

The Newsletter of the Palouse Prairie Foundation

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<http://www.palouseprairie.org/>

June 2010

The regular meeting date for the Palouse Prairie Foundation is the 1st Thursday of each month. Check the PPF website for updates and locations.

Recent Field Trips

On June 1, 2020 we visited the Whelan Cemetery remnant in Whitman County. This was one of Daubenmire's sites and contains some rare Palouse plant species. See "Insects of the Palouse" below for some information on several insect species found there. The trip was led by Dave Skinner with Tim Hatten providing the information on insects.

On June 5, 2010 Smoot Hill (the George E. Hudson Biological Reserve), which is under the protection and management of Washington State University, was visited. There are several Palouse Prairie remnants on the site as well as some associated ponderosa pine habitats. Tim Hatten emphasized the arthropod segment of the wildlife of the Palouse. We spent a good part of a very pleasant Saturday on this field trip and learned a lot about the insects of the Palouse. The trip was led by Tim Hatten and Dave Skinner.

June 16, 2010. We went on a field trip near Troy to see Tanna Ragan's restoration work and help inventory what germinated in this spring's plots. Tanna is working on putting native forbs into an existing CRP grass stand to improve diversity and provide more pollinator habitat. The trip was led by Tanna Ragan and Trish Heekin.

Upcoming Palouse Prairie Foundation Field Trips

This is the nesting season for many of our local birds. Please leave your dog at home and keep young children under close supervision at all times.

June 22, 2010. TUESDAY. We will visit the property of Joan and Ray Folwell. This was farmland only a few years ago and the Folwells have done an amazing job of restoration on this land, including uplands, wetlands, and a pond. We will see plantings as well as wildlife and birds which have moved into the property since the restoration began.

Led by Joan Folwell.

We will meet at 5:30 in the parking lot near Office Depot in Moscow to arrange carpooling, then proceed to the Dissmore's parking lot in Pullman to connect with the Pullman contingent at 5:45. Please plan to be at the meeting place a little early. We will leave on time.

June 23, 2010. WEDNESDAY. Kramer Prairie is a preserve which is under the protection and management of Washington State University. Daubenmire had several plots here and the site contains some rare Palouse plant species.

Led by Bertie Weddell.

We will meet at 5:30 in the parking lot near Office Depot in Moscow to arrange carpooling, then proceed to the Safeway parking lot in Pullman to connect with the Pullman contingent at 5:45. Please plan to be at the meeting place a little early. We will leave on time.

This is rescheduled after we had to cancel the June 9 trip due to heavy rain.

June 29, 2010. TUESDAY. We will visit **Bob Clyde's restoration project** on Paradise Ridge. Bob has been restoring the native vegetation on parts of his CRP land and on some adjacent patterned ground. Led by Bob Clyde and Trish Heekin.

We will meet at 5:30 in the parking lot near Eastside Marketplace in Moscow to arrange carpooling. Please plan to be at the meeting place a little early. We will leave on time.

This trip will involve a lot of walking over uneven terrain. Come prepared with good shoes and clothing and bring water. Transportation may be available for people who need it.

Insects of the Palouse

This is the first of a series of notes concerning invertebrates (insects, spiders, myriapods and mollusks) of Palouse Prairie.

Submitted by Timothy D. Hatten¹

photo © David Hall



On a recent Palouse Prairie Foundation (PPF) sponsored field trip to Whelan Cemetery, I and a group of prairie enthusiasts came across several insects that caught our eye. Normally, there is a great deal of insect activity during early June, but on this June 1, 2010, it was overcast and quite cool; hence, activity of these cold-blooded "Poikilotherms" was subdued. The first notable bug that we encountered was the ubiquitous convergent lady beetle (*Hippodamia convergens*) which was hunkered down along the base of some Idaho Fescue. Ladybugs, also known as ladybirds or lady beetles

