



Washington Butterfly
Association

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)

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



Our base for 2023's Study Weekend, July 21-23: the Historic Washington Hotel in Metaline Falls. WBA has reserved all the rooms, plus the meeting room. Lodging in the area is limited but there are still rooms available at the Hotel. Call 506-442-5354 to reserve a room.

In this issue:

Trip Reports	p 2
Watching Washington Butterflies	p 4
President's Message	p 7
Neonicotinoids	p 8
Field Trip Schedule	p 10

Registration for the 2023 Study Weekend in Metaline Falls is now open!

<https://reg.planetReg.com/E41717253237462>

Everything will be like it was last year—bare bones. Details are still being worked out but we will meet somewhere on Friday July 21 for snacks and mothing; Saturday will be field trips in the Pend Oreille area; Saturday night pizza and salads at the Historic Washington Hotel in Metaline Falls; Sunday field trips in the Pend Oreille area; and possibly Monday field trips too. Bring a lawn chair and lantern for evening activities. All this, for \$50 per person!

Trip Reports

WBA Volunteers Survey Evan's Creek Preserve Melanie Weiss

The 179 acres of Evan's Creek Preserve is a hidden gem in King County. The land was gifted to the City of Sammamish over twenty years ago and includes areas of mossy forest, meadows with native lupine, wetlands, and of course, wildlife. Restoration work is in progress. Volunteers from WBA will be surveying the preserve this season. Being on the west side of the Cascades, we don't expect to see an abundance of butterflies, but hope to find good diversity by season's end. During a visit the last week of April we saw five species including Mourning Cloak, Anglewing, Margined White, Cabbage White and blues, probably Echo Azure. The survey will be shared with the preserve at the end of this season.



Margined White. (M. Weiss)



Mourning Cloak. (M. Weiss)

Earth Day 2023 (April 22) was celebrated in the Methow Valley with a community afternoon event sponsored by Methow Recycles and hosted at the John Doran Ranch in Twisp, Washington. Among the festivities of the half day celebration was an educational village featuring 15-20 different tabling displays with relevant topics and hands-on activities. WBA, represented by Cheryl Bellin, had a table on "Butterflies of the Methow Valley" which included a flight period species list from her residence/neighborhood, a live Mourning Cloak and two moths; Books, Photos, Charts with Habitat needs, and Gardening approaches to support butterflies.



Over the 5 hours of attendance the butterfly exhibit was visited by over 40 individuals with roughly 40% children (ages ~3-10) and 60% adults. Future dates for butterfly outings were discussed with several adults including field trips, personal home visits, and helping to develop a pollinator habitat. One young girl revisited with mom in tow to show her what it was all about. All 25 copies of the species list, with current books and online resources, were happily taken away and emails exchanged to pass along a few more. A set of butterfly stickers and one of flowers were given together to the kids to highlight the need for flowers and host plants to support butterflies. A couple of pages from the Field Guide to Butterflies Coloring Book, permission to copy graciously granted by coauthor Bob Pyle, were

handed out to take home to remind them of the day along with WBA bookmarks. Listening to the excitement and curiosity expressed by the kids and the appreciation by many adults was my reward for the day. One young girl, after looking at the Mourning Cloak, said “I saw a green butterfly last week”. I said with enthusiasm “you did”!? I commended her observation skills and showed her a chart with a picture of a Sheridan’s Green Hairstreak that IS flying now and potential buckwheat host plants. I asked her dad if they had buckwheat plants at their home and he nodded. I gave a nod back in hopes that her eye for the butterfly world continues to be encouraged.

As an added bonus for the presenter, the first Julia’s Orangetip of the Methow Valley 2023 season was observed flying through the gathering. Appreciatively, Lucy Reid, a new butterflyer, joined me at the table for the event so I could run after it to confirm the sighting. She also provided support when multiple groups visited simultaneously.



Julia’s Orangetip. (M. Weiss)

Elfin Quest, first TBD field trip

Melanie Weiss

On May 3, ten WBA members traveled to Mason County for the first field trip of the season, and our first TBD (To Be Determined) field trip. The weather and target species in flight coalesced for a perfect day, and we took advantage of it. The participants agreed that TBD was a good option to add to our trip scheduling.

