



Washington Butterfly
Association

*G'nun**

The newsletter of the Washington Butterfly Association

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<http://wabutterflyassoc.org>

Facebook: Washington Butterfly Association. Instagram: #washingtonbutterflies (anyone can use this hashtag)
iNaturalist: <https://www.inaturalist.org/projects/washington-state-butterflies>

*G'nun is the official greeting of WBA. It is derived from the name of common Washington butterfly food plants, of the genus *Eriogonum*.



Last field trip of the season: Crystal Mountain, with Mt. Rainier in the background.

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Upcoming Programs by Zoom First Wednesday at 6 PM

December 4: James Adams and *Dinumma deponens* (Erebidae: Scoliopteryginae) in the U.S. — the continuing saga of a moth on the move.

January 11 (tentative): Winter Party on Zoom.

February 5: Red Blindness, Red Vision and Far-Red Vision of Butterflies: (Then some Fun Stuff) by Gary Bernard.

President's Message from Liz Kuehn

Hello Butterfly fans,

The votes are in, we surpassed the 25-vote threshold set forth in the bylaws and the WBA Board is now in place for the 2024-2025 season. Congratulations to all our nominees; I am looking forward to hearing everyone's great ideas to keep WBA a great resource for all butterfly enthusiasts across the state! A bit of a recap: Carolyn Heberlein launched the Survey Monkey on September 13, we had a 30% response rate which, according to the folks that do this for a living, is a good response! Thanks Carolyn for taking charge of the election voting and to Sylvia Sheets for getting our profiles formatted and posted on the web! If you missed the profiles, you can check out Meet the Board on the WBA website.

As we have run out of warm sunny days to chase butterflies in Washington it is now time to turn our attention to planning for our next field season and WBA activities. To start, next year's Study Weekend will be held around Yakima focusing on some new areas David James discovered last year; and, anyone who joined him on last year's field trip can attest to the magical butterfly experience! Much more to come regarding future plans.

Along with our Study Weekend field activities we have an opportunity to sponsor young butterfly enthusiasts to join us through the Idie Ulsh Scholarship that covers much of the expenses for them and a parent for the weekend. This is a wonderful chance for us to engage and grow the future of lepidoptery. If you have candidates between the ages of 13-17 or are interested in joining (or chairing!) the Scholarship Committee, email us at wabutterflyassoc@gmail.com subject line 'Scholarship'.

Invitations to participate at many fairs and festivals across the state continue to pop in and we hope to take advantage of more of these tabling opportunities to spread the word about WBA. Last year we were able to do outreach at multiple events thanks to our members and Board volunteers. This is a fun and valuable way to communicate and engage the public to grow our organization and fulfill our WBA mission as a nonprofit organization dedicated to the appreciation, understanding, and conservation of butterflies and other pollinators and their ecology. We will get the word out through our Washington Butterfly Association email for opportunities to participate in tabling events. If you would like to be part of our troop of volunteers, send us a line at wabutterflyassoc@gmail.com subject line 'Tabling' and we will communicate with you directly.

The Web design update is underway so stay tuned for that exciting launch! Along with our webpage, we have a Facebook page, YouTube Channel, Meetup Groups and we plan to expand our Social Media presence with an Instagram account. This is a great way to share our admiration and knowledge of amazing butterflies.

And finally, as we face an uncertain climate both physically and politically, we hope to find ways to expand our conservation efforts and partnerships with likeminded organizations. Through surveys, fundraising and sponsorships we can throw our WBA support into understanding the impacts these exogenous shocks have on the species and find ways to help in their preservation for future generations to enjoy. Stay tuned and I hope you will join us in these future endeavors.

