

Prairie Butterflies

by
Harlan Ratcliff

Prairie Butterfly Guide

Welcome to the prairie. This is what the landscape was like when white settlers first came to this area. Then it was plowed and drained and used for other purposes.

There are a lot of different kinds of living things on the prairie. There are a lot of different kinds of flowers. There are a lot of different kinds of grasses. There are a lot of different kinds of insects.

Scientists and conservationists talk about the biological diversity of an area. When they do, they are talking about the total number of different kinds of plants or animals found there.

Almost anything people use the land for—growing crops, making a soccer field, making a parking lot—decreases the biological diversity of that area.

Parking lots have low biological diversity. Prairies have high biological diversity.

Let's examine the biological diversity of a prairie by looking at the butterflies. How many different kinds can you find?

How to Study Butterflies

People used to study butterflies by catching them with a net, killing them, and pinning them on a board with a little note about where and when the butterfly was caught. That was the way scientists did it, and it seemed like a good way to learn about them.

Some scientists still do that, and it is a scientific way to study butterflies. Other people have found that you can study butterflies by photographing them, or watching them with binoculars, or catching them in a net and letting them go. That is a fun way to study butterflies. Lots of scientists are now finding ways to study butterflies without killing them. And they are finding out it is a lot more fun.

If you see a butterfly that is sitting on a flower or on the ground, you can get close to it if you move really slowly. If you practice and have lots of patience, you can learn to get really close. You can learn the things to look for that let you know which kind it is—its characteristics. Is it large or small? What color is it? Does it have any markings that are unique? If you figure out what kind it is, write it down by making a mark on the checklist.



The Best Places to Find Butterflies:

Where are the best places to find butterflies? Here's my list.

1. On flowers:

Flowers need insects to transfer pollen so they can make seeds. So they offer the insects a little treat—a type of sugar water called nectar. Butterflies get the pollen on their legs and carry it to other flowers. So the flowers help the butterflies and the butterflies help the flowers.

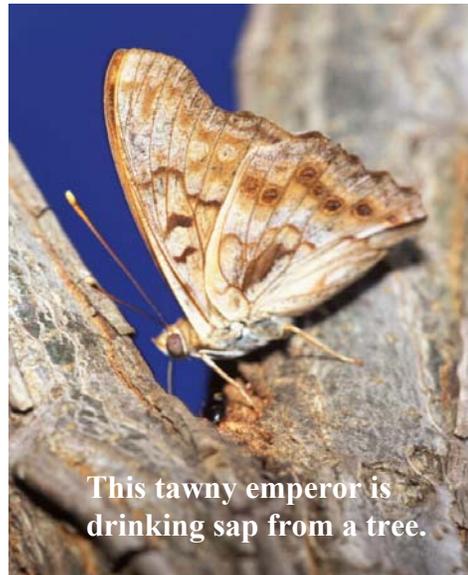
2. On the caterpillar host plants:

It turns out that caterpillars of different butterflies like to eat different kinds of plants. Some caterpillars will only eat one kind. Others will eat many kinds. A plant that a particular butterfly likes to eat is called its “host” plant. It's like when you give a party for someone—you are the host.

Usually, the adult butterfly lays eggs on the host plant. That is why you will find them there.

3. Where a tree is leaking sap:

You probably won't see this in the prairie, but some woodland butterflies drink sap. If the wind blows a branch off of a tree, or other insects damage a tree, the tree leaks sap. The sap is kind of a sugar water solution. Some butterflies are good at finding this, and make it a major food source.



This tawny emperor is drinking sap from a tree.

4. On rotten fruit:

A butterfly probably can't eat any fruit that you might eat, because it is too hard and they have no teeth. But when the fruit gets rotten and the skin breaks open, they can get their little soda straw mouths (the official name for their mouth is a proboscis) in and take a good long drink.

5. Near a mud puddle:

Butterflies often drink from the soft ground near a mud puddle. They are getting water and salts. Try pouring a couple buckets full of water on a gravel driveway—you will soon attract butterflies.

6. (The best place to find butterflies) On you:

If you get hot and sweat, you might have a butterfly land on you. They are attracted to the water and the salt in the sweat. They usually just sit there and drink unless someone shoos them away. Don't worry, they can't bite you. How much fun is it to have a butterfly land on you?

A Short Butterfly Guide

Here is a short butterfly guide. The butterflies in this guide can all be found in Iowa prairies in mid September. You might easily see other kinds. There are less than 20 in this guide and Iowa has more than 120 different kinds.

Large butterflies are about the size of your hand—maybe a little larger, maybe a little smaller. Small butterflies can range in size from smaller than a dime to slightly larger than a quarter. Medium sized butterflies are in between the two.

Skippers are a special kind of butterflies that are small to medium sized. Skippers have fatter bodies than other types of butterflies, and their wings are relatively smaller than the other butterflies. They get their name from the way they fly. Their flight sort of looks like skipping.

Have fun hunting butterflies!