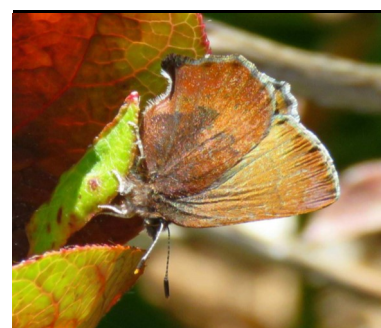


Bramble Green Hairstreak.

Power line corridors in the Hoodspout area have been productive for several species that are not commonly seen in good numbers. We saw all four target species: Bramble Green Hairstreak, Brown Elfin, Hoary Elfin and Western Pine Elfin. Unfortunately, ‘2:00 Oreas’ did not put in an appearance. We searched in vain for an Oreas Comma that is reported to visit a particular sunny location around 2:00 regularly. We saw an orange flash, but never had a clear view. However, resting for a few moments by the stream out of the sun was a fine consolation prize. A big thank you to Tanna Knouse for sharing some of her favorite locations with our group.



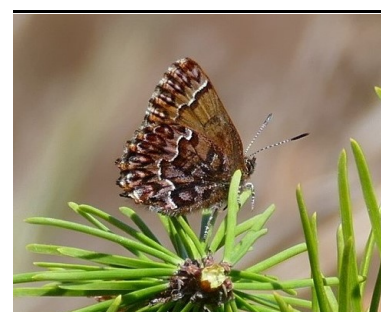
Hoary Elfin. (J. Barreca)



Brown Elfin. (Cathy Clark)



The Elfin Questers. (Karen Holtrop)



Western Pine (Shelton) Elfin.
(Karen Holtrop)

Watching Washington Butterflies with Bob Pyle

Watching Washington Butterflies with Bob Pyle

Number Fifty

Metamorphosis

Everyone knows that one of the most compelling features of the Lepidoptera is the order's possession of a profound metamorphosis from egg through caterpillar and on into pupa and adult. We are (or should be) constantly aware of the fact that every one of our beloved butterflies and moths has actually been two different kinds of animal, with separate forms, foods, and functions: one a creeping, chewing creature, the other a flying, sucking one. We of WBA are particularly fortunate to have one of the best regional treatments of butterfly ontogeny in the world at our disposal: *Life Histories of Cascadia Butterflies*, by David Nunnallee and David James (Oregon State University Press, 2011). I hope that most of us give a fraction of the attention we grant the grown-up butterflies to their beautiful and fascinating immatures.

Just as the scientific journals are scattered with observations and studies over the years, adding up to a loose compendium of the sort the Davids brought together for us largely through their own rearing experience, general literature is loaded with poetic metaphors and bromides drawing upon metamorphosis as the manifestation of resurrection: the triumph of life over death. Clichés work for a reason, so I don't disparage or downplay this old appropriation, but I prefer a nuanced approach. The Grove Street Cemetery on the Yale University campus in New Haven, Connecticut, (incorporated in 1797, it is the oldest formal burying ground in the country) has a big, gilded lepidopteran perched in the Gothic gable of the gatehouse. Some say it is the butterfly of rebirth, while others maintain it represents the moth of decay.

Either way, we can't deny that insect metamorphosis profoundly affects our culture, whether in religion, pop-psych, or comic strips, farming and forestry, metaphysics or molecular biology. If it works for all of them—whether as soulful similes or experimental systems (the many generations of *Manduca* sphinx moths in culture at the University of Washington almost rival fruit flies), then more power to them all. But *WE* are the really lucky ones, the happy few who actually know the actors and the plot, and live to see the outcome each spring.



Cecropia (Giant Silk) Moth. (Top, Michael Hodge. Bottom, C. Barrentine)

One of the best ways to realize this bonus of being a butterflyer is to rear them through. I have never reared leps on the scale of Nunnallee and James (who has??) or others of our peers such as Dave McCorkle and Jon Pelham. But I did raise quite a few as a kid. It was easy to find Painted Lady larvae in a thistle patch. Then to just take them home, add fresh thistles, and watch and wait. Cabbage White chrysalides hung under the eaves of our suburban Denver houses like Easter eggs in winter, and Mourning Cloaks' thorny pupae in summer. Inspired by Gene Stratton Porter's *Moths of the Limberlost*, I looked and looked for giant silkmoth cocoons in the fall—the magical Lunas, Imperials, and Promethias—but living outside the Eastern Deciduous Forest, I never found any until I introduced Cecropias to my mother's lilacs, which they defoliated.

