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Washington Butterfly Association

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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)

Dayton, WA: Lewis & Clark's Patit Creek Campsite sculpture. (Flikr)

In this issue:

Upcoming Programs

Seattle, Feb 5: Regina Rochefort, National Park Service (retired). Monitoring Subalpine Butterflies as Indicators of Climate Change: Cascades Butterfly Project.

Spokane, Feb 19: Video, Bob Hardwick, the Skippers of Washington

Seattle, March 4: Jon Pelham. There and Back Again - A different sort of butterfly migration. A demonstration of the seasonal movement of *Speyeria coronis* - Coronis Fritillary and its relationship with *Viola trinervata* - Sagebrush Violet.

Spokane, March 18: James Dillman, Butterfly field specialist for WSU. Stories from 40 Years in the Field

Seattle, April 1: Julie O'Donald. Native Pollinators: Garden and Habitat Restoration.

Spokane, April 15: Kelly McAllister, biologist for WSDOT. Roadside Habitat Conservation for Butterflies and other Pollinators.

Seattle, May 6: Rachael Bonoan. Species interactions in a changing environment: plants, butterflies, and ants.

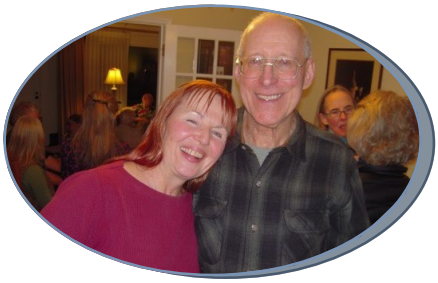
Spokane, May 20: TBA

Dayton, July 10-13: Butterfly Study Weekend

WBA SEATTLE WINTER PARTY

A kaleidoscope was passed around the room for everyone to try. (Al Wagar)

WBA Seattle held their Winter Party this weekend at the Lipkin's comfortable home. One photo shows all our shoes left in their entry way. There were almost 30 members in attendance at this potluck and White Elephant Gift Exchange. It is a relaxed time for socializing, catching up on what has been happening in each other's lives, and connecting outside of field trips and butterfly meetings. The food was excellent as usual, more desserts than last year. And, as always, there was much humor during the White Elephant Gift Exchange. Audubon books were some of the esteemed gifts. One gift that received a lot of attention and laughter, but was never "stolen", was a furry squirrel that was a holder of mint hand cream...you had to be there to appreciate the humor of it. As we were saying good night, many of us agreed that sadly there was not enough time to talk to everyone...a great evening! Thanks again to the Lipkins for hosting this event.



Our hosts, Ann and Ed. (Al Wagar)

President's Message from David Jennings

Solstice is well behind us. Days are getting longer, and even if the current weather does not always seem to reflect the trends ahead, spring is on its way! May this new year and new decade be excellent for you from a field naturalist perspective. May it be full of exciting new species, encounters and learning opportunities.

By the time you are reading this I fully expect us to have received reports on "first of the year" butterfly sightings. As far as WBA goes, we are preparing to embrace this field season with a host of field trips around the state plus our Summer Study Weekend.

Please check our list of field trips. The ones listed in this edition are just a teaser for others we will be adding as details firm up. Check the WBA website for current information during the year. Many thanks to Melanie and John for helping organize this year's field trips.

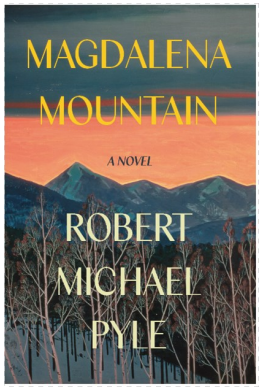
The board is most excited about our upcoming Summer Butterfly Study Weekend. After many years we are going back to the Blue Mountains. The study weekend will be Friday July 10th through Sunday July 12th. We will have supplemental field trips for Monday the 20th. We will be based out of Dayton and thanks to the amazing focus and energy from Board Members Mary and Lora we have a meeting location established and are in final negotiations with caterers. Mary and Lora were key organizers of last year's Study Weekend and we know what a great job they did then. More details to follow but please mark your calendar. Grabbing a hotel reservation sooner rather than later is probably a good idea also.

That's a lot of shoes. (M. Weiss)

With all the concerning news of insect declines worldwide, and a particular focus on pollinators, the WBA board will be approaching Washington Department of Fish and Wildlife to see how we can help make positive changes in Washington, with an initial emphasis on WDFW managed lands. Stay tune as there may well be some citizen science opportunities to help WDFW establish a current working baseline of key pollinator species such as butterflies and bumble bees. Without current numbers, we can't detect trends!