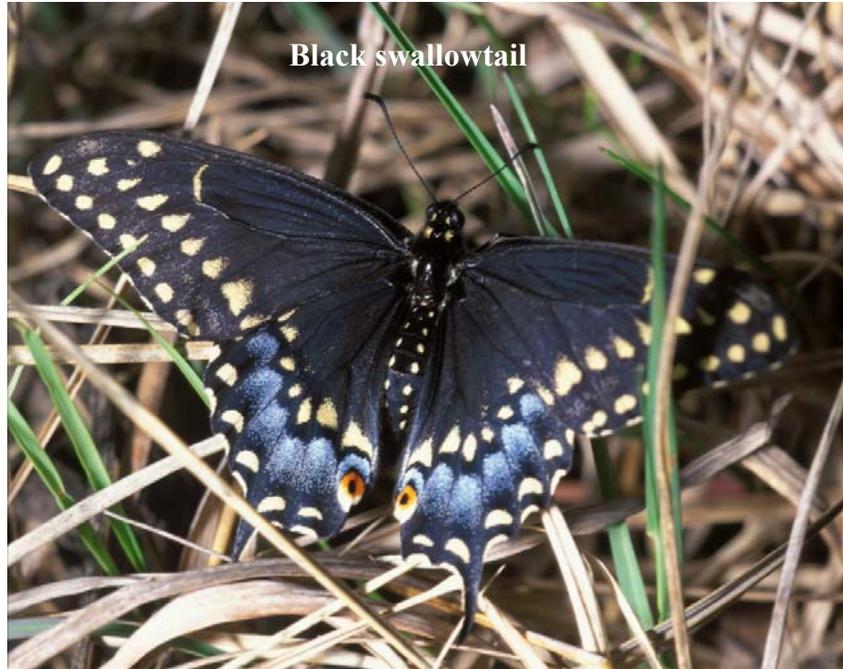
Large butterflies

Black Swallowtail

One of the largest butterflies you will see on the prairie is the black swallowtail.

Iowa has six species of swallowtails—all are large butterflies with little tails on the end of their hindwings. The others are mostly butterflies of woodlands, but the black swallowtail is a true prairie butterfly.

One behavior that you might observe in butterflies is called “mudding”, or “mudpuddling”. Butterflies land on the damp mud and drink water from the wet dirt (you won’t see them actually in the water—they stay on the edge of it). Look really close at the tail end of the picture at the bottom of the page. There is a little drop of water coming out. When butterflies mudpuddle, they seem to discharge a bunch of water even as they are drinking it, which leads scientists to think that they are not doing it just because they are thirsty—they might be getting salts or other things out of the water they are drinking. Another thing they have observed is that the butterflies that are mudding are mostly males. Why? No one knows for sure. If you become a scientist some day, maybe you will be the person who figures it out.



Large butterflies

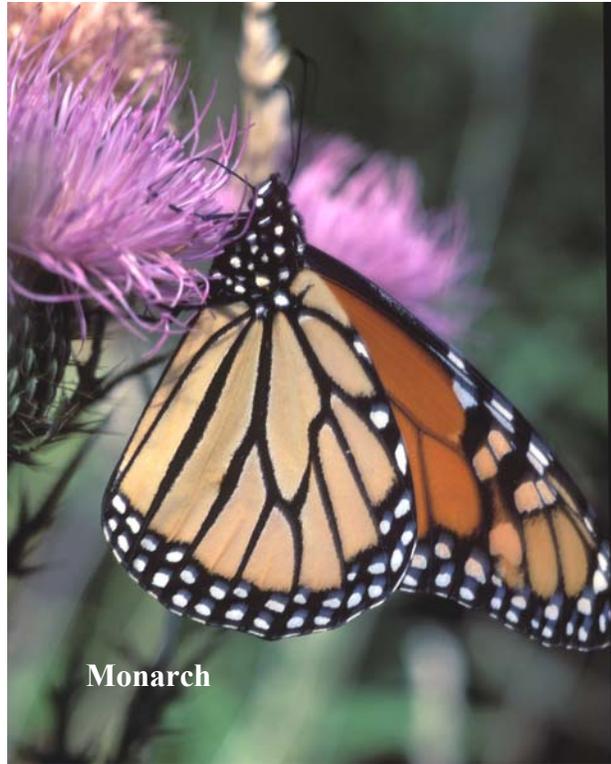
Monarch and Viceroy

There are two butterflies that you might see in the prairie which are very different but look a lot alike.

The monarch, on the right, migrates south (into Mexico for the butterflies found around here) each winter, and its offspring migrate back north. The monarch caterpillar eats milkweed plants.

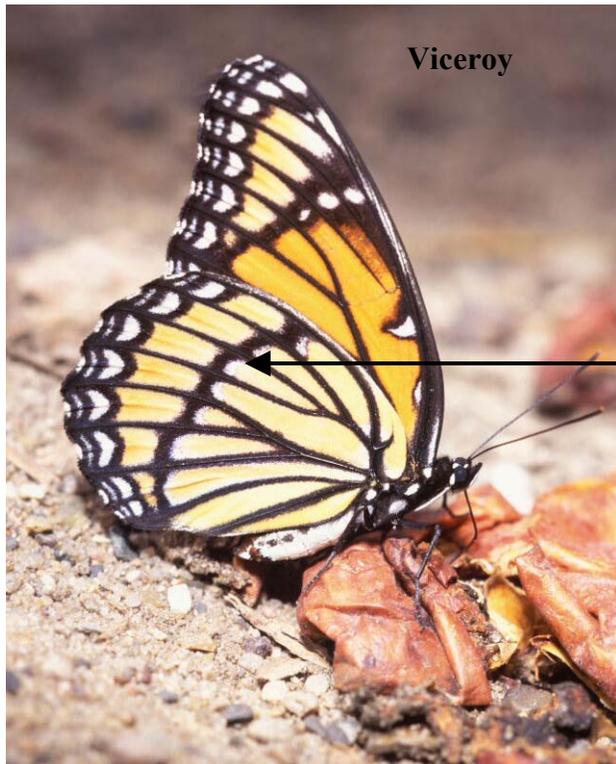
The viceroy does not migrate—its caterpillars hibernate in the winter. The viceroy caterpillar eats the leaves of willows and other trees.

