

# Host Plant Relationships Between Native Lepidoptera and Three Native Grasses



## and Three Native Grasses

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### Introduction

Native grasses are host plants, providing food and shelter, for numerous Lepidoptera species during their larval stage. However, these benefits to Lepidoptera are not typically known to many horticulturists, let alone the average consumer. We reviewed the literature to document specific associations between native Lepidoptera species and native grasses.

### Methods

Three native prairie grasses, common in the horticulture trade: little bluestem, [*Schizachyrium scoparium* (Michx.) Nash], blue grama, (*Bouteloua gracilis* Willd. ex Kunth), and big bluestem (*Andropogon gerardii* Vitman) were reviewed as host plants. Records which identified these grasses as host plants for native Lepidoptera species in the upper Midwest region (ND, SD, MN, IA, WI, MI, IL) were included.

### Results

#### Lepidoptera that use native prairie graminoids:

##### Butterflies

Family *Hesperiidae*, Subfamily *Hesperiinae*

Hesperiinae larvae eat grasses and/or sedges.

Most larvae build shelters, overwinter in larval stage.

Adults have short bodies, fly in bursts.

Family *Nymphalidae*, Subfamily *Satyrinae*

Most Satyrinae larvae eat grasses/sedges.

Larvae are camouflaged.

Adults have "hopping" flight pattern, mostly feed on sap.

##### Moths

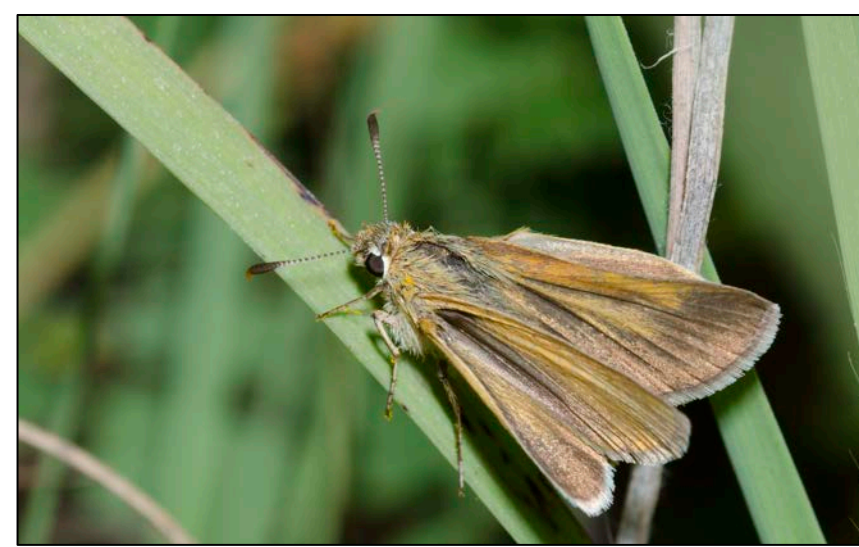
Species from multiple different families:

Subfamily *Arctiinae* (tiger moths)

Subfamily *Cosmopteriginae* (cosmet moths)

Subfamily *Anomologinae*

Subfamily *Noctuinae* – contains generalists



Dion skipper by Bryan Reynolds



Ottoe skipper by Bryan Reynolds



Common wood nymph by Karl Foord



Ottoe skipper by Bryan Reynolds



Uncas skipper by Bryan Reynolds



Arogos skipper by Bryan Reynolds

Table 1. Little Bluestem (*Schizachyrium scoparium*)

COMMON NAME	SCIENTIFIC NAME
Oslar's roadside skipper	<i>Amblyscirtes oslari</i>
Arogos skipper	<i>Atrytone arogos</i>
dusted skipper	<i>Atrytonopsis hianna</i>
common wood nymph	<i>Ceryonis pegala</i>
Cosmopterigidae moth	<i>Cosmopterix callichalca</i>
Assiniboia skipper	<i>Hesperia assiniboia</i>
Dakota skipper	<i>Hesperia dacotae</i>
Leonard's skipper	<i>Hesperia leonardus</i>
cobweb skipper	<i>Hesperia metea</i>
Ottoe skipper	<i>Hesperia ottoe</i>
Indian skipper	<i>Hesperia sassacus</i>
swarthy skipper	<i>Nastra lherminier</i>
Poweshiek skipperling	<i>Oarisma poweshiek</i>
crossline skipper	<i>Polites origenes</i>
Gelechiidae moth	<i>Stereomita andropogonis</i>

Table 2. Blue Grama (*Bouteloua gracilis*)

COMMON NAME	SCIENTIFIC NAME
Oslar's roadside skipper	<i>Amblyscirtes oslari</i>
Simius skipper	<i>Notamblyscirtes simius</i>
Mead's wood nymph	<i>Ceryonis meadii</i>
Blake's tiger moth	<i>Grammia blakei</i>
Assiniboia skipper	<i>Hesperia assiniboia</i>
common branded skipper	<i>Hesperia comma</i>
Leonard's skipper	<i>Hesperia leonardus</i>
Ottoe skipper	<i>Hesperia ottoe</i>
Pahaska skipper	<i>Hesperia pahaska</i>
Uncas skipper	<i>Hesperia uncas</i>
Ridings' satyr	<i>Neominois ridingsii</i>
Garita skipperling	<i>Oarisma garita</i>
Rhesus skipper	<i>Polites rhesus</i>

Table 3. Big Bluestem (*Andropogon gerardii*)

COMMON NAME	SCIENTIFIC NAME
Oslar's roadside skipper	<i>Amblyscirtes oslari</i>
Delaware skipper	<i>Anatrytone logan</i>
Arogos skipper	<i>Atrytone arogos</i>
dusted skipper	<i>Atrytonopsis hianna</i>
wheat head armyworm	<i>Faronta diffusa</i>
Dakota skipper	<i>Hesperia dacotae</i>
cobweb skipper	<i>Hesperia metea</i>
Ottoe skipper	<i>Hesperia ottoe</i>
Indian skipper	<i>Hesperia sassacus</i>
Newman's borer	<i>Meropleon ambifusca</i>
Byssus skipper	<i>Problema byssus</i>

#### Lepidoptera use native grasses for:

##### Oviposition

adults lay eggs directly on grasses

##### Shelter

larvae build shelters using silk  
larvae hide in the base of grasses  
larvae overwinter as larvae in grasses



Dakota skipper shelter by Diane Narem

##### Food

larvae feed from shelter  
larvae feed camouflaged in the open  
larvae feed by leaf mining  
larvae feed by boring into stem or roots  
larvae feed on seeds



Dakota skipper larvae by MN Zoo

### Discussion

Additional grass skipper species that feed on native grasses were found. However, their host plants were listed only to genus, or were not listed in the plant community reference that defined the scope of our study. Further research on grass skippers and moths may reveal additional Lepidoptera species that use these native grasses.

This information can assist horticulturalists, ecologists, landscape planners, land managers, and homeowners in their decisions to buy and plant native grass species.

This knowledge provides increased awareness about the larval life stage of butterflies and moths to concerned citizens and green industry and further supports the importance of conserving native prairie to maintain Lepidoptera.

### Acknowledgements

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### References

Narem, D. M. and Meyer, M.H. 2017. Native Prairie Graminoid Host Plants of Minnesota and Associated Lepidoptera: A Literature Review. Journal of the Lepidopterists' Society. <https://www.lepsoc.org>. (In press).



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