I hope to see you out in the field this year! Happy butterfly hunting!

Watching Washington Butterflies with Bob Pyle



Magdalena Mountain book jacket. (Counterpoint Press)

Number Thirty-nine

Magdalena Mountain: An Excerpt

[Author's Note: My novel *Magdalena Mountain* was published in 2018 by Counterpoint Press. In it, the developing human story alternates with chapters from the life history of one Magdalena Alpine butterfly (*Erebia magdalena*) that I have named Erebia. The butterfly strongly influences the action and the doings of the human characters. While the story takes place in the Colorado high country and this species does not occur in Washington, its adventures might not be unlike those of our arctic and alpine butterflies. If this makes you want to read more, the book may be ordered from any bookstore or library and from Powells.com, among other standard sources.]

After mating, Erebia seeks shelter from a brief shower beneath a handy parasol, the leaf of a Parry primrose. Its rose-pink petals glisten with raindrops as Erebia sits snug and dry, his wings folded tight. The urge to fly and seek a partner assuaged for now, he rests, as his next spermatophore recharges the costly nutrient package it will bear along with sperms. When the rain lets up, he creeps down a fissure for the night. In the morning he will resume his up and down flights over the rocks, seeking to mate as many times as he can during his lifetime. If he manages to couple with a female already mated, his spermatophore will displace the other, so his genes will be the ones passed on. So there's no giving up, just because he has succeeded once.

Of course, the same fate could befall his own germ cells, left with his first mate. Not for now, however. Since their parting on the morning after their union, she has been unreceptive to further courtship, raising her abdomen high and spreading her wings low whenever approached, until the frustrated males give up. Instead, she hops, flutters, and crawls from tuft of grass to sedge tussock to lump of stone. From time to time she taps a grass blade with her antennae, dips her body's tip, and deposits a single egg on one surface or another, cementing it into place. More often than not the chosen substrate is an overhang of rock, where the egg is inconspicuous, but never very far from a succulent supply of grass.

Magdalena Alpine (*Erebia magdalena*), dorsal, historic illustration by W. H. Edwards, *Butterflies of North America* (1868-1897) (with thanks to John Calhoun)

Large for a satyr's egg, more the size of a swallowtail's, the ovum resembles an oblong vase for a petit point flower. Ribbed and creamy white when laid, it turns tan and purplish brown, and in a few hours ripens to silver-gray with a Prussian blue band around the dimple on top. Finally, before hatching, it goes putty-gray against the grayer granite and fading grass. About ten days after the egg is deposited, a thrips-sized larva will eat its way out, consume the eggshell, and switch to tender grass. How many times Erebia's offspring will molt before diving into the grassroots will depend upon the length of the season until the alpine herbage dries out between summer's last breath and autumn's first frost.

Of all this, Erebia knows nothing. He has resumed his patrols, sometimes top to bottom and back, other times back and forth in a drunken glide path to the edges of the willow thickets and *Boloria* bogs below. A Clark's nutcracker makes a half-hearted pass at the butterfly. Distracted by a checkerspot, it loses both in a classic fox-and-grapes act of indecision. The corvid settles for a fat rock spider instead, thus getting the distilled goodness of ten scree moths, two Magdalenas, four checkerspots, and a tortoiseshell, as well as various flies, caddis flies, and lacewings, harvested over the orb-weaver's lifetime.

Erebia hasn't quite the same vigor as before. Shiny chitin is beginning to show through the sparser scales on the veins of his wings, especially the big, swollen vein at the base of the forewing that sets the satyrs apart from other lineages of butterflies. Still, but for the beak-brand applied by the black swift, his wings are entire. Few shrubs grow on the

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rockslides to tear butterflies' wings, and nights spent safe among the lock-box of the rocks mean no scratches or tears from branches blowing on the night-time breeze.

The most obvious sign of Erebia's aging shows in his coloring; no longer truly black, but a rich coffee-bean brown, he has faded in the harsh ultraviolet rays of the alpine sky. Built and colored for the purpose of gathering sunbeams, those sable vanes nonetheless lose their luster in the performance of that very function.

