

Butterflies

By Dennis R. Skadsen

Butterflies are one of the most easily identified and well studied groups of insects. Most can be identified on the wing, and several field guides (second only to birds) are available to aid the observer in identifying both adult and larvae, learning where to find species, and flight periods of adults.

The life history of butterflies, as with most insects, involves a complex series of changes known as metamorphosis. Adult females lay eggs, most often on or near a specific species of plant or plants which the larvae will feed on. A larva or caterpillar hatches from the egg. The main purpose of the larval stage of a butterfly's life history is to eat and grow. Caterpillars often employ defense mechanisms to protect them from predators that include camouflage and warning coloration like the mourning cloak caterpillar (pg. 5).



Monarch caterpillar feeding on common milkweed leaves (photo by Dennis Skadsen)

The caterpillar will eventually cease growing and enter the pupa or chrysalis form, the next to last stage in metamorphosis. Dependant on whether the

species is bivoltine, meaning two broods per year, or univoltine, meaning only one brood per year, determines how long before the pupa emerges as an adult butterfly.



Monarch chrysalis (photo by Dennis Skadsen)

In our area most species overwinter as pupae emerging as adults during late spring to early summer. A few species like the mourning cloak overwinter as adults, hibernating in brush piles, under the bark of fallen or dying trees, and other sites that will keep the adult dry and protected from harsh winter conditions. One of the most recognizable butterflies, the monarch is one of only a few species that migrates to a warmer climate to overwinter as an adult.

Since some butterfly larvae are restricted to feeding on certain plants, several species of butterflies are categorized as specialists. In northeast South Dakota we have several species known as tallgrass prairie-dependent butterflies. These butterflies are only found on native tallgrass prairies, and many, due to

the conversion of native prairie to cropland, are threatened with or in danger of becoming extinct.

To date, ninety-three species of butterflies have been observed in Day, Grant, Marshall, and Roberts Counties. Of these, twenty-three are considered rare or accidental with three or less records per species.

Annotation is provided for groups and certain species denoting abundance, habitats where the species will most likely be encountered and specific locations where these butterflies may be found. The species list is compiled from the following sources; Marrone (2002) and the author's personnel collection. Taxonomic order, common and scientific names follow the North American Butterfly Association (NABA) Ed. 2.4.

Butterflies Observed in Day, Grant, Marshall, and Roberts Counties, South Dakota.

Swallowtails



Eastern tiger swallowtail (photo by Dennis Skadsen)

Black Swallowtail (*Papilio polyxenes*) Eastern Tiger Swallowtail (*Papilio glaucus*)

Only two species of swallowtails are common in this area. The black swallowtail is found on prairies and grasslands with nearby wetlands. The Eastern tiger swallowtail can be found in wooded areas with deciduous trees. Both are frequently seen visiting flower gardens. Two other swallowtail species are considered rare in this area; the Canadian swallowtail has been collected at Sica Hollow State Park, and one specimen of the old-world swallowtail was collected by the author in the Hecla Sandhills. The giant swallowtail has been observed at Hartford Beach State Park, Sica Hollow State Park, and Pickerel Lake State Recreation Area. They may occasionally occur wherever prickly ash is found.

Whites and Sulphurs



Mustard white (spring form) (photo by Dennis Skadsen)

- Checkered White (*Pontia protodice*)**
- Western White (*Pontia occidentalis*)**
- Mustard White (*Pieris napa oleracea*)**
- Cabbage White (*Pieris rapae*)**
- Clouded Sulphur (*Colias philodice*)**
- Orange Sulphur (*Colias eurytheme*)**

Both the checkered and Western white can be found on grassy fields, tame pastures, and native prairie sites. The mustard white is found in deciduous woods especially along streams and has been observed at the Hatchery Creek Public Access Area and at Hartford Beach State Park. The cabbage white is an introduced species from Europe that can be observed in a variety of habitats from backyard gardens to prairie. The larva of this species can be a garden pest. Both the clouded and orange sulphurs are common in this area and are usually found in grasslands, especially fields with alfalfa and clover.

Harvesters, Coppers, Hairstreaks, and Blues

- Gray Copper** (*Lycaena dione*)
- Bronze Copper** (*Lycaena hylus*)
- Purplish Copper** (*Lycaena helliodes*)

All three *Lycaena* species listed above can be found near streams, lakes, and wetlands making area parks and public wildlife areas good sites to find these butterflies.



