



Washington Butterfly
Association

The newsletter of the Washington Butterfly Association

P.O. Box 31317 Seattle WA 98103

<http://wabutterflyassoc.org>

*G'nun**

Facebook: Washington Butterfly Association. Instagram: #washingtonbutterflies (anyone can use this hashtag)

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



Bird Creek Meadow, a potential destination at this year's Study Weekend. (D. James)

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Upcoming Programs

May 16, Spokane: Jon Pelham, Basic Butterfly Biology. The latest iteration of Jonathan Pelham's highly engaging and provocative introduction to the science of butterflies, tailored by this leading curator and taxonomist for the Spokane area butterfly enthusiast.

No meetings in summer. See you in White Salmon or on one of the field trips! For notification of 'flash field trips', make sure we have your current email address, check our website, or follow our Facebook page. Be sure to post your photos of butterflies on Instagram with our hashtag #washingtonbutterflies!

July 13-16, White Salmon: Annual Butterfly Study Weekend (aka Conference)

Sept. 5, Seattle: TBA

President's Message—Annual Study Weekend (previously known as the Conference)

Time to Sign up! We invite you and your family to sign up for this year's annual Study Weekend “Wings over White Salmon”. Last year’s event in Ellensburg was a lot of fun, based on all the reports received, and this year promises to be another great opportunity to spend time in the field with other fun folks in a part of the state that WBA has neglected for a few years: Mt Adams and the Gorge.

At the WBA fall retreat, the board discussed a lot of fun possible sites, and ended up with Mt Adams/Bird Creek Meadows, the Gorge and Oregon options at Mt Hood as our preferred destination.

Tom Landis will be delivering our keynote on the topic of the conservation of Monarch butterflies, especially efforts in which we, as citizen scientists, can create Monarch waystations in our own yards. You will learn of the many interesting success stories he has to share about how students and families in Mr. Landis' Oregon communities have helped to protect this endangered phenomenon of the west, the Monarch butterfly migration.

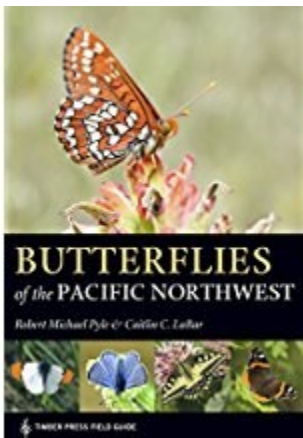
As an extra bonus to all of the native pollinator gardeners in the audience, Tom has been researching the combination of native and non-native plants best suited to attract a wide array of our native pollinators. His talk will include a discussion of what plants work best and why.

During our study weekend, we will explore accessible meadows on Mt Adams, Mt Hood and the lowlands in-between. Target species we hope to encounter include Monarchs in the gorge areas, rarer hairstreaks and checkerspots in the high country, where we might also glimpse the uncommon Oreas Anglewing. We will also be on the lookout for an unusual migrant fritillary, the Coronis, which WBA's scientific advisors have studied extensively.

Come help us find out who is flying in this part of the state, this time of year. Bird Creek Meadow is a seldom surveyed site, so we are expecting some fun surprises.

This year's conference will continue offering Idie Ulsh memorial youth scholarships with the generous support of her family.

Butterflies of the Pacific Northwest, by Robert Michael Pyle and Caitlin C. LaBar: a preliminary review by John Baumann



Timber Press has just released Bob Pyle's and Caitlin LaBar's *Butterflies of the Pacific Northwest*. It is hoped that a future contributor to our magazine will share a more detailed review of this fine publication for our readers, however, I am happy to put in a few sentences today as our next G'Num goes to press. I have tremendous respect for these co-authors, who, ever since I joined WBA 10 years ago, have encouraged me to share butterfly sightings, ask questions and learn, learn, learn the varied and diverse butterfly fauna of our region. I am grateful that they collaborated so well with one another on this project, while also drawing on the scholarly, field and photographic skills of naturalists and scientists all over the country, and especially here in the Northwest. Our readers should expect razor-sharp photos, illustrating both male and female adults of most area butterfly species, as well as some immature stages and host plants. Also anticipate up to date information on species descriptions, and an introduction to new species splits, such as the hard work still being done on Northwest Buckwheat Blues. As well, our authors have combined to produce detailed range maps for the species that capture newer data from all over the region, reflecting fluid nature of our butterflies' distributions. My thanks to Bob and Caitlin for this fine work! If you all don't have a copy yet, why don't you?