(Continued on page 5)

(Continued from page 4)

My great good luck lay in the fact that two of my favorite butterflies reproduced prolifically right there in my raw young subdivision. The builders of Hoffman Heights in east Aurora planted shade trees of several species along all the streets. The Chinese Elms of Revere (my street) were useless, except for shade and later for climbing with my pet anoles. But the next street east, Salem, was lined with alternating Hackberry trees and Green Ashes. Those first few years they were just the right height for scanning the lower limbs at eye level. It was a cinch to walk up one side of the street and down the other and simply pluck the fat green caterpillars as I went: the saw-backed, white-striped, horned and tailed Hackberry Emperors, the blue-eyed, hump-backed Doubletails sticking out their smelly osmeteria when I gripped them. Both species have greatly increased their abundance and range thanks to the generous use of these eastern trees all over the shade-thirsty West. (In more recent years, I walked my niece Heather along her own street in Colorado Springs, also lined with Green Ash, to recreate the experience with her.) Those summers in the late 'fifties and early 'sixties, my bedroom/laboratory was redolent with the rich scent of Hackberry leaves wilting in the heat. The plump, camouflaged chrysalides that followed were my just rewards for all the feeding. Then—a few days later for the Hackberry butterflies and the following spring for the swallowtails—the immaculate adults popped out.

Maybe my most memorable rearing was that of the Oregon Swallowtail. In his May, 1936 *National Geographic* article, a devotional canticle of my youth, Laurence Ilsley Hewes (who contributed many early Washington records) described the adult in riveting terms as "a crisp, sharply marked denizen of the arid wind." He went on to describe the difficulty of catching it in the hot basalt canyons, and recommended rearing it if possible. So in 1964, when my mother took me to Seattle on the train to see the UW, I insisted we visit the Columbia Gorge. There I found one caterpillar of *Papilio bairdii oregonia*. Though it feeds on Tarragon in the wild, it will accept umbels of the carrot family such as its relatives, the Anise and Indra swallowtails, require. So I begged extra parsley from the waiters in the dining car, and fed it on that all the way home and on to autumn pupation back home. It was only my bad luck that, after waiting all winter, my family was away on a mountain outing the day it chose to eclose...and my new kitten ate it.

Once I'd come to Seattle for college, my rearing took a back seat. But I do recall with excitement a trip over the Cascades to Tri-Cities with veteran collector Dan Carney to seek the autumn hibernaculi of Viceroy's in the silked-on leaf-tips of willows along the Columbia. There was little room for rearing cages in the dorm. But there were spring willows leafing out beside the Montlake Fill for fodder, as the tiny caterpillars crawled out of their mummy bags looking for the first green of the season. Several years later I nearly reared Valerata Arctics from the high Olympics for the first time, using the climate-controlled chambers at Yale. In the end I lost them to a difficult mold just prior to pupation. I might have done better in my boyhood bedroom.

Well, the real reason that we make such hay from butterfly metamorphosis isn't entirely due to their dramatic changes, which nearly beg belief. It is also, and perhaps mostly, that *we* change, too. Boy howdy don't we just. None of us is the person we were when we fell in love with leps. I was always the kid, then the student, then the grad student, and the post-doc, but still more or less the *kid*, at the Lepidopterists' Society meetings, in awe of the old timers I was privileged to meet: Legends such as Klots, Hessell, Brown, Comstock, Martin,



Hackberry Emperor, larva and adult. (anon)



Two-tailed Tiger Swallowtail larva. (RM Pyle)



Oregon Swallowtail. (C. Bellin)

(Continued on page 6)

(Continued from page 5)

Tilden, the Millers, the Remingtons, the Hodges, the Prestons, Clench, Ehrlich, Newcomer, and many others. And now, guess what—I am the old timer! How strange and all-of-a-sudden that seems.

Yet, it is only these sixty-odd years, and the changes they have brought to my experience, that have enabled me to share these fifty columns with the readers of *G'num*. That's right—*fifty*! Which seems like a good time to shed this particular bit of larval skin. As I work and play my way through this final instar, I am simplifying right and left, as Henry Thoreau bid us do. I want to spend as much of my remaining time and energy as I can in the out-of-doors, amid the butterflies, moths, and tardigrades, if only in my own yard and valley. If I feel I have anything to say, I'll send it in. But it's high time for a fresh voice, or voices, in this slot.