Coral hairstreak (photo by Dennis Skadsen)

- Coral Hairstreak** (*Satyrium titus*)
- Acadian Hairstreak** (*Satyrium acadica*)
- Edward’s Hairstreak** (*Satyrium edwardsii*)
- Banded Hairstreak** (*Satyrium calanus*)
- Striped Hairstreak** (*Satyrium liparops aliparops*)
- Gray Hairstreak** (*Strymon melinus*)

The hairstreaks are somewhat harder to find and identify in the field. Most of these species are listed as uncommon or local for this area. Both Sica Hollow and Hartford Beach State Parks are good areas to find these butterflies.



Eastern tailed-blue sipping water at Hartford Beach State Park (photo by Dennis Skadsen)

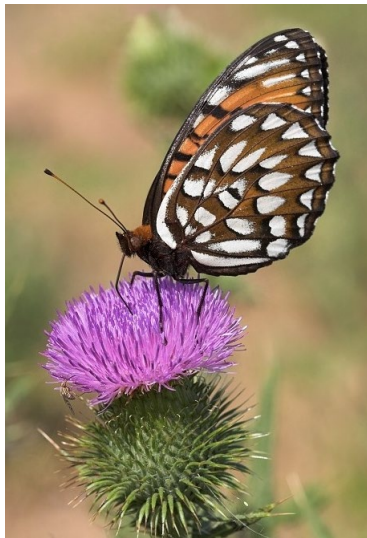
- Eastern Tailed-Blue** (*Everes comyntas*)
- Summer Azure** (*Celastrina ladon neglecta*)
- Silvery Blue** (*Glaucopsyche lygdamus*)
- Melissa Blue** (*Lycaeides melissa*)

The blues, all except the summer azure which is a woodland species, can be found on tame pastures, alfalfa fields, and native prairies. Most can be identified in the field using a good butterfly guide.

Brushfoots

- Variiegated Fritillary** (*Euptoieta claudia*)
- Great Spangled Fritillary** (*Speyeria cybele*)
- Aphrodite Fritillary** (*Speyeria aphrodite*)
- Regal Fritillary** (*Speyeria idalia*)
- Silver-bordered Fritillary** (*Boloria selene*)
- Meadow Fritillary** (*Boloria bellona*)

Visit any native prairie in mid-July and you may observe all the fritillary species listed above. Unfortunately, populations of one species the regal fritillary, have declined in many parts of the United States due to the loss of native tallgrass prairie. Larvae of the regal fritillary feed exclusively on prairie violets including *Viola pedatifida* and *Viola nuttallii*.

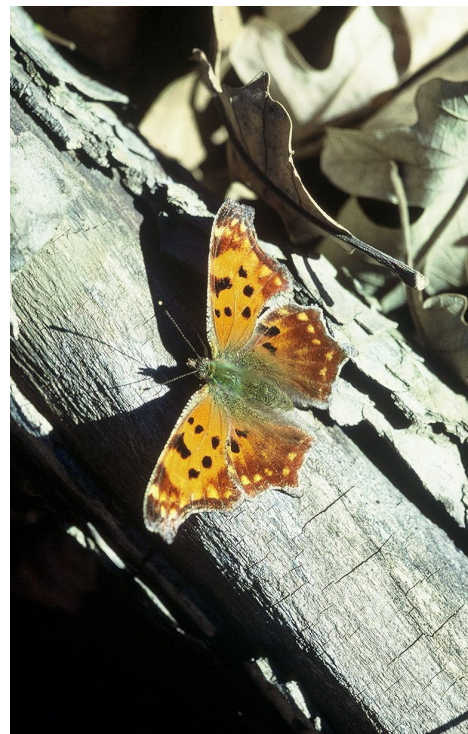


Regal fritillary (photo by Doug Backlund)

- Gorgone Checkerspot** (*Chlosyne gorgone*)
- Silvery Checkerspot** (*Chlosyne nycteis*)
- Pearl Crescent** (*Phyciodes tharos*)
- Northern Crescent** (*Phyciodes selenis*)
- Question Mark** (*Polygonia interrogationis*)

The brushfoots, one of the largest families of butterflies found in northeast South Dakota,

are a diverse and unique group that includes two species, the painted lady and monarch that migrate as adults to southern climes in the winter; the mourning cloak which overwinters as an adult by hibernating; and the viceroy (pg. 5) a species that gains protection from predators by mimicking the unpalatable monarch. The best areas to observe members of this butterfly family are Sica Hollow and Hartford Beach State Parks.



