | X                  | X               |                     |                 | X               |
| 9666     | Noctuidae | <i>Spodoptera frugiperda</i>                | X                  |                  | X                         | X                  | X               |                     |                 |                 |
| 9669     | Noctuidae | <i>Spodoptera ornithogalli</i>              |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 9678     | Noctuidae | <i>Elaphria versicolor</i>                  |                    |                  | X                         |                    |                 |                     |                 |                 |
| 9679     | Noctuidae | <i>Elaphria chalcedonia</i>                 |                    | X                | X                         | X                  |                 |                     | X               | X               |
| 9684     | Noctuidae | <i>Elaphria grata</i>                       |                    | X                | X                         |                    |                 |                     | X               | X               |
| 9688     | Noctuidae | <i>Galgula partita</i>                      | X                  | X                |                           | X                  | X               |                     | X               | X               |
| 9690     | Noctuidae | <i>Condica videns</i>                       | X                  | X                |                           |                    | X               |                     | X               |                 |
| 9720     | Noctuidae | <i>Ogdoconta cinereola</i>                  | X                  |                  | X                         | X                  |                 |                     |                 |                 |
| 9815     | Noctuidae | <i>Cosmia calami</i>                        |                    |                  |                           | X                  |                 |                     |                 | X               |
| 9818     | Noctuidae | <i>Amolita fessa</i>                        | X                  |                  |                           |                    |                 |                     |                 |                 |
| 9874     | Noctuidae | <i>Xylena curvimacula</i>                   |                    |                  |                           |                    |                 |                     |                 | X               |
| 9885     | Noctuidae | <i>Lithophane semiusta</i>                  |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9886     | Noctuidae | <i>Lithophane patefacta</i>                 |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9887     | Noctuidae | <i>Lithophane bethunei</i>                  |                    | X                | X                         | X                  |                 |                     |                 | X               |
| 9888.1   | Noctuidae | <i>Lithophane franclemonti</i>              |                    |                  |                           |                    |                 |                     |                 | X               |
| 9892     | Noctuidae | <i>Lithophane disposita</i>                 |                    |                  |                           | X                  |                 |                     |                 |                 |
| 9892.1   | Noctuidae | <b><i>Lithophane sp. near disposita</i></b> |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9893     | Noctuidae | <i>Lithophane hemina</i>                    |                    |                  | X                         |                    |                 |                     |                 | X               |

