



G'num*

The newsletter of the Washington Butterfly Association

P.O. Box 31317 Seattle WA 98103
<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*.



Cabbage White pair, *Pieris rapae crucivora*, a Japanese subspecies. In North America we have *P. rapae rapae*. They look different in ultraviolet light. (Masaki Ikeda)

Dr. Morehouse will tackle topics related to butterfly courtship, mating and reproduction as he discusses recent insights from his research into the colorful lives of these remarkable animals.

In this issue:

2020 Volunteers	p 2
President's Message	p 3
Watching Washington Butterflies	p 4
2021 Field Trip Season?	p 6
Butterfly Probosci	p 8

Upcoming Programs by Zoom

Wednesday May 5, 6 pm: Colors, Choices, and Conflict: Evolutionary Insights from the Reproductive Biology of Butterflies. Dr. Morehouse is an Associate Professor in the Department of Biological Sciences at the University of Cincinnati. He will cover his work on the evolution of bright colors in butterflies, as well as the evolution of male ejaculatory traits and female reproductive physiology.

Wednesday May 19, 6 pm: Glenn Marangelo from the Missoula Butterfly House and Insectarium will do a presentation on insects.

Summer: Field Trips on your own. No study weekend again this year. Dang pandemic. Get vaccinated.

WBA Volunteer Recognition for 2020 by John Baumann



Sue Orlowski with a Monarch. (J. Baumann)

We recognize **Sue Orlowski** as one of the key original members of the Spokane area WBA membership group. In her Board work, field work, recruiting efforts and broadly shared photographs, she may be the best recognized of Spokane area members today. She truly outdid herself this past season by submitting over 300 Eastern Washington butterfly sightings scattered over five counties, complete with all the details we locals would need to follow in her footsteps, material submitted complete with all the latitude, longitude and elevation details so that Jon Pelham can readily enter each of these sightings into his statewide database and atlas. In sheer numbers, she may have equaled Tom Rogers' lifetime tally of entries in one season! More than just a soloist, Sue is also the best sort of WBA team player, someone who has helped recruit new members, Board members and many an enthusiastic field tripper. Our current president is one of her recruits: thank you, both Sue and Mary! She also was one of the producers of the 2019 Study Weekend in Colville—the last one before the pandemic! She may also be one of few G'Numers also to have had a photo published on the cover of the summer 2015 issue of "Butterfly Gardener", the nationally-circulated NABA members magazine. She confesses her dedication to butterflies began as a spinoff from birding, but let no one call her "a birder gone bad"! Thank you, Sue Orlowski, for sharing your love of butterflies, birds, dragonflies, bees andNature... with all of us!



Sue Orlowski, lower left, serving on the WBA Board at the Colville Study Weekend, 2019. (Photo by Allan Latimer)

David Droppers must be reckoned as one of the leaders among Washington states of incoming generation of younger – than age 70 – lepidopterists! A WBA member since near our group's inception, David must first be recognized in the field as the man with the fastest net, bar none. Scarcely a swallowtail or hairstreak eludes him. He leads field trips, teaches classes on butterflies and moths and varied settings, and makes himself readily available to share material from his fieldwork in WBA monthly meetings. Most recently, we appreciated his presentation and excellent photos documenting his years of fieldwork exploring "Butterflies of the Deep, Dark Forest". Years back, David contributed a gem of local butterfly taxonomy to the WBA website, "A Dichotomous Key to the Blues of Washington State", well worth



David Droppers examines the contents of a beating sheet. Photo by Lauren Rich.

the viewing if you haven't seen it. He has volunteered thousands of butterfly identifications for our area photographers on the BAMONA website, where he has served as our regional point man for almost a decade. WBA stands by David in enthusiastic appreciation for all he has shared with us celebrating our rich butterfly and moth fauna.

David is currently pursuing a teaching certificate to teach biology to high school students, hoping to ensnare more young ones into butterflies and moths, or insects and the natural world at the very least. His enthusiasm is contagious. He says his only regret is that he is human - a human life is far too short to properly enjoy the butterflies of Washington, let along the Pacific Northwest, North America, and the world.