Eastern comma (photo by Dennis Skadsen)

- Eastern Comma** (*Polygonia comma*)
- Gray Comma** (*Polygonia progne*)
- Mourning Cloak** (*Nymphalis antiopa*)
- Red Admiral** (*Vanessa atalanta*)
- American Lady** (*Vanessa virginiensis*)
- Painted Lady** (*Vanessa cardui*)
- Common Buckeye** (*Junonia coenia*)



American lady (photo by Dennis Skadsen)



Mourning cloak caterpillar (photo by Dennis Skadsen)



White admiral (photo by Dennis Skadsen)

White Admiral (*Limenitis a. arthemis*)
Red-spotted Purple (*Limenitis arthemis astyanax*)



Viceroy (photo by Dennis Skadsen)

Viceroy (*Limenitis archippus*)
Hackberry Emperor (*Asterocampa celtis*)
Tawny Emperor (*Asterocampa clyton*)
Northern Pearly-eye (*Enodia anthedon*)
Eyed Brown (*Satyrodes eurydice*)
Little Wood-satyr (*Megisto cymela*)



Prairie ringlet (photo by Dennis Skadsen)

Prairie Ringlet (*Coenonympha tullia benjamini*)
Common Wood-Nymph (*Cercyonis pegala*)



Common wood-nymph (photo by Dennis Skadsen)

Uhler's Arctic (*Oeneis uhleri*)
Monarch (*Danaus plexippus*)

Skippers



Common checkered skipper (photo by Dennis Skadsen)

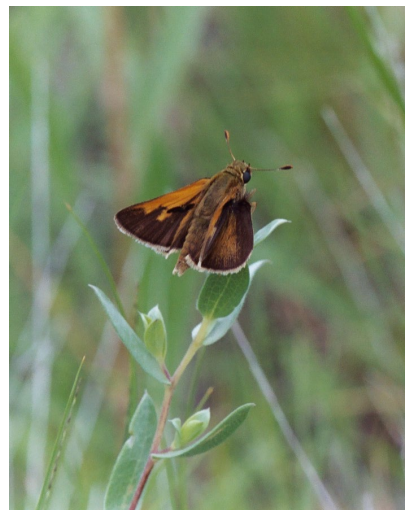
Silver-spotted Skipper (*Epargyreus clarus*)
Common Checkered Skipper (*Pyrgus communis*)

Common Sootywing (*Pholisora catullus*)
Least Skipper (*Ancyloxypha numitor*)



Leonard's skipper nectaring on blazing star (photo by Dennis Skadsen)

Poweshiek Skipperling (*Oarisma poweshiek*)
Common-branded/Plains Skipper (*Hesperia comma assiniboia*)
Leonard's/Pawnee Skipper (*Hesperia leonardus*)
Dakota Skipper (*Hesperia dacotae*)
Sachem (*Atalopedes campestris*)
Peck's Skipper (*Polites peckius*)



Tawny-edged skipper (photo by Dennis Skadsen)

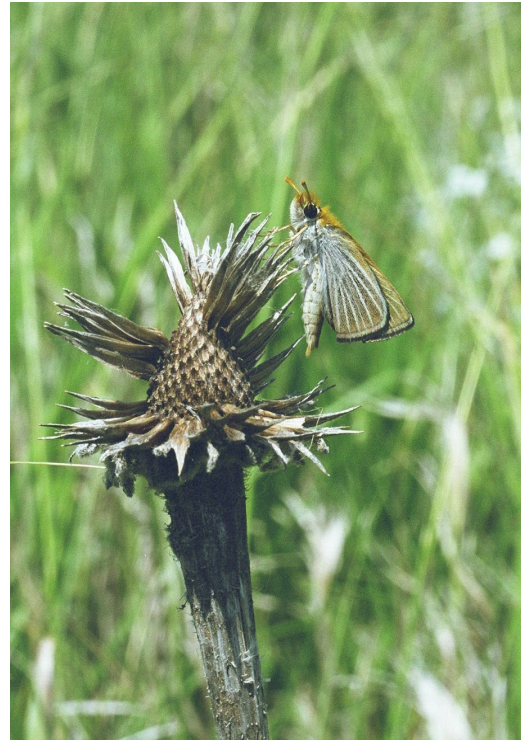
Tawny-edged Skipper (*Polites themistocles*)
Long Dash (*Polites mystic*)
Northern Broken Dash (*Wallengrenia egeremet*)
Arogos Skipper (*Atrytone arogos*)
Delaware Skipper (*Anatrytone logan*)
Hobomok Skipper (*Poanes hobomok*)
Broad-winged Skipper (*Poanes viator*)
Eastern Dun Skipper (*Euphyes vestris*)
Dusted Skipper (*Atrytonopsis hianna*)

Due to their small size, similar appearance and flight speed, the skippers are a challenge to identify in the field. With practice, and a good knowledge of habitat requirements and flight periods, one can become adept at identifying these interesting little butterflies.