I have very much enjoyed resurrecting that hoary old title "Watching Washington Butterflies" in the pages of this marvelous newsletter. Thank you for the space, the pulpit, and the platform, the reading, and the comments—nothing means more to a writer than they do. And thank you, Regina, for your excellent editing and layout, and for doing this demanding job at all.

So, here's to you all, here's to WBA, here's to the habitat, and here's to the butterflies—our reason, after all, for being here together. May that never change. Good butterflying, and cheers!

Signing out,

Bob Pyle

Swede Park

Gray's River

April 30, 2023



Norfolk, U.K., April 2022. Photo by Susan M. Wells.

News of The Lepidopterists' Society Volume 65, Number 1 Dr. Robert M. Pyle, Hon. Fellow of the Royal Entomological Society

From the 1970s onwards, Bob Pyle pioneered and popularised insect conservation in the USA at a time when fish, large mammals and certain birds and trees were more-or-less the only taxa considered worthy of conserving. He focused mainly on butterflies, and was elected as both an Hon. FRES and a Fellow of the Entomological Society of America for his contributions to insect conservation – one of the few entomologists to receive this latter honour who are not connected to economic entomology or pest control.

In 1971-72, Pyle spent a pre-doc year as a Fulbright Scholar in the UK under the tutelage of John Heath at Monks Wood Experimental Station, where he rapidly absorbed - and contributed to - the then emerging, world-leading ideas for monitoring, understanding the ecology of, and conserving insects. This inspired Pyle to found the Xerces Society (1971), the first conservation organization devoted to insects in either of the Americas. Xerces has been a great success and still flourishes as a major driver of policy and conservation practice in the States.

After a doctorate under Charles Remington at Yale, Pyle, Sally Hughes and Remington instituted the annual 4th of July Butterfly Counts, which remain a hugely popular vehicle for lay involvement with insects and which increasingly yield

(Continued on page 7)

(Continued from page 6)

rigorous data on changing abundances across North America. Xerces and the 4JBCs were the models for similar activities soon to be established across Europe. In 1976, with Lincoln Brower, Pyle initiated conservation efforts for the threatened phenomenon of the migratory Monarch butterfly. He then spent two years establishing butterfly conservation in Papua New Guinea - where it was pretty much unknown - including the sustainable breeding of common species for village-supportive butterfly farms and the conservation of the rare giant birdwings. In Australia, Bob Pyle is revered as one of the 'big three' pioneers of global butterfly conservation.

Since then he has used his exceptional gifts as an entomologist, scientist, author, poet, teacher and communicator to advance the popularity, knowledge and conservation of insects - particularly butterflies - across the world. For example, during three years in 1979-82 at the IUCN/WWF's Conservation Monitoring Centre at Cambridge, he co-compiled (with Sue Wells and Mark Collins) the first IUCN Invertebrate Red Data Book, which laid the blueprint for all subsequent global assessments. He has also taught, lectured and inspired others repeatedly across Europe, as various nations 'discovered' and grew concerned about declining butterfly populations.

In America, Bob Pyle has popularised butterflies as author of *The Audubon Society Field Guide to North American Butterflies*; *Mariposa Road: The First Butterfly Big Year*; *The Butterflies of Cascadia: A Field Guide to All the Species of Washington, Oregon, and Surrounding Territories*; *Peterson Field Guide Coloring Books for Insects and Butterflies* [both for children]; *Handbook for Butterfly Watchers*; and *Butterflies of the Pacific Northwest*.

Bob Pyle is also a poet and general author of note, winner of various literary prizes including a Guggenheim Fellowship. Among the books where he brings art and literature to insect natural history are *The Art of the Butterfly*; *Nabokov's Butterflies*; and *Chasing Monarchs: A Migration with the Butterflies of Passage* (1999), the last an unusual combination of original research presented as a popular book, in which he tracked the southerly migration of western Monarchs over many weeks, thereby demonstrating for the first time that some Monarchs cross into Mexico west of the Rockies and proving that the eastern and western populations, hitherto considered separate and more vulnerable, are integrally connected.

President's Message from Jim Reed

Greetings Once Again to my Fellow Lepidopterans!