President's Message from Mary Schu

Greetings from Spokane, with Spring in the air! Ahhhh....yes, spring the time of year where the flowers start to bloom, butterflies start to emerge, joining with other emerging pollinators, to nectar and present their beauty to the world. The time of year where us butterfly enthusiasts thrive with butterfly nets in the air, bug viewing jars at the ready for the next magnified identification of what our nets caught and the cameras for those butterflies that land on flowers and hold still long enough for a picture that isn't just a blur. Yes, that is spring! A wondrous time of year.

As for the Washington Butterfly Association, it has been an eventful year despite the COVID setup backs. We have been able to schedule many presenters via Zoom that have given us so much knowledge and learning it has been utterly amazing. We cannot thank you all enough, below is a list of this year's meetings and the presenters we have had! I would like to **THANK YOU ALL SO MUCH FOR PRESENTING!!!**

Species Profiles – Hairstreaks and a Skipper by David Nunnallee
Native Pollinators: Garden and Habitat Restoration by Julie O'Donald
Migration Biology and Conservation of the Monarch in the Western US by
Dr. David James
Dr. Sean Ryan How genetics and citizen science can help us understand insect
ecology and evolution in a changing world
Glad Tidings from Mothlandia by Carl Barrentine, Susan Mulvihill, and
Michelle Sloan Bos

Managing for butterflies on Department of Natural Resources' Natural Areas:
a delicate dance by Dave Wilderman & Regina Johnson of the DNR.

Butterflies of the Deep, Dark Woods by David Droppers
Butterfly Biology: Anatomy and Phylogeny by Jon Pelham
Wool Carder Bees by Dr. Gary Chang
Pollinators, Native Prairies, and Conservation by Dr. Susan Waters
Bumble Bees of Washington State by David Jennings
Stripes, bands, and blotches – Oh My by Dr. Moria Robinson
Food Plant Guilds by Jon Pelham
Glenn Marangelo from the Missoula Butterfly House and Insectarium upcoming presentation on bugs.

The Washington Butterfly Association board has decided to postpone the Blue Mountains WBA Butterfly Weekend another year to 2022. We have also decided to postpone the fieldtrips until 2022 as well, out of an abundance of caution.



Oregon Monarch in Benicia. (Teresa Chang)



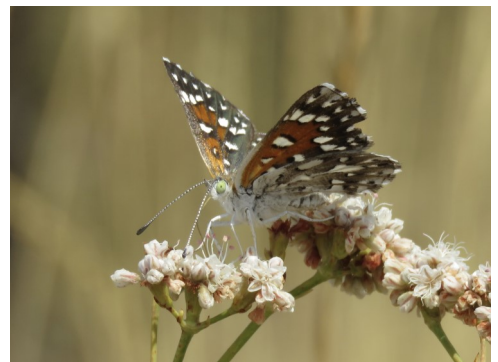
Native prairie wildflowers. (R. Johnson)



Julia's Orangetip nectaring on Blue-eyed Mary
at one of DNR's Natural Areas. (D. Wilderman)

Just a reminder, Jon Pelham is still collecting butterfly data for the Washington State database he is building, you can email him that data at zapjammer@comcast.net.

Mormon Metalmark, part of the Tall Buckwheat Guild. (M. Weiss)



Watching Washington Butterflies with Bob Pyle

Number Forty-three

Put Another Dime in the Record Machine

Part 2

In Part 1 of this essay, we looked at the history and importance of occurrence records for butterflies and other elements of natural history, and the importance of keeping them. This time I will go into a little more detail, in hopes it will prove helpful to everyone who wishes to contribute to our store of knowledge and understanding. Keeping good, precise records enables each of us to learn, conserve, and enjoy our beloved butterflies even more.

Here, again, are the basic elements of an acceptable field record;

- 1) State and county, followed by the precise locality at which the butterfly was encountered.
- 2) The exact date of the encounter, given as day/month/year.
- 3) The name of the person responsible for the record.
- 4) The voucher: traditionally a specimen, but these days more commonly a good, recognizable photograph; or in the absence of a photo, clear notes of observed, diagnostic field marks.
- 5) Any additional field notes.