| Hodges #     | Family           | Species                               | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|--------------|------------------|---------------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 9893.1       | Noctuidae        | <i>Lithophane lanei</i>               |                    |                  |                           | X                  |                 |                     |                 | X               |
| 9910         | Noctuidae        | <i>Lithophane antennata</i>           |                    |                  | X                         | X                  |                 |                     | X               | X               |
| 9915         | Noctuidae        | <i>Lithophane grotei</i>              |                    |                  |                           |                    |                 |                     |                 | X               |
| 9916         | Noctuidae        | <i>Lithophane unimoda</i>             |                    |                  | X                         | X                  |                 |                     |                 | X               |
| 9932         | Noctuidae        | <i>Pyreferra pettiti</i>              |                    |                  | X                         |                    |                 |                     |                 |                 |
| 9933         | Noctuidae        | <i>Eupsilia vinulenta</i>             |                    |                  | X                         |                    |                 |                     |                 | X               |
| 9933.2       | Noctuidae        | <i>Eupsilia</i> sp. near <i>sidus</i> |                    |                  |                           | X                  |                 |                     |                 | X               |
| 9935         | Noctuidae        | <i>Eupsilia tristigmata</i>           |                    |                  |                           | X                  |                 |                     |                 | X               |
| 9936         | Noctuidae        | <i>Eupsilia morrisoni</i>             |                    |                  | X                         | X                  |                 |                     |                 | X               |
| 9939         | Noctuidae        | <i>Eupsilia devia</i>                 |                    |                  |                           |                    |                 |                     |                 | X               |
| 9943         | Noctuidae        | <i>Metaxaglaea inulta</i>             | X                  | X                | X                         |                    | X               |                     |                 | X               |
| 9946         | Noctuidae        | <i>Epiglaea decliva</i>               |                    |                  |                           |                    |                 |                     |                 | X               |
| 9952         | Noctuidae        | <i>Eucirroedia pampina</i>            |                    | X                | X                         | X                  | X               |                     |                 | X               |
| 9957         | Noctuidae        | <i>Sunira bicolorago</i>              |                    | X                | X                         | X                  |                 |                     |                 | X               |
| 9961         | Noctuidae        | <i>Anathix ralla</i>                  |                    |                  | X                         |                    |                 |                     |                 |                 |
| 9962         | Noctuidae        | <i>Anathix puta</i>                   |                    | X                |                           |                    |                 |                     |                 | X               |
| 9965         | Noctuidae        | <i>Xanthia tatago</i>                 |                    | X                |                           |                    |                 |                     |                 |                 |
| <b>10013</b> | <b>Noctuidae</b> | <b><i>Psaphida grandis</i></b>        |                    |                  |                           |                    |                 |                     |                 | X               |
| 10014        | Noctuidae        | <i>Psaphida rolandi</i>               |                    |                  |                           |                    |                 |                     |                 | X               |
| 10019        | Noctuidae        | <i>Psaphida resumens</i>              |                    |                  |                           |                    |                 |                     |                 | X               |
| 10021        | Noctuidae        | <i>Copivaleria grotei</i>             |                    |                  |                           |                    |                 |                     |                 | X               |
| 10033        | Noctuidae        | <i>Catabena lineolata</i>             |                    |                  |                           |                    | X               |                     | X               |                 |
| 10177        | Noctuidae        | <i>Calophasia lunula</i>              |                    |                  |                           | X                  |                 |                     |                 |                 |
| 10200        | Noctuidae        | <i>Cucullia asteroides</i>            |                    |                  |                           | X                  |                 |                     |                 |                 |
| 10223        | Noctuidae        | <i>Anarta trifolii</i>                |                    |                  |                           |                    | X               |                     |                 | X               |
| 10265        | Noctuidae        | <i>Sideridis rosea</i>                |                    |                  |                           |                    |                 |                     | X               |                 |
| 10289        | Noctuidae        | <i>Orthodes goodelli</i>              |                    |                  |                           |                    |                 |                     | X               | X               |
| 10292        | Noctuidae        | <i>Melanchra adjuncta</i>             |                    |                  |                           |                    |                 |                     | X               | X               |
| 10299        | Noctuidae        | <i>Lacanobia subjuncta</i>            |                    |                  | X                         |                    |                 |                     | X               | X               |
| 10304        | Noctuidae        | <i>Trichordestra legitima</i>         |                    |                  |                           |                    |                 |                     | X               |                 |
| 10317        | Noctuidae        | <i>Hadena capsularis</i>              |                    |                  |                           |                    |                 |                     | X               |                 |
| 10368        | Noctuidae        | <i>Lacinipolia meditata</i>           |                    |                  | X                         | X                  | X               |                     |                 | X               |
| 10397        | Noctuidae        | <i>Lacinipolia renigera</i>           | X                  | X                |                           | X                  | X               |                     |                 |                 |
| 10405        | Noctuidae        | <i>Lacinipolia lorea</i>              |                    |                  | X                         |                    |                 |                     |                 |                 |
| 10406        | Noctuidae        | <i>Lacinipolia olivacea</i>           |                    |                  |                           |                    | X               |                     |                 |                 |