of the family Coccinellidae, are easily recognized by their round, dome-shaped bodies and brightly red-colored wing covers (elytra) dappled in black spots (actually, these and other lady beetles range in color from orange to scarlet, but brown to black species are not uncommon albeit they are more cryptic and less easy to identify than bright colored species). The convergent ladybug is a native species found commonly in North America in both wild and managed habitats. It feeds primarily on aphids, scale insects and their associated honey dew (a rich sugary substance). Because aphids are pests in gardens, this species is frequently sold by the hundreds from insectaries for aphid control. The number of spots on the convergent lady beetle can be quite variable, ranging from 0 to 13, but the species can always be recognized by the two white linear markings on the pronotum behind the animal's head. These white markings come together, or converge, towards the posterior side of the pronotum, hence the name "convergent lady beetle".

The second insect that we came across was a small "blue butterfly" belonging to the family Lycaenidae. This is a very large family with over 6,000 species worldwide, hence they are often categorized by subfamily reflecting in-part wing coloration or other features such as "tails". One such subfamily is the "Blues" belonging to the subfamily Polyommataidae. The Blues get their namesake by the blue coloration found on the upper surface of the wings, while the lower surface tends to have a silver, or gossamer coloration often accompanied by small black markings and orange banding. One of the reasons for the success of this cosmopolitan group of butterflies is their myrmecophilous behavior, or mutualistic (although not always) relationship with ants. Apparently, a number of lycaenid species are tended to by ants during the early stages of their lifecycle. Like aphids, caterpillars of this group produce honey dew, from a special gland called the Dorsal Nectar Gland found on the 7th abdominal segment, which the ants go crazy for. Hence, ants protect caterpillars of this group in exchange for honey dew. Some lycaenid species also migrate into ant nests for protection and food, where they will later pupate and emerge from the nest as adults.

Finally, the third notable species that we encountered was a darkling beetle (*Eleodes* species), belonging to the family Tenebrionidae, lumbering along the ground. Darkling beetles tend to be quite large (>10 mm), black in color and incapable of flight, hence one often finds them crawling along the soil surface. When encountered, these beetles frequently take on a posture resembling the down dog position in Yoga, with their heads pointed down and their "backsides" pointed up. This is a defensive posture because these

beetles emit a rather potent smell for defensive purposes. Darkling beetles feed largely on decaying organic matter but also on living tissue of plants, depending on the species. In contrast, the larvae of darkling beetles are commonly called mealworms and are sometimes pests of stored grain and milled grain products.

Several other insects were observed during the trip including a click beetle (Coleoptera: Elateridae), a plume moth (Lepidoptera: Pterophoridae), aphids (Hemiptera: Aphididae) and a long-horn beetle (Coleoptera: Cerambycidae). The larvae of click beetles are often plant and root feeders but some are predators and others carrion feeders, while plume moths are leaf browsers or stem- and root-borers. Aphids suck the sap from plants, while many long-horn beetles are cambium feeders in much the same fashion as bark beetles.

Although the overall diversity of insects observed on this trip was low due to weather, a wide range of functional feeding groups is represented by these insects (e.g. detritivores, carrion feeders, herbivores, predators), and provides an important lesson about insects; namely, they carry out a disproportionate number of ecological functions, or jobs, and in so doing these small creatures help to maintain ecosystem function, diversity and health of prairie habitat.

¹ PPF Board of Directors, CEO of Invertebrate Ecology Inc. (www.invertebrateecology.com)

Featured Plant

photo © David M. Skinner



Balsamorhiza sagittata, Arrowleaf balsamroot, is a member of the sunflower family (Asteraceae) which is native to dry, open prairies and meadows and open coniferous woodlands of western North America east to Alberta and the Dakotas and south to Colorado and Arizona. It is a frequent member of Palouse Prairie communities and adjacent open forest lands but is often replaced by Carey's balsamroot (*Balsamorhiza careyana*) west of here in the shrub-steppe of Washington. Where two species of

Balsamorhiza occur, they may hybridize to produce intermediate forms.

The leaves are mostly basal with heart-shaped (sagittate) blades covered with dense woolly hairs. This gives the leaves a grey-green appearance. The flowering stems are mostly leafless (scapiform). These characteristics make it readily distinguishable from the similar mule's ears (*Wyethia amplexicaulis*).