How can you tell them apart? Well, the monarch is a little larger and has a stronger flight, but the easiest way is to look for the extra black line that the viceroy has on its hind wings. This is visible from both the top and the bottom.



Monarch

The viceroy shown below is sucking the juice from a rotten apple.



Viceroy

The viceroy has this line.
The monarch does not
have this line.

Large butterflies

Great Spangled Fritillary and Regal Fritillary

If you watch the big flowers like thistles, you will probably see this butterfly. Iowa has seven species of fritillary. They are all mostly light brown with black and white spots. Fritillaries as a group mostly have violets as a caterpillar host plant. The great spangled fritillary uses several common violets as host plants, and as a result is very common in Iowa.

One butterfly you will not see



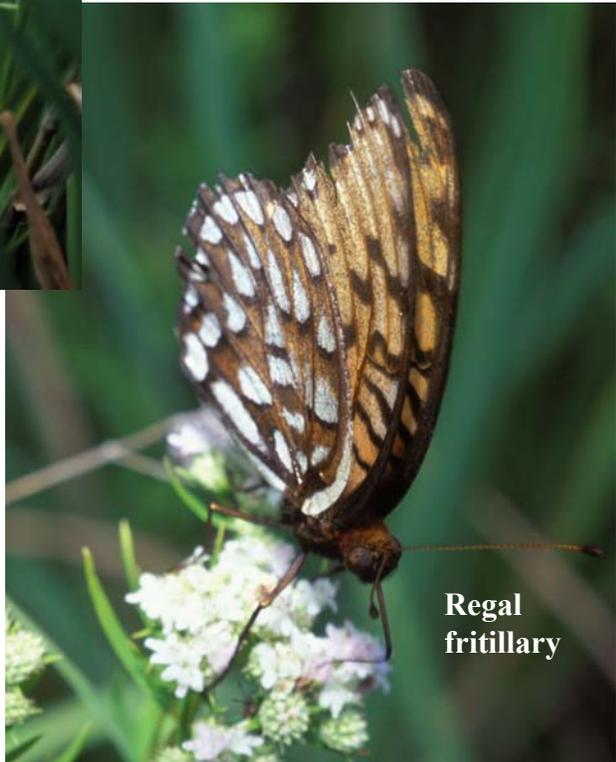
Great spangled fritillary



Great spangled fritillary

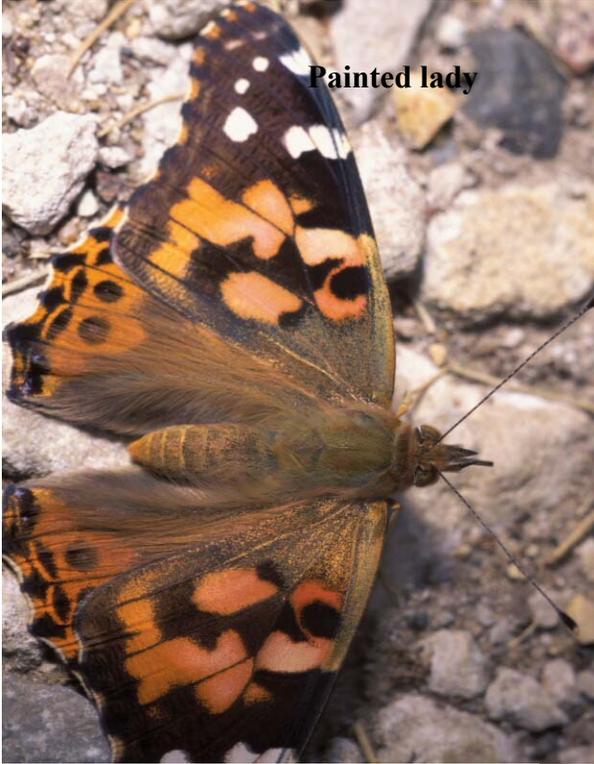
unless you are very lucky and visit a very good prairie is the regal fritillary. It uses only prairie violet and birds-foot violet as host plants. Those violets are usually only found on very good

prairies. Regal fritillaries are only found where their host plants are found.



Regal fritillary

Large butterflies



Painted lady

Painted lady and American lady

Here's a butterfly (left and center right) you are very likely to see in the prairie. This butterfly is the painted lady. You are also likely to see it other places. Its caterpillar uses a wide variety of different plants as host plants although it really likes thistles. The caterpillar is also known as the "thistle caterpillar."

This butterfly migrates like the monarch—individuals fly north and south each year, but the one that flies

south is not the same one that flies north.