| Hodges # | Family       | Species                           | Root River Parkway | Lawrence Prairie | Abraham's Woods & Prairie | Stagecoach Prairie | Mueller Prairie | Doyle Road Prairies | Hogback Prairie | Hanson Prairies |
|----------|--------------|-----------------------------------|--------------------|------------------|---------------------------|--------------------|-----------------|---------------------|-----------------|-----------------|
| 10676    | Noctuidae    | <i>Feltia herilis</i>             | X                  | X                | X                         | X                  | X               |                     | X               | X               |
| 10705    | Noctuidae    | <i>Euxoa messoria</i>             |                    | X                | X                         | X                  | X               |                     |                 | X               |
| 10803    | Noctuidae    | <i>Euxoa velleripennis</i>        |                    | X                | X                         | X                  | X               |                     |                 |                 |
| 10805    | Noctuidae    | <i>Euxoa tessellata</i>           |                    |                  |                           | X                  | X               |                     |                 |                 |
| 10807    | Noctuidae    | <i>Euxoa albipennis</i>           |                    | X                |                           |                    |                 |                     |                 |                 |
| 10854    | Noctuidae    | <i>Euxoa servitus</i>             |                    |                  |                           |                    |                 |                     |                 | X               |
| 10868.9  | Noctuidae    | <i>Euxoa</i> spp.                 |                    | X                | X                         |                    |                 |                     |                 |                 |
| 10869    | Noctuidae    | <i>Dichagyris grotei</i>          |                    |                  | X                         |                    |                 |                     | X               |                 |
| 10878    | Noctuidae    | <i>Striacosta albicosta</i>       |                    | X                | X                         |                    |                 |                     |                 |                 |
| 10891    | Noctuidae    | <i>Ochropleura implecta</i>       |                    |                  | X                         |                    |                 |                     | X               |                 |
| 10903    | Noctuidae    | <i>Anicla illapsa</i>             |                    |                  |                           | X                  |                 |                     | X               | X               |
| 10911    | Noctuidae    | <i>Anicla infecta</i>             |                    | X                |                           |                    |                 |                     |                 |                 |
| 10915    | Noctuidae    | <i>Peridroma saucia</i>           |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 10942    | Noctuidae    | <i>Xestia c-nigrum</i>            |                    |                  | X                         |                    |                 |                     | X               | X               |
| 10942.1  | Noctuidae    | <i>Xestia dolosa</i>              |                    | X                | X                         |                    |                 |                     | X               |                 |
| 10943    | Noctuidae    | <i>Xestia normanianus</i>         |                    |                  |                           |                    |                 |                     |                 | X               |
| 10944    | Noctuidae    | <i>Xestia smithii</i>             | X                  | X                | X                         |                    |                 |                     | X               | X               |
| 10950    | Noctuidae    | <i>Pseudohermonassa bicarnea</i>  |                    | X                | X                         |                    |                 |                     | X               | X               |
| 10951    | Noctuidae    | <i>Pseudohermonassa tenuicula</i> |                    |                  |                           | X                  | X               |                     |                 |                 |
| 10955    | Noctuidae    | <i>Agnorisma badinodis</i>        |                    | X                | X                         |                    | X               |                     |                 | X               |
| 11003.1  | Noctuidae    | <i>Noctua pronuba</i>             |                    | X                | X                         | X                  | X               |                     | X               | X               |
| 11006    | Noctuidae    | <i>Protolampra brunneicollis</i>  | X                  | X                |                           | X                  | X               |                     | X               |                 |
| 11029    | Noctuidae    | <i>Abagrotis alternata</i>        |                    | X                | X                         |                    | X               |                     |                 | X               |
| 11043    | Noctuidae    | <i>Abagrotis cupida</i>           |                    |                  | X                         | X                  | X               |                     |                 |                 |
| 11045    | Noctuidae    | <i>Abagrotis anchocelioides</i>   |                    | X                | X                         |                    |                 |                     |                 | X               |
| 11063    | Noctuidae    | <i>Pyrrhia cilisca</i>            |                    |                  |                           |                    | X               |                     |                 |                 |
| 11068    | Noctuidae    | <i>Helicoverpa zea</i>            | X                  | X                |                           | X                  | X               |                     | X               |                 |
| 11117    | Noctuidae    | <i>Schinia lynx</i>               |                    | X                |                           |                    |                 |                     |                 |                 |
| 11128    | Noctuidae    | <i>Schinia arcigera</i>           |                    | X                |                           | X                  | X               |                     | X               |                 |
| 11148.1  | Noctuidae    | <i>Schinia grandimedia</i>        |                    | X                | X                         |                    |                 |                     | X               | X               |
| 11174    | Noctuidae    | <i>Schinia lucens</i>             |                    | X                | X                         | X                  | X               |                     |                 |                 |
| 11177    | Noctuidae    | <i>Schinia nudina</i>             |                    | X                |                           |                    |                 |                     |                 | X               |
| 11233.99 | Noctuidae    | Unidentified Noctuidae            | X                  | X                | X                         | X                  |                 |                     | X               | X               |
| 11234    | Unidentified | Unidentified Lepidoptera          | X                  | X                | X                         |                    |                 |                     |                 | X               |

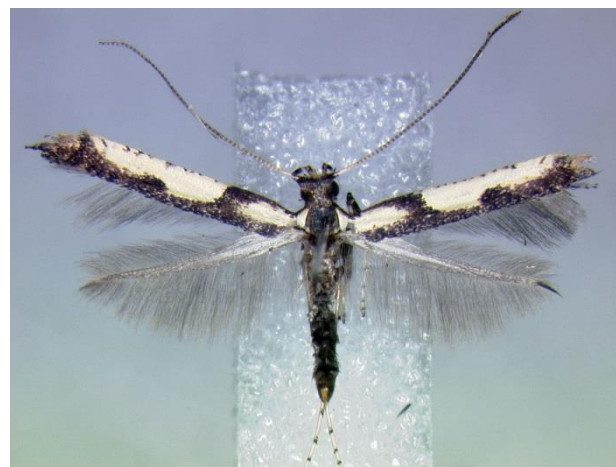
**Table 6.** Lepidoptera diversity at the study sites based on current identifications.