Watching Washington Butterflies with Bob Pyle

Number Thirty-three

Washington Butterfly Big Year: Third Report

Well, it's been a decidedly slow start for the second half of the first Washington Butterfly Big Year. Some years, Echo Azures appear as early as the third week in February here in southwesternmost Washington. Two years ago, in spring of 2016, there were six species of butterflies decking my cherry laurel blossoms in warm sunshine of mid-March. And one can normally find Sheridan's Green Hairstreaks and other extreme earlyies on the wing at least by April Fool's Day on the East Side.



Sheridan's Hairstreak. (M. Weiss)

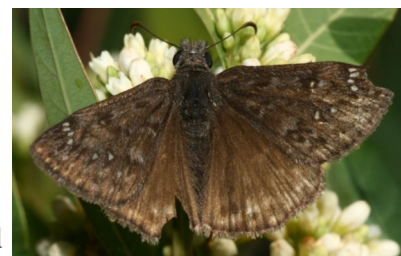
But this year, wouldn't you know, was the second La Niña spring in a row (I misspoke in the previous column, calling it El Niño). In this swing of the El Niño Southern Oscillation, or ENSO cycle, known as La Niña, the Pacific experiences cooler-than-usual waters, which can lead to cold, wet springs onshore. This has certainly been the case in 2017 and 2018, and the frankly crappy conditions for week upon week affected the dry side of the Cascades as well as western Washington. Crappy, that is, if your object is finding butterflies! Which mine was.

So I was appalled to realize that the calendar had already reached mid-April, and I hadn't undertaken a single field trip! Oh, I'd spotted the odd azure and white and anglewing on my own premises, but there seemed to be a statute in force militating against more than one nice day in a row, and things just couldn't get going. So you can imagine that when a genuinely clear, warm day came, on April 18th, I couldn't stand it, and had to get out in search of new species for the Big Year list. The only candidates I was likely to find close to home at that date were the Two-banded Checkered Skipper and the Brown Elfin, both present but local in the Willapa Hills.

Since time was limited with the sun unobstructed and hot, before the marine layer arose from the Columbia, I chose a locality quite near home: Eden Valley. This pastoral slot diverges from the Gray's River estuary along little Crooked Creek, running back easterly into the southernmost Willapas, between the Gray's and the Columbia itself. I remembered fantasies of restoring the old schoolhouse here as a home, back in '75; now it is nowhere to be seen, having deliquesced into the wet green meadows of Eden. At the end of the valley, a gated logging road continues northeasterly into the private timberland. This stretch hadn't been logged for a while, so the roadside vegetation was in good condition, including loads of Spring Beauty (*Claytonia parviflora*). This gave me high hopes, as did the balmy airs of the heavenly day.

I didn't see any Large-leaved Avenas (*Geum macrophyllum*), the chief hostplant for the checkered skipper in this district, but there was plenty of Dewberry (*Rubus ursinus*), which will also do. And farther up the steep logging road on a level side spur, lots of Salal, a favored larval host and nectar source for the elfin. Yet search as I might, neither species appeared. I reckoned that perhaps, in *this* particular year, when there have been so few warm days for chrysalides to cook, it was just too early. However, brilliant blue Echo Azures (Frost's "sky flakes down in flurry on flurry,") abounded as mint-fresh males. Margined Whites, heavily veined and some of them milky white and others buttery yellow below but again almost all males, glided up and down the road in their dozens as well. Both butterflies visited the Spring Beauties, and the azures showed great astuteness in locating little spots of bird-lime on the pit-run rocks of the road: as many as seven to a cluster. So, while garnering nothing new, Big Year-wise, I got a splendid big butterfly hit to get me going out of the drizzly doldrums and to launch me onward into spring.