The Skipper Family includes are smallest butterfly, the least skipper. Less than a half inch in length, this little butterfly can be found along streams and wetland edges. The broad-winged skipper and rarer mulberry wing are two species found only in wetlands. To observe these two butterflies, one must venture into the wet margins of wetlands where emergent vegetation like sedges are growing. These two species may be more common than previously thought due to the fact most lepidopterists concentrate on more terrestrial habitats like woods and grasslands.

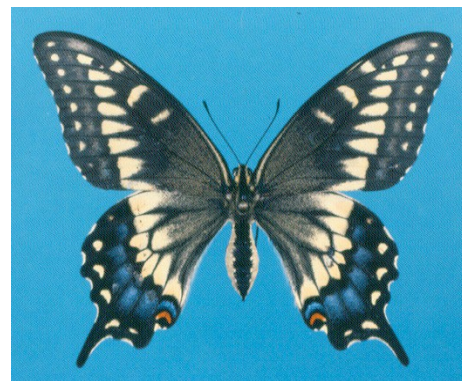
Several species of skippers are tallgrass prairie-dependent, and many of these species are in danger of becoming extirpated or extinct due to the loss of quality native tallgrass prairie habitat. The Dakota skipper is currently listed as Federally Threatened, and the Poweshiek skipperling as Federally Endangered. The Poweshiek skipperling may no longer occur in South Dakota, and the Arogos skipper, Dakota skipper, and dusted skipper have disappeared from many

of the sites where specimens were collected in the past.



Poweshiek skipperling (photo by Dennis Skadsen)

❖ Accidental and Rare Species



Baird's old world swallowtail (specimen by Dennis Skadsen)

These species are represented by less than three observations or specimen records for

the four counties's covered by this publication.

Baird's Old World Swallowtail (*Papilio machaon bairdii*)

Giant Swallowtail (*Papilio cresphontes*)

Canadian Tiger Swallowtail (*Papilio canadensis*)

Olympia Marble (*Euchloe olympia*)

Southern Dog Face (*Colias cesonia*)

Little Yellow (*Eurema lisa*)

Dainty Sulphur (*Nathalis iole*)

Harvester (*Feniseca tarquinius*)

Reakirt's Blue (*Hemiargus isola*)

Lupine Blue (*Plebejus lupini*)

American Snout (*Libytheana carinenta*)

Texan Crescent (*Phyciodes texana*)

Compton Tortoiseshell (*Nymphalis vaualbum*)

Milbert's Tortoiseshell (*Nymphalis milberti*)

Northern Cloudywing (*Thorybes pylades*)

Juvenal's Duskywing (*Erynnis juvenalis*)

Horace's Duskywing (*Erynnis horatius*)

Uncas Skipper (*Hesperia uncas*)

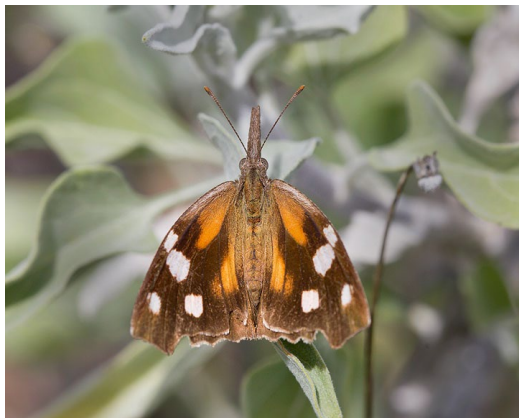
Ottoe Skipper (*Hesperia ottoe*)

Crossline Skipper (*Polites origenes*)

Mulberry Wing (*Poanes massasoit*)

Common Roadside Skipper (*Amblyscirtes vialis*)

Eufala Skipper (*Lerodea eufala*)



American snout (photo by Doug Backlund)

❖ Endangered and Threatened Species



Dakota skipper (female top, male bottom) (photo by Dennis Skadsen)

Federally Listed Species:

Threatened

Dakota Skipper (*Hesperia dacotae*)

Endangered

Poweshiek Skipperling (*Oarisma poweshiek*)

The following species are tracked by the South Dakota Natural Heritage Program managed by the SD Dept. of Game, Fish, and Parks;

Poweshiek Skipperling
Ottoe Skipper

Dakota Skipper
Arogos (Iowa) Skipper
Mulberry Wing
Broad-winged Skipper
Regal Fritillary.