Each year it seems as though our Spring weather is getting more cantankerous. Of course we all expect that spring time weather will be quite variable with spring showers, blustery days, intermixed with glorious warm sunny days. But this year our weather patterns kept it cold, rainy, even snowy all through March and most of April. I saw a few of our hardy, overwintering butterflies (Green Commas, *Satyrion faunus*) in my local case, out for a small sun break and then it snapped right back to cold and rainy. The flowers and plants pushed up and were ready to burst into life and then forced to wait in semi-dormancy. And suddenly the last week of April, it was as though someone threw a switch and it got warm, bordering on hot.

The weather was grand and butterflies ended their diapause rather abruptly. The end of April saw Julia's Orange Tips, Propertius Duskywings and Anise Swallowtails suddenly all flying together. In some years this burst of life occurred at the end of March or the first week of April; so, late, but perhaps all the much more appreciated.

As with the butterflies, so too is it the same with butterfly enthusiasts of all types. People are trying to determine what pollinator-friendly flowers to plant in empty yard borders, others are taking to the woods, the hills, the meadows and their favorite places to catch a glimpse of their favorite fliers. As you go about your spring rituals, paying homage to nature, please do not forget about your fellow humans as well.

It would be a great time to get involved with WBA; there are opportunities to interact with nature and other nature lovers. Consider serving on the WBA Board as some of our members need to step off the Board for a variety of reasons. To those retiring Board members, we thank you for your service and dedication over the years.

The current Board has left us in great shape financially. We have a solid group of dedicated field trip leaders. I hear people say that they would like to help but they do not know enough about butterflies to sit on the Board. Nor do I. As wonderful as they are, the butterflies do not really notice if you are a novice or an expert. Being on the Board is more about caring about people, than knowing the butterflies. So get involved, meet some great people and have a blast doing so.

Neonicotinoids and the Insect Apocalypse

By Paulette Murphy and Regina Johnson

Sudden, rapid, and enormous declines of insects world-wide, an ‘insect apocalypse’, has received a wave of media attention since 2004. Since then, scientific studies have sought to quantify the phenomenon and to understand what is causing it. Declines of commercial honeybee populations have received the most attention since the global food supply depends significantly on them. But butterflies, beetles, dragonflies, grasshoppers, and other insects have declined precipitously as well. Quantifying the decline across so many species is challenging, but several studies have attempted to do so. One study in Germany found that the flying insect biomass dropped by 76% in 27 years. Subsequent reports have attempted to quantify particulars of declines in abundance and diversity, but the decline of insect populations is a complex and heterogeneous story.

Scientists may argue about the particulars, but there is general acknowledgement that insect biomass is declining globally. Perhaps the most compelling aspect of the story is the rapidity of the decline - massive declines in just decades. There are many reasons that may account for insect declines, e.g. climate change, increasing agricultural acreage, shift to monoculture and industrial agriculture, and increased insecticide use generally. It is difficult to assign causes to such a widespread phenomenon, but there is one correlation that is of high interest. The use of neonicotinoid insecticides has increased dramatically in the past few decades, i.e., approximately the same timeframe as the dramatic insect reductions. The annual use of neonicotinoids in the US increased from near-zero in 1994 to almost 8 million pounds in 2014, and they are used widely for maize, canola, soybean, oilseed rape, cereal, rice, cotton and sunflower crops. Neonicotinoids have been widely adopted as safer replacements for previously used insecticides because they are selectively toxic to insects while relatively nontoxic to vertebrates, and because of growing insect resistance to carbamates and organophosphates (which were killing farmworkers).

There is insufficient evidence to say unequivocally that neonicotinoid compounds are responsible for a widespread decline in insect numbers. Still, some countries are very concerned about the global insect declines, and about the correlation with neonicotinoid use. The 28 countries of the European Union have passed legislation to ban the use of three neonicotinoids for all outdoor settings, although neonicotinoids are permitted for use in permanent greenhouses. In the U.S., the Environmental Protection Agency has been reviewing assessments of neonicotinoids for risks to ecological systems, human health, pollinators, and non-target insects, and plants, and microbes. A final interim decision is expected in 2024.

As the U.S. and Europe have diverged in their approaches to neonicotinoids, insect populations will reflect this policy difference if neonicotinoids are a significant factor in the rapid declines of the past several decades. Until a ‘smoking gun’ is found, or possibly a range of factors that have contributed to the insect apocalypse, we in the U.S. can make personal decisions that can make a difference in our local environments.