The next opportunity that presented itself came the following Sunday, April 22nd. I'd driven up the Columbia Gorge the night before, camping a little way west of The Dalles. By nine I had breakfasted, crossed the Biggs Bridge, and entered my target



Propertius duskywing. (S. Rae)

area, Rock Creek Canyon in Klickitat County. I had butterflyed here on several occasions, but never in (relatively) early spring. Of course, things were farther along over here, with the Arrowleaf Balsamroot mostly past. But the Cheatgrass was still green and its awns too soft to stick in my socks, and Desert Parsley bloomed all over in carrotty clumps of yellow. The first butterflies of the day flashed the same yellow and black as the many Meadowlarks piping into the crisp cool morning air: Anise Swallowtails, products of the parsley, flipping and gliding over the full-running creek.



Julia's Orangetip. (J. Baumann)

What I especially hoped to find here were Sheridan's Green Hairstreaks, though I suspected I might be too late, this low. A few miles up I began seeing whites along the road, and several of these would have been new for me too. But they were devilishly difficult to catch, keeping just beyond my reach when I leapt from the car, seldom giving a clean stroke of the net, and never, ever alighting. Slowed from a recent illness and rusty on my net-work, I was no match for them. At last I managed to net two orange-tips, formerly Sara's, but now Julia's (since Todd Stout's recent revision of western *Anthocharis*). The male was small, but the pale yellow female truly minute--no bigger than a Dainty Sulphur! And then a much bigger white found its way into my net, a beautiful green-veined Becker's. Julia was new but Becker was not. I really think I saw both Desert and Large Marblewings as well, but I certainly couldn't prove it.

A few miles up the road I came in view of the Rock Creek Longhouse of the Klickitat/Yakama people. Many families had gathered down by the Longhouse for their big spring pow-wow. I would have loved to see the dances and hear the drumming, if I were welcome; but that would be the day, and the day was for butterflies. All morning and afternoon, Indian people continued to pour down the road from the north.

As I rose in elevation, moisture, flowers, and butterflies all increased. The Garry Oaks were just leafing out, and below one clump, a crisp new Propertius Duskywing basked on a cattail stalk--mouse-gray forewings, mink-brown hindwings. Another new one! These became common still farther up-canyon, especially around mud where water seeped underneath the oaks.

Ochre Ringlets, Silvery Blues, and Mourning Cloaks also appeared, and a Western Tiger Swallowtail or two. And then came the real spectacle of the day: a swallowtail soiree at a long puddle at the edge of the dusty road. The day had grown warm, verging on hot, and a hot day with mud in the mountains usually means butterflies. There beneath the basalt rimrock fluttered numbers of bright fresh Anises, crowding about for the salts, shouldering one another for the best spots. And then, wow! a few smaller Short-tailed Black Swallowtails, also known as Indra, sneaking in among the larger Zelicaons. I hadn't seen Indra for years, and they are such a sight: coal-black, shot with rows of small yellow spots ending in red and blue punctuations by the tiny tails. One of them was another dwarf, no larger than a sulphur, and barely tailed at all. This was my seventy-third butterfly for the Big Year, the third new species for the day.

And it would be the last. A stony gully crowded with g'nums produced a brief up-down of what very well might have been a greenie, in a perfect habitat for Sheridan's; but it did not deign to appear again. The sight of both Julia and Propertius nectaring on Fiddleneck on a wall of Starflowers was worth the drive, but of course they were reiterations of the day's novelties. Up at the top of the road, where it intersects with the Bickleton-Goldendale Road in a sharp hairpin curve, the streamside shrubs offered an azure or two, but I couldn't get a good enough look-see to tell whether they just might be the very local *Celastrina lucia*.