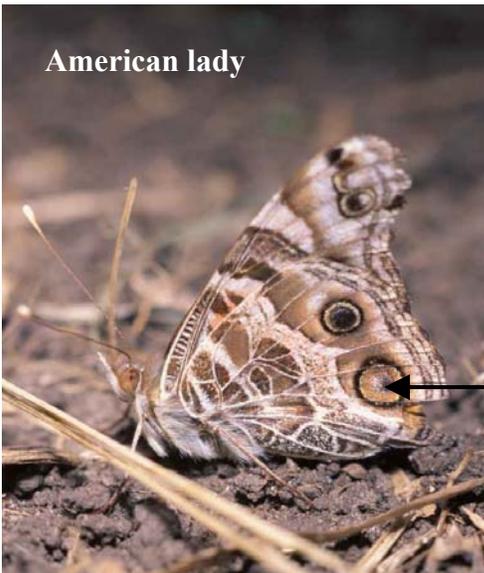
Look at the picture at the bottom left of the page. Does it look the same? Count the spots on the hind wing. That butterfly is the similar but much less common American lady butterfly. You are much less likely to see it, but look for it anyway.

The American lady migrates



Painted lady

also, but not as far as the painted lady.



American lady

Painted lady—5 spots

American lady—2 spots

Medium-Sized Butterflies



Clouded and Orange Sulphurs

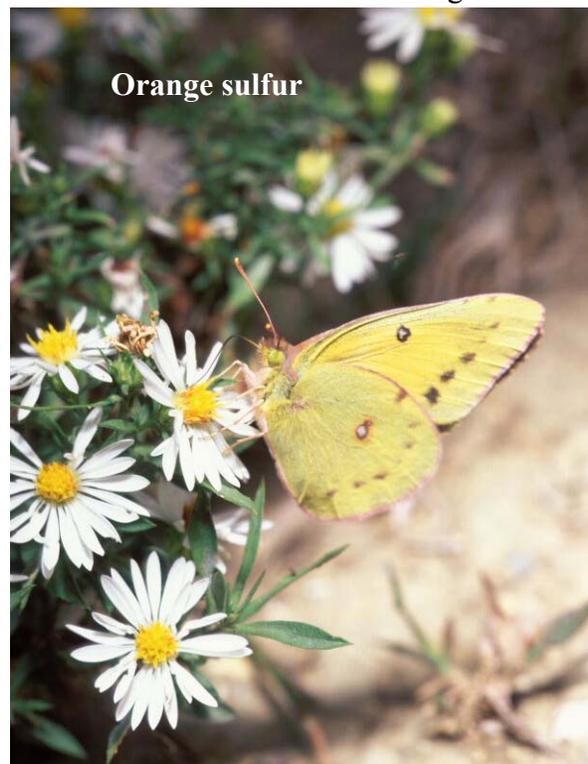
There are two butterflies that look very similar which you might see. They are the clouded or common sulfur, and the orange or alfalfa sulfur.

The orange sulfur is a little bit larger than the clouded sulfur, but otherwise they look the same when you see the underside of the wings. From the upper side, the clouded sulfur is yellow and the orange sulfur is yellow with a distinct orange tint. If you get two good specimens in hand you can easily tell them apart.

The problem is that they hybridize readily and have forms that are intermediate in characteristics. They also have white forms. Experts can't always tell them apart if they seem to be intermediate in form.

You are almost guaranteed to see one or both of these butterflies when you visit the prairie. They probably were originally prairie butterflies, but they seem to thrive with modern agricultural practices, so they are much more common now.

Late in the year, after a frost or two but before a hard frost, you still may see a few of these butterflies flying around. All the other butterflies will be dead or gone or hibernating, but these will still be around.



Medium-Sized Butterflies

Red Admiral

Here's another butterfly you might see—or it might be right in front of you and you won't see it. This is the red admiral. It is very colorful when it opens its wings, but can remain hidden if it keeps them closed.

This butterfly flies very rapidly. Sometimes the males perch in a particular location then chase anything that flies past them. Sometimes they chase another butterfly of the same species. Sometimes they chase a butterfly of a different species. Sometimes they will even chase a bird!



Red admirals migrate, just like painted ladies and monarchs. The individuals that fly south in the fall are the parents or sometimes the

grandparents of the ones that fly back north in the spring.

If you are really lucky, this butterfly might land on you!



Medium-sized butterflies

The American Snout

This is not really a prairie butterfly but you might see it anyway. This is a butterfly of forests and edges of forests. Its caterpillar host plant is the hackberry tree and other elm-like trees.

You will see them in the prairies nowadays because most of our prairies are small, and sometimes these guys undergo population explosions so there are a lot of them flying around.

This is the only butterfly in the United States that has a long snout. There are some moths with snouts, but they look a lot different. If you see this guy you can be pretty sure of your identification.