Now for some elaboration on each of these categories:

1) Locality: to be useful, this needs to be as precise as possible, so that a field researcher or conservation monitor could locate the very same place. Old records were notoriously bad at this, sometimes giving no more than "Washington Territory" or "Cascades." Even quite recently we made do with approximations such as "5 mi. E of Hwy 97 on Bickleton Hwy." For many years, Township, Range, and Section coordinates were considered desirable, but these still leave one guessing within a square mile. Nowadays we all have easy access to Longitude and Latitude, so there is no excuse not to give a very precise designation. Even if you don't have cell service or GPS, or don't use a smart phone like me, you can still pinpoint the spot on a map such as the DeLorme Atlas, Green Trails, or USGS topo in the field (maps are still essential!) and then fix the lat/long on Google Earth or Google Maps on your home computer. This is of enormous service to the long-suffering records compiler (see below). In short, give a concise but precise verbal description of the site, as well as the lat/long coordinates if at all possible. The record is even more valuable if the elevation is included. A good record should enable future researchers or butterfly monitors to return to the same location with confidence.

2) Dates: Since order of day and month differ by different systems, don't rely on numerical dates (e.g. Roman numerals for month) but spell or abbreviate the name of the month unequivocally.

3) Names: The name of the observer is very important to include, so that we know who takes responsibility for the data and who may be contacted for further information. These days, lots of people use "handles" or nicknames on social media, and some carry these through for their photo by-lines and records. If this is your choice, for privacy or other reasons, I hope you will consider making your identity available to the records compilers. Anonymity is not generally acceptable as a source of biological data, which is what we are all creating. Also, much of the joy in butterflies lies in the sharing—of knowledge, of enthusiasm, of questions, of discoveries, of photographs, and yes, of records. That sharing is what WBA is all about, and it is at the very root of collaborative science. Gracing our records with our names allows us to take part in the joy of community that the shared love of butterflies can bring.



Well-labeled specimen, Essig Museum of Entomology.

(Continued on page 5)

(Continued from page 4)

4) Vouchers: The ultimate voucher specimen is a specimen, which can be turned over and examined from any angle, dissected, examined for its DNA and chemical signatures, and otherwise confirmed and studied. Photographs too can be useful as well as beautiful, though much more limited in what they can convey. More and more they are being accepted as vouchers for records, as are sightings in a few instances. But watchers and photographers must be content that their data will not always be sufficient for a positive ID, and thus as an acceptable record. For a sight record to be accepted, it must be accompanied by detailed notes if there is any question of its visual recognition—just as with birds.

5) Notes: These often include number and gender of individuals sighted, condition, and whether sighted, photographed, collected, or netted and released (s, p, c, n/r). Beyond these basics, feel free to add important plant associations (nectaring on asters, ovipositing on *Salix scouleri*), weather, predation events, or any other specific field notes that seem relevant or useful.



Before this Red Admirable flew away, it contributed a full record and a dot on the map for Mount Annie, Okanogan County, on the author's birthday in 2017. Photo by David Branch.

At this point it should be said that some butterflyers are reluctant to give out their locality information because they are worried about marauding collectors coming along and depredating their subjects. Once upon a time there may have been commercial collectors who might justify such caution. But there are few collectors today, and all of them that I know are committed to the butterflies' study and conservation. The Lepidopterists' Society Collecting Guidelines are conservative, and all laws, lists, and protected lands are observed by nearly all members. None of our rarer butterflies stand at any risk whatever from collectors, who are at best extremely poor predators. But several of them are indeed threatened by habitat development, insecticides, warming, and other factors that make it imperative for land managers to know where they occur, so that all suitable measures may be taken for their habitat protection. Considered in this light, secrecy may well help to doom a butterfly colony, rather than save it from imaginary collectors.