Indra swallowtail. (B. Hardwick)

From there I climbed out of the canyon westerly toward Goldendale, but diverted north again on a little road called Old Mountain. This begins paved, goes gravel, then goes all to hell. A truly abominable narrow trackway of rocks, holes, and mud, this so-called "road" carries one up onto Monson Prairie. This interesting mounded savanna was sparsely flecked with two of my favorite spring wildflowers, Showy Phlox and Desert Pansy, but all chopped up into ranchettes with doublewides and dogs. Persevering, one finally escapes this morass and joins the much better Three Creeks Road. One of my goals had been to reach the

highlands southeast of Satus Pass and below the Yakama Reservation. Turning right took me easterly across beautiful high prairie, near 4,000 feet, abloom with a different balsamroot, perhaps Hooker's. The piney forest and open grassland here is undeveloped and unfenced, but all signposted "No Trespassing" by "WPT." That turns out to be Western Pacific Timber, which owns 93,000 acres in the Simcoe Block of Klickitat County, all off limits east of SR 97. Too bad; it looks like great habitat.

In any case, though the day had grown late and cool, one more butterfly would yet grace this first big outing of the spring. Just as I'd turned around and headed back west toward Goldendale and home, a lone California Tortoiseshell cut the chill air in the late sunshine and drifted over me, dropping toward the canyon below.

I dropped down too, first to the 97, then Goldendale, the Gorge, Stevenson, and a glass of good Walla Walla red to toast my twelve-fifteen species for the day, three of them new for the WBBY. Next: Kittik County with Branch, Pelham, and Droppers. And so on toward summer, and the many forays to come!

Species Profile: Taylor's Checkerspot and the Golden Paintbrush

Executive Summary on the Status of the Taylor's Checkerspot Butterfly **Ann Potter, WDFW**

The Taylor's Checkerspot, a Pacific Northwest endemic butterfly, was historically found in grassland habitats from southeastern Vancouver Island, British Columbia, south through the Puget Trough in western Washington, and into the southern Willamette Valley in Oregon. Today, the butterfly is restricted to 11 known populations: eight in Washington, one in British Columbia, and two in Oregon. Current distribution within Washington is greatly reduced from historical and limited to two geographically isolated areas: the south Puget Sound region (Pierce County), and the northeastern Olympic Peninsula (eastern Clallam County). In addition to the eight naturally occurring populations, efforts to reintroduce the butterfly are underway at four sites in the south Puget Sound region. Taylor's Checkerspot was listed as an endangered species by the Washington State Fish and Wildlife Commission in 2006, the Committee on the Status of Endangered Wildlife in Canada in 2011, and the U.S. Fish and Wildlife Service in 2013.

When listed endangered by the Washington Fish and Wildlife Commission in 2006, Taylor's Checkerspot was known to occur on 10 Washington sites in Clallam, Pierce, and Thurston counties. Since then, extirpation of the butterfly has been observed on seven of the 10 sites. Also during this period, searches continued for Taylor's Checkerspot on the Olympic Peninsula, and five new sites were located within Olympic National Forest. No new populations have been found since 2009.

Grassland dependent butterflies in the Willamette Valley-Puget Trough-Georgia Basin ecosystem, including Taylor's Checkerspot, have declined dramatically due to widespread habitat degradation and loss of prairie-oak ecosystems from development, invasive species, and loss of beneficial disturbance mechanisms. Habitat enhancement efforts for Taylor's Checkerspot since 2006 have been significant, however, the amount of fully-restored habitat relative to need is low, and the configuration of habitat remains fragmented and isolated.

Research in the Prairies of Western Washington **By Melanie Weiss**

The following is a brief summary of some research being done on the Taylor's Checkerspot and its host plants. This information was taken from a recent presentation given by Dr. Jon Bakker of UW, to the Seattle chapter of the Native Plant Society titled "Prairies of Western Washington". The talk was packed with information about our northwest prairies and the research that he and a team of people are doing in the South Sound prairies, Whidbey Island,



Golden Paintbrush.
(R.Johnson)



