

DELICATE DAZZLER The Melissa blue butterfly lives throughout Montana in wet meadows, moist streambanks, open woodlands, parks, and gardens.



FLOATING FLOWERS IN THE SKY

The challenge and importance of counting butterflies. **By Shane Sater**

The parking lot at the main Rattlesnake trailhead near Missoula is bustling this July morning. An unusual group has gathered at one end, carrying insect nets, field guides, and binoculars. These butterfly watchers are taking part in the annual Five Valleys Butterfly Count. With a forecast for sunny skies and highs in the upper 70s, the weather looks promising. “Butterflies are solar-powered. They need sunlight to warm them up so they can fly,” says Kristi DuBois, a former regional Nongame Wildlife Program coordinator for Montana Fish, Wildlife & Parks who has led this count for the past 12 years.

Our goal is to identify all the butterflies we see. A few species are easy to distinguish, even at a distance. Others are much harder. Using light mesh bags on four-foot handles, the plan is to catch, examine, and release.

Butterflies are surprisingly wary. Netting inside, uninjured though no doubt surprised. Another participant helps me gently transfer it to a collapsible mesh box. Through the plastic viewing window, the butterfly is gorgeous, with a flame-colored

Shane Sater is a biology student at Carroll College in Helena and a part-time employee with the Montana Natural Heritage Program.

them requires stealth and lightning-quick reflexes. In the dappled light of a small meadow, I spot one resting on a wildflower. I swing my net and quickly twist the handle to close the bag. The butterfly flutters

band running along the back of its black wings. DuBois identifies it as a Milbert’s tortoiseshell, an uncommon species this time of year, she says. We mark it down in a notebook and let it flutter away.



The Milbert’s tortoiseshell is a common Montana butterfly found statewide in gardens, parks, wet meadows, and moist streambanks.

BUTTERFLY BASICS

Butterflies are shape-shifters. Each starts life as an egg, hatches into a voracious caterpillar, rests as a comatose pupa, then transforms into a winged wonder.

Montana hosts roughly 200 butterfly species of remarkable diversity. Many survive just a few weeks as adults, while others may live as long as eight months. Some spend the winter as eggs or pupae. Others hibernate as adults, one-fifth of a gram of insect somehow surviving Montana’s brutal cold. A few, like the monarch and painted lady, can migrate hundreds of miles in spring and fall to and from southern wintering areas.

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I caught likely grew up eating nettles. The Rocky Mountain dotted blue, a tiny meadow gem, eats only buckwheats—from a single genus of native plants. Other species consume junipers, lupines, mustards, violets, willows, and grasses. “If you don’t have the right larval food plants, you won’t have butterflies,” DuBois says.

Most caterpillars end up as food for something else. “They’re full of fat and are very nutritious,” DuBois says. Many songbirds, even seed-eaters like lazuli buntings, fatten their nestlings on caterpillars.

As for adult butterflies, most survive on flower nectar sipped with their tongue, which works like a straw.

A butterfly, which the British poet Rudyard Kipling called “thou winged blossom,” gets its colored wings from millions of tiny scales that reflect light in different ways. The category of butterflies known as blues are sky-blue or brownish, quarter-size, and abundant. Sulphurs are yellow and fly quickly. Wood-nymph butterflies wear brown camouflage with unexpected bulls-eye markings under their wings. Swallowtails are large, striped in black and yellow.

In the Missoula-area meadows, today’s volunteers find dozens of orange butterflies in the skipper family—all tiny, active, and triangular winged. Most are the accidentally introduced European skippers. They showed up around Missoula sometime after 2002, and in recent years have become one of the most commonly observed species on the Five Valleys count.

Sunny skies bring out the butterflies. As longtime butterfly counter Jim Brown of Missoula says, “So much of their life is inconspicuous.” Eggs, caterpillars, and pupae live out of sight of most people. Even as brightly colored adults, butterflies take cover if it’s cloudy, rainy, or cold. “What you find on a given day depends so much on the weather,” Brown says.

Some months are better than others for viewing certain species. In early June, for instance, Brown sees many spring azures. “But by July they’re very uncommon at this elevation,” he says. Other butterflies, like the woodland skipper, are just starting to appear in July. In another month, they’ll be common and eventually disappear from sight.



NUMBERS GAME In the Missoula area, and at the MPG Ranch, Glacier National Park, and Yellowstone National Park, volunteers count different species of butterflies each summer. The counts, along with hundreds of others nationwide, are coordinated by the North American Butterfly Association. Information from the surveys helps scientists understand population trends and identify threats to butterflies.