Hope you're enjoying the off season,

Liz

Trip Reports

Crystal Mountain Subalpine Field Trip, August 26 Melanie Weiss

This season's challenging weather unfortunately resulted in the cancellation or postponement of WBA's late summer field trips. The Crystal Mountain trip was postponed until Aug. 26, and fortunately the day was spectacular. A gondola carried our group up 2,500 ft. to an elevation of 6,800 ft. and an in-your-face view of Mt. Rainier and subalpine flowers. It was 54° upon arrival and breezy, but a few hardy species were flying. Soon the sun warmed the area, and butterflies emerged in good numbers. Pearly Everlasting and Cascade Aster were the primary nectar sources. We had an enthusiastic group, with several excellent netters allowing us a closer view of species in jars before releasing them again. Eleven species were seen with *Coronis* Fritillaries being the most abundant along the trail. They were loading up on nectar for their flight back to the shrub steppe and egg laying. *Hydaspe* Fritillaries were also present. Their unsilvered ventral spots clearly distinguished them from the silvered spots of *Coronis* for everyone.



Coronis Fritillary. (M. Weiss)



Clodius Parnassian. (Richard Carlson)

And just before returning to the parking lot, we saw several Mormon Fritillaries. Also seen were Clodius Parnassian, Western White, Blue Copper, Gray Hairstreak, a very worn Boisduval's Blue, Anna's Blue, California Tortoiseshell and a friendly Milbert's Tortoiseshell. Pika whistles were heard, and a ground squirrel delighted everyone as he nibbled leaves along the trail. We were a butterfly-satisfied group as the gondola carried us back to the parking lot, and we all headed for home. Oh yes, not to be forgotten was the ice cream stop made by a few of us in Greenwater.

SLEUTHING A CHECKERSPOT MYSTERY

David G James

Almost seventy species of butterflies have been recorded at Snow Mountain Ranch (SMR), a 2000-acre slab of shrub-steppe with an elevational range of 1000 feet, just west of Yakima in central Washington. Until recently, the Desert Checkerspot, *Chlosyne acastus*, was not on the list of butterflies recorded at SMR, but since 2020, it has been seen commonly on Washington Fish and Wildlife (WDFW) land immediately west, within yards of SMR property. Some individuals have also been seen within the SMR property. Closer examination of this Desert Checkerspot population revealed that there were two seemingly distinct 'forms' on the WDFW land. One, matches all the identification criteria for *C. acastus* and appears typical for the species (Fig. 1). The other form is darker (Fig. 2), quite distinct from the typical form and is similar (albeit darker) than individuals of a segregate of the Northern Checkerspot (*Chlosyne palla*) population that is recognized from the eastern end of the Columbia Gorge (type locality, Wasco) (Fig. 3), 75 miles due south from SMR. Both forms occurred in similar numbers during May for the past two years in a restricted area of the numerous shrub-steppe coulees that characterize the WDFW land.

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Figure 1.

Do both Desert and Northern Checkerspots occur in the same habitat at SMR-WDFW? Northern Checkerspots are generally butterflies of montane areas, except for the eastern Columbia Gorge segregate (CGS) that occurs on lower elevation lands (~1500-2500 ft), very similar to the elevation of the area the Northern-type form occupies at SMR-WDFW (~2000 ft). Perhaps the SMR-WDFW population represents a northward extension of range of the CGS segregate of Northern Checkerspots?

Although the coloration and markings of the two Checkerspots at SMR-WDFW strongly suggest the presence of two species, I wanted further evidence that these are indeed two species. Especially since Jon Pelham was skeptical! So, I captured a female of the putative Northern Checkerspot in late May 2022 to try and get her to lay eggs so I could see and rear the caterpillars. Initially, I confined her with Rabbitbrush (*Ericameria nauseosus*) a primary host plant of Desert Checkerspot. After a week, no eggs had been laid, so I removed the Rabbitbrush and gave her Showy Fleabane (*Erigeron speciosus*), a known larval host of Northern Checkerspots. Within hours, she laid eggs! I reared ~20 larvae that diapaused as third instar larvae in July and then overwintered. Nine larvae resumed feeding on Erigeron (also the ornamental Aster, *Symphyotrichum novae-angliae*) in mid-March producing final instar larvae and pupae by early April (Fig. 4). My caterpillars had prominent orange-red spots dorsally which is characteristic of some populations of Northern Checkerspots, while mature larvae of Desert Checkerspots sometimes lack these. However, considerable variation occurs in larvae of Northern and Desert Checkerspots and as Dave Nunnallee and I noted in 'Life Histories of Cascadia Butterflies', it may not be possible to reliably differentiate the larvae and pupae of these two species. However, the fact that my female putative Northern Checkerspot would only lay eggs on Asters and not Rabbitbrush and the larvae fed on Asters, is a little bit of evidence, I think, that the 'mystery' checkerspot is in fact the CGS of Northern Checkerspot.