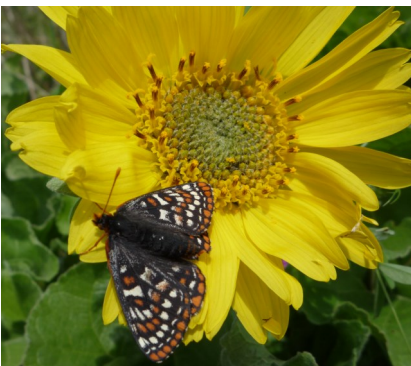
Harsh Paintbrush.
(R. Johnson)

and in the San Juans, both in restoration and in monitoring two endangered species that depend on the prairies: the Taylor's Checkerspot, a subspecies of the Edith's Checkerspot (*Euphydryas editha taylori*); and the Golden Paintbrush (*Castilleja levisecta*).

One study looked at the butterfly's host plant preferences. The Taylor's Checkerspot uses host plants that contain iridoid glycosides, which the larvae sequester. These are toxic and unpleasant to taste giving the larvae protection from predators. (This is similar to what Monarch larvae do by eating milkweed.) Prairie plants which are high in these chemicals are: Golden Paintbrush, Harsh Paintbrush (*Castilleja hispida*) and Narrow-leaved Plantain (*Plantago lanceolata*). Historically the Taylor's Checkerspot used *C. hispida*. However, it has been documented using all three as a host in the wild. In their research, it survived better on Plantain, although the Plantain is not native. One possibility is that it has switched hosts, and could switch back to the Castillejas. Of note, their research showed that while Plantain has higher levels of iridoid glycosides, repeated burning can lower its iridoid glycoside levels.

Castillejas are hemiparasites, meaning that they can live independently but may grow better by getting resources from a host plant. Castilleja roots can penetrate the roots of other plants drawing nutrients from them. In another study the researchers asked the following question: if the butterfly is using Castillejas, does the identity of the Castilleja's host plant impact the butterfly larvae? Research showed this to be the case—the checkerspot larvae growth varied with host plant of the Castilleja. This is an example of an indirect effect in which the Castilleja is the mediator through which its host plants affect the butterfly larvae even though the larvae don't eat those plants. This would be similar to a situation in which the plants that a herbivore eats affect the carnivore that eats the herbivore. Some host plants are better hosts than others, thus the Castilleja will be more or less healthy depending on the host. The researchers found that in the prairie, yarrow was the most beneficial host to the Golden Paintbrush of the plants they were testing, and the yarrow stood up well as a host. It is also interesting to note that the Castilleja may parasitize several hosts at the same time if a variety of plants are nearby!

The 4th instar of the Taylor's Checkerspot overwinters from July through February. Adults usually emerge during April and May. Eggs are laid and the larvae feed until the 4th instar or 5th instar goes into diapause around July. At the time the butterfly emerges from diapause in early spring, it may use different hosts than it had been using earlier. Historically it has also used annuals in the spring, but today there are fewer annuals in the prairie due to less disturbance to the ground, such as no harvests of camas bulbs by Native Americans, reduced populations of gophers, and fewer fires. There are many different factors to consider with this butterfly and the prairie that are unknown. Research is an ongoing process.



Taylor's Checkerspot on balsamroot.
(R. Johnson)

I applaud the efforts that these researchers are making to tease apart the interdependent details of the prairie system and proceed in supporting the plants and animals of this fragile habitat.

~Thanks to Jon Bakker for kindly fact checking and making editorial comments for this summary. He welcomes questions on the prairie research at: jbakker@uw.edu.



Taylor's Checkerspot. (Lisa Randolph)



Taylor's Checkerspot on Harsh Paintbrush. (R. Johnson)

The Butterfly Formerly Known as Sara.....

By David James

Our beloved Sara's Orangetip is sadly no more in Washington. No longer can we shout 'Sara' as we glimpse the dancing orange-tipped white butterflies that are true harbingers of spring in the Pacific Northwest. However, Sara is not dead; she has simply taken her family and gone to live in California! There you will find her through the length of that state still gracing the kinds of spring habitat we know her so well in.