And so the ideal record might look something like this:

Papilio rutulus

**WA: Wahkiakum Co. Front yard Swede Park, Gray's River, Jcnctn. SR 4 X Loop Rd. Elev. 80 ft. 46.356, -123.581
1 fresh female s. 19 July 2021. R. M. Pyle.**

Finally, what should we do with our records? First, there is the matter of storing them. If you are a throwback like me, you may still prefer a handwritten notebook or index cards. But most will use a computer file or spreadsheet, linked to the appropriate photographs by whatever system you choose or devise. The essential thing is that the vouchers and their data not be irretrievably separated! Work it out.

And then what? More and more people are submitting their records to iNaturalist and/or e-Butterfly, which are fine repositories. But here in Washington, we are fortunate to have the Northwest Lepidoptera Survey, the Washington butterflies part of which is coordinated and personally managed by our own WBA Guru-in-Residence, Jonathan P. Pelham, Curator of Lepidoptera at the Burke Museum. Jon has been gathering and amalgamating the state's butterfly data bank for more than half a century, in partnership with Jon Shepard, myself, and a few other lepidopterists, and later Ann Potter of WDFW. In recent years, he has been working closely with various WBA members to make sure their copious and excellent field records get into the database, and to develop elegant maps from them with Caitlin LaBar. Just as the laboriously entered record-books maintained by John Hinchliff for many years led to the *Oregon* and *Washington Butterfly Atlases*, the current efforts will facilitate modern maps that will allow us to visualize the changing ranges of all our butterflies, to find them where they ought to occur or perhaps discover why not, and to care for them as well as possible. You can personally help and honor Jon's enormous efforts by making sure he gets all of your records, common species or rare.

Conscientious record keeping is the very foundation of natural history and conservation. I hope this little sermon will have convinced those who have not yet begun keeping and submitting records to do so, and those who already do, to do it even better. Or at the very least, to throw another dime at the record machine!

(Editor's Note: online databases require a unique username and valid email address. Use an email you actually check. As for user names, you'd be surprised how many people globally have the same name as you—real names are not unique, where these databases have to have a unique identifier for each user—hence the usernames or “handles”. e-Butterfly requires a real name along with a username. iNaturalist allows for the inclusion of a real name along with the username, so give it yours.)

Field Trip Season 2021, hmmm...
Article and photos by Melanie Weiss

With the pandemic and variants still in our midst, WBA is going to err on the side of caution and suspend live field trips and our annual Butterfly Weekend for the 2021 season. Given the concern of gathering participants from various locations around the state, the sharing of jars, and our enthusiasm that makes us drop all safety protocols and converge on a target species, we have decided to proceed in this manner. And we tip our hats, or nets, to the progress we are making toward meeting live in person in the future.

On a positive note, by suspending our in person monthly meetings to a Zoom format this past year, we have been able to schedule local speakers in addition to speakers from across the country. Members from around our state have been able to attend where the distance prohibited them from doing so in the past. And we have drawn viewers from afar, also.

WBA is excited to announce that we have been compiling a butterfly site list from around the state. Directions, times to visit, and target species will be given for each site. In appreciation of the support of WBA's members, this listing will be distributed to members only and emailed in the very near future. So sign up now if you're not a member!

Until then, below are a few suggested locations to visit on your own around the state. For additional directions, most of the sites listed below may be located on Google Maps or WTA.org. Blues are puddling, checkerspots and swallowtails are emerging, and fritillaries will be flying later in May. Enjoy the season!

Data: Consider sending the data from site visits to Jon Pelham at zapjammer@comcast.net. Please include the date, latitude/longitude or GPS coordinates, site name and county, butterfly names or photo if unsure. You may also record your data on the iNaturalist app directly from your cell phone.

Ritter Canyon, March through summer, but crowded in warmer weather

North Spokane, Spokane County

This is a productive butterfly area throughout the season. The Arctic Skipper, Dreamy Duskywing and Butler's Alpine all fly there. Ritter Canyon can be found in North Spokane by taking Indian Trail to Indian Painted Rocks which is along the Little Spokane River. It is best to go during the week since the parking lot is small and the trails are popular.

Discover Pass needed.



Dreamy Duskywing.