Figure 2.

ser Checkerspots sometimes lack these. However, considerable variation occurs in larvae of Northern and Desert Checkerspots and as Dave Nunnallee and I noted in 'Life Histories of Cascadia Butterflies', it may not be possible to reliably differentiate the larvae and pupae of these two species. However, the fact that my female putative Northern Checkerspot would only lay eggs on Asters and not Rabbitbrush and the larvae fed on Asters, is a little bit of evidence, I think, that the 'mystery' checkerspot is in fact the CGS of Northern Checkerspot.



Figure 3.

I hope to rear these checkerspots again, this time rearing Desert Checkerspots alongside 'Northern Checkerspots', to confirm differences in host plant choice and utilization. In a further twist to this mystery, recently published genomic studies suggest that the Desert Checkerspot is actually a subspecies of the Northern Checkerspot, rather than its own species! If this is the case (and there is skepticism about this), then we would have a situation of two subspecies of the same species living in the same habitat with the same seasonal history, but utilizing different host plants. I'm not sure if this would be unprecedented but I think it would certainly be rare.



Figure 4

Figure 1. Female (left) and male (right) Desert Checkerspots (*Chlosyne acastus*) at SMR-WDFW May 2022 (Photos: Tanna Knouse)

Figure 2. Putative Northern Checkerspots (*Chlosyne palla*) female (left) and male (right) at SMR-WDFW, May 2022 (Photos: DG James left and Tanna Knouse right)

Figure 3. Eastern Columbia Gorge segregate of Northern Checkerspot (*Chlosyne palla*) female (right) and male (left). Taken from butterfliesofamerica.com. Photos by Kim Davis and Mike Stangeland.

Figure 4. Final instar larva (left) and pupa (right) of putative Northern Checkerspot (*Chlosyne palla*) from SMR-WDFW (Photos: DG James)

Field Guide

Usually known as Red Admiral
though called by some (like Nabokov)
Red Admirable, by others The Alderman.
In Latin, *Vanessa atalanta*, for the goddess
famed among the Greeks for her fleetness.

Vermilion bands across panther-black wings
milk-spots spilled over their squared-off tips
little blue stud at the tail. Flies all over
the northern world—I've even seen it in Iceland.
The caterpillars feed on nettles.

That's basically it. But what the field guide
won't tell you—let alone any poxy app—
is how a boy of ten painted it in tempera
for a fifth-grade mural, working from an Audubon
sticker. How he asked Mrs. Frost if it was real,
because how, really, could it be? How she said
"Yes, Bobby, it is. Maybe you'll see one someday."

Then how there, how very *there* it was
in a barnyard that summer, basking fully spread
at the foot of a Colorado cottonwood. How Atalanta
rose and fell, rose and fell at the end of the day,
playing with Painted Ladies, the lot of them swirling
up to the crown, down to the ground, up again
and all around, so fast, right into dusk.

And how she appeared on the butterfly bush
yesterday morning, Atalanta herself,
fresh as could be and glistening, all scarlet and jet.
Then a Painted Lady too (Cynthia of the Thistles
in old books). The two of them rose again,
reunited, bearing me back on brilliant wings. Back
to that classroom, that barnyard, that cottonwood,
sixty-six years ago.