So Erebia is a little past his prime when he meets a fresh misfortune. During a late passage, he is taken by a sudden gust and carried over the ridge to the steep snowfield that gathers, then melts, annually in the lap of the mountain's other side—a mere ghost of the glacier that carved out this cirque. Only once before has he ventured here, all the way down the north-facing slope to the pro-talus rampart at its base; but that was a warm day, and he sailed right back up and over to his accustomed home range. Now, as he blows over the snow-bowl, the cold-blooded insect feels its chill. A stiff, sharp shaft of upwelling air clutches him, sucking him down onto the surface of the firn. There his body temperature rapidly drops toward the danger point.

Magdalena Alpine, ventral, on granite, Horseshoe Mountain, CO. (Kim Davis and Mike Stangeland)

A watcher at the snowfield would notice the surface speckled and spotted with the bodies and wings of grasshoppers, butterflies, and other insects thus entrapped. This strange fallout proves a boon to foraging birds and entomologists. Rosy finches and water pipits alight in the middle of these refrigerated larders for the cold cuts they contain. Ptarmigan, leaving off their accustomed willow buds for the high-protein opportunity, work the edges. Birds draw other birds to the bonanza. Helpless when the temperature of their flight muscles drops below a critical point, most insects become easy prey when so chilled—or simply freeze to death and become immured in the snowpack. Sometimes entire strata of this snow-plankton have been preserved in glaciers, and famous among scientists are the places where the melting feet of these ice-sheets give forth their insect lodes, such as Grasshopper Glacier in Montana. The lesser museum of Magdalena Mountain is about to gain one more specimen.

Instinctively, just before numbness sets in for good, Erebia lays his closed wings flat against the reflective surface of the snow. At just this time of day, the sun shines directly onto the mountain's far face, blinding birds, pikas, and passersby unless they shield their eyes. For a time, his temperature flirts with the point of total shut-down. Then a calorie or two convects from that spread black beamcatcher to the body, and into the muscle fibers, the nodes of nerves. Heat gain begins to overcome loss by an immeasurable margin, but not too small for Erebia to feel, and respond to. Slowly, slowly, he reclaims precious degrees. The snowfield struggled its best to drain the BTUs from his blood, but those elegantly evolved solar panels, the wings of an alpine, suck back at the sunbeams for all they are worth.

Finally, just able, Erebia rights himself and begins to crawl. In a few labored minutes he reaches the edge of the snow, struggles onto warm granite, continues to a hot black patch of lichen, and lies flat again. In seconds, his flight muscles reach the take-off temperature, well above the ambient high for the day—and he takes flight. The first patch of campion he passes over draws him like a butterfly collector to beer, and he quaffs the sugar-rich nectar for minutes.

Renewed, as the sun sinks to the ridgetop, Erebia follows another time-grooved pattern and flies to a shadowed cleft in the rockslide. Alighting on the rim of the rock, he fairly dives into the void that promises safety for the high montane night. He'll never know how close he came to frozen death that day; but if he knows anything, it is how to pass a high-country sunset. He crawls down the fluted side of a rock chimney. At last, warm against the stone-walled haystack of a providential pika, Erebia sleeps his Stygian sleep, a black butterfly down a black hole in a black night. Thus ends the twelfth day of adult existence for one alpine resident of Magdalena Mountain.

Pika gathering hay. (Wikipedia user VJAnderson)

Species Profile: Watch Out for this Plant: *Eriogonum elatum,* Tall Buckwheat By Melanie Weiss (and photos)

Tall Buckwheat flowers. (Wikipedia)

In a talk to our group two years ago, Jon Pelham discussed butterfly foodplant guilds. He defined a foodplant guild as a plant species that supports at least three species of butterflies as a distinct community in an ecosystem. This plant is durable and persistent over time and over a considerable area. He suggested that several buckwheats were guild plants. *Eriogonum elatum*, Tall Buckwheat, is one of Cascadia's guild foodplants that supports at least seven butterfly species according to Dave Nunnallee in "*Buckwheats of Washington*". Since the writing of his booklet, one additional species has been added bringing the total to eight butterfly species: Blue Copper, Western Green Hairstreak, Sheridan's Green Hairstreak, Gray Hairstreak, Columbia Dotted Blue, Acmon Blue, Lupine Blue, Mormon Metalmark. In addition to being a host plant, it is an excellent nectar source for butterflies throughout the season, and is a plant to seek out when you are in the field!