In Washington we have a new girl in town and her name is Julia. Yes, Julia's Orangetip will be what we shout when we spot the familiar orange-tipped white. It will take some getting used to I know but give it a few years and Sara will be a distant memory and Julia will be our new favorite spring girl.

We have Todd Stout, a Utah-based lepidopterist to thank for the shuffle of our Orangetip girls. Todd has spent many years looking at the Orangetip species and subspecies complex in the western US and recently published the results of his study which you can find here: <http://journals.fcla.edu/mundi/article/view/106138>

It was long suspected that Sara had multiple personality disorder and was really a number of different girls and we have to thank Todd for clarifying the situation. I am confident that the current arrangement should stand the test of time and Julia will remain our new girl into the future. Another small wrinkle is that while Julia occurs throughout Washington, Todd recognizes that the west side and east side forms are slightly different, enough to be named subspecies! So on the west side we have Julia Flora and on the eastside Julia Sulfuris! Flora of course is a nice old fashioned girl's name but Sulfuris? Perhaps we will just stick with 'Julia' for eastside Orangetips.....

Volunteers Restoring Butterfly Habitat!

Volunteers with Center for Natural Lands Management (right and below right) and students in the UW-Tacoma Ecological Restoration class (below) plant prairie plants (including Golden Paintbrush) last winter to restore habitat for butterflies at South Sound prairies in Thurston County. Sometimes it's pouring, as at right, but these hardy volunteers got to talk to DNR's Natural Areas Ecologist David Wilderman (in green rain gear at far right) about butterflies, especially the Taylor's Checkerspot; prairies, prescribed fire, and restoration. And some days it's sunny and beautiful, as at lower right! You could have been there!



All photos by R. Johnson.

This volunteer is planting balsamroot, a good nectar source for butterflies.



Washington Butterfly Association 2018 Study Weekend
Registration & Meal Reservations
Mountain View #98 Grange, 1085 Main Street
 White Salmon, Washington, July 13-16, 2018

No refunds after June 16th.
Registration fee does NOT include lodging or meals.
Meal reservations must be received by June 30.

Name(s) _____
 Addl. Name(s) _____
 Address _____ **Please print clearly**
 City, State, Zip _____
 Telephone _____ Email _____

Enter number of people and, if chosen, any meals, with totals and grand total in the right-hand column.	Price	How many?	Total
WBA MEMBERS—REGISTRATION			
Registration includes: • Friday evening light refreshments & lecture, • Saturday field trip, • Saturday evening lecture, • Sunday field trip; Register by June 30	\$90		
NON-MEMBER—REGISTRATION includes one year free WBA membership.			
Non-Member Registration includes Friday evening light refreshments & lecture, Saturday field trip, Saturday evening lecture, Sunday field trip: Register by June 30	\$100		
SPECIAL OFFER! Discounted registration AND one year free WBA membership for juniors 13 –17 years, and students enrolled in school programs. Under 18 must be accompanied by registered adult. (Names of minors needed for name tag purposes)	\$ 45		
Children 12 and under free if accompanied by a registered adult	\$ 0		
A Monday field trip will be available for those staying over	Free		
MEALS--OPTIONAL not included with registration fee. Bring your own water for field trips.			
Saturday dinner (catered by Lori Foster Harvey Catering): includes a Summer Vegetable Chop Salad w/ Apricot Vinaigrette, an olive oil and herb pasta (<i>gluten free</i>) and apple crisp for dessert. Iced tea and lemonade. Pick one entrée per person.			
Adults			
• Lemon Oregano Chicken	\$27		
• Vegetable Lasagna (made with thin sliced vegetables such as zucchini & eggplant instead of noodles) (vegetarian) (gluten free)	\$27		
Children (12 and under)			
• Lemon Oregano Chicken	\$17		
• Vegetable Lasagna (made with thin sliced vegetables such as zucchini & eggplant instead of noodles) (vegetarian) (gluten free)	\$17		
No Lunches available. Please make your own arrangements for breakfast and lunch			