Sinlahekin Wildlife Area, May to August with peaks mid June to mid July

Okanogan County

SWA is a butterfly-rich area to explore. The road through SWA is car friendly, and there are many locations with good butterfly habitat along the way. On a WBA visit a few years ago, our group saw 41 species including the Oregon Swallowtail, Thicket Hairstreak, Coral Hairstreak, Sylvan Hairstreak, many Behr's Hairstreaks, blues, coppers, nymphalids. Caitlin LaBar has documented 90+ species in the wildlife area.

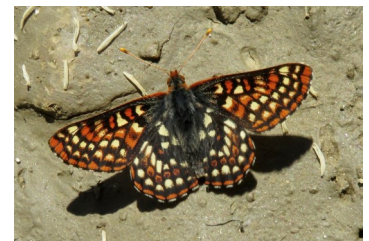
Discover Pass needed.

Swakane Canyon, mid May through late June

Chelan County

This is a butterfly rich area, but note that the road is narrow, rocky and full of ruts. Areas where the road runs close to the stream are the most productive, but keep watch along the way. Duskywings, Northern Cloudywing, Roadside Skipper, Common Checkered Skipper, Anicia Checkerspot, many blues and swallowtails are some of the species you may see. Take Hwy 97A north from Wenatchee along the west side of the Columbia about 6 miles. Turn left onto the canyon road.

Discover Pass needed.



Anicia Checkerspot.

(Continued on page 7)

(Continued from page 6)

Douglas Canyon, late May to early June

Douglas County

In general this is an uncrowded area, good for butterflying and birding. Possible species are the Indra Swallowtail, Sagebrush Checkerspot and marbles. See WTA for directions.

No pass required.

Reecer Canyon, peaking June through mid-July

Kittitas County

Located outside Ellensburg, Reecer Canyon has abundant flower-filled meadows and seeps with excellent butterfly opportunities. Follow Reecer Creek Rd as it climbs above the canyon and up into the Wenatchee Mtns, traveling higher as the season progresses.

Cell phones will also do a good job of providing directions from Exit 106: search "current location to Reecer Canyon".

No pass needed.

Snow Mountain Ranch, April through June and again in September-October

Yakima County

Beautiful Snow Mountain Ranch has 9.2 miles of trails on the 1800 acres of rich and varied butterfly habitat ranging from lowland-riparian at about 1500 feet through canyons and shrub-steppe areas to summit & ridges at about 3000 feet. More than 60 butterfly species have been recorded at Snow Mountain including Ruddy Coppers, Oak Duskywings, Hoffman's Checkerspots and Mormon Metalmarks. Check the site map at the trailhead and enjoy! All trails are good choices.

No pass required.

Klickitat Rail Trail, April to June, possibly July if there is enough moisture to keep nectar sources going

Klickitat County

This trail in magnificent Columbia River Gorge country is a partnership between the Klickitat Trail Conservancy, Washington State Parks and the US Forest Service. It runs along the Wild and Scenic Klickitat River. It follows on the opposite side of the Klickitat River from Hwy 142 and is accessible only at MP 0 and at the Pitt Bridge at MP 10. Butterflying is actually best above the town of Klickitat from MP 13.5 up to MP 20. The best time to visit is from April to early June before it gets too hot. A couple of species of note include the Propertius Duskywing, all six species of swallowtails, Great Arctic.

For a map and additional directions see: www.klickitat-trail.org

No pass required.



Anise Swallowtail on balsamroot.

Did You Ever Wonder: The Amazing Butterfly Proboscis

By Melanie Weiss



Ruddy Copper with unzipped proboscis.
(M. Weiss)

The proboscis is sometimes referred to as a butterfly's tongue, but it is not a tongue. A better term may be the butterfly's mouth parts. As butterflies know, this long curled up tube is how food is taken into the butterfly's body. Butterflies are easily observed using this extension to probe flowers in meadows.