Tall Buckwheat is one of our native buckwheats and is found east of the Cascade Crest from the shrub-steppe to higher elevations such as Red Top Lookout. This plant may found growing along roads, hillsides or in meadows, and sometimes in abundance. As the name implies, it is a tall plant growing up to 4 feet. This luxuriant species was one of the first of our many buckwheats that I was able to recognize. It has a tall hollow green stem that rises from large, basal leaves. The stem branches at the top where small pink and white flowers bloom from June to September. The top branching is fairly open and gives the plant a lacy appearance during its long blooming season.

Sheridan's Hairstreak (J. Baumann)

The eight known butterfly species that use Tall Buckwheat as a food plant may be found during different times of the season. For example, Sheridan's Green Hairstreak has an early flight time while the Mormon Metalmark flies late in the season. Depending on the flight time of the species, various parts of the plant may be used: the tender, unfurling leaves of early spring, the mature leaves as the season progresses, or the flowers. Some species use both the leaves and flowers, and one late season species sometimes uses the stem.

Hedgerow Hairstreak

Three of these species that use Tall buckwheat as a food plant are Hairstreaks. The early Sheridan's Green Hairstreak, *Callophrys sheridanii*, is one of Cascadia's early fliers. The range for this species is from the shrub-steppe to subalpine mountains in the eastern part of our state. The eggs are laid on the young leaves of Tall Buckwheat. At higher elevations, the larva feeds on flowers. This species also uses other Eriogonum as host. The mature larva then looks for protected areas, such as leaf litter, for pupation and winter diapause. The Western Green Hairstreak, *Callophrys affinis*, flies a bit later, but they may overlap in some areas. This species ranges along an area on the east side of the Cascades and also in the Blue Mountains. It is thought that the species lays eggs on young leaves early in the season and flowers later. This species also uses other *Eriogonum* as host. The Western Green Hairstreak, like the Sheridan's Green Hairstreak, overwinters as a pupa in plant litter on the ground. The third Hairstreak, one of our most common butterflies, is the Gray Hairstreak, *Strymon melinus*, and is seen in most parts of our state. The larva feeds on leaves or flowers and the pupa overwinters. This species flies from April to October and may have three broods. A wide variety of host plants are used by this species including Tall Buckwheat.

Columbia Dotted Blue.

Three of our Blues use Tall Buckwheat as host plant. The Columbia Dotted Blue, *Euphilotes columbiae,* is one of the more common Euphilotes that you will see in the Columbia Basin. This species makes use of two buckwheats, one being the Tall Buckwheat. *Eriogonum compositum* is used as well. Eggs are laid on the flowers. The larva eats flowers and fruit, sometimes being attended to by ants (myrmecophily). The pupa overwinters. Acmon Blue, *Icaricia acmon*, may be seen in habitats from the shrub-steppe to alpine meadows. There will be one brood at high elevations, two in hotter areas. Eggs are laid on flowers and leaves. This species uses other buckwheats as well as some lotus species. Pyle and LaBar state that the second instar overwinters. Lupine Blue, *Icaricia lupini,* has also been recovered from Tall Buckwheat.

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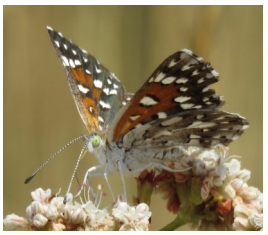


Mormon Metalmark

The Blue Copper, *Lycaena heteronea*, uses many Eriogonum species as host including the Tall Buckwheat. However, it may be that *Eriogonum compositum*, Northern Buckwheat, is the preferred plant. We see this species from the subalpine meadows of the Cascades to the shrub-steppe of eastern Washington. Eggs overwinter. Ant attendance may occur when the larvae hatch the following season.

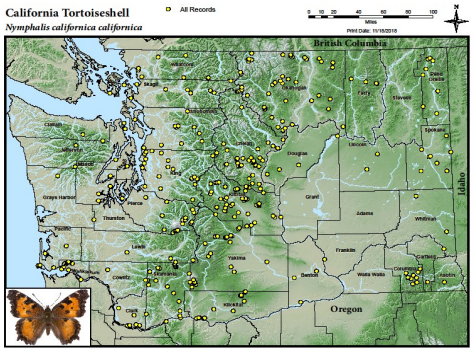
One of our late season fliers, the Mormon Metalmark, *Apodemia mormo*, uses several Eriogonums as host in our area including Tall Buckwheat. When I first saw this species on Tall Buckwheat while driving slowly along a country road, I stopped my car and quickly jumped out to take a photo. In my excitement, I left my car door open. The man in his truck behind me was not happy, but fortunately patient. This is a species of roadsides, canyons and the shrub-step of eastern Washington. James and Nunnallee show that after the overwintered eggs hatch in the spring, the larvae spend some time in a dormant state, then pupate late summer prior to their flying time. They can be seen late summer in the shrub-steppe nectaring on both Tall Buckwheat and Rabbitbrush.