First, what the heck is a neonicotinoid? Neonics are insecticides, which are pesticides specifically targeting insects. “Pesticide” and “insecticide” are not synonyms, rather, insecticides are a class of pesticide. Other common classes of pesticides are herbicides, fungicides, and rodenticides. Yes, they are related to nicotine, an organic* chemical occurring naturally in tobacco plants. But neonics are a group of organic compounds that do not occur naturally. So why go to the trouble to make something in the laboratory that resembles nicotine, but isn’t?

Nicotine is a well known systemic insecticide that is toxic to sucking insects. The trouble is that it is also toxic to mammals. A favorite home-made insecticide of our great-grandparents’ time was cigars soaked in water, then run through a blender, sieved and sprayed. Extremely effective, toxic, and dangerous! And a perfect example of how not everything home-made is safe. By identifying the specific way that nicotine targets the receptor chemicals in an organism’s cells, a

nicotine-like chemical can be designed that will retain toxicity toward insects but minimize its effect in mammals. An entire class of neonicotinoids has been developed with highly specific toxicity to insects, but with lower risk for other species, specifically humans, other mammals, and birds. Still, there is growing evidence that neonicotinoids can adversely affect the health of invertebrates, birds, fish, and mammals, including humans, even if its effects are not lethal.

The most common neonicotinoids used currently are: imidacloprid, clothianidin, thiamethoxam, dinotefuran, acetamiprid. Other compounds continue to be developed for sale, so this is only a current listing. These compounds are widely used because of their effectiveness in killing target insects, but also because of their stability and wide range of possible application methods. They can be used in irrigation mixtures, sprays, coatings, soil drenching, and stem and trunk injections. They are widely used for agricultural production of field crops, and for growing ornamental plants, grapes, and tree fruit. They are also used to treat forest trees, and trees and grass in a variety of urban settings (parks, golf courses, public right of way, etc.), as well as for residential use and as a topical flea treatment on cats and dogs.

Unfortunately, when you're shopping for an insecticide, the labels are not going to specify if something's a neonicotinoid. All neonics are systemic, but not all systemic insecticides are neonics. There are web resources that allow you to quickly research pesticides by brand name or by active ingredient, so you might want to bring reading glasses and your smart phone when shopping.

Because neonicotinoids are systemic toxins, they are taken up throughout the entire plant. A major use of neonicotinoids in commercial agriculture (both for food and nursery stocks) is treated seeds, eliminating or minimizing the need for insecticide treatments of growing plants. Primary exposure to insects occurs by ingesting any part of the treated plant - tissue, pollen, nectar, flowers, fruits, and roots, and by ingesting untreated plants contaminated by residues from treated plants. Human exposure occurs through ingesting or handling treated plants, ingesting water contaminated by neonicotinoids, inhaling dust generated during planting treated seeds, and inhaling pollen released by treated plants. Studies of neonicotinoid bioaccumulation are of interest, but have not yet been conclusive.

The stability of neonicotinoids means that these compounds take months to years to break down in soil, depending on the specific compound and soil conditions. Persistence in water is on a timescale of weeks to months. A recent report documented the 'ubiquitous' presence of imidacloprid in Florida surface water finding its presence in 24 of 25 watersheds. Concentrations varied depending on location and season, but could be high enough to produce 'deleterious, and in some cases fatal, effects on aquatic invertebrates'. In California, 89% of the samples taken from rivers, creeks, and agricultural ditches contained imidacloprid. In the Midwest, a small study detected multiple neonicotinoids in all nine streams that they sampled. This mobility and nationwide ubiquity is important because even plants that have not been treated with neonicotinoids are able to absorb them from contaminated soil and water. It seems likely that neonicotinoids could become widespread throughout the plant world and the entire food chain in the U.S.

Even if neonicotinoids are not lethal to non-target species, they have been shown in recent studies to impair flight behavior and migratory ability in locusts and songbirds. Direct and indirect effects of neonicotinoids on non-target vertebrates have also been reported from rats, mice, rabbits, birds, frogs, fish, reptiles and deer. Some recent studies reported that human prenatal and adult exposures to neonicotinoids are linked with Autism Spectrum Disorder, heart defects and neurological symptoms.