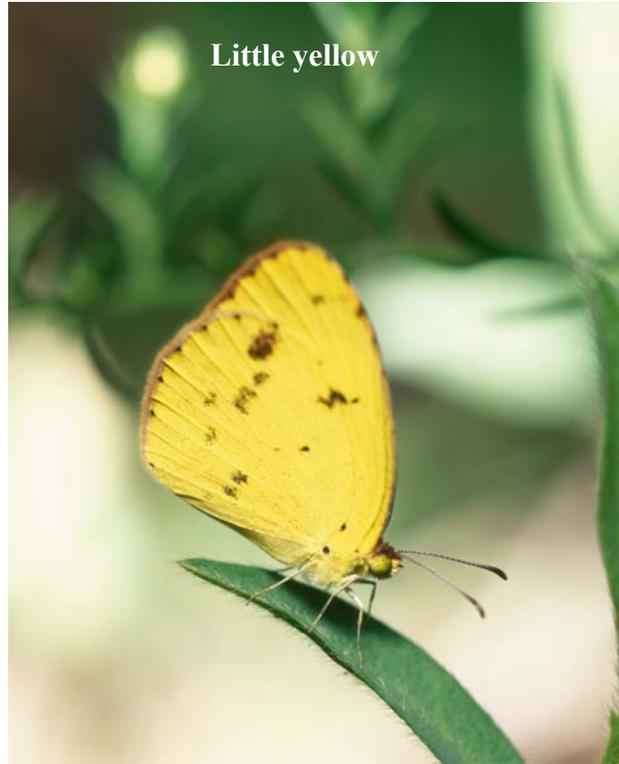
Small Butterflies

Little Yellow

Here's a butterfly that is fairly common at times in Iowa. Have you seen it before? It is pretty small—about the size of a penny or a nickel.

Scientists are not really sure about the habits of this butterfly. Some say it is mostly a southern butterfly that undergoes population explosions that make their way into Iowa. That is not the same as migrating—no little yellow butterflies go south in the fall. Others say they can over-winter in Iowa.

There are several other yellow butterflies in Iowa. Most are a lot larger than this butterfly (only one is smaller). None have as bright of a yellow color as this one, however.



Small Butterflies

Eastern Tailed-Blue

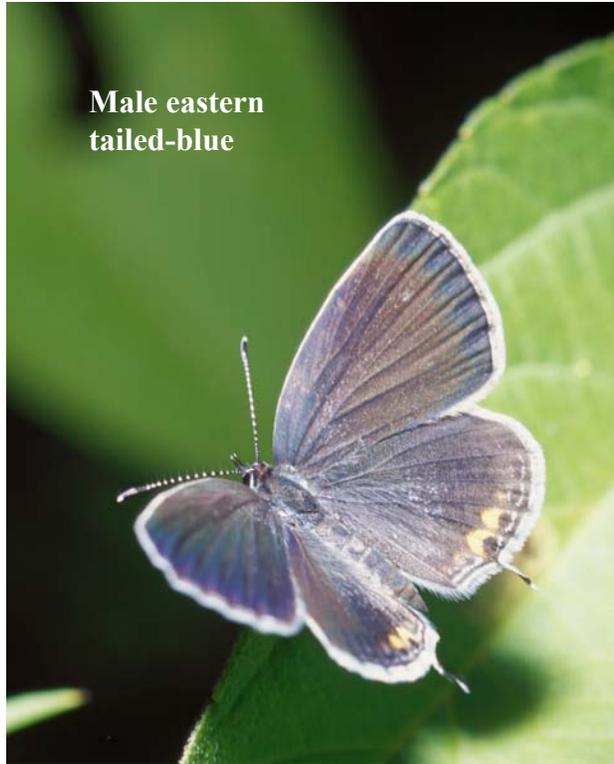
Look around the prairie for a tiny silvery-blue butterfly with a tail. Chances are it's an eastern-tailed blue. This is one of the most common butterflies in Iowa, yet you may have never noticed it.

The bottoms of the wings are kind of silvery. The males are a brilliant color of blue on top. Females are brown on top.

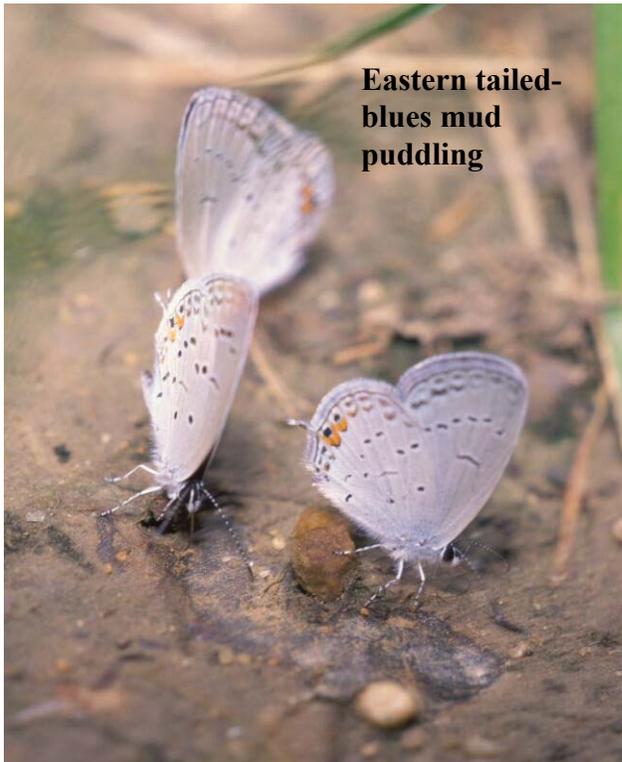
There are a few other types of blue butterflies in Iowa. All are very small. The eastern-tailed blue is by far the one you are most likely to see. The other types of blues do not have a tail.