Poetry by Robert Michael Pyle

This poem will appear in the book *Swimming with Snakes: Encounters in the Actual World (Poetry and Prose)*, by Robert Michael Pyle, to be published in spring 2025 by Watershed Press, Seattle.

Painted Lady (M. Weiss)



Red Admiral (M. Weiss)



How to support your local caterpillars by Regina Johnson

Originally published in the November 2017 Gnum.

Recently I read a book that has been making waves in gardening circles, Douglas Tallamy's *Bringing Nature Home*. I believe I can summarize his main points thus: Wildlife, including insects and birds, are dependent on suburban gardens for habitat because development and other disturbances have resulted in widespread habitat loss and degradation; and that typical garden plants do not provide food for the insects and other arthropods that form the foundation of the food web for the larger animals like birds and reptiles. It was an interesting read with some caveats. One, it's written almost entirely for gardeners in the Mid-Atlantic states, relying heavily on his personal observations in his own gardens in Delaware and Pennsylvania, and discussing the non-native garden plants and invasives common in that area. He treats Douglas-fir as a nonnative! Which it is there, but not for us here. Two, his uses of statistics don't always ring true—his assumptions aren't necessarily valid, and his numbers don't always add up. For instance, he cites the USDA statistic that 41.4% of the land area in the US is in agriculture, and jumps to the conclusion that therefore the rest is urban. I'm pretty sure there are other land use categories besides agriculture and urban! And there's different degrees of urbanization, from the density of Manhattan to typical Washington rural residential. He also cites 'ecologists' as estimating that only 3-5% of the land area in the US is undisturbed, which will depend of course on your definition of undisturbed.

Tallamy wants us all to plant our gardens with native plants, because native plants are more likely to support robust populations of insects and other invertebrates, and most of the animals we think of as 'wildlife' depend on these insects and other invertebrates for their food supply, either directly, as with birds feeding their nestlings (most all birds eat bugs, primarily caterpillars, as nestlings, whatever the adults may eat), or indirectly, with other animals eating insectivores. Basically, insects turn plants into bird and reptile and fish food. He cites anecdotal evidence from his own observations, and research by his college students, that insects etc. are declining overall (not just butterflies or bees) and believes this is a result of habitat loss through widespread planting of nonnative plants, and the invasion of more natural areas by nonnative plants. By and large, most insects don't eat nonnative plants because they are not co-evolved; the plants have phytochemicals to deter herbivores and only co-evolved herbivores will be able to eat them. Monarchs and milkweeds are a well-known example of this; few animals can eat milkweed other than Monarchs. This is, of course, a generalization and we will cover some exceptions in a later issue. Speaking strictly for the Mid-Atlantic area, he states that although the Norway Maple has been in this country for over 300 years, there are still essentially no insects that eat it here, while native maples support 285 species of Lepidoptera; 300 years is too short for co-evolution to have occurred. And *Clematis vitalba*, a nonnative weedy clematis that is increasingly common here in Washington, supports 40 species of insects in its native range in Eurasia, but only 1 species in North America (he doesn't say what that one species is though, or how long *C. vitalba* has been here). You can see the problem, even if his numbers are not 100% correct. He goes so far, in fact, as to compare nonnative plants to statuary—ornamental, but sterile and lifeless.

What is meant by insect/plant co-evolution? Most all plants create phytochemicals of one kind or another to deter herbivores, for self-defense. Phytochemicals are what give plants their flavors and fragrances. These phytochemicals have a variety of effects. Some taste bitter, some bind up the nutrients in your gut so you starve, some poison the nervous system or heart. Digitalis in foxgloves, pyrethrin in chrysanthemums, nicotine in tobacco, salicylic acid in willows, tannins in oaks and conifers, are all phytochemicals to deter herbivores. In response, herbivores like insects evolve to be able to tolerate or detoxify the particular phytochemicals in a particular group of plants. Many mammalian herbivores have the ability to at least partially detoxify many different phytochemicals, and rely on eating a varied diet to avoid overloading on any one toxic phytochemical. Most insect herbivores, on the other hand, have evolved the ability to more thoroughly detoxify or sequester a limited range of phytochemicals, so they specialize on plants with those chemicals. Makes sense,