With all this bad news, what can we can all do to positively impact our local, if not global, environment? Here are a few thoughts:

seek alternative solutions to pesticides. Integrated Pest Management involves using cultural and mechanical techniques in addition to chemical, to manage pests. The simplest methods might include planting pest-resistant selections (cultural), and pulling or smothering weeds rather than using an herbicide (mechanical). An alternative to neonic use in gardens would be to squash aphids with your fingers! Extremely effective mechanical control. But the best-adapted

plants will not have defenses against introduced insect pests or diseases. And, some pests just cannot be controlled without at least some use of chemicals, and are detrimental to ecosystems and/or human health without some level of control. Balancing all this is the Art of Integrated Pest Management. Unfortunately it is not as simple as “Just Don’t Spray”, or using chemicals that claim to be “Organic” or “Safe”. Organic fungicides made from copper and sulfur are very toxic to bees, and neem and horticultural oils, marketed as safe for beneficial insects, are not. Insecticidal soaps are another example. Like neem oil and horticultural oil, they work by smothering and dessicating soft-bodied insects, but that includes all larval forms of predatory insects.

- use contact insecticides at night and/or when insects are not flying. Contact insecticides have to be sprayed directly on the target to work and will have little effect on insects that wander by once the spray has dried.

- be very selective of what plants you apply neonics or any other systemic insecticide to, taking care not to exceed recommended dosage. Pesticide labels aren’t there for amusement value, they represent millions of dollars in research, and your use of the pesticide constitutes a legally binding agreement to follow the label requirements. Yes, you can be investigated and prosecuted for misuse.

- support organic production of agricultural products, seeds, and nursery plants

- vote for politicians (and write letters to let them know how you feel) who support agricultural reform

- share your thoughts with interested parties. But, keep in mind that shaming and judging don’t work – people shut down when they feel shamed or judged. “Just Don’t Spray” is also too simplistic to be useful. Yes, there are situations where it may not be necessary to use a chemical spray, and some uses ought to be discouraged, but it’s a complicated subject without a one-size-fits-all solution. What works in your little city garden, won’t work at a larger scale on a farm or forest.

Alternative insect controls in gardens:

First of all, bugs eating your plants are what’s feeding the birds and other wildlife in your garden. Try to share.

- Aphids can be easily controlled in small gardens by either squashing them with your fingers, or hosing them off your plants. Birds will gladly eat your aphids if you let them, and would appreciate their not being contaminated with any kinds of insecticides, neonic or not.

- Mites are creatures of hot dry dusty weather, so a regular hosing of the undersides of the foliage will keep mites down. Avoid planting mite-susceptible plants next to hot surfaces like concrete or brick. A thick organic mulch can help too. Neem oil in particular seems to cause explosions of mite populations – it’s killing off mite predators, which are susceptible to most “safe” insecticides.

- Scale, mealybugs, lace bugs and thrips are difficult to control and big reasons neonics are so popular. Best to ignore them if you can, or prune them off if necessary, or even remove infested plants. Natural predators can exert reasonable control if allowed to do so. This means avoiding the “safe” insecticides like soaps, oils and neem, which one might think are the safer alternatives to neonics; but they kill larval predatory insects.



Snakefly, generalist predator on small insects and mites. (D. James)



Minute Pirate Bug, predator of mites, aphids, and thrips. (D. James)



Damsel Bug, another predator of mites, aphids and thrips. (D. James)

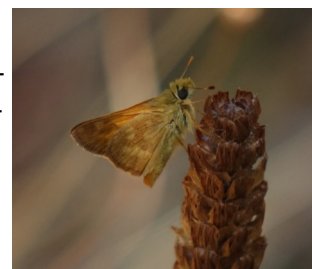
- Other pesticides such as herbicides and fungicides are often accused of harming insect populations, probably mostly through confusion of “pesticide” with “insecticide”, although some do have deleterious effects. Organic fungicides in particular tend to be poisonous to bees and other insects – anything based on copper or sulfur. This is a direct effect. Herbicides tend to have an indirect effect, if any. You’ve probably heard Roundup accused of being bad for Monarchs. But it’s an herbicide, and the active ingredient does not have insecticidal activity. The problem is two-fold. The primary problem is that broadcast spraying of Roundup on genetically-modified Roundup-Ready (herbicide resistant) crops like corn and soy eliminates larval and nectar plants in and around agricultural fields, eliminating Monarch habitat over huge areas of the Midwest. Secondly, the proprietary surfactant that makes plain glyphosate into brand-name Roundup is known to be deleterious to invertebrates. Plain glyphosate by itself is considered safe. Limited applications of plain glyphosate that don’t wipe out host plants are not a real concern and in fact are invaluable in habitat restoration. You can buy plain glyphosate for home garden use, and careful spot-spraying of difficult weeds will not affect insect populations. (Unless you’re Regina’s neighbor eliminating his reed canarygrass, normally a laudable activity, but in this case you cut her Woodland Skipper population in half with a single application of glyphosate. Despite her having plenty of unmowed and unsprayed weedy grasses available for them.)