There is another group of butterflies called hairstreaks. Their wings are more pointed, and they are usually larger than the blues. Most of the hairstreaks have small tails, too.

Look at the gray hairstreak on the next page. Can you tell the difference? Here is a hint—if you see a whole bunch of them, they are probably the eastern tailed-blue. Usually there are not as many hairstreaks. Also, the eastern tailed blue has rounder wings than the gray hairstreak.



Male eastern
tailed-blue



Eastern tailed-
blues mud
puddling

Small Butterflies

Gray hairstreak



Gray Hairstreak

Here's a butterfly you might see if you are lucky. This is a gray hairstreak.

Hairstreaks are small, and they get their name from the little tails they have on the ends of their wings.

Some scientists think the tails are supposed to fool birds and other predators into thinking the back end of the butterfly is the front end. So if the bird goes for the butterfly's head, the butterfly fools the bird by flying in the other direction. Do the spots look like little eyes and the tails look like little antennae?

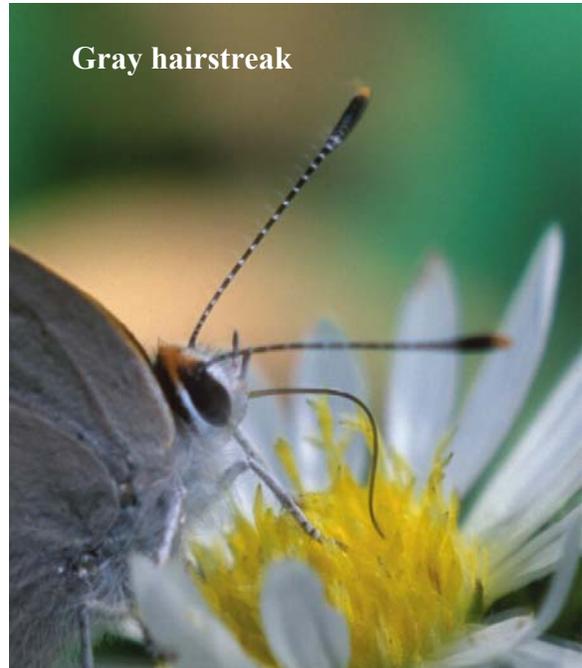
This butterfly is a lot less common than the eastern tailed-blue that you saw on the last page. How can you tell the difference between the gray hairstreak and the eastern tailed

blue? The gray hairstreak is a little larger and the outside edge of its wings are straighter.

Gray hairstreak



Gray hairstreak



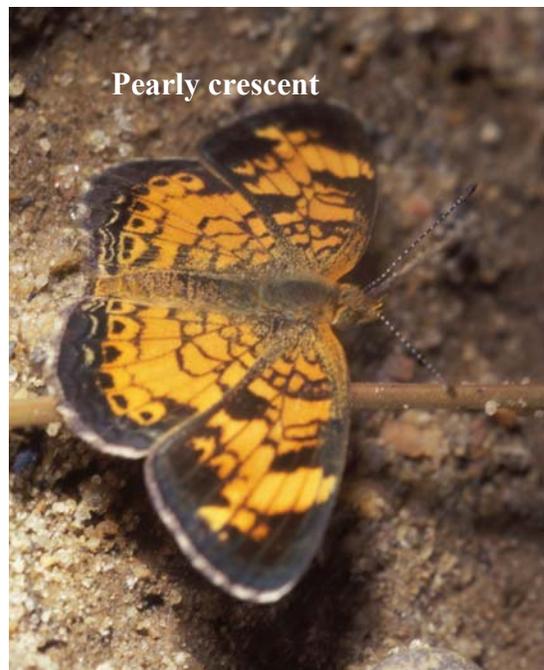
Small Butterflies

Pearly Crescent

You will probably see this small orange butterfly in the prairie. It is very common there, and it does well other places, too. You might see it in your yard at home.

Pearly crescents over-winter in Iowa as caterpillars. The caterpillar host plants are various species of asters.

The photograph on the right shows an interaction between two butterflies of this species. The female has her wings spread. The male, who is trying to impress her, is slowly walking towards her on the flower, and his wings are closed. They chase each other from flower to flower in a way that sort of resembles a dance.



Skippers

Silver Spotted Skipper

The silver-spotted skipper is the largest skipper you will see. As with other skippers, its body is fatter in relation to its wing size than other types of butterflies. This one is pretty large—larger than a half dollar. Most skippers are small. This butterfly will often land on the side of a flower and reach its proboscis up over the top to drink, rather than landing on top of the flower to drink.