Red Admiral. (M. Weiss)

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since most mammals can move around a lot more than caterpillars, and thus sample a larger variety of plants than caterpillars can. Besides Monarchs on milkweeds, there's also checkerspot on paintbrush and Mourning Cloaks on willows. A few insect species, like the various Tiger Swallowtails, can eat a wide variety of plants, but only about 10% of insect species are considered to be generalists. Other



Mourning Cloak. (D. Nunnallee)

species that appear to eat a variety of plants are eating plants that share the same phytochemicals. But just being in the same genus isn't enough to make different species of plants edible, as in the Norway Maple example above—the nonnative garden sweet violet, *Viola odorata*, is inedible to greater fritillaries, which rely on native violets; and the California Sister, which eats the oaks common in California and Oregon, can't eat our only native oak. And as we see from the Norway Maple example, co-evolution takes a long time.

So you should plant more native plants in your garden. I have put together a short list of Washington native plants that are known to be good host plants for our more-common butterfly caterpillars, drawn from the book *Landscaping for Wildlife in the Pacific North-west*, by Russel Link. Not all butterflies will occur in your area—no Monarchs west of the Cascades (sorry, Seattle), and not all native plants occur in all parts of the state—no Bigleaf Maples east of the Cascades (sorry, Spokane). Before you go launching into a total reworking of your landscape, take a look at Eileen Starks' *Real Gardens Grow Natives*, which was reviewed by Joyce Bergen in our March 2015 issue. The book covers ecological landscaping principles, designing for wildlife, soil preparation and planting techniques, and wildlife-friendly garden maintenance. Also, recently out from Xerces, is *Gardening for Butterflies*. It's a beautiful and inspiring book, and while not written exclusively for the PNW, it does cover our area very well. And, it is exclusive to butterflies, not wildlife in general like the above books, with information on garden design, plant selection, and garden maintenance—turns out most of our traditional garden maintenance activities are devastating to butterflies and other insects.

Keep in mind this list is for plants that caterpillars eat, not nectar sources.

Maple: bigleaf, vine, Douglas	Pale and Western Tiger Swallowtail, Mourning Cloak
Hawthorne: black, Columbian	Pale Tiger Swallowtail, Mourning Cloak, Gray Hairstreak
Cherry: bitter, choke	Pale and Two-Tail Tiger Swallowtail, Spring Azure, Lorquin's Admiral
Willow: many species	Tiger Swallowtail, Lorquin's Admiral, Mourning Cloak, Viceroy
Ceanothus: redstem, snowbrush	Pale Tiger Swallowtail, California Tortoiseshell, Brown Elf
Oceanspray	Pale Tiger Swallowtail, Gray Hairstreak, Spring Azure, Lorquin's Admiral
Pearly Everlasting	Painted Lady
Western Bleeding Heart	Clodius Parnassian
Lomatium: many species	Anise and Indra Swallowtails
Eriogonum: different species	Euphilotes blues, green hairstreaks
Lupine: many species	Silvery and Boisduval's Blues, Western Sulphur

Milbert's Tortoiseshell. (M. Weiss)



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Stinging Nettle	Red Admiral, Painted Lady, Milbert's Tortoiseshell, Satyr Anglewing
Kinnikinnick	Brown Elfin
Salal	Brown Elfin, Spring Azure
Bitterbrush	Brown Elfin
Milkweeds	Monarch
Violets: early blue, stream	Greater fritillaries, Western Meadow Fritillary
Thistles: any	Painted Lady, Mylitta Crescent
Grasses: most any	Common Ringlet, wood nymphs, grass skippers
Pine: lodgepole/shore, western white, ponderosa	Pine White



Monarch. (Matthew Hull)

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