| <b>Site</b>             | <b># Lepidoptera taxa</b> |
|-------------------------|---------------------------|
| Root River Parkway      | 173                       |
| Lawrence Prairie        | 175                       |
| Abraham's Woods Prairie | 296                       |
| Stagecoach Prairie      | 186                       |
| Mueller Prairie         | 179                       |
| Doyle Road Prairies     | 19                        |
| Hogback Prairie         | 222                       |
| Hanson Prairies         | 259                       |
| <b>TOTAL</b>            | <b>707</b>                |

## Specimen Figures



**Figure 15.** *Hybroma servulella*  
Abraham's Woods Prairie 26 June 2012



**Figure 16.** *Caloptilia blandella*  
Hanson Prairies 11 Aug 2012



**Figure 17.** *Epicallima argenticinctella*  
Abraham's Woods Prairie 26 June 2012



**Figure 18.** *Elachista* sp.  
Root River Parkway 8 Aug 2012



**Figure 19.** *Coleophora* sp.  
Root River Parkway 8 Aug 2012



**Figure 20.** *Coleophora* sp.  
Root River Parkway 8 Aug 2012





**Figure 21.** *Mompha murfeldtella*  
Root River Parkway 8 Aug 2012



**Figure 22.** *Scythris* sp.  
Abraham's Woods Prairie 26 June 2012



**Figure 23.** *Aristotelia rubidella*  
Lawrence Prairie 7 Aug 2012



**Figure 24.** *Diploschizia impigritella*  
Lawrence Prairie 7 Aug 2012



**Figure 25.** *Synanthedon rileyana*  
Hogback Prairie 10 July 2012



**Figure 26.** *Lobesia bicinctana*  
Root River Parkway 8 Aug 2012



**Figure 27.** *Eucosma albiguttana*  
Lawrence Prairie 7 Aug 2012



**Figure 28.** *Eucosma nandana*  
Root River Parkway 12 Sept 2012



**Figure 29.** *Haimbachia squamulella*  
Lawrence Prairie 7 Aug 2012



**Figure 30.** *Eoreuma crawfordi*  
Hanson Prairie 11 Aug 2012



**Figure 31.** *Galasa nigrinodis*  
Abraham's Woods Prairie 26 June 2012



**Figure 32.** *Peoria bipartitella*  
Abraham's Woods Prairie 26 June 2012



**Figure 33.** *Atascosa glareosella*  
Lawrence Prairie 7 Aug 2012



**Figure 34.** *Thyris maculata*  
Lawrence Prairie 8 Aug 2012



**Figure 35.** *Idia diminuendis*  
Hanson Prairies 9 July 2012



**Figure 36.** *Ponometia binocula*  
Hanson Prairies 9 July 2012



**Figure 37.** *Spragueia leo*  
Hogback Prairie 14 Aug 2012



**Figure 38.** *Schinia nundina*  
Hanson Prairies 11 Aug 2012

## Live Figures



**Figure 39.** *Erynnis lucilius* (Columbine Duskywing)  
Doyle Road Prairies (8 July 2012)



**Figure 40.** *Hesperia leonardus* (Leonards Skipper) mating pair  
Stagecoach Prairie (10 September 2012)



**Figure 41.** *Atrytonopsis hianna* (Dusted Skipper) courting pair  
Hogback Prairie (29 May 2013)



**Figure 42.** *Callophrys gryneus* (Juniper Hairstreak)  
Doyle Road Prairies (8 July 2012)



**Figure 43.** *Speyeria idalia* (Regal Fritillary)  
Mueller Prairie (21 June 2012)



**Figure 44.** *Estigmene acrea*  
Hogback Prairie (10 July 2012)



**Figure 45.** *Cynia inopinatus* larva on *Asclepias verticillata*  
Abraham's Woods Prairie (6 August 2012)



**Figure 46.** *Catocala abbreviatella*  
Stagecoach Prairie (22 June 2012)



**Figure 47.** *Catocala amestris* on baited tree trunk  
Stagecoach Prairie (22 June 2012)



**Figure 48.** *Papaipema cerina* Abraham's Woods Prairie  
Abraham's Woods Prairie (16 September 2012)



**Figure 49.** *Lithophane* sp. near *disposita* on baited tree trunk  
Abraham's Woods Prairie (16 September 2012)



**Figure 50.** *Psaphida grandis*  
Hanson Prairies (8 April 2013)



**Figure 51.** *Schinia grandimedia*  
Abraham's Woods Prairie (6 August 2012)



**Figure 52.** *Schinia lucens* (Leadplant Flower Moth)  
Stagecoach Prairie (22 June 2012)



**Figure 53.** *Epicauta atrata* on *Amorpha canescens* flowers  
Abraham's Woods Prairie (26 June 2012)



**Figure 54.** Moths swarming on banana-brown sugar bait  
Hanson Prairies (28 September 2012)



**Figure 55.** *Eusarca confusaria* conversing with gummy bear  
Abraham's Woods Prairie (26 June 2012)



**Figure 56.** Nitidulid beetles and *Neopyrochroa flabellata* on bait  
Abraham's Woods Prairie (26 June 2012)