These should be easy to identify if you see them. Look for them on large thistle flowers. You probably



Silver spotted skipper on rough blazing star



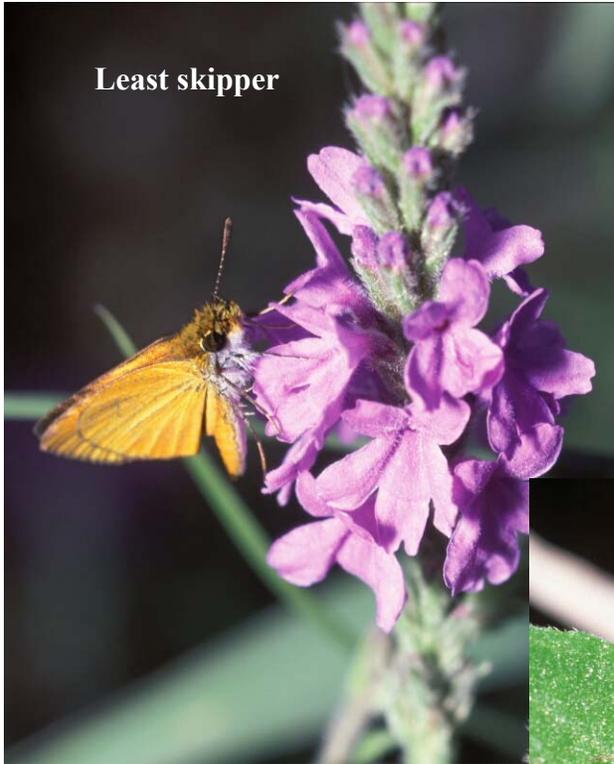
Silver-spotted skipper

won't mistake this butterfly for any other one.



Silver-spotted skipper on the side of a thistle flower

Skippers



Least skipper

Least skipper

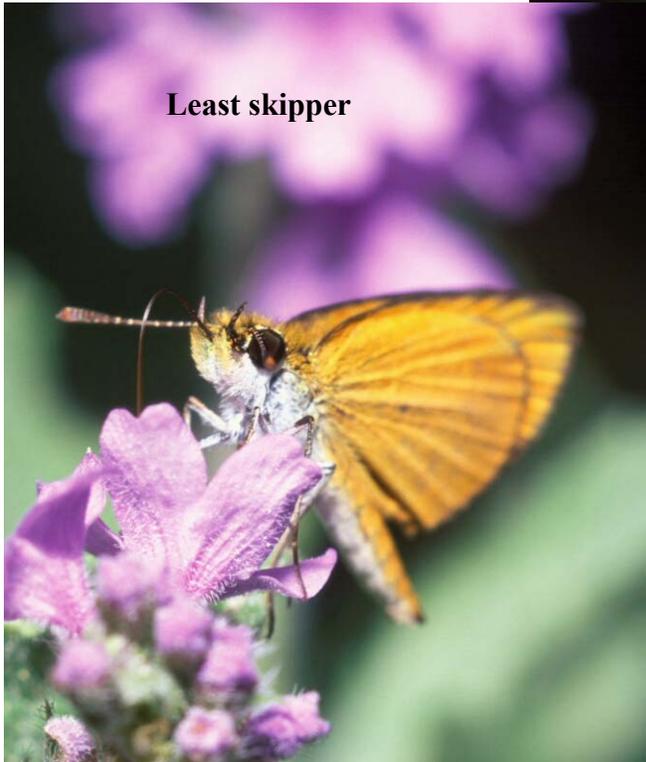
This is the smallest butterfly you will see. Look for it flying in tall weeds around water. It is possible that you might not see it at all, but if it is present it will probably be pretty common.

This is a grass skipper. One of the characteristics of grass skippers is the “jet fighter” pose they have sometimes—the front wings are up and the hindwings are to the sides. It is a common behavior in some skippers.

Small brown skippers are usually hard to identify, but this one is a lot smaller than most, and common enough you can probably pick it out. Once you find one you will probably



Least skipper in “jet fighter” pose



Least skipper

be able to find several others.

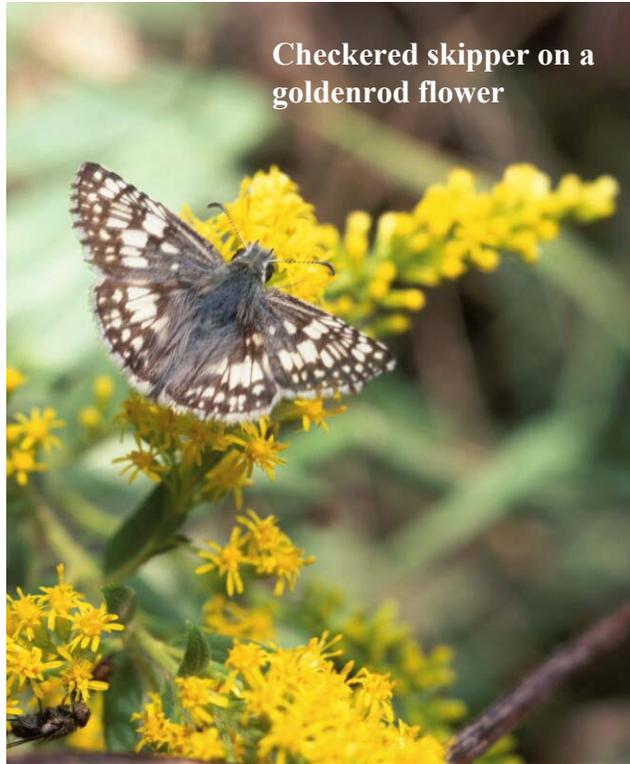
Skippers

Common Checkered Skipper

Late in the summer and early in the fall you can usually find this little butterfly flitting around on whatever flower is in bloom. It has more than one brood each year, so you might see them in the spring, too.

