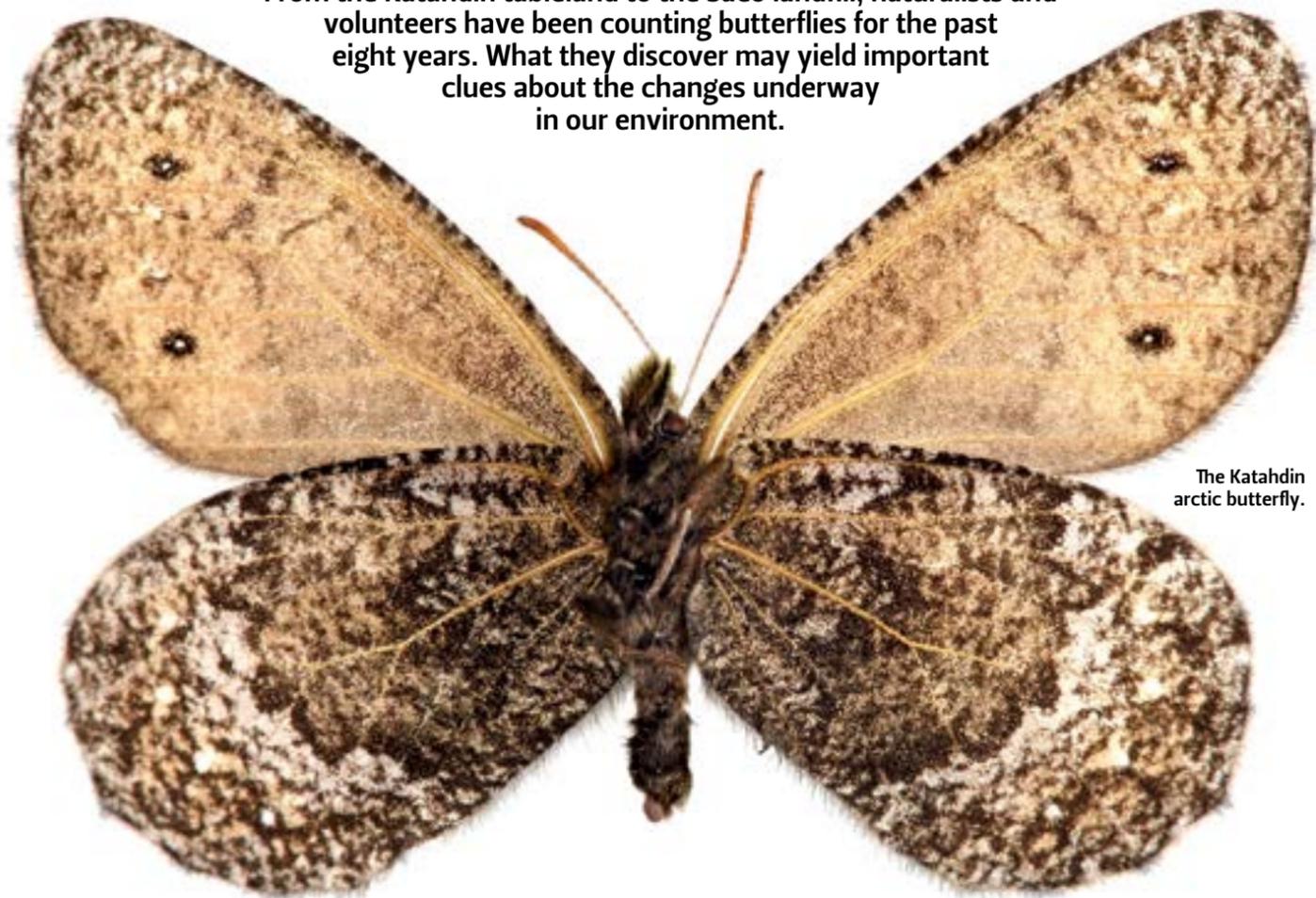


CRITTERS

The Rarest of Them All

From the Katahdin tableland to the Saco landfill, naturalists and volunteers have been counting butterflies for the past eight years. What they discover may yield important clues about the changes underway in our environment.



The Katahdin arctic butterfly.

BY VIRGINIA M. WRIGHT PHOTOGRAPHED BY MARK FLEMING

Once a summer, weather permitting, Jean Hoekwater and a field partner make the arduous climb to the top of Maine's highest mountain on a single-minded pursuit. Up on Katahdin's boulder-strewn tableland, the Baxter State Park naturalist falls in behind her companion, watching as his ankles brush the low-growing sedge and grass. She is looking for the fluttering of gauzy wings – the courtship dance of the

Katahdin arctic butterfly, one of the world's rarest butterflies.