Monarch. (T. Pyle)

* Organic compounds are chemicals that contain carbon and hydrogen, but can also contain oxygen, nitrogen, and sulfur. Organic pesticides are generally those derived from natural sources, e.g. pyrethrins extracted from chrysanthemum flowers. But not all organic pesticides are safe, either for insects or other organisms. See the discussion of nicotine, above. To use the pyrethrin example, these are highly toxic to bees and moderately to highly toxic to other beneficial insects. Mammals can also be affected. Dogs are less reactive, but cats and fish are very sensitive to these compounds. This is just one example. More information is available at:

https://xerces.org/sites/default/files/publications/13-053_web-screen.pdf. However, this publication is oriented toward larger scale farming and is focused primarily on bees.



A Woodland Skipper in Regina’s garden. Who knew that they use reed canarygrass??

Resources

General information on pests and pesticides: University of California’s Integrated Pest Management Program:

<https://ipm.ucanr.edu/index.html>

Their Pesticide Information page is here: <https://ipm.ucanr.edu/GENERAL/pesticides.html>

WSU Extension Home Gardener Fact Sheets on pests and Integrated Pest Management:

<https://hortsense.cahnrs.wsu.edu/>

National Pesticide Information Center: <http://npic.orst.edu/>

Search for product names by active ingredient, or active ingredients by product name: <http://npic.orst.edu/NPRO/#>
(AI means Active Ingredient, not Artificial Intelligence!)

2023 Field Trip Protocols

Non-consumptive appreciation of butterflies is central to our purpose, basic to our approach, and the guiding principle behind general membership field trips. Collecting of adult butterflies is not allowed on these trips. Collecting of eggs and larvae for rearing is accepted on condition that individuals raised to adult stage are released at their original location.

HOW TO SIGN UP: Anyone can sign up by contacting the trip leader. (See back page for contact information)

Check our website and Facebook page for last-minute additions (Flash Field Trips!).

DIFFICULTY RATINGS:

- 1 Easy, mostly by car, minor walking along roads.
- 2 Fairly limited walking, some slopes may involved.
- 3 Moderate, 3-4 miles walking, or with some slopes.
- 4 Difficult, hiking required off road, may have short steep sections, total of 4 miles or so.
- 5 Strenuous, extended hiking on trails with steep terrain, 4-8 miles.

Date	Destination/Description	Difficulty	Trip Leader
May 31-June 1	San Juan Island	2	Melanie Weiss
May TBD	Mima Mounds, Thurston County	2	Regina Johnson
Late May, early June, TBD	Klickitat River	2	Jim Reed
Early June, TBD	Boulder Creek, Okanogan County	2	Cheryl Bellin
June 10-11 TBD	Monarch Weekend, south-central WA	1-2	David James
Late June TBD	Leona Land, south central OR		David James
June 24	Bethel Ridge, Yakima County	2-3	David James
July 5	Big Four Ice Caves, North Cascades	2	David Droppers
July 15	First Creek, Reecer Road, Ellensburg area	2-3	David James
July 21-23	WBA Study Weekend, Metaline Falls	Varies	Varies
August 4	Date fixed, location TBD!		Cathy Clark, Dan Dunphy
Early August	White Pass Exploration	2-3	Regina Johnson
August 21	Big Four Ice Caves, North Cascades	C	David Droppers
August 25	Crystal Mountain Ski Resort	3	Regina Johnson, Melanie Weiss
Thanksgiving Weekend	Royal Tour of Western Monarchy, California—Monarch overwintering sites along the California coast.		David James

Field Trip Leaders

Melanie Weiss		
Jim Reed		
Regina Johnson		
Cheryl Bellin		
David James		
David Droppers		
Cathy Clark, Dan Dunphy		

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At-Large	Dan Dunphy		

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Field Trips	Melanie Weiss and Jim Reed		
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Newsletter	Regina Johnson		

The views expressed in articles in this newsletter are those of the authors, and not necessarily those of the WBA.