## Discussion

What prairie affiliated insects are severely impacted by extensive fire management? To answer this one must know which species have significant degrees of prairie dependence, but considerable research is needed to assess the prairie affinities of most insect species. Demonstration of prairie dependency (and the concept of prairie dependency) is a complex matter and is beyond the scope of this paper; the noted “prairie affiliates” in Table 5 and in the following discussion are essentially based on hypotheses (crude to well-supported) prior to this study.

### Insects other than Lepidoptera

Many prairie affiliates are expected among the specimens (based on the richness of prairie affiliated Lepidoptera) but the paucity of identifications and considerable lack of baseline data makes further discussion of little value at this time. Some species such as the tiger beetle *Cicindela splendida*, for example, likely have some affiliation with dry bluff prairies (at least within part of the range) but currently there are no “stand outs” for fire-management sensitive species.

### Lepidoptera

While this study is only a preliminary investigation, it is already clear that these non-fire managed prairies are important reservoirs of prairie affiliated Lepidoptera biodiversity. At least 35 “prairie affiliates” were noted, but further knowledge of other species will probably increase this total with most additions from the MicroLepidoptera.

Of those noted in Table 5, a few stand out as candidate “fire sensitive species”. *Hesperia ottoe* (Ottoe Skipper) is probably the most significant and best known of these (virtually unanimous agreement among regional lepidopterists regarding fire sensitivity). Others include *Speyeria idalia* (Regal Fritillary), *Catocala amestris*, *C. abbreviatella*, and *C. whitneyi*. The latter three are *Amorpha canescens* feeders as larvae (“Leadplant Underwing Moths”) and are apparently sensitive to first year plant growth such as following a burn. Bob Borth and Tom Barina (pers. comm.) demonstrated this at Muralt Bluff Prairie in Green County; larvae were abundant within the section not burned for many years, whereas zero were found in the recently burned section.

Lepidoptera was the focus of this study, but even so the diversity documented (Table 6) represents only the minority of what probably exists. No site in Wisconsin has been thoroughly inventoried for Lepidoptera (as a whole) to my knowledge, but based on personal field work and discussions with other Wisconsin researchers (esp. Hugo Kons Jr. who has conducted thorough macro Lepidoptera inventories of sites in Outagamie County) 1000-1500 species per site would be a conservative estimate. By extrapolation, total insect diversity could number upwards of 8500 species or more. There is little doubt than many more prairie species await discovery.

## Future Studies

The purpose of this study was to gather raw data. Extensive surveys of the full diversity of habitats across the state are needed to shed light on which species potentially have significant degrees of prairie dependence. With that information we can then compare non-fire managed sites to comparable fire-managed ones to investigate management sensitivities.

Surveys within prairie regions but *far removed* from prairie habitats will be particularly helpful to quickly par down the list of species exclusive to prairies.

Surveys of prairies similar to those in this study but heavily managed with fire are needed to designate candidate fire-sensitive species for more focused research.

Life history studies of candidate “sensitive species” may shed light on *why* they are susceptible to extensive fire management, and thus provide managers with new guidance.

The prairies in this study represent some of the finest non-fire managed prairies left in southern Wisconsin. Unfortunately the opportunity to study such places is ever dwindling as we struggle to maintain the skeletal bits of a broken ecosystem which we barely understand.

Hopefully these sites will be managed wisely and with open minds to extend this opportunity- and more importantly, sustain a fragile piece of Wisconsin’s natural heritage well into the future.

## References

Metzler, E. H., J. A. Shuey, L. A. Ferge, R. A. Henderson, and P. Z. Goldstein. 2005. Contributions to the Understanding of Tallgrass Prairie-Dependent Butterflies and Moths (Lepidoptera) and their Biogeography in the United States. Ohio Biological Survey, Columbus, OH. 143 pp.