Tall Buckwheat is a guild plant that is known to support eight species of butterflies. In addition, this author has observed the following species using this luscious plant as a nectar source: Dark Wood Nymph, Blue Copper, Snowberry Checkerspot, Hoary Comma, California Hairstreak, Hedgerow Hairstreak, Halfmoon Hairstreak, Gray Hairstreak, Behr's Hairstreak, Boisduval Blue, Acmon Blue, Columbia Blue, Mormon Metalmark. This is a plant that gets me to stop my car and take a closer look at what might be flying. Get to know this plant and watch for it when you are in the field this summer! But make sure you close your car door when you stop!

Dark Wood Nymph

Jon Pelham, WBA talk, "Butterfly Foodplant Guilds in WA State", Dec. 6, 2017; "*Buckwheats of Washington*", David Nunnallee; *Life Histories of Cascadia Butterflies*, David James & David Nunnallee; *Butterflies of the Pacific Northwest*, Robert Pyle & Caitlin LaBar

Species Lists Wanted



Sample page from the upcoming Butterfly

Some of you may be aware that Jon Pelham is feverishly working on a database of all of Washington's butterfly species. We have attached a map of all known California Tortoiseshell records as an example of what Caitlin LaBar is producing from the database.

As butterfly season approaches, we would like to ask all of our members to make note of the species that you are seeing and send that information to Jon. In order to place your sightings precisely on the map, he needs the following:

* Date
* Coordinates: the latitude/longitude coordinates can easily be obtained with the built-in Compass app on an iPhone, other apps for Android or iPhone, or a standard GPS. You can also use Google Earth to find your coordinates if you are able to pinpoint your exact location.
* Location description: provide a short description of the site for the database and for verification of the coordinates (sometimes numbers are accidentally transposed). For example: "Swakane Canyon, Chelan County" or "Forest Road 1200 near Silver Star Mountain, Clark County"
* Butterfly name. If you are uncertain of the ID, include a good photo or two.

Ultimately Jon and Caitlin are planning to create a Butterfly Atlas for Washington.

Send your Species Lists to Jon at: zapjammer@comcast.net

Field Trip Descriptions 2020

Early Reecer Canyon, April 18, rain date April 25
Melanie Weiss
We will look for early eclosures and species that overwinter as adults: Mourning Cloak, Hoary Comma, Green Comma, California Tortoiseshell, Sheridan's Hairstreak, Brown Elfin, Moss's Elfin. We won't be able to go very far up Reecer Canyon due to snow. So we will enjoy what the day brings.
Sign up with Melanie:

Butterfly Class, April 20, 27th, and May 4th Tentative dates for 3 part class
John Baumann
This class will be at Corbin Art Center, not the community college this year.
Concluding Field Trip will be on Saturday, May 16th, at **Rutter Canyon**, Little Spokane Natural Area. There will be no formal fee for the class, but we are asking $25 donation to WBA from each person.
Sign up with John:

Cedar Hairstreaks on *Aruncus* near Hoodsport. (R. Johnson)

Rocky Ford, May 2
David James
Rocky Ford, a BLM area near Ritzville on the edge of The Palouse is proving to be a magical place for butterflies! John Baumann discovered a new colony of Silver-bordered Fritillaries here just a few years ago but the site is also home to many other species including the not-often-seen Garita Skipperling. This year we want to explore Rocky Ford's butterflies in a slightly earlier time-frame to see what selection of early-mid spring butterflies it boasts. On behalf of the BLM we are developing a list of butterflies which will help inform future land and habitat conservation measures at this site. Come help us with this list! Sign up with David James:

Winthrop area, mid May, to be announced
Cheryl Bellin
See spring fliers in the shrub steppe of the eastern North Cascades. Possible species include: Hoary Elfin, alpines, greenies, skippers, duskywings. This will be a shared trip with the Methow At Home organization.
Sign up with Cheryl:

Hoodsport Area, end of May, early June, to be announced
David Droppers, Melanie Weiss
We will visit several favorite sites of two WBA members living in the area. In addition, we will search for the Johnson's Hairstreak and the Cedar Hairstreak in an area where they are known to fly.
Sign up with David:

Douglas Canyon and Jamison Canyon/Lake, June 6
Sue Orlowski
Please meet at 9:30 AM at Jamison Canyon on Route 2 which is about 8-10 miles west of Bank's Lake on the north side of the road. There is a sign on the corner where the road intersects with Route 2. We will tour the area along the road into the lake and camping area then leave and go west again on Route 2 to the road that will take us to the road leading to Douglas Canyon. The target species for Douglas Canyon is the Indra Swallowtail. If you live in Spokane and want to carpool, meet at the Safeway store on Mission and Hamilton at 7:00 AM. Please let me know if you are interested in going on this field trip either by email

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Antine Peak Conservation Area, June 13
John Baumann
4-5 mile gently sloped trail, **t**rail includes good hilltopping spots and a large, south-facing meadow with wild-flowers!
Sign up with John:

Hog Lake and Folsom Farm, June 20
Sue Orlowski
Please meet at 9 AM at the Fish Lake exit on I 90. If you live in Spokane and want to carpool meet at the Safeway on Mission and Hamilton at 8 AM. Target specie is the Sheridan Green Hairstreak. Please let me know by email at

Coffee Pot Lake and Twin Lakes, July 11
Sue Orlowski
Both of these lakes have a variety of butterflies so you shouldn't be disappointed. If interested in going on this field trip please contact me either by email at

WBA Butterfly Weekend, July 10 to 12, with an optional day on July 13
Dayton, Blue Mountains of Washington
Information and registration will be posted on the WBA website

Bear Creek Mountain, July 25
David James
The 3-4 mile hike from the Bear Creek Mountain trailhead at 6000 feet, boasts one of the most diverse and populous butterfly faunas in the Cascades. The hike is mostly on level ground and is an easy stroll through flowery meadows. Blues, whites, checkerspots and fritillaries abound along with both species of parnassi-ans. One of the best-kept secrets of the Cascades!
Sign up with David James:

Crystal Mountain, August 21, note this is a Friday
Regina Johnson, Melanie Weiss
We will take the gondola up to the top of the ridge and butterfly in the alpine meadows along a trail with stun-ning views and late season fliers and flowers. Gondola fees will be part of this trip, although you may choose to hike down rather than pay to ride down.
Sign up with Regina Johnson:

Cascade Butterfly Project
Citizen Science Project - see Tab on WBA website for additional information
Melanie Weiss will be going out weekly from late July through August on the Naches Loop at Mt. Rainier Na-tional Park.
Sign up with Melanie:
Field Training is tentatively scheduled for July 8, Sauk Mountain, 10 am- 2pm, and July 15, Sunrise, 10 am - 2 pm.
More training will be announced by early June. For information on trainings and signing up for all other loca-tions at Mt. Rainier NP, the North Cascades NP and a few other locations contact Regina Rochefort:

2020 Field Trip Schedule (Subject to Change)

Date	Destination/Description	Diffi-culty	Trip Leader
April 18 (25)	Reecer Canyon	1-2	Melanie Weiss
May 2	Rocky Ford, near Ritzville		David James
May 16	John Baumann's Butterfly Class field trip, Rutter Canyon	2	John Baumann
Mid May, TBA	Winthrop Area, Northeast Cascades		Cheryl Bellin
late May or early June tba	Hoodsport	2	David Droppers, Melanie Weiss
June 6	Douglas Canyon and Jamison Canyon/Lake	1-2	Sue Orlowski
June 13	Antine Peak Conservation Area	4	John Baumann
June 20	Hog Lake and Folsom Farm	2	Sue Orlowski
July 8	Cascade Butterfly Project Field Training, Sauk Mtn.	2	Regina Rochefort
July 11	Coffee Pot Lake and Twin Lakes	2	Sue Orlowski
July 15	Cascade Butterfly Project Field Training, Sunrise at Mt. Rainier	2	Regina Rochefort
July 10-12	WBA Study Weekend, Dayton, SE Washington	Varies	Varies
July 25	Bear Creek Mountain	3	David James
August 21	Crystal Mountain Ski Resort	3	Regina Johnson, Melanie Weiss

Rain date, if any, in parentheses.

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.

Board Members

President	David Jennings	
Vice President	Mary Schu	
Secretary	Hailey Armstrong	
Treasurer	Regina Johnson	
At-Large	Regina Rochefort	
At-Large	Lora Langford	
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	