The composite flowers are yellow with pistillate ray flowers and perfect disc flowers. They begin blooming in April, often before the leaves are fully formed, and continue into May and even into June in cooler locations. The flowers are pollinated by native bees, especially *Osmia californica*. They are mostly xenogamous but geitonogamy often produces viable seed. Very little seed is produced autogamously.

All parts of the plant are edible but the roots are resinous and not especially palatable. Native peoples ate the roots only when nothing else was available. Many Native peoples also used various plant parts medicinally. Green growth, including the seedhead, is eaten by elk, deer, and livestock. Ground squirrels will gnaw the roots and eat the seeds. Birds eat the seeds and seed insects are also common. It has been shown that clipping reduces plant vigor the following year, so it is likely that grazing also reduces vigor. A rust fungus, *Puccinia balsamorhizae*, will attack the plants but the plants have developed resistance and the fungus causes little damage.

The plants grow from a large woody caudex and a taproot. The caudex and taproot are extremely resistant to fire, but make the plants impossible to move. The caudex reportedly caused a great deal of difficulty for early settlers breaking out the prairie with single-bottom horse-drawn plows.

The seed (achene) requires extended cold, moist stratification to break dormancy and germination then occurs at temperatures less than 40° F. Seedlings should be grown under cool temperatures. They do not thrive in a warm greenhouse. Due to the taproot, plants should not be held in pots for extended periods. Dry seed can be stored for a few years in ambient conditions, but seed is apparently not stored in the seed bank. Plants grown from seed often require 4-6 years to flower.

The early blooming plants are attractive in a landscape and the leaves are interesting after flowering is completed, although they will often dry up with the arrival of hot, dry weather. They should be planted in full sun where the soil is well drained. Plants are often available from local native plant nurseries and seed is usually available from native seed suppliers.

You can obtain more information about *Balsamorhiza sagittata* from:

Plant Profile from the USDA NRCS PLANTS Database

<http://plants.usda.gov/java/profile?symbol=BASA3>

Species page from the US Forest Service Fire Effects Information System

<http://www.fs.fed.us/database/feis/plants/forb/balsag/all.html>

Species page from the University of Washington Herbarium (WTU)

<http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Balsamorhiza&Species=sagittata>

Species information from the Native American Ethnobotany database of the University of Michigan-Dearborn

<http://herb.umd.umich.edu/herb/search.pl?searchstring=Balsamorhiza+sagittata>

There are 3 propagation protocols in the Native Plant Network

[University of Kentucky](#) [Pullman WA Plant Materials Center](#) [University of California, Davis](#)

Palouse Prairie Foundation Display

If you would like to have the Palouse Prairie display at a gathering or meeting, please contact us. The display consists of a free standing 4 panel poster explaining Palouse Prairie, and a myriad of printed information regarding the prairie. A smaller version of the poster is also available for more limited spaces. You can view the poster on the PPF website at <http://www.palouseprairie.org/display/>

Upcoming Events

Peatland and Fen Plant Communities. Sponsored by the White Pine Chapter, Idaho Native Plant Society. Saturday, Sunday, July 10-11, 2010. Overnight Field Trip and Workshop. Leaders: Fred Rabe, Archie George, Juanita Lichthardt. Location: Hager Lake near Priest Lake, Idaho.

To learn more about the White Pine Chapter of the Idaho Native Plant Society, visit their website at

<http://www.whitepineinps.org/>

To find out more about Palouse Prairie and the Palouse Prairie Foundation, visit our website at

<http://www.palouseprairie.org/>

Copies of past issues of the Newsletter of the Palouse Prairie Foundation are available online on the PPF website at <http://www.palouseprairie.org/pppubs.html>

If you have ideas, suggestions, or contributions for the newsletter, please send them to Dave Skinner at abbie48 at roadrunner dot com (you will need to replace “at” with the symbol “@” in the address line of your email program) or call him at 208-874-3205. Look for the next newsletter in September 2010.