As butterflies go, the Katahdin arctic is homely, with mottled yellowish-brown wings spanning roughly 1½ to 2 inches. It is, nonetheless, an extraordinary creature. Its life cycle alone places it in an exclusive club: it is among a handful of butterflies that require fully two years to make the transition from caterpillar to butterfly (the showy monarch, by contrast, spawns three to four generations in a single summer). And it is found nowhere in the world but the desolate, inhospitable Katahdin tundra, where it emerges from its pupal case in

early July, flies for a few weeks, lays eggs, and dies.

Hoekwater's survey is, she says, "very informal: just presence, absence, and numbers." It is also hit or miss. Like most butterflies, the Katahdin arctic is finicky. It won't fly when it's less than 70 degrees, it won't fly when it's windy, and it won't fly in the rain – conditions that can come and go several times a day at nearly 5,000 feet. "In any given year, we might see 14 or we might see none," Hoekwater says. "Last year it rained so much that I didn't get up there at all."

Hoekwater shares her observations with the Maine Butterfly Survey, an

ambitious project to map butterfly species at the township level led by the Maine Department of Inland Fisheries and Wildlife (IF&W) and its partners at several colleges, museums, and environmental organizations. Now in its eighth and possibly final year, the survey deploys 30-odd trained volunteers to observe, photograph, and record butterflies from May to August in places as varied as a Fort Kent bike path, a Gouldsboro bog, a Phillips field, even the Saco landfill. They've added six new butterflies to the state list, which now numbers 125 species.

Among the new sightings is the short-tailed swallowtail, a beauty with black wings trimmed in brilliant yellow and blue bands. Previously recorded only in Canada, its caterpillar was spotted three years ago in a patch of cow parsnip in Wallagrass Plantation during a field trip led by Phillip deMaynadier, a survey coordinator and IF&W endangered species biologist. "I told my son, who was 15, that this was going to be a bit of a wild goose chase," deMaynadier recalls. "We arrived at our very first cow parsnip site, he walked over to a leaf, flipped it over, and said, 'Is this it?'" It

Butterflies at Risk

These butterflies are considered to be at risk of extinction in Maine.

Endangered

Clayton's Copper (*Lycaena dorcas claytoni*)
 Edwards' Hairstreak (*Satyrium edwardsii*)
 Hessel's Hairstreak (*Callophrys hesseli*)
 Juniper Hairstreak (*Callophrys gryneus*)
 Katahdin Arctic (*Oeneis polixenes katahdin*)

Threatened

Purple Lesser Fritillary (*Boloria chariclea grandis*)
 Sleepy Duskywing (*Erynnis brizo*)

Of Special Concern

Cobweb Skipper (*Hesperia metea*)
 Coral Hairstreak (*Satyrium titus*)
 Crowberry Blue (*Plebejus idas empetri*)
 Early Hairstreak (*Erora laeta*)
 Frigga Fritillary (*Boloria frigga*)
 Leonard's Skipper (*Hesperia leonardus*)
 Spicebush Swallowtail (*Papilio troilus*)
 Appalachian Brown (*Satyrodes appalachia*)
 Satyr Comma (*Polygonia satyrus*)
 Bronze Copper (*Lycaena hylus*)
 Southern Cloudywing (*Thorybes bathyllus*)
 Dusted Skipper (*Atrytonopsis hianna*)
 Northern Blue (*Lycaeides idas scudderii*)

SPECIMEN COURTESY OF MAINE DEPARTMENT OF AGRICULTURE CONSERVATION AND FORESTRY

was the first time the short-tailed swallowtail had been recorded anywhere in the U.S.

In York and Cumberland counties, volunteers Bob and Rose Marie Gobeil are finding species previously associated with southern New England. "A few years ago during one extremely hot summer, we saw the largest concentration of common buckeyes ever recorded in Maine," Bob Gobeil says. "We've since found evidence that the species is breeding here."

Sometimes a species is notable for its absence. Last summer the Gobeils surveyed Swan Island in the Kennebec River off Richmond, where they expected to find monarchs among the abundant milkweed. They didn't see a single one. The orange-and-black insects, which migrate from Mexico, have been hard hit by drought in Texas and the Southwest. Few made it to Maine last year.

Because they are highly vulnerable to environmental stressors, butterflies are a good indicator group for documenting climate change, habitat loss and fragmentation, pollution, and invasive species, deMaynadier says. "We have 125 butterfly species in Maine and 20 percent of them are either endangered, threatened with extinction, or already extirpated from the state," he says. "That comes as a surprise to many folks, who conjure up images of the abundant common yellows and sulphurs and swallowtails in their backyard gardens."

Among the endangered: that plain little butterfly that dwells only on the Katahdin tableland. Its numbers are naturally limited by its lengthy metamorphosis, limited habitat, and harsh climate, and its rarity makes it a prize for collectors – though taking them is illegal (in the 1990s, 37 Katahdin arctics were among the thousands of rare butterflies seized in an international criminal poaching case). "The Katahdin arctic is a great flagship species for endangered species because it is endemic to the state," deMaynadier says. "It's something we should be proud of and do our best to protect."

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