❖ Butterfly Collecting & Gardening



Orange sulphur specimens collected by Dennis Skadsen

Whether for 4-H, Boy or Girl Scout projects, many young people have had their first experiences with nature by collecting butterflies and other insects. In a few cases the hobby carries over into adulthood and may even lead to the scientific study of these beautiful insects as it has with so many well-known naturalists during the 20th century. Winter (2000) notes that recently a “no collecting’ philosophy is becoming more prevalent even though there is still relevance in children learning about the natural world through butterfly collections. With this philosophy in mind, the butterfly collector should be discrete and use moderation.

Never collect more specimens than you can properly care for. Specimens should be carefully labeled with museum quality labels and stored in insect boxes or cabinets. The collector should decide to deposit larger collections at some point in the future at a

museum or leaning institution like a university.

Collectors should always refrain from collecting rare species unless for legitimate scientific purposes. State and federal permits are always required to capture species listed as threatened and endangered on public lands. In South Dakota, it is illegal to capture or remove any plant or animal from State Parks and Recreation Areas, State Game Production Areas, National Parks, Monuments, Federal Wildlife Refuges and Waterfowl Production Areas.

An alternate to collecting butterflies is photography. Good equipment and patience are needed however to capture good photos. You will need a good digital camera with a minimum 100mm macro lens or a close-focusing telephoto lens.

Another alternative to collecting butterflies, and an excellent way to observe and photograph butterflies in your own backyard, is to build a butterfly garden. A properly designed butterfly garden will offer plants suitable to the region to be utilized as sources of nectar for adults and food for caterpillars, rock and shrub piles to be used as overwintering habitat for adults and pupae, and water.



Butterfly garden with pond (photo by Dennis Skadsen)

There are several publications and websites devoted to butterfly gardening.

You can download several fact sheets on butterfly gardening and backyard wildlife habitat from the National Wildlife Federation at;

<http://www.nwf.org/gardenforwildlife/>

❖ Suggested References

Guides for Identifying Adults and Larvae

Field Guide to Butterflies of South Dakota.,
Gary M. Marrone
2002. S.D. Dept. of Game, Fish, and Parks,
Pierre, SD.

Caterpillars of Eastern North America, a
Guide to Identification and Natural History.
David L. Wagner
2005. Princeton University Press Field
Guides, Princeton.

Basic Techniques for Observing and
Studying Moths and Butterflies,
William D. Winter, Jr.
2000. Memoirs of the Lepidopterists'
Society No. 5, Los Angeles, CA.

Also see: Peterson's Field Guide to Eastern
Butterflies, Kaufman's Field Guide to
Butterflies etc.

Butterfly Gardening, Conservation, and Life Histories

Butterfly Gardening
Jane Hurwitz
2018. Princeton University Press, New
Jersey.

The Lives of Butterflies
Matthew M. Douglas
1986. University of Michigan Press, Ann
Arbor.

Pollinator Conservation Handbook,
Matthew Shepherd et al.
2003. Xerces Society, Portland, OR.

Miscellaneous Butterfly Websites

The Butterfly Website
<http://butterflywebsite.com/>

Butterflies and Moths of North America
<http://www.butterfliesandmoths.org/>

The Lepidopterists Society
<http://www.lepsoc.org/>

North American Butterfly Association
<http://www.naba.org/>

Each of the websites listed above also
provide links to dozens of other websites
devoted to butterflies and other
invertebrates.

❖ Literature Cited

Marrone, Gary M. 2002. Field Guide to the Butterflies of South Dakota. South Dakota Dept. of Game, Fish, and Parks, Pierre. 478 pp.

Winter, William D. Jr. 2000. Basic Techniques for Observing and Studying Moths and Butterflies. Memoirs of the Lepidopterists' Society No. 5, Los Angeles. 444 pp.