WHERE TO FIND THEM

A few clouds are moving in, but the air above the meadows remains busy with butterflies. The winged insects seem to dwindle along stretches of trail where trees, and shade, close in. The key to finding abundant butterflies is to seek out sunshine and diverse host plants, DuBois says. Recently burned forests,

where fire was not too severe, are usually great sites. “The first few years after a fire you get all this sunshine and, with it, a big flush of shrubs, forbs, and grasses—all excellent butterfly food plants,” she explains.

Meadows, streamsides, and edges between different habitats are other likely spots. Males concentrate on hilltops and in



COLORFUL CROP SUSTAINERS Butterflies are essential pollinators. From alfalfa to apples, pollinators are key to the production of about 150 food crops worth an estimated \$10 billion in the United States each year, according to the U.S. Department of Agriculture. Montana is home to roughly 200 butterfly species. Clockwise from top left: woodland skipper, cabbage white, mourning cloak, anise swallowtail, Christina sulphur, and Boisduval's blue. Many survive just a few weeks as adults, while others may live as long as eight months.

PHOTOS: MARIROSE KUHLMAN

CLOCKWISE FROM TOP LEFT: DOMINICK SPERANZA, STACY THORNBROUGH, GAIL MOSER, DOMINICK SPERANZA, JESSE LEE VARNADO, ELIZABETH MOORE



DAZZLING COLORS Butterflies are covered in millions of tiny scales that reflect light in different ways to produce the insects' vibrant and diverse colors and patterns. Part of the beauty of butterfly sightings comes from the flowers that they move among, feeding on nectar sipped through their strawlike tongue. In their caterpillar stage, butterflies eat plants—often only specific species—growing fat and providing nutritious food for birds and other wildlife. Clockwise from top left: Weidemeyer's admiral, spring azure, snowberry checkerspot, pale swallowtail, gray hairstreak, and painted lady.

CLOCKWISE FROM TOP LEFT: PAUL LALLY; RANDY BECHTAN; CAROL POLICH; AARON BARTOSIK; DOMINICK SPERANZA; DAN ELLISON

MARIROSE KUHLMAN

ravines searching for mates. Other males fly up and down a trail, patrolling a territory. Since most adult butterflies feed on nectar, flowers are good places to check. Mud puddles also attract surprising numbers—yes, butterflies get thirsty. Some species also gather on cowpies and wild animal scat.

DuBois points out that butterfly habitat is changing in the Missoula foothills. Noxious weeds have displaced native grassland wildflowers such as lupines and violets. Forest openings and grasslands, historically kept open with wildfire, are filling in with young Douglas firs. For thousands of years in the Missoula area, DuBois explains, fires periodically raced through forests, creating a mosaic of open and treed areas. “You’d have seen more grasslands, more meadows, and also more old-growth forests.”

Ancient trees were less likely to ignite in the fast-burning fires that shaped the region.

Now young and middle-aged forests have increased. That’s been better for some wildlife—elk, for instance—but worse for others, like butterflies. “The whole butterfly habitat picture is related to the whole wildlife habitat picture,” DuBois says. While hundreds of native insect species have suffered from the habitat changes wrought by lack of fire, most invertebrates are difficult to see. “But butterflies are a highly visible part of the invertebrate community,” DuBois says. “They’re easy to monitor.”


THE IMPORTANCE OF COUNTING

In 2013, botanist and butterfly enthusiast Marirose Kuhlman started a butterfly count at the MPG Ranch near Florence. The annual events have become both social and scientific. “Not only do they provide good information, but it’s a great way to connect with other people and get better at learning. Some

counters attend every year,” Kuhlman says.

Butterfly counts also take place at Glacier and Yellowstone National Parks, part of the roughly 450 counts across North America each summer coordinated by the North American Butterfly Association (NABA). The summer counts are a butterfly version of the annual Christmas Bird Survey run by the National Audubon Society. The NABA’s yearly reports include important information about the geographical distribution and relative population sizes of butterfly species. By comparing results across years, scientists can monitor butterfly population trends and study the effects of weather and habitat alterations on various species.

“Like with managing all wildlife, annual population monitoring is vital for butterflies,” DuBois says. “They’re definitely fun to look at, but it’s important that we count them, too.” 🦋



More about Butterflies

BOOKS

A Golden Guide: Butterflies and Moths, by Robert Mitchell and Herbert Zim

A Swift Guide to Butterflies of North America, by Jeffrey Glassberg

ONLINE

Find a butterfly count:
naba.org/counts/us_mx_map.html

Butterfly identification:
butterfliesandmoths.org/

Species profiles
<http://fieldguide.mt.gov/>



The variegated fritillary is found in parts of Montana in fields, grasslands, pastures, and open woodlands. In North America, the species ranges from central Saskatchewan to central Mexico.