A few years ago I saw a female Ruddy Copper attempting to draw nectar with a proboscis that had never been 'zipped up' upon eclosure, or emergence from the chrysalis. She was trying to use the two halves to draw nectar. If you have ever raised butterflies, you would have seen that connecting these two halves is one of the first things that occurs after eclosure. The proboscis develops in two parts in the chrysalis. After emerging, the butterfly uncurls and curls the two halves in order to fasten them together. This had not occurred for the Ruddy Copper female. On occasion she was able to curl at least one of

the halves, and could lay down the two halves on the yarrow flowers. But I was left wondering if she was able to draw any nourishment, or would simply die.

Other than flowers, I have observed butterflies with their proboscises on rocks, charcoal, fruit, tree sap, carrion, scat, my skin and heard about the heliconian species, able to dissolve pollen and then draw it in, such as the Zebra Longwing. I've had questions regarding the proboscis prior to observing the Ruddy Copper and pondering her fate. In my search to learn more, I found an astonishing amount of information available. The research and applications of the research have also been remarkable. Below are a few basic pieces of information from researchers over the past few years:

- 1) The tip of the proboscis is like a sponge rather than a straw, and the nutrients are absorbed into it.
- 2) The tip of the proboscis is shaped differently depending on what the species eats.
- 3) Liquid is not sucked up the proboscis like through a drinking straw, but drawn up through capillary action. The drinking straw analogy needs to be thrown out.
- 4) One researcher said that butterflies can 'spit' onto a surface to moisten it, then reabsorb the liquid. So they can draw nutrients from rocks, carrion, and charcoal, and they can 'mop' off the salt on your skin.

Butterfly proboscis. (Rylee Isitt)



Regarding the Ruddy Copper, I'm not optimistic about her fate. The inside of a functioning proboscis is constructed for fluid movement, but she did not have a zipped up tube. She would have the spongy tips for absorbing nectar. But how would capillary action occur to transport it to her stomach? So I keep asking the experts what they think about it and continue reading on the topic.

This is just the tip of the iceberg, or proboscis if you may. For those who would like to know more, I refer you to the following very readable article with photos of several different proboscis tips. I have others if you are interested:

<https://askentomologists.com/2016/02/29/on-the-tip-of-the-butterflys-tongue/>

2020 Field Trip Schedule, for Independent 2021 Sojourns

Date	Destination/Description	Difficulty	Trip Leader
May 2	Rocky Ford, near Ritzville	2	
Mid May	Winthrop Area, Northeast Cascades		
June 6	Douglas Canyon and Jamison Canyon/Lake	1-2	
June 13	Antoine Peak Conservation Area	4	
June 13	Coffee Pot Lake and Twin Lakes	2	
June 20	Hog Lake and Folsom Farm	2	
July 18	Toppenish National Wildlife Refuge	2	
July 25	Bear Creek Mountain	3	
August 1-2	Slate Peak, North Cascades	3	
August 21	Crystal Mountain Ski Resort	3	

DIFFICULTY RATINGS:

- 1 Easy, mostly by car, minor walking along roads.
- 2 Fairly limited walking, some slopes involved.
- 3 Moderate, 3-4 miles walking 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.

We are including this list of field trips scheduled for last year as a courtesy to our readers. While there are NO field trips scheduled for this year, you can certainly go out on your own, and this list with dates will give you some ideas of where to go and when. Melanie Weiss also has a nice list with details of places to go in spring and early summer in this issue: directions, species to expect, season, parking passes. A longer list with similar details will be sent to all WBA members by email soon.



Mountain Parnassian at Crystal Mountain.
(M. Weiss)

Silver-bordered Fritillary at Rocky Ford.
(J. Baumann)





Board Members

President	Mary Schu	
Vice President	David Jennings	
Secretary	Hailey Armstrong	
Treasurer	Regina Johnson	
At-Large	David James	
At-Large	Cheryl Bellin	
At-Large	Paulette Murphy	
At-Large	John Baumann	
At-Large	Jim Reed	
At-Large	Melanie Weiss	

Committees

Science Advisor	Jon Pelham	
Membership	Reg Reisenbichler	
Annual Conference	Mary Schu and Lora Langford	
Field Trips	Melanie Weiss and Jim Reed	
Programs	Paulette Murphy	
Publicity/Website	Carolyn Heberlein	
Newsletter	Regina Johnson	

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