These butterflies really like goldenrod. Goldenrod is a tall plant—two feet to seven feet tall, with small yellow flowers. Check the flowers of goldenrod. You will see lots of butterflies, including this one on it. You will also see lots of different kinds of insects on it as well.

This butterfly is usually brown, gray, and white, but sometimes it has a lot of blue as well.



Checkered skipper on a goldenrod flower



This checkered skipper looks very different from the side.

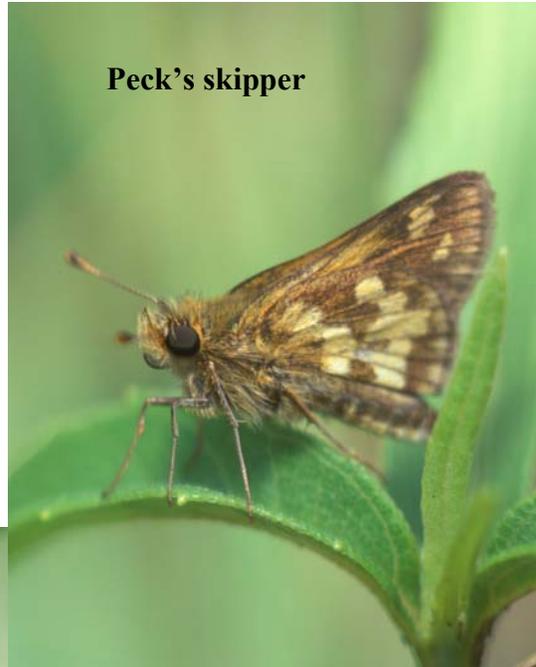
Skippers

Peck's Skipper

One skipper you might see is brown and has yellow rectangles. It is called peck's skipper.

There are a couple of other skippers in Iowa that you might see that have rectangles like this, but they are not very common, and peck's skipper is.

Like most skippers, they have a perky kind of flight. Skippers fly fast! Look at how this butterfly puts its wings when it is at rest (middle picture). Does that pose remind you of a jet fighter?

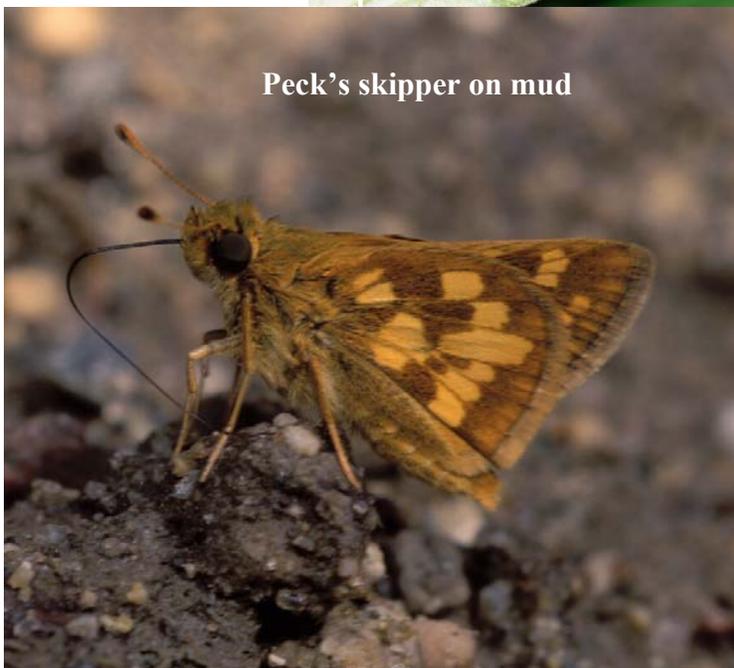


Peck's skipper



Peck's skipper—
Jet fighter pose

Peck's skipper



Peck's skipper on mud

Checklist

Have you seen these butterflies? Put a check mark by the ones you have seen.



Large butterflies:

- 1. Black Swallowtail
- 2. Monarch
- 3. Viceroy
- 4. Great Spangled Fritillary
- 5. Regal Fritillary
- 6. Painted Lady
- 7. American Lady



Medium-sized butterflies:

- 8. Orange sulfur or clouded sulfur
- 9. Red admiral
- 10. American snout



Small butterflies:

- 11. Little yellow
- 12. Eastern tailed-blue
- 13. Gray Hairstreak
- 14. Pearly crescent



Skippers

- 15. Silver-spotted skipper
- 16. Least skipper
- 17. Common Checkered skipper
- 18. Peck's skipper

A note to teachers:

This target audience of this guide is fourth graders who are exploring the Iowa prairie in the second week of September. At that time, butterfly diversity in Iowa is about its greatest. Hopefully all of the butterflies mentioned here could be found then. You may not find them all. You may find others that are not mentioned. Depending on the weather and the prairie, the air may be alive with them or you might not find any.

Feel free to use this booklet in any way you want. Copy it electronically or print it out on a printer. Make as many as you like. Get the children involved with butterflies. The photos and text are all my own.

Enjoy.

Harlan Ratcliff

(Special thanks to those members of the Iowa Native Plant list serve who read drafts and offered suggestions.)