TOTAL \$ _____

Note that you can register online <http://www.planetReg.com/E41712725239767> **or,** if you use this form, make your check payable to **Washington Butterfly Association**, and mail it with this form to: **WBA, Attn: Registrars, P.O. Box 31317, Seattle, WA 98103.** You will receive confirmation by email, telephone, or mail.
Questions? Contact Registrar **Richard Youel (cryouel@gmail.com)**

2018 Field Trip Schedule (Subject to Change)

Date	Destination/Description	Difficulty	Trip Leader/Contact
May 19	Yakima Training Center: Beginning a butterfly inventory on this military training land. No examination of the butterfly fauna of this vast shrub-steppe landscape has been conducted.	3	David James
May 20	Moxee Bog, Yakima area. Survey of the bog and surrounding areas for marsh violets, the host of Silver-bordered Fritillary.		David James
May 26-27	Trinity National Forest, Northern California: Weekend trip to Eagle Creek to tag northward-migrating Monarchs. Also a rich area for butterflies (30-40 species) .	2	David James
June 2	Rocky Ford, Adams County: WBA/WDFW Species of concern: Silver-bordered Fritillary, recently discovered by John Baumann to be present on this shrub-steppe site.	3	David James
June 9	Big Meadow, Bonner County, Idaho, a lesser fritillary and spring butterfly extravaganza.	1-2	John Baumann
June 15-16	Butterflies and Moths of the Methow Valley and beyond: 2 sessions class. Winthrop. http://methowconservancy.org/butterflies.html		David Droppers
June 23	Big Springs, Umatilla National Forest, Blue Mountains: WBA/WDFW Species of concern: Meadow Fritillary.	3	David James
June 30	Red Top Lookout, Teanaway area.	2-3	Dan Dunphy
June 30	4th of July Butterfly Count, Little Pend Oreille NWR.		Mike Munts
July 13-15	Annual Conference, White Salmon.		
August 11/18	Monarch Tagging Day at Lower Crab Creek. Date to be determined by late July and will depend on Monarch abundance.	2	David James
August 25	Toppenish, Yakama Nation: Search for Silver-bordered Fritillary (SBF) and violets as part of our Moxee Bog SBF project.	3	David James

Non-consumptive appreciation of butterflies is central to our purpose, basic to our approach, and the guiding principal 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 at a WBA monthly meeting or by contacting the trip leader. (See Board and Committee list in this issue 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 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..

Field Trip Instructions

WHERE & WHEN TO MEET: Trips depart from the north half of the Ravenna Park & Ride at 7:00 a.m. unless expressly stated otherwise. The park & ride is located under I-5 at Ravenna Blvd between NE 50th & NE 65th St. On request we also stop at the Issaquah Park & Ride at 7:30 a.m. To reach the Issaquah Park & Ride: going eastbound on I-90 take Exit 15 (1st Issaquah exit). At exit stoplight turn right (south) and drive 0.45 mile to Newport Way intersection (traffic light). Turn left (east) on Newport Way and drive 0.1 mile to another light, and turn right (south) into the Park & Ride. If you live in another part of the state, contact the trip leader to arrange where to meet the field trip group.

Please tend to personal matters such as getting coffee or lunch food before departure time so others are not delayed. Bring your own beverages, snacks and lunch for a day in the field.

All field trips are conducted by carpool. Without the volunteer participation of drivers, the trips are not possible. If you have a car that you are willing to drive, please have the gas tank full and ready to go.

All WBA-sponsored field trips are fully insured.

COSTS: Passengers are expected to share gasoline expenses. Typically this is \$10-20 each. Each rider should also pay a share of any park entry fees, ferry fares, etc. The trip leader will collect a voluntary donation of \$5 per person (children under 12 are free) for each field trip to help offset expenses of the organization.

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Committees

Science Advisor	Jon Pelham	
Membership	Reg Reisenbichler	
Annual Conference	Available	
Field Trips	Available	
Programs	Available	
Publicity/Website	Carolyn Heberlein	
Newsletter	Regina Johnson	
Trip Leader, Central WA	David James	